Wattstopper®

Segment Manager Version 2.2 (with Energy Dashboard)

No: 24820 – 6/17 rev. 1

Operation Manual

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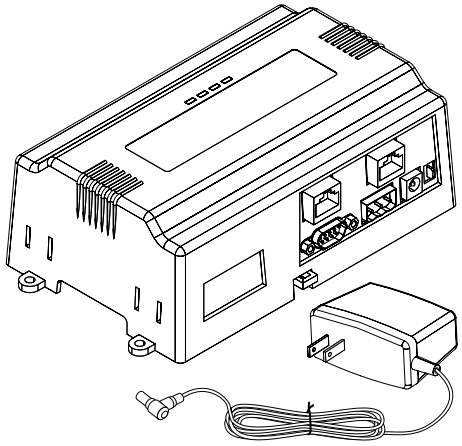
Country of Origin: Made in China • Pays d'origine: Fabriqué en Chine • País de origen: Hecho en China

INSTALLATION AND SETUP OF THE LMSM

Prior to logging into the Segment Manager user interface, it is necessary to complete all installation steps outlined in the Installation Instructions provided with your unit. This manual assumes that the Segment Manager (LMSM) has been completely installed and configured. You can download the instructions at http://www.wattstopper.com/products/digital-lighting-management/network-components/lmsm-3e-6e.aspx The manual also assumes that the LMSM is connected to a PC either directly or via a network. By default the Segment Manager uses secure SSL encryption for access over TCP port 443. Browsers may issue warnings associated with the self-signed certificate in use by the Segment Manager, as detailed in Appendix B. Accepting this exception is required in order to access the system. Also, TCP port 443 must be open between the user's PC and the Segment Manager.

NOTE: Version 2.2 can be installed in the LMSM-3E, LMSM-6E, and LMSM-603. It is not applicable for the LMSM-201.



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INTRODUCTION

ACCESSING THE SEGMENT MANAGER—TWO TYPES OF IMPLEMENTATION

All Segment Manager functionality is accessed via a web browser. However, there are two separate platforms available:

- **SegMan Platform** – In this platform, the browser communicates directly with the Segment Manager. All Segment Manager settings and connected device information is stored directly on the Segment Manager.
- **Supervisor Platform** – In this platform, a version of the Segment Manager software is installed on a PC, which communicates with a remote Segment Manager and all its connected devices. The Supervisor software can work with multiple segment managers, which might be installed in different sections or floors of a building, or even installed in different buildings.

Differences Between the SegMan Platform and the Supervisor Platform

- The SegMan platform is required for initial setup and configuration. Although some configuration screens for the Segment Manger itself are available on the Supervisor platform, several features are available only on the SegMan platform.
- Configuration of device specific parameters for the DLM devices connected to the Segment Manager is done only on the SegMan Platform.
- If using the Supervisor platform, all monitoring of power usage should be done on that platform, since it provides the ability to view information from multiple Segment Managers simultaneously.
- If using the Supervisor platform, all global scheduling should be done on that platform, to avoid potential conflicts between a schedule set up on the Supervisor platform and one set up on the SegMan platform.
- Because of available memory on the Segment Manager, historical monitoring data for groups is limited to the last five days. Data for individual rooms is not stored. But on the Supervisor platform, there is no limit to the amount of historical data that can be stored, and both room and group data is stored.

The exact same software is used in both the SegMan and Supervisor platforms. The software automatically adjusts based on the installation. Access to each implementation is based on the IP address or URL of that platform.

SOFTWARE MODES—AN OVERVIEW

The SegMan software consists of two operational modes: **Configuration** and **Dashboard**.

Depending on the user ID used to log in, the software will open in either Config or Dashboard mode.

Configuration Mode

Configuration Mode is used to initially set up and configure the SegMan. It also provides access to additional functions such as BACnet data export, reports, and firmware upgrades. A set of tabs across the top provide access to different functions. Additionally, the **Config** tab contains a series of screens, accessed by clicking the menu options on the left. For details, see “Configuration Mode” on page 6.

Dashboard Mode

Dashboard mode provides a graphic interface that displays current and historical usage. Rooms can be grouped into both location based and custom groups. Alerts are provided when an individual room or group exceeds normal usage, based on predetermined target usage.

For detail on Dashboard mode, see "Dashboard Mode" on page 44.

LOGGING INTO THE SEGMENT MANAGER

Open a web browser on the PC and enter the IP address of the SM as determined from the Installation Instructions.

The Login Screen appears:

NOTE: The Segment Manager can be configured to use a pop-window as a login instead of a browser window. See "User Services (LDAP Configuration)" on page 10 for details.

The segment manager is shipped with 3 logins installed:

Username: **SegMan** Password: <w@ttstopper>	This Username provides administrator access. All configuration screens are available
Username: **Supervisor** Password: <w@ttstopper>	This Username allows full operator privileges but restricts the user from accessing certain high level functions such as the Discovery devices and user management.
Username: **Observer** Password: <w@ttstopper>	This Username allows viewing only, no editing of configuration information is allowed.

NOTE: **Both** the Username and Password are case sensitive.

Depending on the level of security desired, you can use these as is. However, if the software will be accessible via the internet, you should login as the administrator and change the user logins. See "User Management" on page 9 for more information on setting up user logins.

If the Segment Manager has previously been configured with a custom login, you will need to get this Login information from the administrator of your system.

Once you log in, the SegMan application opens in Dashboard mode. If you are setting up the SegMan for the first time, or if you are adding a user or changing users, or if you are adding or changing DLM devices in your network, you will need to enter Configuration Mode. Click **Configure**, as shown on the previous page.

CONFIGURATION MODE

Configuration Mode consists of six tabs providing access to various configuration and utility functions. Additionally, the first tab, **Config**, consists of multiple screens accessed by clicking the menu options on the left side of the screen. When you enter Configuration Mode, the **Config** tab is selected and the **System Information** screen is displayed.

The six tabs include:

- The **Configuration** tab provides access to a set of screens related to system and network settings. See “Config Tab” on page 6.
- The **Devices** tab provides five different organizational tree views of devices connected to the Segment Manager, by Location, Network, Name, Assigned Group, and Network ID. See “Devices Tab” on page 20.
- The **BACnet Export** tab opens the BACnet Export screen where the user can choose Toggle Export Configuration or Reset Export Configuration. See “Network Groups” on page 38.
- On the **Reports** tab, you select one of several reports. You can then generate a new report, or view the most recently run version of that report. See “Reports Tab” on page 41.
- The **Connections** tab displays a list of connected Segment Managers. If using multiple Segment managers, on the SegMan platform, you will see only that specific device. On the Supervisor platform, you will see all of them. See “Connections Tab” on page 41.
- The **Jobs** tab displays a list of background jobs run on the application. See “Jobs Tab” on page 42.

INITIAL SETUP

Setting the Station Name

When the Segment Manager is first installed, the **Station Name** should be set before configuring any other parameters. This will likely have been done by the WattStopper field service technician or by the Integrator, but if not, you should do this before proceeding with any other configuration.

A station is a java application that runs on the Segment Manager, or on the PC when running the Supervisor Platform. It consists of a set of configuration parameters, drivers, and run time data. The **Station Name** identifies the station in all communications. It is also used for historical data storage. Consequently, once you have named the station, you should **not** change the name. If you do change the name, you will break the communication between the Segment Manager platform and other devices or software.

You can view and rename the **Station Name** on the **System Information** screen. The default name is SegMan. Click **Rename** to change the name. A pop-up window opens. Enter the new name and click **Rename**.

The name must use only alpha or numeric characters and can also include an underscore “_”. WattStopper recommends using the underscore instead of a blank space.

NOTE: The **Station Name** is different from the **Site Name**, which appears in the browser window, in the upper left hand corner next to the WattStopper logo.

For information on the rest of the fields and buttons on this screen, see the **System Information** section on the following page.

Screens Used for Initial Setup

After setting the Station Name, there are several screens that need to be configured before the Segment Manager can be used. All Screens are found on the **Config** tab:

- **Date/Time Settings** – Set the date and time, for use with schedules. See “Date/Time Settings” on page 8.
- **Sunrise/Sunset Settings** – Set your location, for calculation of sunrise and sunset. This is for use with schedules.. See “Sunrise/Sunset Settings” on page 9.
- **Network Settings** – Set the addresses used for Local Area Network communication. The Segment Manager has default values; you only need to change these values if directed by an IT administrator. Note that this screen only applies for the SegMan platform. The Supervisor platform uses the network settings specified on the PC. See “Network Settings” on page 11.
- **BACnet Settings** – Set the address and ports used for BACnet communication. See “BACnet Settings” on page 12.
- **Device Discovery** – Discover all WattStopper DLM products on the segment network(s). See “Device Discovery” on page 14.

CONFIG TAB

The **Config** tab consists of 16 different screens. These screens have been grouped into logical areas:

- The first two screens display information about the station and the currently logged on user.
- The second group of screens are used for configuring date/time, location, and user management
- The third group of screens are related to the DLM and BACnet networks.
- The final group of screens provide access to miscellaneous utilities and functions

Click the menu item on the left to display that screen.

Config Tab Menus

System Information

When you enter Configuration mode, this is the default screen that displays. It contains information about this Segment Manager, including the station name and firmware versions.

Station Name – Identifies the station in all communications. See **Setting the Station Name** on the previous page for details.

Host ID – For the SegMan platform, this is the serial number of the Segment Manger. For the Supervisor platform, this ID will begin the characters “Win” and indicates the ID of the PC.

Niagara Version – Indicate the version of Niagara that the Segment Manager is running on.

Memory – For the SegMan platform, this is the amount of available memory in the Segment Manager. This includes memory used for storing historical usage information. For the PC platform, this the amount of available RAM in the PC running the software.

GUI Version and **Module Version** – These indicate the version of the WattStopper User Interface software, and the WattStopper SegMan engine. The two fields should normally be the same number.

Product Type – For the SegMan platform, this will say “Segment Manager”. For the Supervisor platform, this will say “SegMan Supervisor”.

Site Name – The text entered here is displayed in the upper left hand corner of the display, next to the WattStopper logo.

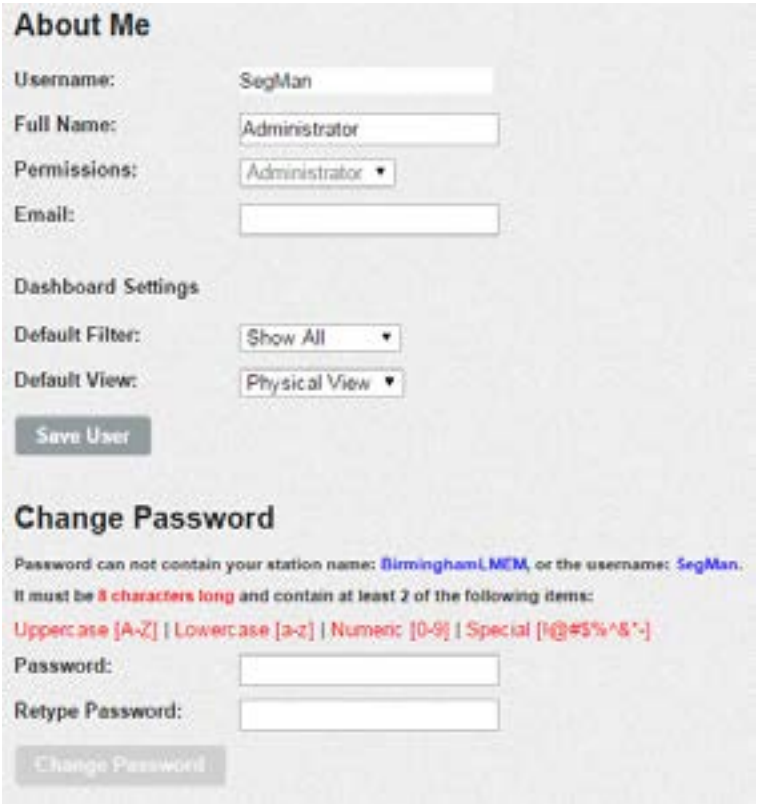
Versions – If you click this button, a pop-up window opens, displaying the versions of the various component files accessed by the software.

Rename – If you click this button, you can rename the station. See **details and cautions regarding this process in the section** "Setting the Station Name" on page 6.

Save – The Segment Manager automatically saves the changes you make on various configuration screens. But it doesn't always save those changes immediately. Clicking this buttons forces the SegMan to save immediately. This function is useful if you have to power down the unit after making changes, to ensure that your changes are saved.

About Me

This screen displays information about the currently logged in user. These parameters can also be edited and saved (with the exception of the **Permissions** parameters, which is edited on a different screen).



Username – This is the name the user enters in the login screen.

Full Name – This name is displayed in the upper right hand corner of the browser.

Permission – Displays the permissions for the current user. It can't be edited on this screen. It is set by an administrator when the Username is created.

Email – Currently, this is used for user documentation purposes and has no other functionality.

Default Filter – Determines whether by default, the current user sees all of configured rooms and groups when in Dashboard mode, or only sees "Trouble Spots" (the rooms and groups that have a current state of exceeding expected power consumption for lighting). This only affects the default view—the user can still switch the filter in Dashboard mode.

NOTE: If any room assigned to a group exceeds expected power consumption, that group will also be displayed when "Trouble Spots" is selected.

Default View – Determines whether the user initially views the rooms and groups using a Physical or Logical view when in Dashboard mode. If you select "Physical", the Dashboard will initially display in Location View, grouping rooms by their physical location. If you select "logical, the Dashboard will initially display in Custom View, which can have groups based on any user determined grouping (for example, all conference rooms).

Save User – Click this button to save the current value of all the parameters listed above.

Change Password – Rules for password length and composition are listed on the screen. Passwords are case sensitive.

Date/Time Settings

The date and time settings are used when scheduling events, such as turning load on and off. See "Schedule Tab" on page 59 for details on scheduling.

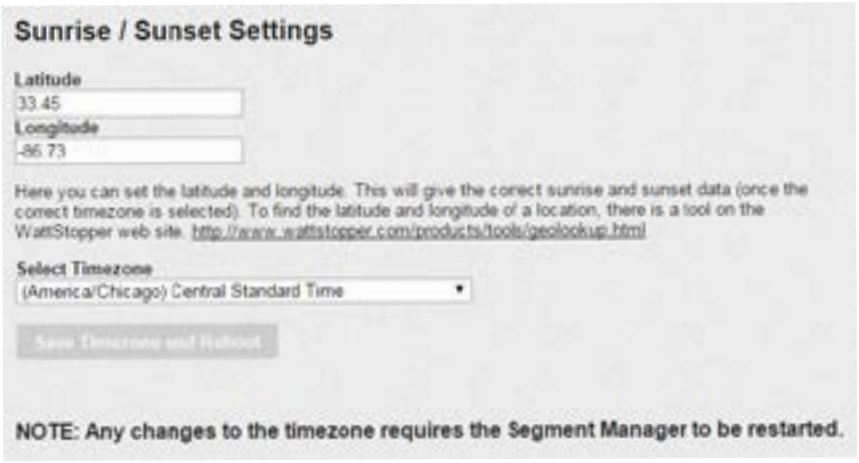
NOTE: If using the Supervisor platform, you should configure these settings on both the SegMan and Supervisor platforms (making sure they are the same).

Click the Calendar icon or manually enter the date. Select the local time. Click **Set System Time**.

Sunrise/Sunset Settings

The setting on this screen, allow the Segment Manager to calculate daily sunrise and sunset times, for use with schedules.

NOTE: If using the Supervisor platform, you should configure these settings on both the SegMan and Supervisor platforms (making sure they are the same).



Enter the appropriate latitude and longitude in the appropriate fields.

NOTE: WattStopper provides a tool to look up latitude and longitude, on the wattstopper.com web site at http://apps.wattstopper.com/products/tools/geolookup.html Enter the settings for the city closest to your actual location.

Select the appropriate time zone. Click **Save Timezone and Reboot**. Note that this will automatically reboot the Segment Manager. It can take up to 5 minutes for the Segment Manager to reboot and return to full on-line operation.

User Management

This screen allows the Administrator to set up new users or delete users and assign permissions for each based on their unique login.

The screen initially opens with the list of user names. When you click **New User**, the **Edit User** section is added to the screen. Enter the appropriate information and click **Save User** to add that user to the list above.

NOTE: When creating new user accounts, be aware that **both** the Username and Password are case sensitive.

Username – This is the name the user enters in the login screen. The Username is case sensitive.

Full Name – This name is displayed in the upper right hand corner of the browser.

Permission – Permission selections include: Viewer (view only), Operator (Can change parameters, but none of the screens on the Config tab are available, except About Me and System Information), and Administrator (no restrictions)

Email – The email address for this user

Password – Rules for password length and composition are listed on the screen. Passwords are case sensitive.

NOTE: An administrator uses this screen to enter the password for other users. To change your own password, you must use the **About Me** screen.

Enabled – If this checkbox is not selected the user will not be allowed to log in.

Lock Out User – If this checkbox is selected, the user will be locked out after 5 incorrect attempts to enter the password. This Lockout status will reset to enabled after a predetermined period.

Default Filter – Determines whether by default, the current user sees all of configured rooms and groups when in Dashboard mode, or only sees “Trouble Spots” (the rooms and groups that have a current state of exceeding expected power consumption for lighting). This only affects the default view—the user can still switch the filter in Dashboard mode.

NOTE: If any room assigned to a group exceeds expected power consumption, that group will also be displayed when “Trouble Spots” is selected.

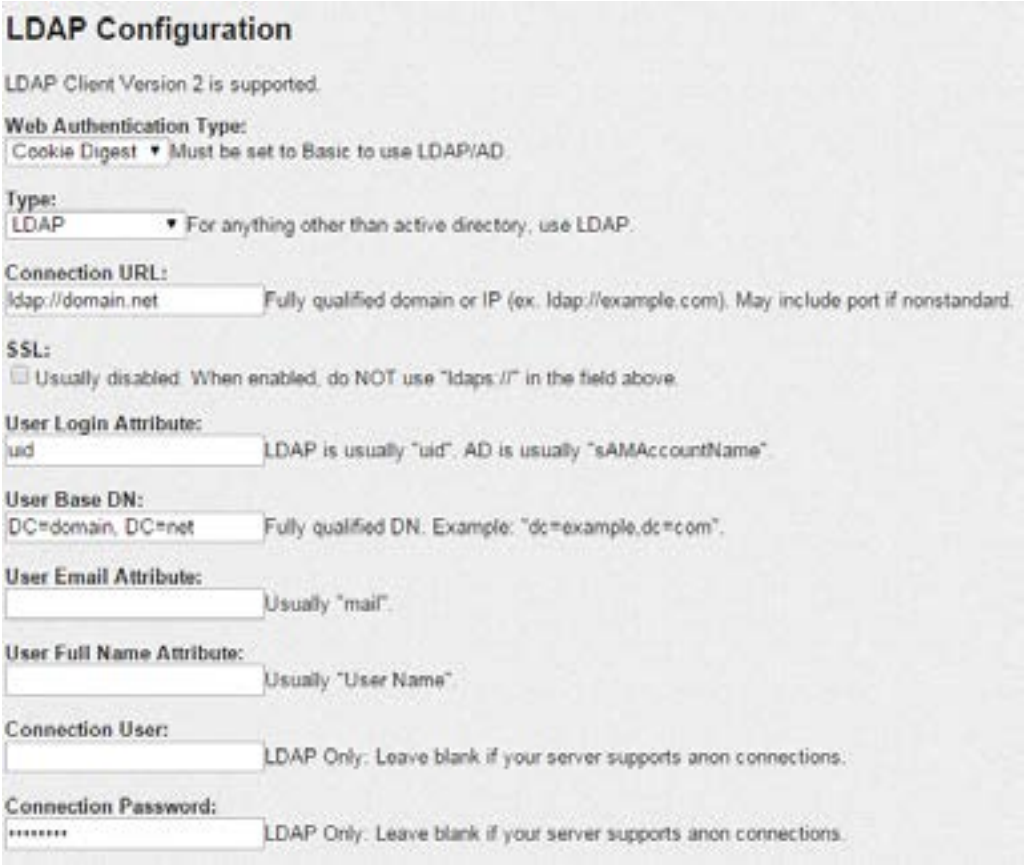
Default View – Determines whether the user initially views the rooms and groups using a Physical or Logical view when in Dashboard mode. If you select “Physical”, the Dashboard will initially display in Location View, grouping rooms by their physical location. If you select “logical, the Dashboard will initially display in Custom View, which can have groups based on any user determined grouping (for example, all conference rooms).

Tile Access Level – There are three available options, all of which apply in Dashboard mode. “Control” allows the user to create and edit **Schedules**. “Configure” includes the “Control” access, **plus** allows the user to set device properties under the **Manage** tab. “Observer” allows the user to view only.

Tile Restrictions – This field allows you to select which groups, rooms, and panels apply for the **Tile Access Level**. Any tiles not included will have “Observer” access only.

User Services (LDAP Configuration)

Using LDAP configuration allows the Segment Manager to access an LDAP or Active Directory of corporate users. The directory is not stored in the Segment Manager. Instead, if a user logs in to the Segment Manager, that user is automatically added to the list of users on the User Management screen. The user is automatically set up with the “Viewer” permission. Once the user is added, an administrator can then go back and modify permissions and set other defaults.



Web Authentication Type – If set to “Cookie Digest”, the login screen (as shown on page 5) is displayed as a browser page. This is the most secure (and recommended authentication method. If set to “Basic”, a pop-up login dialog appears instead. You must use “Basic” if using Active Directory.

Type – Options are “LDAP” and “Active Directory”. Use “LDAP” for anything other than Active Directory.

Connection URL – URL used to connect to the LDAP server. If the port is not the default LDAP port of 389, then it must be explicit (for example, ldap://host.com:123). The scheme of the URL must always be ‘ldap’, even if SSL is being used; “ldaps” is not supported.

SSL – The CryptoService must be installed to use LDAP over SSL. The “Connection Url” must point to a secure LDAP port: the common secure LDAP port is 636. As mentioned above, do not use the “ldaps” scheme.

User Login Attribute – This is the LDAP property whose value would match a user’s login name. Typically this will be “uid.”

User Base DN – The sub-tree of the LDAP server where users who can login will be found. At the very least, the value of this property must contain the domain components of the server’s domain. For example: “DC=example, DC=com”

User Email Attribute – This is the LDAP attribute whose value would be the user’s email address.

User Full Name Attribute – This is the LDAP attribute whose value would be the user’s full name.

Connection User – ID used for connecting to LDAP.

Connection Password – Password needed to connect to LDAP.

Network Settings

The network settings allow the Segment Manager to connect and work with a local area network. When using the Segment Manager directly connected to a personal computer, it is not necessary to change any of these settings. If using the Segment Manager on a LAN, these settings will be provided by the IT department or system administrator of the LAN. If these settings are changed from the defaults, be sure to document the default values in case you need to return to them. Network 1 is the connection to the building. Network 2 is the service port or may be used when NB-routers are directly connected.

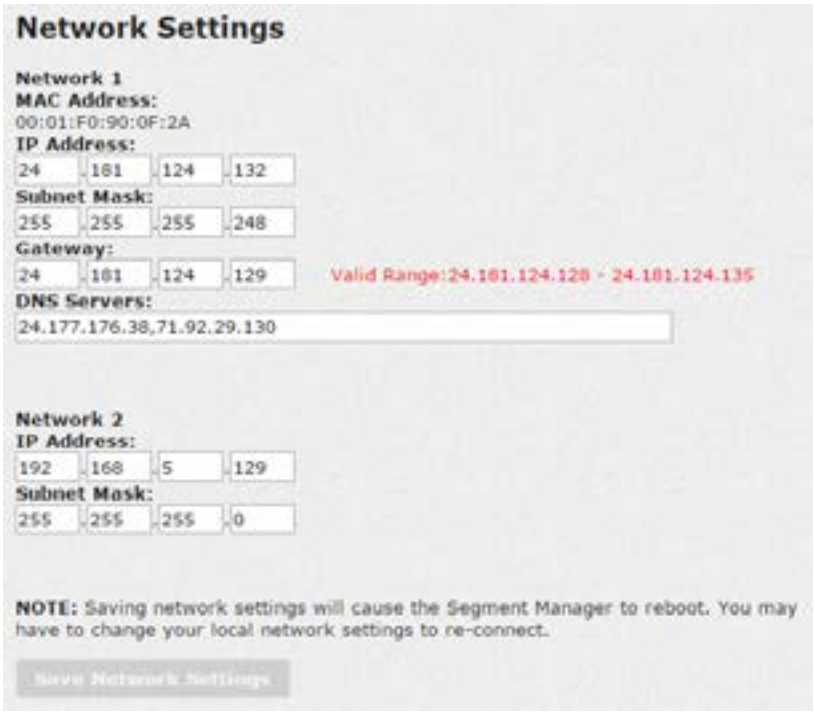
NOTE: This screen is only used in the SegMan Platform. If using the Supervisor platform, these network settings are specified on the PC itself.

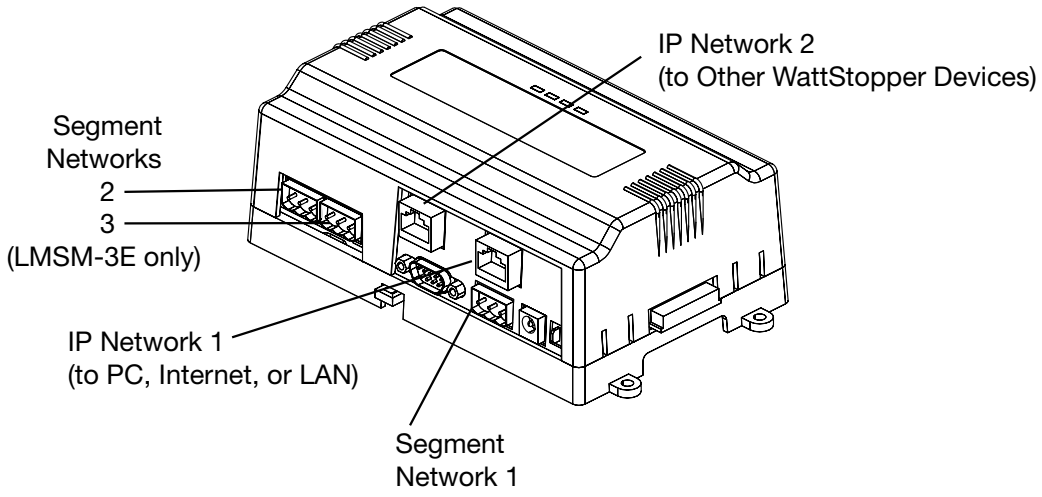
NOTE: If you change the network settings, the Segment Manager will reboot once you click **Save Network Settings**.

The factory-default IP address for LAN1 on a Segment Manager is 192.168.1.12x, where the last numeral “x” in the address matches the last digit of the Segment Manager’s serial number. The subnet mask is 255.255.255.0.

The factory-default IP address for LAN2 on a Segment Manager is 192.168.5.12x, where the last numeral “x” in the address matches the last digit of the Segment Manager’s serial number.

IMPORTANT: Do not change any settings for Network 2. This port is reserved for use by WattStopper technical services only.





BACnet Settings

This screen contains network number and other fields related to communicating via BACnet. This screen is only used in the SegMan Platform. This screen includes the following:

Local Device

Includes the device ID and description of the Segment Manager.

IP Network Ports

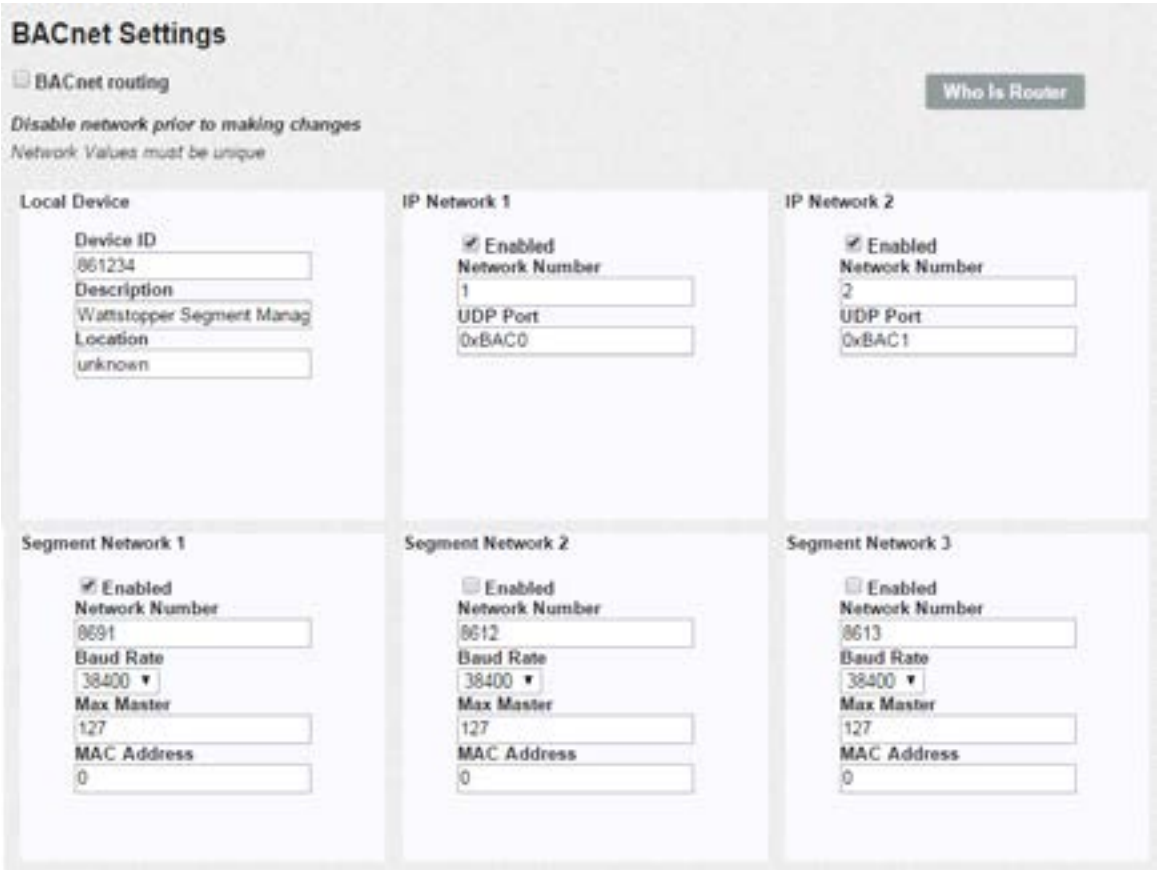
The IP Network Ports are used for communication with a BAS other external BACnet software/devices, as well as for connections with other Segment Managers and NB Switches and Routers. Port 1 should be used for external communication (to the internet, or internal computer network), while port 2 is used for communication with WattStopper Devices (routers, switches, and other Segment Managers).

Segment Network Ports (MS/TP)

The Segment Network ports are used to connect to an LMBC-300 Digital Network Bridge for communication with other DLM devices, or directly to an LMCP panel. These ports can also be used to communicate with other Segment Managers, but in a larger scale implementation with many Segment Managers, WattStopper recommends using the IP ports, to reduce the amount of message processing on the MS/TP ports.

Each segment network port can be configured independently. Segment network port #1 is enabled by default. Ports #2 and #3 are displayed only when using the LMSM-3E, which includes additional RS-485 ports. To conserve system resources, only ports that are actually used should be enabled. Check the box to enable the segment network port. Do not change any of the other settings unless directed by WattStopper technical services or your system integrator.

NOTE: Be sure to disable the network (by deselecting the **Enabled** checkbox) before making any changes to the parameters. You only need to disable the specific network you are editing If, after disabling and re-enabling the network, communication is not working properly, reboot the Segment Manager by clicking **Reboot SM** in the **Utility Functions** section of the "Device Discovery" screen.



Bacnet Routing – If this checkbox is selected, the Segment Manager will act as a BACnet router. By default. this is not selected. In general, Wattstopper recommends all routing be done with an external router, especially with larger systems.

Local Device

Device ID – The Device ID is a unique number, between 0 and 4194302, that identifies a device in a BACnet network. Every device in the network must have a different number. The default is 861234 but can be changed if needed.

NOTE: Since all Segment Managers have the same default ID, if using multiple units, you should power up the first one, set the Device ID as desired, then power up the second one and set that Device ID, etc. This prevents any ID conflicts from occurring.

Description – This is a BACnet point, providing a name/description for use with other software.

Location – Similar to **Description** but intended for providing information about the physical location of the Segment Manager.

IP Networks

Network Number – By default, IP Network 1 is set to “1” and IP Network 2 is set to “2”. For IP Network 1, this should be set to the number used for Internet/LAN communications. For IP Network 2, this is the number used for communicating to any routers or switches connected to the Segment Manager. If you have multiple Segment Managers, each one should IP Network 2 port should be set to a different number, so that routers and switches connected to the various Segment Managers are addressed independently.

UDP Port – The default port for BACnet communication over IP is 0xBAC0 (in hexadecimal, or 47808 in decimal) for the first port and OxBAC1 (47809 in decimal) for the second port. These should not be changed unless specified by an Integrator or WattStoppper technician.

Segment Networks

Network Number – This can be any unique number. If working with a BAS, a specific number may be specified by the integrator.

Baud Rate – The default is 38400. This should not be changed unless specified by an Integrator or WattStoppper technician.

Mac Address – The MS/TP MAC address is used by the devices on the MS/TP network to communicate with each other. It is a number between 0 and 127. The default MAC Address for the Segment Manager is 0, because it can act as a router, and by convention a router is set to 0. But you can set it to another number if another device in the MS/TP network is using that same address.

It is important to understand the difference between the device ID and the MS/TP MAC Address. The Device ID is, in essence, a number that identifies “who” the devices is, while the MS/TP MAC address identifies its “location”.

In a BACnet network, all the devices pass a token to each other to determine which device has control of communication over the network. The MS/TP MAC address is used to “locate” other devices. When a device receives the token, it will take control of the communication and send messages to other devices as needed. It then passes the token to the device with the **next highest** MS/TP MAC address. In order to do this, it sends an “Are you there?” message on the MAC address one higher than its own. If it receives a response, it passes the token. If it does not receive a response, it tries again on the next highest number, continuing in this manner until it receives a response. This “Are you there?” message is referred to as a Poll For Master.

Since the Poll For Master message checks the next highest address number and then increments that number until it finds a device, having devices with gaps between numbers can increase latency. If you have 10 devices, numbered 0–9, you will have optimal performance since no time is wasted sending the Poll For Master message to an unused number.

NOTE: In order to send and respond to this Poll For Master message, a device must be designated as a master device. Other devices (slave devices) on the network will not respond, and cannot take control of the communication.

Max Master – The Max Master parameter can also help cut down on latency. The value you set for this parameter is the highest number the Segment Manager will check when sending a Poll For Master message, before returning to 0. So, in the previous example, where there are 10 devices numbered 0–9, if you set the Max Master to 9, it will never check addresses 10–127.

NOTE: You should be aware that devices connected over the DLM Local Network also have MAC addresses for communication purposes, but that MAC address is entirely separate from the MS/TP MAC address.

Further details on Device IDs and MAC addresses can be found in WattStopper's Technical Bulletin #180 at http://www.wattstopper.com/resources/download-center/tech-bulletins-whitepapers.aspx.

Device Discovery

A necessary first step in using the Segment Manager with your DLM network is to perform a one-time operation that will automatically discover the DLM rooms or LMCP lighting control panels that are on your segment network(s).

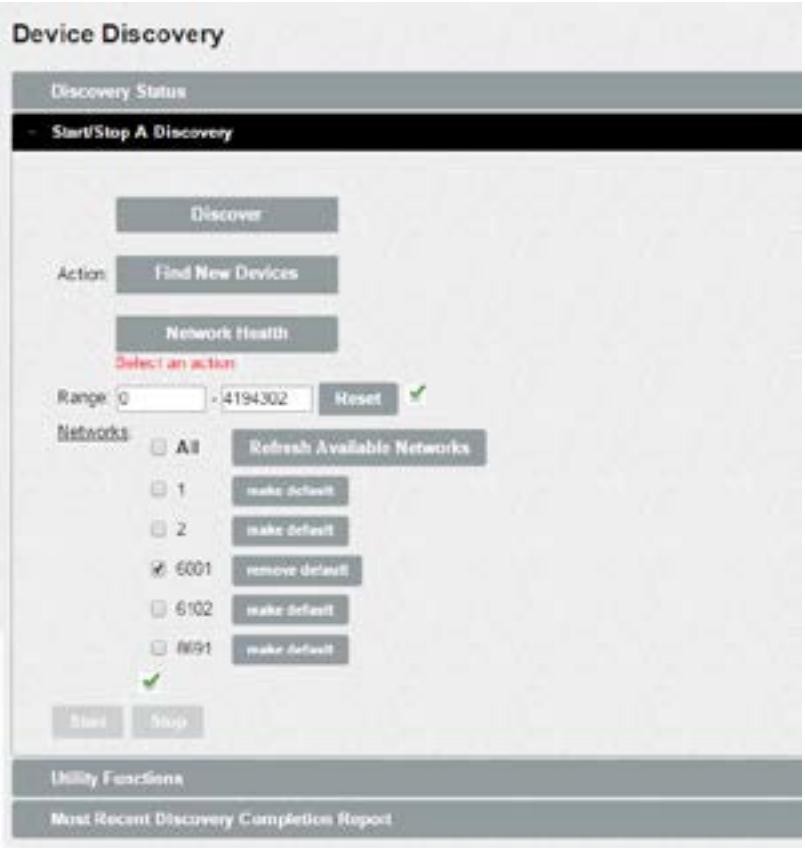
If any devices are added after discovery is complete, you will need to run a "Discover New Devices" process.

This screen is only used in the SegMan Platform. Devices must be discovered in each individual Segment Manager before they can be monitored from the Supervisor platform.

The screen is divided into four expanding/contracting sections: **Discovery Status**, **Start/Stop A Discovery**, **Utility Functions**, and **Most Recent Discover Completion**. Click a section to expand it and contract the other sections.

When you select this screen, the **Discovery Status** section is expanded. During the Discovery process, this section displays the progress of the discovery.

Start/Stop A Discovery



1. Select one of the following three actions
   - Click **Discover** to run a BACnet discovery process to find new rooms and panels on the segment network(s) connected to this Segment Manager. In an implementation with multiple Segment Managers connected, each to their own routers and switches, the network IDs of all those devices will be shown in the list below.
   - Click **Find New Devices** to discover new devices on the network without disturbing devices that have already been discovered.
   - Click **Network Health** to run a report that lists all network bridges and panels and the Segment Manager's ability to communicate reliably with them.
2. Select the **Range** of BACnet ID numbers to search. WattStopper recommends leaving this at the default values to ensure you find all devices. However, if you know the ID of the device you are trying to discover, you could limit the range to that number to speed up the discovery process.
3. Select which network(s) you want to run the discovery on.

   NOTE: As mentioned in step 1, the list of all network IDs may be longing using multiple Segment Managers and associated routers and switches. To help distinguish which network IDs you want to discover from this specific SegMan, click **Make Default** next to each network you want to discover. Whenever you return to this screen, those networks will be automatically selected for discovery. (If you then click **Remove Default**, that network ID will no longer be automatically selected.)
4. Click **Start** to begin Discovery.

If a discovery process is currently running, you can stop the process by clicking **Stop**.

For the initial discovery, choose the **Discover** action. This action will first delete any discovery information from the system, then perform a fresh discovery of the network. For larger networks with many devices, this process can take over 30 minutes. In most cases this should only be required one time. If you are adding rooms or panels to your network, you can choose the **Find New Devices** action. This will perform a discovery without first deleting previously discovered rooms and panels. This process will require much less time than a full discovery.

Once discovery is complete, you can click the **Device** tab to view the discovered devices. These will be displayed in a navigation tree format. See "Devices Tab" on page 20 for details.

Utility Functions

Remove All Devices – Deletes all devices from the database that were previously discovered.

Remove All Devices And Groups – Deletes all devices as well as location groups, custom groups, and network groups.

Reboot SM – Reboots the segment manager. Note that a reboot takes approximately four minutes. Rebooting is always recommended after adding or removing rooms.

Toggle Device Management – Clicking this button will enable/disable device management. A message briefly appears at the top of the screen indicating whether it has been enabled or disabled. When enabled, and extra set of functions appears on the Network Bridge parameters screen, in the **Devices** tab. This includes the ability to reset the room and discover device connected to that room only. See "Network Bridge Settings" on page 23 for details.

Enable Devices – This will enable any discovered devices that have been disabled for any reason.

Most Recent Discover Completion Report

Once a discovery has been run, this section will display a discovery report.

NOTE: If there are errors listed in a report, that indicates that loads are missing. This can occur if there are room or plug load controllers which were added while Plug n' Go Lock was set. They will not renumber their loads when added to the room and will not operate properly. Nor will their loads be controllable from the Segment Manager. The best solution is to reset the room to defaults and unlock Plug n' Go. Then the loads will be numbered correctly. After this is done, the room can be rediscovered.

NOTE: Installers should **always** use the Reset to Plug n' Go on the LMCT or by manually, **before** they set up the room, or connect with LMCS or the Segment Manager.

NOTE: The information generated by the report can be copied and pasted into another application, if desired.

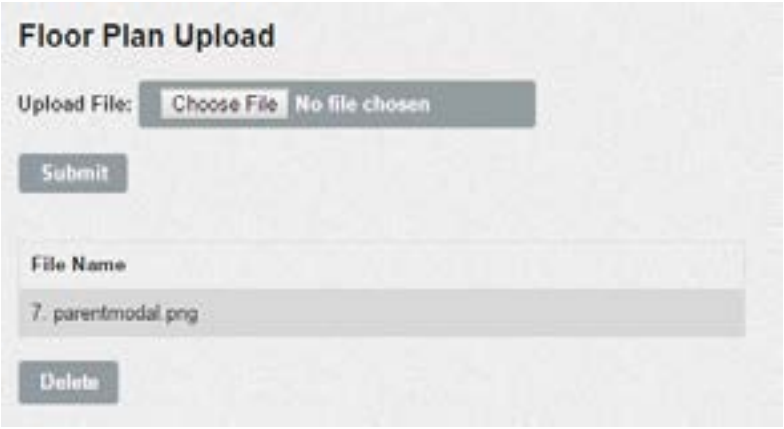
LMCS Import

The LMCS-100 Import feature provides the ability to import descriptions, locations, and custom grouping from the LMCS-100 software. LMCS-100 software is typically used when developing and implementing a DLM system. In larger installations with extensive usage of groups, this feature prevents users from having to manually enter group information in the Segment Manager, which was previously programmed in LMCS. All Areas defined in LMCS, will display as tiles in the **Location View** on the Dashboard. LMCS also has a tagging feature, in which you can apply a named tag to a room. Importing these tags creates tiles in the **Custom View** on the Dashboard.

Click **Choose File** to open a dialog where you can select the LMCS-100 file. After selecting the file, click **Submit**. If you select the **Remove existing groups?** check box, all current group information is deleted from the Segment Manager, before importing the new group information.

Floor Plan Upload

This feature allows you to upload floor plan graphics. You can then assigned specific files to individual groups or rooms in **Dashboard** Mode. See XXX. Files must be in .jpg or .png format.



Click **Choose File** to open a dialog where you can select the floor plan graphic file. After selecting the file, click **Submit**.

To delete a previously uploaded file, click on the file, then click **Delete**.

Demand Response

On this screen you select a single group, whose members will follow a demand response command to shed power consumption. Note that since you can select only a single group, that group must include all rooms that will follow demand response.

The screens displays the current demand response status. This is also indicated in Dashboard mode by the color of the **Demand Response** tab:

- “Disabled” indicates that the system is not in demand response mode. (Gray tab in Dashboard mode)
- “Allow Override” allows users to override the light level restriction in the room. (Yellow tab in Dashboard mode)
- “Force Override” restricts users from violating the demand shed. (Red tab in Dashboard mode)

If you click **Clear Demand Response**, all loads configuration on the segment network(s) will shed the demand response

If you select the **Activate BACnet Export** checkbox, the Demand Response point will be available for access from an external BACnet application, for external control of the demand response status. This will apply only to the selected group.

Tuning Parameters

The parameters on this page allow you to modify how the system responds while in Configuration Mode.

Important: Consult WattStopper technical support before adjusting these settings.

Polling Limit – This applies when you are viewing a device in the **Devices** tab. It sets how often browser application refreshes the parameter values of the currently displayed device.

Default Comm Timeout – This sets the amount of time before a timeout error for network communication between the browser and the Segment Manager. For applications where there are a lot of SegMans and devices, or where the computer used to run the browser application is located a great distance from the building where the SegMan is located, you may need to set this to a higher amount.

Default Device Timeout – Like **Polling Limit**, this applies when you are viewing a device in the **Devices** tab. It sets the amount of time before a timeout error occurs when updating device parameters.

Max Queue Size – This defines the size of the BACnet message queue used to communicate with bridges and panels. The default is 1000. However, on very large networks, sometimes the communication can overflow the queue. Wattstopper recommends increasing the queue up to 2000, if a large network exhibits unstable behavior, for example if devices are reporting offline or On/Off messages sent from the Segment Manager have intermittent failure.

Network Bridge Firmware

This feature allows the Segment Manager to upgrade the firmware installed in the network bridges that are connected on the segment network(s). The firmware version that is currently available for transfer to the network bridges is displayed on the screen.

Click **Upgrade Firmware** to update only those bridges that have a version older than the current one.

Click **Install Firmware** to install the current version in **every** bridge on the segment network(s). Once installation is complete, a report will display confirming the status of the installation. You can also view the most recently run report by clicking **Get Report**.

Important: Do not use this function unless directed by WattStopper technical services.

Server Logging

This screen provides the log of server messages, for troubleshooting problems. Standard logging is always enabled. But the options below enable additional features:

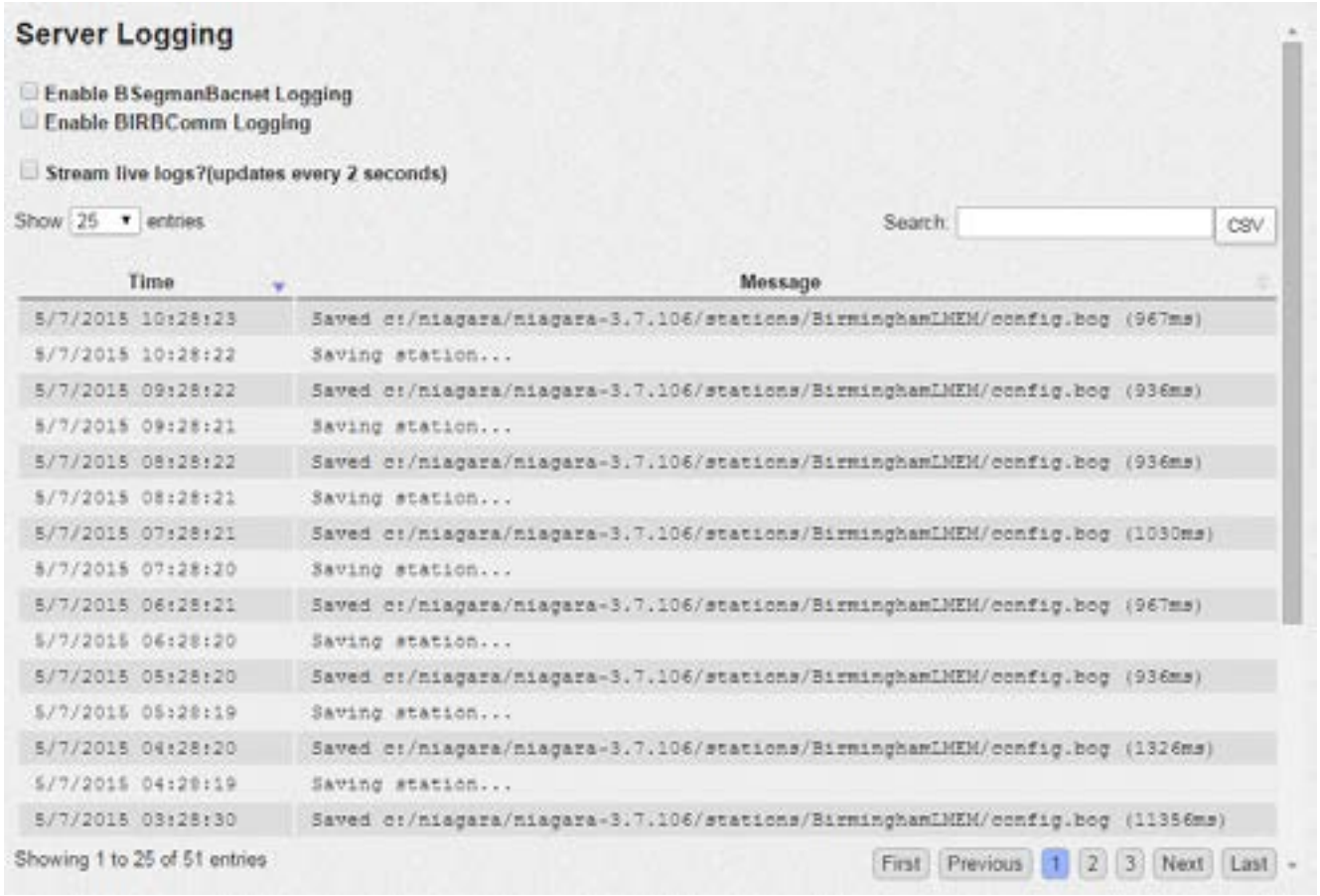
Enable BSegManBACnet Logging will log more actions than standard logging.

Enable BIRBComm Logging will cause the system to log all IRB communication to rooms (these are the messages that set the configuration settings of individual devices). This generates many log messages on large systems and should only be turned on to diagnose problems with setting advanced properties of the device.

Stream live logs? will cause the log to update every two seconds. This will cause added network traffic, but will allow viewing the log entries as they are generated.

Enter any text in the **Search** field to limit displayed messages to those which include the search terms For example, you might want to limit the search to a room name to debug problems with a specific room

Click **CSV** button to save the log data as a .csv file. This file can be sent to WattStopper for analysis.



Energy Targets

The **Watts/Sq. Ft Targets** slider allows you to set the amounts for watts per square foot that determine when alarms are indicated while in Dashboard mode. The settings you make here are global and apply to all rooms on the segment network(s).

The slider has two movable points. As long as the current usage remains below the amount set for the lower end point of the slider, the

tile for that room (in Dashboard Mode) will be green. If the usage is in between the lower and upper end points, the tile will turn gray. And if it goes above the upper endpoint, the tile will turn white with red lettering.

NOTE: Only lighting usage is included when measuring energy usage. Plug Loads are not included.

The three **Density** target sliders determine the values of the percentages shown on the room and group tiles in Dashboard Mode. The percentages indicate how close the room or group is to reaching the target. So for example, if you set the Target Lighting Density to .8 and the current watts per square foot is .48, the tile will display a percentage of 60% (.48/.8 = .6). Therefore the room is currently at 60% of intended maximum usage.

The reason that watts per square foot is used instead of total watts is that a large room will use many more watts than a small room, and therefore watts per square foot provides the ability to compare energy efficiency.

Currently, only Lighting loads are shown in the Dashboard Mode tiles. Therefore, only the **Target Lighting Density** slider affects the percentages. The other two sliders are reserved for future use.

DEVICES TAB

The **Devices** tab provides a tree view of all rooms, panels, and devices on the segment network(s). In addition, by clicking on a an item in the tree view, you open a screen in which you can edit various parameters for each device, panel or room. The editable parameters are a limited subset of the full list available when using LMCS-100 software.

NOTE: You must run the discovery process before items will appear on this tab (as well as in Dashboard Mode).

There are several different views available for viewing the network devices in the tree.

- Expand **Location View** to view subfolders based on the physical location of the various DLM devices in the BACnet network (for example 1st floor and 2nd floor, or North Wing and South Wing). These location sub folders are set up in LMCS-100 software during the design of the network. Expand those subfolders to view icons for individual rooms or panels included in that location.
- Expand the **Custom Views** folder to view sub folders for all user created custom groups. Custom Groups allow you to combine a set of rooms together for easu monitoring on the Dashboard. For example, all enginneering rooms could be grouped, no matter where they are physically located. Expand a group folder to view icons for individual rooms or panels included in that group.

- If there are panels or bridges with Network Groups included in the building or site, there will be a **Network Groups** folder. Network groups are described in "Network Groups" on page 38.
- Expand **Devices by Network** to view sub folders for each BACnet segment network. Expand the subfolder to view a list icons for individual rooms or panels within that network. In this view, the icons are shown by Mac address instead of name.

  NOTE: This view is not available on the Supervisor platform. (You will see the folder but it can't be expanded.)
- Expand **Devices by Name** to view icons for all rooms or panels on the BACnet network.

  NOTE: This view is not available on the Supervisor platform. (You will see the folder but it can't be expanded.)

Once you have expanded the tree to the highest device level, there are two types of devices you will see: LMBC-300 Network Bridges, and LMCP lighting control panels. Typically, you will have one network bridge per room. A panel also functions as a "room", even if the loads connected to the panel occupy a larger space.

On the SegMan platform, if you click the "+" to the left of the icon, you can drill down further from the bridge or panel level.

- If you expand the a bridge, you will see individual devices connected to that bridge.
- If you expand a panel, you will see two folders, **Loads** and **Network Groups**. Expand the **Loads** folder to view icons for individual loads in the panel. Expand the **Network Groups** folder to see icons for each group saved within the panel. (Network groups are different from Custom groups. One or more loads from within the panel, as well as individual loads from a room controller or other panel connected via the DML Network can be members of a Network Group. These groups are described in detail in the LMCP User Manual.) **In addition**, if any DLM devices are connected directly to the panel via its own DLM Network ports, those devices will also show up under the panel icon.

  NOTE: The **Network Groups** folder found under a panel icon is functions slightly different than the icon of the same name under the Custom Groups folder. The folder under the panel expands to show group icons for only those groups with members in that panel, whereas the icon found within the Custom Groups folder expands to show groups for **all** panels within the building or site. For details, see in "Custom Groups" on page 37 and "Custom Groups" on page 37.

When you click on a device in the tree, various parameters related to that device are displayed to the right of the tree.

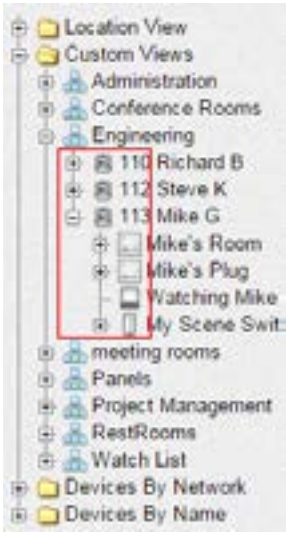
NOTE: If a device is "down" for any reason (unplugged, connection problems, etc.), it will appear in yellow, as shown below. If a device is disabled, it will appear "grayed out".

Differences Between SegMan Platform and Supervisor Platform on the Devices Tab

On the SegMan platform, you have the ability to drill down through the tree to view and edit individual devices on the DLM network. But in the Supervisor platform, you can only view the bridges and panels. Additionally, the Supervisor platform allows for only an extremely limited set of parameters that can be modified and viewed.

In the tree view, the bridges and panels are shown using their specific icons on the SegMan Platform and you can expand the tree to show the individual devices in that room, but the Supervisor platform uses a generic group icon and can't be expanded past the room or panel.

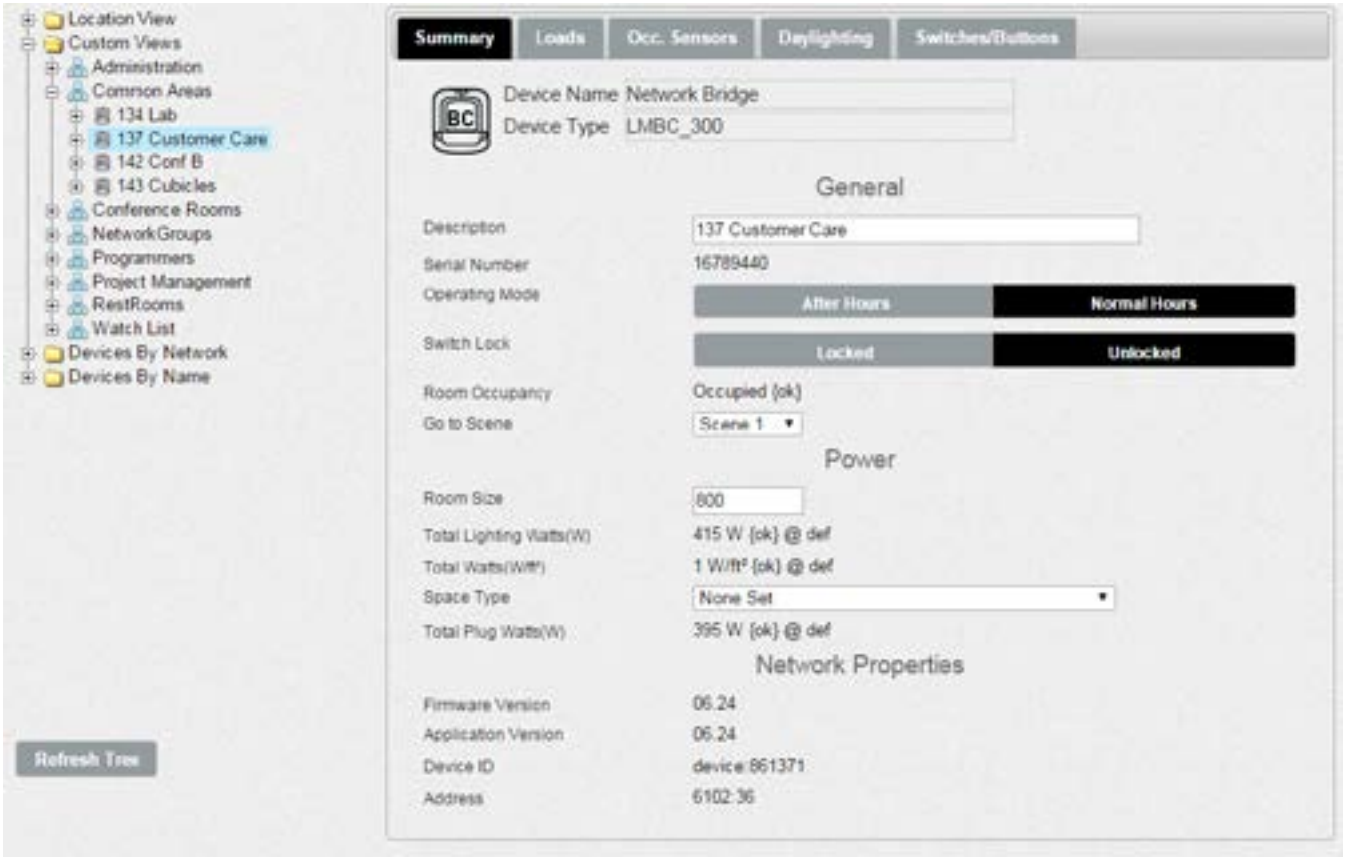
SegMan Platform



Supervisor Platform

Once you click on a bridge icon or folder, to display the parameters for that bridge, the two platforms also look different, because the Supervisor platform has only a few editable parameters.

Bridge Parameters on the SegMan Platform

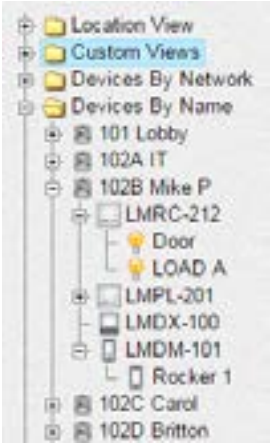


This screen has several tabs which include parameters for the bridge itself as well as devices connected to the bridge. These fields are discussed in "Network Bridge Settings" on page 23. But on the Supervisor platform, there are no tabs and there are fewer parameters shown.

Bridge Parameters on the Supervisor Platform

Viewing and Changing Device Parameters

To view and change the parameter settings for any device shown in the tree, click the icon to “open” the device for editing in the device parameter frame on the right side of the screen. Some individual devices such as room/plug load controllers and buttons can also be expanded for control of individual loads, buttons, etc.



For each individual device, there is a **Description** field on the viewing/editing screen for that device. The text in that field is the text that appears next to the right of the icon in the tree. If you change the **Description** of a device, the new text will not appear in the tree view until the tree is refreshed.

The following sections describe the viewable and editable parameters for each type of individual device.

Changing Parameter Values in the Segment Manager vs. LMCS-100

LMCS-100 software is typically used to setup the DLM system, including both creation of groups and programming of individual devices. In addition to sending and storing parameter values into those devices, a backup file is normally made containing all of the information.

If you use the Segment Manager software to change parameter values, these changes are saved into the devices. If you want the LMCS-100 backup file to reflect the changes you have made, you will need to load the values from the devices into LMCS-100 by initiating a “Read From Device” process in LMCS, and save a new backup file.

Common Parameters on Individual Device Screens

All of the devices have one or more common fields on the parameters screen for that device, located in the **General** section, as follows:

Description – The text entered here will appear in the tree beside the icon. By default, this is catalog number (model name). Keep in mind the default may have been changed in LMCS before importing the parameters. Maximum field length is 32 characters. All characters are allowed.

Serial Number – The following device screens do not include a serial number:

- Screens for individual loads in a room/plug load/zone controller
- Panels and panel loads
- Individual button screens for a switch.

Firmware version – Screens without a serial number also do not contain a firmware version, with the exception of panels.

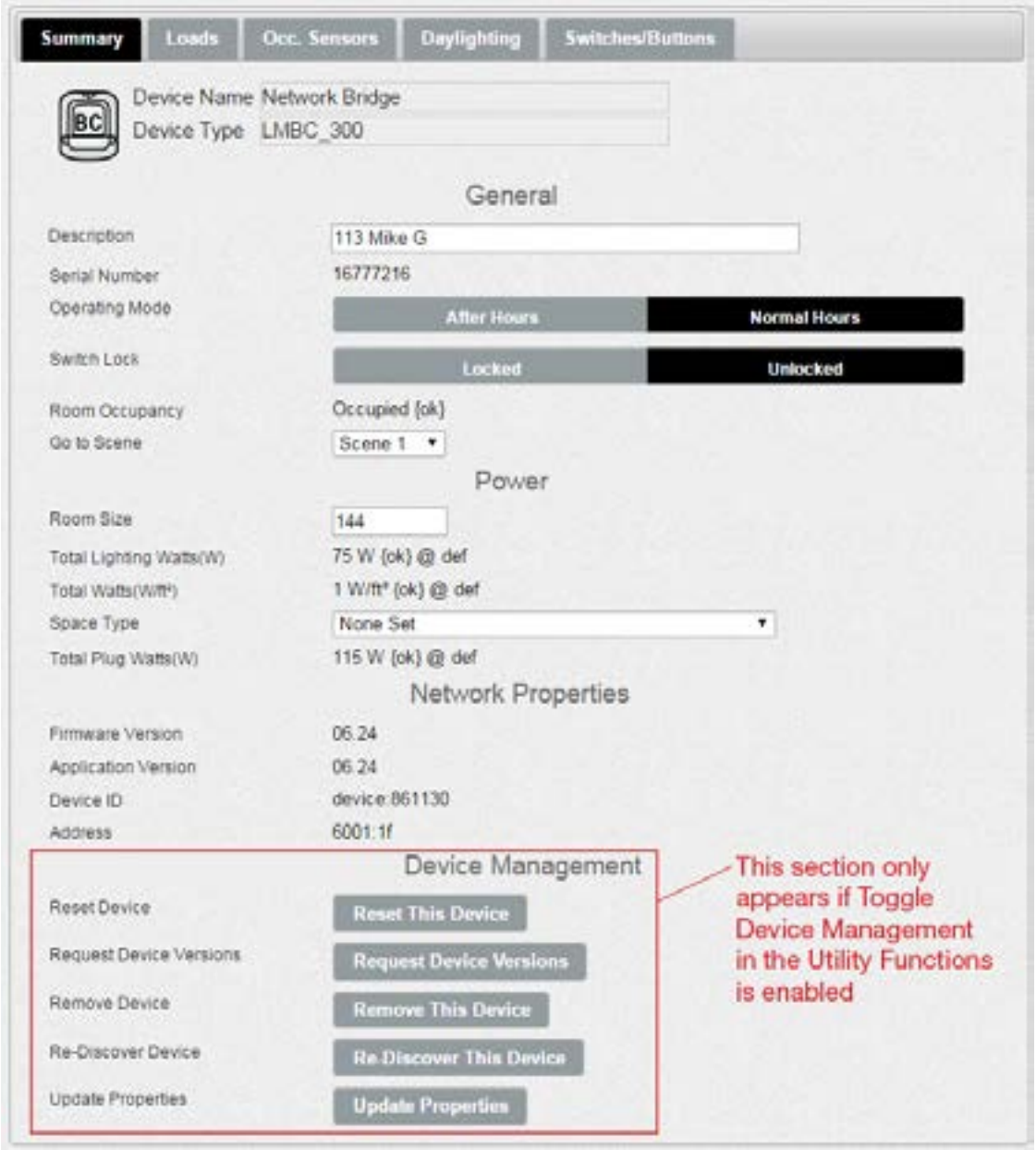
Network Bridges, Panels, and Zone Controllers include both the **Firmware version** and **Application version** in the **Network Properties** section. These two parameters should normally be the same number.

To avoid repetition, the fields listed above are not described in the parameter list for individual screens.

Network Bridge Settings

As mentioned previously, on the SegMan platform, this screen consists of several tabs, while on the Supervisor platform, only a subset of the fields on the **Summary** tab is shown.

The **Summary** tab displays information related to the LMBC-300 bridge, while the other tabs display information about various DLM devices connected to the bridge—specifically room/plug load controllers, occupancy sensors, daylighting sensors, and switches. There are individual screens available for each of these other devices, which contain more information than what is shown on these tabs. But the advantage of these tabs is that they display the status and various editable settings of all devices of one type within a table format. So for example, if there is a large room with multiple occupancy sensors, you can view the status and settings of all those occupancy sensors in a single table.



Summary Tab

General

Operating Mode – The schedule property has two modes, normal hours and after hours. The current schedule mode for the room is indicated by the button that is selected (black). You can force the room into a schedule mode for testing or other purpose by clicking the appropriate button.

Switch Lock – This parameter allows all of the buttons in a room to be locked at their current status. Click the appropriate button to lock or unlock the switch buttons in the room. Note that this is global for all switches connected to the room. You cannot lock or unlock individual switches from the Segment Manager. However, individual switches can have the lock feature enabled or disabled using LMCS-100 software.

Room Occupancy – Current room occupancy status is listed.

Go to Scene – Select a value to send that scene command to a room. It is important to note that this parameter is not updated when a scene is selected by pressing a button in the room. Therefore, it does not necessarily reflect the current scene active in the room.

NOTE: If the room has a scene switch installed, you can view the status of the scene button LEDs to determine which scene is currently active in the room.

Power

Room Size – Enter the size of the room in square feet. This number is used to calculate the watts per square foot usage.

Total Plug Watts – Displays the current amount of watts used by plug loads. This is calculated by adding the watts for each plug load controller in the room. In the case of the LMPL-101, which does not measure current usage, the watts are a user entered amount. In this case, if the load is switched off, that amount is not added to the total.

Total Lighting Watts – Displays the current amount of watts used by lighting loads. This is calculated by adding the wattage for

each plug load controller in the room. In the case of the LMRC-1xx series , which does not measure current usage, the watts are a user entered amount. In this case, if the load is switched off, that amount is not added to the total. Note that for the LMRC-102, if **either** load is switched on, the watts are added to the total.

Total Watts (W/ft2) – Displays the current watts per square foot, calculated by the total lighting watts by the room size.

Space Type – This field is not currently used.

Network Properties

Device ID – By default this is the last six digits of the serial number, but can be changed in LMCS-100.

Address – This displays two numbers. The first is the Network ID. The second is the DLM Local network MAC address for the LMBC-300.

Device Management

This section is displayed only when you enable device management, using the Toggle Device Management button in the **Device Discovery** screen in the **Config** tab. See "Utility Functions" on page 16.

Reset This Device – Click to reboot the bridge. This rechecks connected devices.

Request Device Versions – This will update the device version displayed on this screen.

Remove This Device – This will remove the bridge, along with all connected DLM devices from the device tree.

Re-Discover This Device – This function allows you to run a discovery on just this room, which speeds up the discovery process. If you have added a device to a room such as an extra switch or sensor, and nothing else has changed, this is the best (quickest) way to discover that extra device.

NOTE: Before rediscovering the device, you should **Reset This Device**. If you do not reset first, the new devices will not be seen.

NOTE: In order to rediscover this device, you must select the network that this device is part of, on the **Start/Stop a Discovery** section of the **Device Discovery** screen.

Update Properties – This causes the bridge to send a message to all DLM devices in the room and get their extended properties (certain parameter values related to loads, switches and sensors) and send that information to the Segment Manager without having to go through the entire dsicovery process. This is useful if the device properties are changed manually, or using the LMCT-100 or LMCS software.

Loads Tab

Device – Name of the device.

Description – The text entered here will appear in the tree beside the icon.

Load # – Number of the load within the room

Status – Current Level of the load

Sensor NH – Indicates how the load responds when an associated occupancy sensor is activated during Normal Hours. Available values: "Do Nothing", "Manual On", "On Only", and "Auto On".

Sensor AH – Identical to Sensor Mode NH, but occurs during After Hours.

Trans NH – Indicates the level for the load when the schedule switches to Normal Hours. Available values: 0-100, "Last Non-Zero", "Do Nothing", and "Relinquish".

The Last Non-Zero setting will return the load to the level it was at when it was last ON. The Relinquish setting will cause the load to go OFF unless another device in the room has it set to a non-zero level. The Do Nothing setting indicates that the load will not react to the transition.

Trans AH – Identical to Transition State NH, but the behavior occurs when the schedule switches to After Hours.

Timer NH – If a load is commanded to turn OFF when the schedule switches to Normal Hours, this is the amount of time the load will remain ON after manually being turned ON. When the amount of time expires, the load switches back to OFF.

Timer AH – Identical to Time Delay NH, but the behavior occurs when the schedule switches to After Hours.

Occ. Sensors Tab

This tab displays current status information for all occupancy sensors connected to the currently selected bridge.

NOTE: If an LMLS-600 is connected to the bridge, it will not show in the list, because there is currently no support for programming parameters in this device in the Segment Manager.

Device – Name of the device.

Description – The text entered here will appear in the tree beside the icon.

Sensor Number – Number of the sensor within the room

State – Indicates whether the occupancy sensor is currently detecting occupancy. An “occupied” state does not necessarily mean that the lights in the space are on since the loads might be set to Manual On.

Time NH – The amount of time the load remains ON after no motion is detected, during Normal Hours.

Time AH – Identical to Time NH, but for After Hours.

PIR % NH – Sensitivity for the PIR detection during Normal Hours. A value of zero (0) indicates PIR detection is disabled.

PIR % AH – Identical to PIR % NH, but for After Hours.

US % NH – Sensitivity for the ultrasonic detection during Normal Hours. A value of zero (0) indicates Ultrasonic detection is disabled.

US % AH – Identical to US % NH, but for After Hours.

Daylighting Tab

Device – Name of the device.

Description – The text entered here will appear in the tree beside the icon.

Sensor Number – Number of the daylighting sensor within the room.

Level(fc) – Current amount of foot candles read by sensor

Fade Rate – Determines the speed (or rate) at which the light level increases. Applies for Dimming mode only.

Day SP – The desired light level, in foot candles, **at the sensor** during daytime. Applies for Dimming mode only.

Night SP – The desired light level **at the sensor** during nighttime. This takes into account that when no light is coming in from a window, the amount of light registered at the sensor (mounted in a ceiling) is lower than the amount of light in the working area because it reads only the light reflected from the floor/furniture surfaces back up to the sensor. Applies for Dimming mode only.

NOTE: The Day Setpoint and Night Setpoint parameters are automatically calculated during the calibration process Wattstopper recommends that these values not be changed without consulting technical support.

Off SP Delay – The time that the controlled lighting will remain at a minimum dimmed level, even with high daylight contribution, before the lights will be switched OFF. Applies for Dimming mode only.

SP On (fc) – The target illuminance level (in foot candles) at the sensor, below which the LMLS-400 turns the lights ON. Applies for Switched, Bi-Level, or Tri-Level modes only.

SP Off – The target illuminance level at the sensor, above which the LMLS-400 turns the lights OFF. The OFF Setpoint corresponds to the ON Setpoint multiplied by 1.25, 1.50, 1.75 or 2.0. This ensures that the OFF Setpoint is always higher than the On Setpoint. Applies for Switched, Bi-Level, or Tri-Level modes only.

Operation Mode – Determines how the LMLS-400 functions. Available values: “Switched”, “Bi-Level”, “Tri-Level”, and “Dimming”.

Switches/Buttons Tab

This tab displays current status information for all switches connected to the currently selected bridge.

NOTE: If an LMPS-104 Digital Partition Switch is connected to the bridge, it will not show in the list, because there is currently no support for programming individual buttons in this device in the Segment Manager.

Device – Name of the device.

Description – The text entered here will appear in the tree beside the icon.

Button Number – Indicates the specific button Each button in the switch is numbered, from top to bottom, left side then right.

State – Indicates if the button's LED is currently on or off

Operation Mode – Indicates whether the button is assigned to control an individual load, a scene, or a network ID.

Momentary Mode – Indicates how the button functions. Available values: "On Off" (Toggle), "On Only", "Off Only", "Non-Tracking" (this is used if the button is assigned to a network ID).

Change Mode – Click this button to open a pop-up dialog that allows you to change the operation and momentary modes of the button. See "Setting the Button Type" on page 31 for details.

Room, Plug Load, Power Booster, and Fixture Controller Settings

Click the icon of a room, plug load, power booster, or fixture controller to display the following screen (the icon will change depending on the model of the controller).

Advanced

Current, Voltage and Wattage – Room/plug load controller models capable of measuring current (LMRC-2xx or LMPL-2xx series) will report the current in Amps as a read-only value. Watts is a calculated value based on the measured current in Amps and the user entered Voltage. Since the system does not measure voltage, you can improve the accuracy of the Watts amount by measuring the voltage at the room controller feed rather than simply entering the expected amount of volts.

For room/plug load controller models that do not measure current (the LMRC-1xx and LMPL-1xx series), the Current amount is entered manually, in LMCS-100 or on this window. The Watts in this case is calculated based on both user entered amounts for Current and Voltage. Since these values are user entered, they remain the same no matter whether the loads are on or off.

NOTE: For the LMRC-102 and LMRC-112, which have two loads, the Wattage amount is based on both loads being on. Individual loads are not calculated separately.

Load

Load (x) (%) – For each load in the controller, the currently occurring level is displayed as a percentage.

Individual Load Settings

Click the "+" to the left of the controller icon to expand the tree to show individual loads. Click the icon for an individual load. The screen will display current parameter settings for that load.

NOTE: Some load parameters have both a Normal Hours and After Hours setting. These settings automatically change as the schedule switches between modes.

Load

Level (%) – This is the current light level of the load expressed as a percentage. You can manually change the level by moving the slider. Click **Off** or **On Full** to set the load quickly to off or full on.

NOTE: If the load is set to dimming and has a fade time parameter set, it will fade to the commanded level.

NOTE: If you manually change the value with the slider or buttons, that value will be overridden by the Transition State fields, as long as a schedules are created to switch between Normal and After Hours.

Advanced

Sensor Mode NH – Determines how the load responds when an associated occupancy sensor is activated during Normal Hours. Available values: “Do Nothing”, “Manual On”, “On Only”, and “Auto On”.

Sensor Mode AH – Identical to Sensor Mode NH, but occurs during After Hours.

Override Time Delay NH – If a load is commanded to turn OFF when the schedule switches to Normal Hours, this is the amount of time the load will remain ON after manually being turned ON. When the amount of time expires, the load switches back to OFF.

Override Time Delay AH – Identical to Time Delay NH, but the behavior occurs when the schedule switches to After Hours.

Transition State NH – Sets a level for the load when the schedule switches to Normal Hours. Available values: 0-100, “Last Non-Zero”, “Do Nothing”, and “Relinquish”.

The Last Non-Zero setting will return the load to the level it was at when it was last ON. The Do Nothing setting indicates that the load will not react to the transition. Relinquish deletes the deletes the most recent BACnet priority level message, at the level specified by the **Occupancy Sensor Priority** parameter (available in LMCS-100). The controller then looks at the next highest priority to determine what to do. If no other command exists at any priority level, the load will go to the **Partial Off Level**. This parameter is also available only in LMCS-100. Since the default for this parameter is 0, under most circumstances, “Relinquish” will turn the load OFF, unless other devices are sending higher priority BACnet commands.

The **Last Non-Zero** and **Relinquish** buttons provide the same functionality as in the drop-down, but provide the ability to select that command without having to change the normally programmed value.

Transition State AH – Identical to Transition State NH, but the behavior occurs when the schedule switches to After Hours.

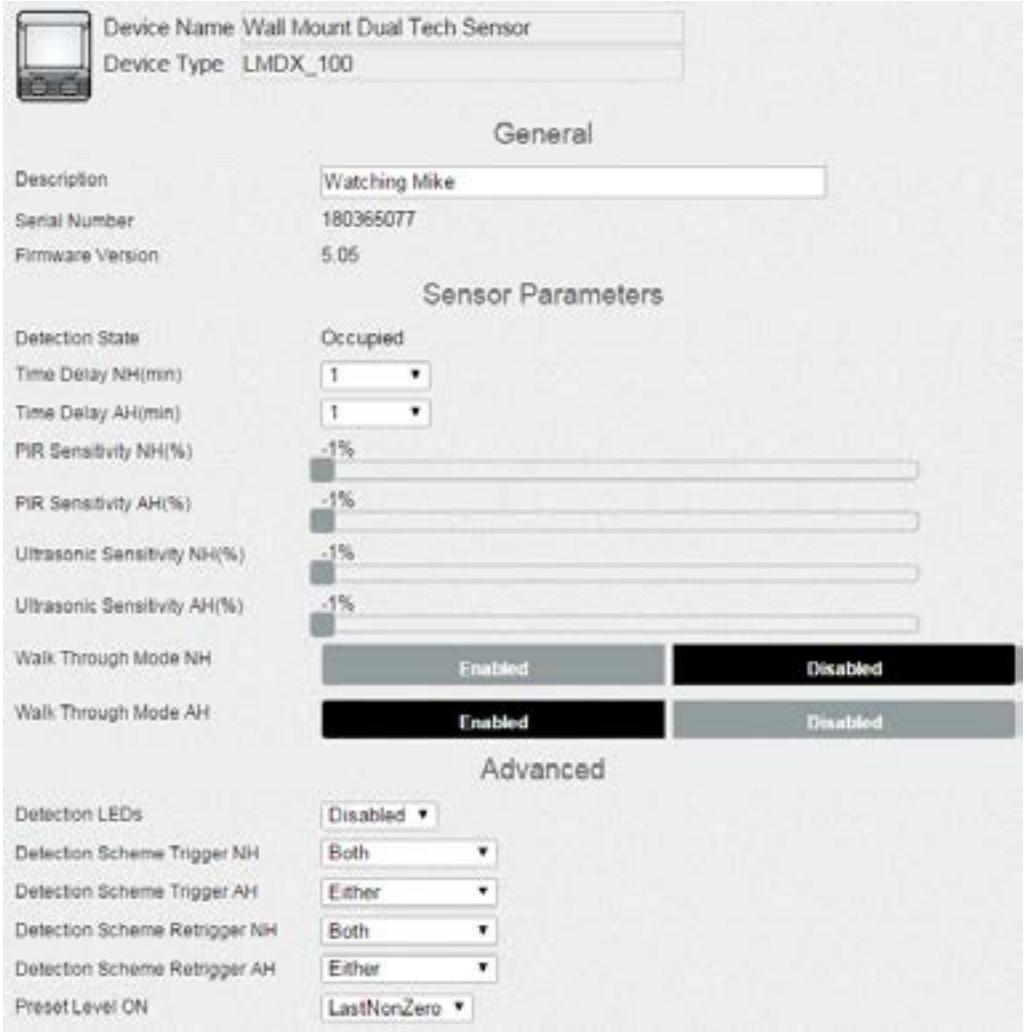
Read Only

Num – This indicates the number of the load in the controller. For example, in an LMRC-213, there will be three loads numbered, 1, 2, and 3.

Occupancy Sensor Settings

Click the icon of an occupancy sensor to display the following screen (the icon will change depending on the model of the sensor).

NOTE: Depending on the type of sensor (PIR only, Ultrasonic only, or Dual technology), the displayed parameters will change, as noted in the field descriptions.



Sensor Parameters

Detection State – Indicates whether the occupancy sensor is currently detecting occupancy. An “occupied” state does not necessarily mean that the lights in the space are on since the loads might be set to Manual On. Note that if you are testing the operation of the sensor, you will need to periodically click the sensor icon in the tree to refresh the display.

Time Delay NH (min) – The amount of time the load remains ON after no motion is detected, during Normal Hours. Available values:1–30 minutes, Override (there is no delay)

Time Delay AH (min) – Identical to Time Delay NH, but for After Hours.

PIR Sensitivity NH – Sensitivity for the PIR detection during Normal Hours. Setting the sensitivity to zero (0) will disable PIR detection in the sensor. This parameter is displayed only if the selected sensor model has PIR technology.

PIR Sensitivity AH – Identical to PIR Sensitivity NH, but for After Hours.

Ultrasonic Sensitivity NH – Sensitivity for the ultrasonic detection during Normal Hours. Setting the sensitivity to zero (0) will disable ultrasonic detection in the sensor. This parameter displayed only if the selected sensor model has ultrasonic technology.

Ultrasonic Sensitivity AH – Identical to Ultrasonic Sensitivity NH, but for After Hours.

Walk Through Mode NH – Walk-Through mode shortens the time delay to reduce the amount of time the load is ON after a brief moment of occupancy, such as returning to an office to pick up a forgotten item then immediately exiting. Applies during Normal Hours. Select “True” to enable this feature.

Walk Through Mode AH – Identical to Walk Through Mode NH, but for After Hours.

Advanced

Detection LEDs – Enables or Disables the visible LED indicators on the face of the occupancy sensor. Note that disabling the LEDs will not affect the operation of the sensor.

Detection Scheme Trigger NH – Indicates whether to use PIR, Ultrasonic, Either, or Both technologies for initial detection of occupancy during Normal Hours. This parameter is displayed only if the sensor model is dual technology.

Detection Scheme Trigger AH – Identical to Detection Scheme Trigger NH, but for After Hours.

Detection Scheme Retrigger NH – Indicates whether to use PIR, Ultrasonic, Either, or Both technologies will be used to keep the lights on once the sensor has initially been triggered. This parameter is displayed only if the sensor model is dual technology.

Detection Scheme Retrigger AH – Identical to Detection Scheme Retrigger NH, but for After Hours.

Preset Level On – Determines the light level when a load is turned ON by the sensor. Note that this level supersedes the load's **Level %** value. Available values" 1–100% and "Last NonZero", which will return the load to the level it was at when it was turned off.

Switch Settings

Click the icon of a switch to display the following screen (the icon will change depending on the model of the switch).

NOTE: For switches that contain a sensor (the LMDW and LMPW series), the Occupancy Sensor parameters (as shown on the previous page) are displayed. In addition, the **Switch Lock Status** parameter described on the next page is displayed. Individual button parameters display as with other switches.

NOTE: The LMPS-104 Digital Partition Switch can be discovered and will display in the device tree. However, no parameters other than the **Description** are editable.

Advanced

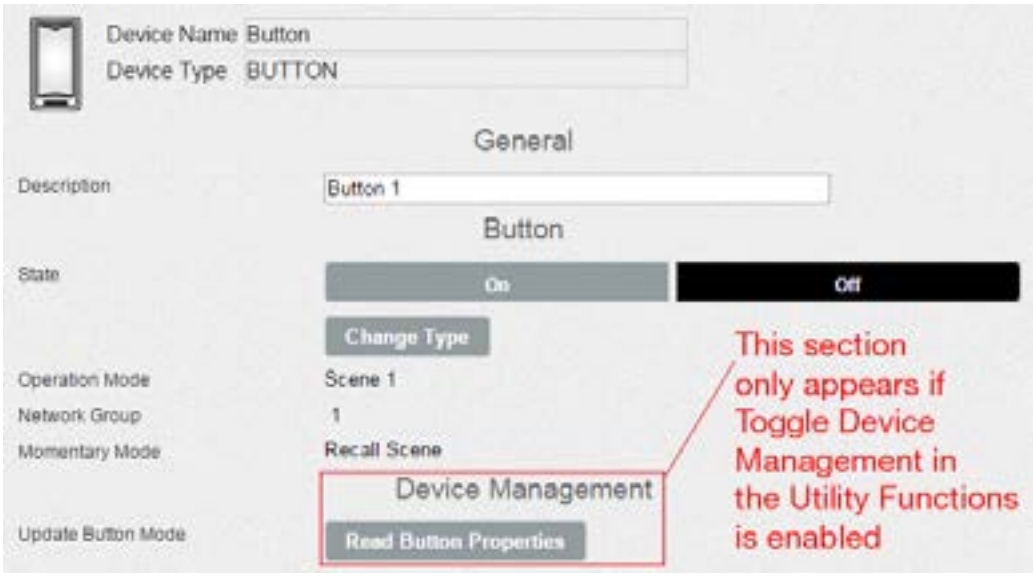
Switch Lock Status – Indicates if the switch is currently in a locked condition or unlocked. If a switch is locked, then pressing any of the buttons on the switch has no effect. This setting can't be edited on this screen, but all switches in a room can be locked or unlocked from the network bridge screen or on the **Manage** tab. See "Network Bridge Settings" on page 23 and "Manage Tab" on page 55.

Buttons

Button (x) – For each button in the switch, the current state (On or Off) is displayed. Note that for a dimmer switch, this field is not displayed.

Individual Button Settings

Click the "+" to the left of the switch icon to expand the tree to show individual buttons. Click the icon for an individual button. The screen will display current parameter settings for that load.



Button

State – The buttons indicate the current state of the button. Click the On or Off button to toggle the state of the button. Changing the state of the Button will actually change the state of the load controlled by the button.

Operation Mode – Indicates the current button type setting. Click **Change Type** to change the button type. The **Set Button Type** dialog opens, as shown on the next page.

NOTE: You must be logged on as Administrator to access the **Change Type** button.

Network Group – If the button is assign as a Network switch, then this is the network group number the switch will control.

Momentary Mode – Indicates how the button functions. Available values:

- If the button is assigned to a Load – "Toggle, "On Only", "Off Only"
- If the button is assigned to a Network Group – "Toggle" (Non-Tracking), "On Only", "Off Only"
- If the button is assigned to a Scene – "Recall Scene", "Recall/Off (toggle)", "Scene Off"

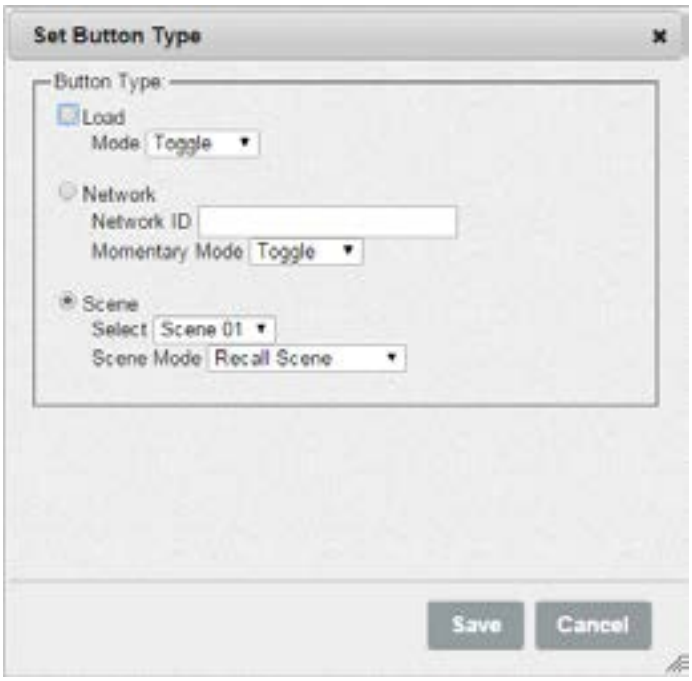
NOTE: There may be a delay of a few seconds after opening this screen before the **Operation Mode**, **Network Group**, and **Momentary Mode** fields update to the current values.

Device Management

This section is displayed only when you enable device management, using the Toggle Device Management button in the **Device Discovery** screen in the **Config** tab. See "Utility Functions" on page 16.

Read Button Properties – Clicking this button will immediately read the button properties. Since the button properties update automatically after a few seconds, use of this buttoon is not normally needed, unless you want to force the application to read the button properties immediately.

Setting the Button Type



The **Button Type** has three possible values:

- **Load** – In this mode, the button is assigned to switch loads on or off. Additionally, you select whether the button will toggle loads on and off, turn loads on only, or turn loads off only.

  NOTE: Binding of a specific load to the button is not available in the Segment Manager. That must be done using LMCS-100 software or the PushnLearn feature built into all DLM products.

- **Network** – In this mode, the button is assigned a **Network ID** number and will control all loads associated with that number. The Network ID number to a Network Group number in an LMCP or Network Bridge. So for example, if you set the button to Network ID 2, all loads assigned to Group 2 in the LMCP and any Network Bridge assigned to Network ID 2 will respond to that button. Additionally, you select whether the button will toggle loads on and off, turn loads on only, or turn loads off only. For details on Network Groups, see "Custom Groups" on page 37.

  NOTE: Network Bridges must have version 7 or later of the firmware installed to use this feature. Assignment of a network ID to a bridge must be done using LMCS-100. Assignment of group number in the LMCP is done with LMCS-100, the LMCT-100 remote control, or on the LMCP itself.

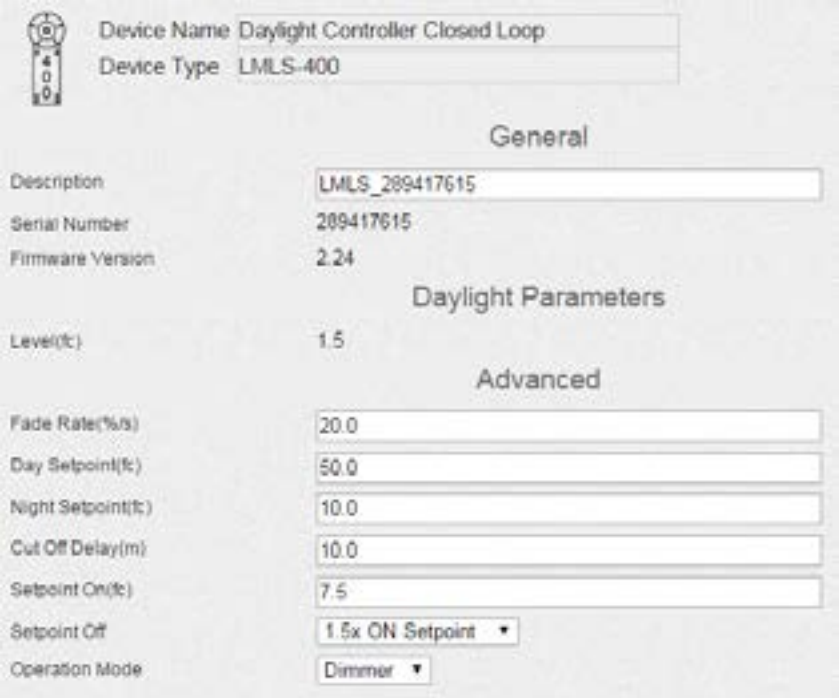
- **Scene** – In this mode, the button controls a specific scene. Additionally, you select whether the button will recall a scene, turn the scene off, or toggle between recalling the scene and turning it off.

  NOTE: Binding of a specific load to a scene is not available in the Segment Manager. That must be done using LMCS-100 software or the Push n' Learn feature built into all DLM products.

Daylight Sensor Settings

Click the icon of a daylight sensor to display one of the following screens.

For the LMLS-400



LMLS-400

Daylight Parameters

Level (fc) – Indicates the current outside light level, in foot candles.

Advanced

Operation Mode – Determines how the LMLS-400 functions. Available values: “Switched”, “Bi-Level”, “Tri-Level”, and “Dimming”.

Parameters Available in Dimming Mode

Fade Rate (%/s) – Determines the speed (or rate) at which the light level increases. The default is 20% per second because the end user needs light quickly.

Day Setpoint (fc) – The desired light level, in foot candles, **at the sensor** during daytime.

NOTE: The Day Setpoint and Night Setpoint parameters are automatically calculated during the calibration process Wattstopper recommends that these values not be changed without consulting technical support.

Night Setpoint (fc) – The desired light level **at the sensor** during nighttime. This takes into account that when no light is coming in from a window, the amount of light registered at the sensor (mounted in a ceiling) is lower than the amount of light in the working area because it reads only the light reflected from the floor/furniture surfaces back up to the sensor.

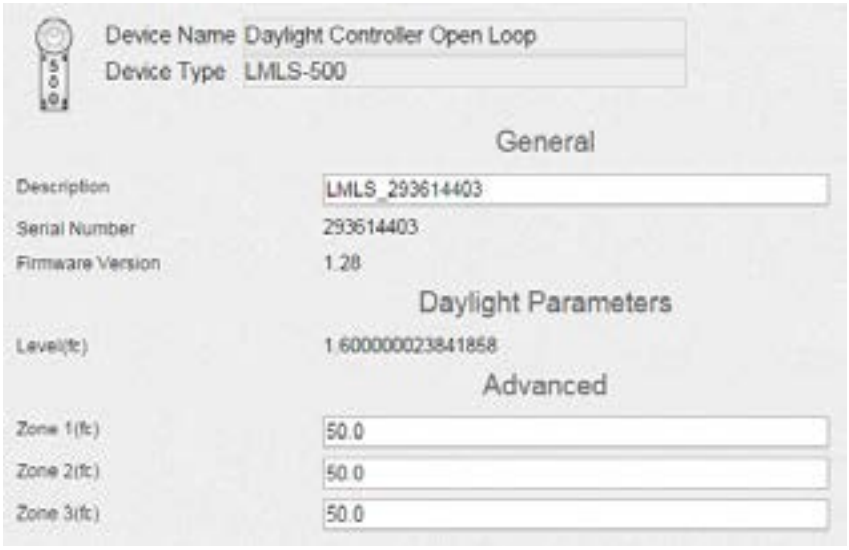
Cut Off Delay (m) – The time that the controlled lighting will remain at a minimum dimmed level, even with high daylight contribution, before the lights will be switched OFF. Available values: 0–30 minutes.

Parameters Available in Switched, Bi-Level, or Tri-Level Modes

Setpoint On (fc) – The target illuminance level (in foot candles) at the sensor, below which the LMLS-400 turns the lights ON.

Setpoint Off – The target illuminance level at the sensor, above which the LMLS-400 turns the lights OFF. The OFF Setpoint corresponds to the ON Setpoint multiplied by 1.25, 1.50, 1.75 or 2.0. This ensures that the OFF Setpoint is always higher than the ON Setpoint.

For the LMLS-500



LMLS-500

Daylight Parameters

Level (fc) – Indicates the current outside light level, in foot candles.

Advanced

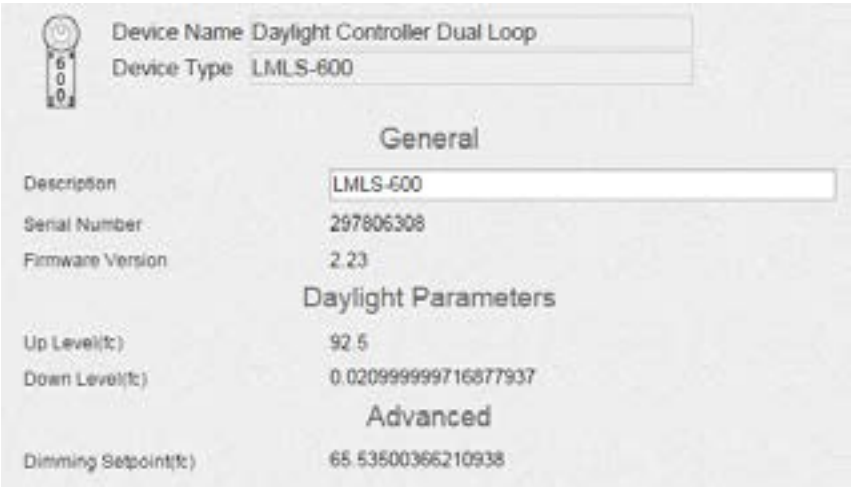
Zone1 (fc) – The desired light level (in foot candles) for zone 1.

Zone2 (fc) – The desired light level for (in foot candles) zone 2.

Zone3 (fc) – The desired light level for (in foot candles) zone 3.

LMLS-600

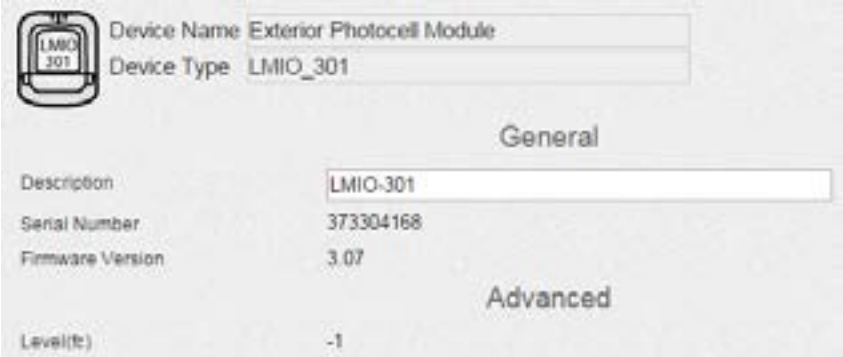
This model can be discovered and added to the device tree. However, currently no parameters other than the **Description** are editable. The screen does provide current information on the light level of the two sensors (one point up and one pointing down) as well as the Dimming Setpoint.



LMIO-301 Settings

Click the icon of the LMIO-301 to display the following screen. The photocell setup screen allows control of lighting based on the exterior light level or atrium light level reported by the LMIO-301 photocell module.

There are no editable parameters on this screen other than the **Description**. The **Level** parameter displays the current amount of footcandles registered by the photocell.

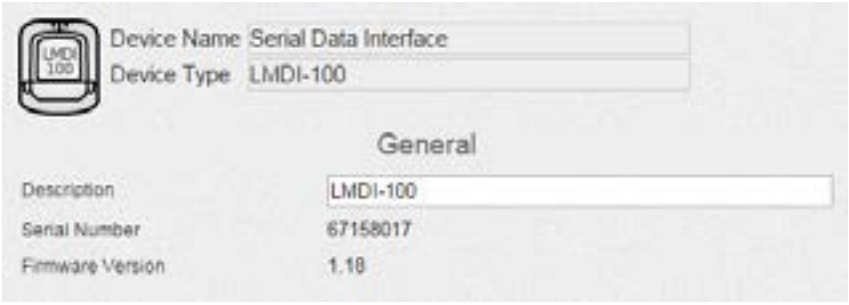


Additional Device Settings

The following additional devices are supported by the Segment manager, but there are no editable parameters other than the **Description**.

- **LMIO-101** – The LMIO-101 provides a digital input/ouput interface for third party devices.
  NOTE: The LMIO-101 functions as a switch and therefore, two buttons show up in the tree under the LMIO-101. they are have teh exact same parameters as buttons for a regular DLM switch.
- **LMIO-102** – The LMIO-102 is a digital partition interface for connection to flexible spaces with up to four walls.
- **LMDI-100** – The LMDI-100 connects a DLM local network to a third party system, for coordinated control of devices such as lighting control, AV equipment, and shade controls.

The screenshot below shows the LMDI-100 but look identical for the LMIO-101 and MIO-102 with the exception of the Device Name and Device Type.



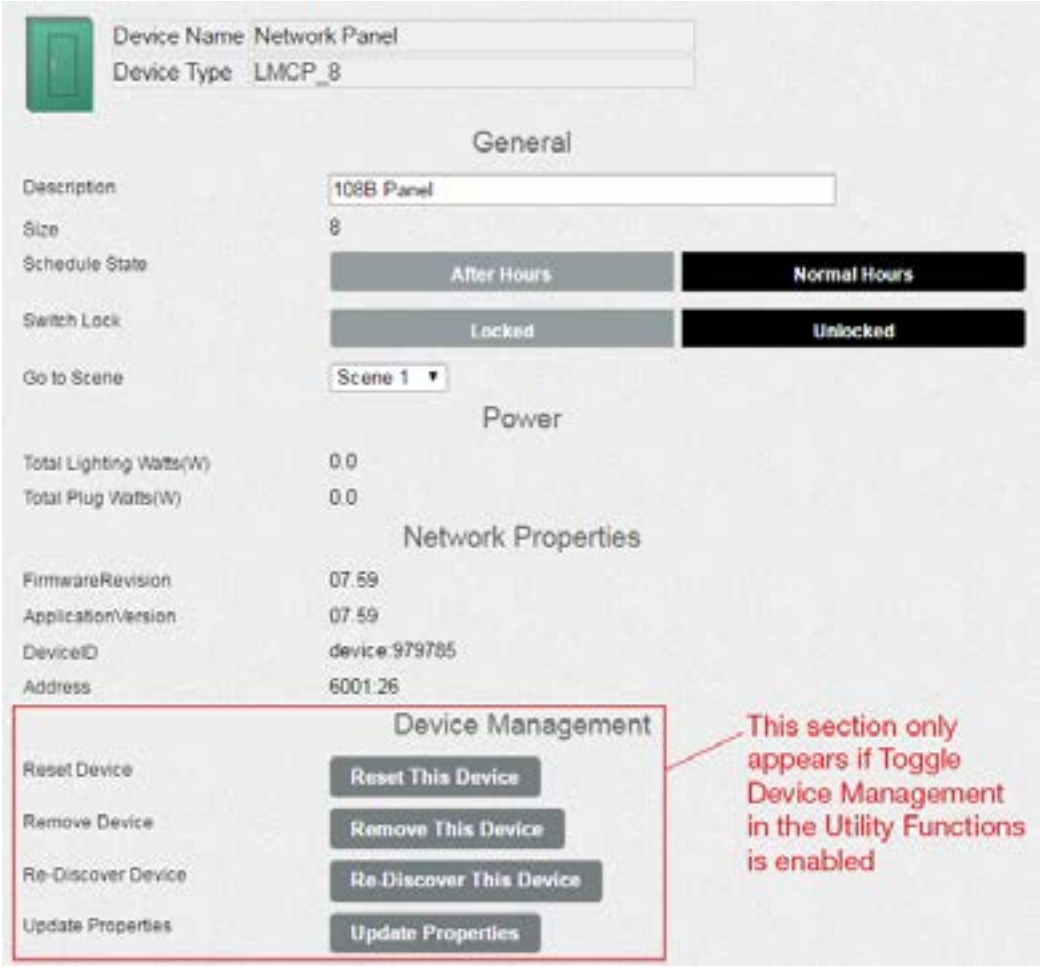
Panel/Zone Controller Settings

LMCP Panels and LMZC-301 Zone Controllers appear in the tree view at the same level as network bridges. Since these devices contain their own bridge, they function as “rooms” in the same way a network bridge does. When you expand a panel in the tree, you will see a list of DLM devices connected via the DLM Network ports on the panel or zone controller, the same as when expanding a network bridge.

However, for an LMCP panel, you will also see two folders: **Loads** and **Network Groups**. If you expand the **Loads**, folder, you will see a load icon for each relay contained in the panel. If you expand the **Network Groups** folder, you will see icons for each group saved within the panel. (Network groups are different from Custom groups. One or more loads from within the panel, as well as individual loads from a room controller or other panel connected via the DML Network can be members of a Network Group. These groups are described in detail in the LMCP User Manual.)

For the LMZC-301 zone controller, the **Loads** folder will be empty because it has no relays of its own. But it still will have the **Network Groups** folder.

Click the icon of a panel or zone controller to display the following screen (the icon will change depending on the model).



General

Description – The text entered here will appear in the tree beside the icon.

Size – Indicates the number of relays (loads) in the panel.

Schedule State – Clicking Normal Hours or After Hours here will set all the relays in the panel to that value. The loads in any room controllers connected to the panel will also be set to that value.

Switch Lock – Clicking these options will lock or unlock any switches that are connected to the panel. If a switch is locked, then pressing any of the buttons on the switch has no effect.

Go to Scene – For panels, scenes turn combinations of relays on or off. (No dimming is possible in panels.)

Power

Total Lighting Watts – The amount shown here is calculated by adding the **Baseline Power** amount from each individual load in the panel. If the relay is currently off, then the amount for that load is not included in the total.

Additionally, if any room controllers are connected to the panel, the amount of Watts for those controllers are added to the total. For the LMRC-2xx series, the watts amount is calculated based on the measured current usage. In the case of the LMRC-1xx series , which does not measure current usage, the watts are a user entered amount. In this case, if the load is switched off, that amount is not added to the total. Note that for the LMRC-102, if **either** load is switched on, the watts are added to the total. For details on how the watts amount is calculated for room controllers, see "Room, Plug Load, Power Booster, and Fixture Controller Settings" on page 27.

Total Plug Watts – Displays the current amount of watts used by all plug load controller connected to the panel. In the case of the LMPL-101, which does not measure current usage, the watts are a user entered amount. In this case, if the load is switched off, that amount is not added to the total.

Network Properties

Device ID – By default this is the last six digits of the serial number, but can be changed in LMCS-100.

Address – This displays two numbers. The first is the Network ID. The second is the DLM Local network MAC address for the panel.

Device Management

This section is displayed only when you enable device management, using the Toggle Device Management button in the **Device Discovery** screen in the **Config** tab. See "Utility Functions" on page 16.

Reset This Device – Click to reboot the bridge. This rechecks connected devices.

Remove This Device – This will remove the bridge, along with all connected DLM devices from the device tree.

Re-Discover This Device – This function allows you to run a discovery on just this room, which speeds up the discovery process. If you have added a device to a room such as an extra switch or sensor, and nothing else has changed, this is the best (quickest) way to discover that extra device.

NOTE: Before rediscovering the device, you should **Reset This Device**. If you do not reset first, the new devices will not be seen.

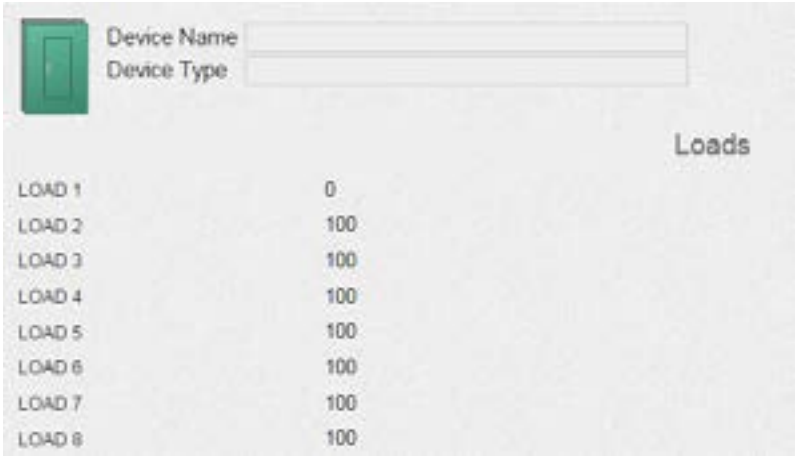
NOTE: In order to rediscover this device, you must select the network that this device is part of, on the **Start/Stop a Discovery** section of the **Device Discovery** screen.

Update Properties – This causes the bridge to send a message to all DLM devices in the room and get their extended properties (certain parameter values related to loads, switches and sensors) and send that information to the Segment Manager without having to go through the entire dsicovery process. This is useful if the device properties are changed manually, or using the LMCT-100 or LMCS software.

Loads Screen

If you click the **Loads** folder in the device tree, the **Loads** screen displays. This provides a quick way to view the status of each load in the panel. Each load is shown, along with its current level. A value of 0 indicates Off. Normally, a load that is turned On will have a value of 100 (percent), but it is possible that it could be set to a percentage between 0 and 100 (even though loads in a panel do not dim), and if so that number will be displayed.

NOTE: By default, the name of each load is based on the relay number (Load 1, Load 2, etc.). But the loads can be named, within LMCS-100, or using the **Description** field in the **Panel Load Settings** screen.



Panel Load (Relay) Settings

Click the "+" to the left of the **Loads** folder to expand the tree to show individual loads. Click the icon for an individual load. The screen will display current parameter settings for that load.

Advanced

Baseline Power (w) – Enter the amount of watts used by this load.

Area – Enter the square footage of the area lit by this load.

State – The current state of the relay.

Relay – Click **On** or **Off** to change the state of the relay.

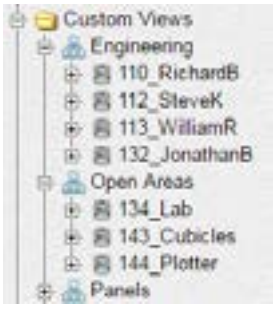
Level – The current level of the load. This will normally be 0 or 100% (for Off and On).

Read Only

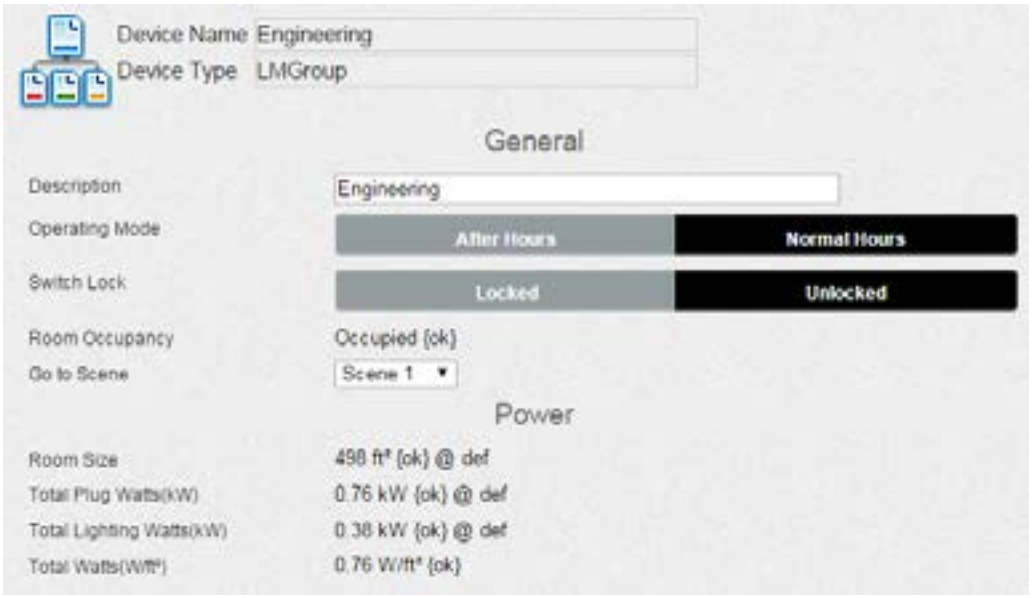
Relay Number – Indicates the specific relay in the panel

Custom Groups

When you expand the **Custom Views** folder, you will see an icon for each custom group. If you expand a custom group icon, you will see icons for each bridge or panel included in that group.



If you click the icon of an individual group, the **Custom Group** screen displays. From this screen, you can send three different commands to a custom group (or one command to a network group), to apply to all members of the group.



General

Operating Mode – The schedule property has two modes, normal hours and after hours. The current schedule mode for the room is indicated by the button that is selected (black). You can force the group members into a schedule mode for testing or other purpose by clicking the appropriate button.

Switch Lock – This parameter applies **only** to custom groups. It allows all of the buttons connected to the rooms that are part of the custom group, to be locked at their current status. Click the appropriate button to lock or unlock the switch buttons in the room. Note that this is global for all switches connected to the room. You cannot lock or unlock individual switches from the Segment Manager. However, individual switches can have the lock feature enabled or disabled using LMCS-100 software.

Occupancy – Indicates whether any sensors connected to the panels or room controllers are currently registering occupancy. If **any** connected sensor registers occupancy, it will display as occupied.

Go to Scene – This parameter applies **only** to custom groups. Select a value to send that scene command to all rooms that are part of the custom group. It is important to note that this parameter is not updated when a scene is selected by pressing a button in the room. Therefore, it does not necessarily reflect the current scene active in the room.

Power

Room Size – This displays the total square footage of all rooms or panels that are part of the custom network group. In the case of panels, if even a single relay in that panel is part of the group, the square footage for the entire panel is included. Note that for panels, square footage can only be entered in LMCS, whereas for rooms, the quare fot aage can be entered in Segment Manager or in LMCS.

Total Plug Watts – Displays the current amount of watts used by all plug load controller connected to the panel. In the case of the LMPL-101, which does not measure current usage, the watts are a user entered amount. In this case, if the load is switched off, that amount is not added to the total.

Total Lighting Watts – The amount shown here is calculated by adding the **Baseline Power** amount from each individual panel load that is a member of the group. If the relay is currently off, then the amount for that load is not included in the total.

Additionally, if any room controllers are included in the group, the amount of Watts for those controllers are added to the total. For the LMRC-2xx series, the watts amount is calculated based on the measured current usage. In the case of the LMRC-1xx series , which does not measure current usage, the watts are a user entered amount. In this case, if the load is switched off, that amount is not added to the total. Note that for the LMRC-102, if **either** load is switched on, the watts are added to the total. For details on how the watts amount is calculated for room controllers, see “Room, Plug Load, Power Booster, and Fixture Controller Settings” on page 27.

Total Watts (W/ft2) – Displays the current watts per square foot, calculated by the total lighting watts by the room size.

Network Groups

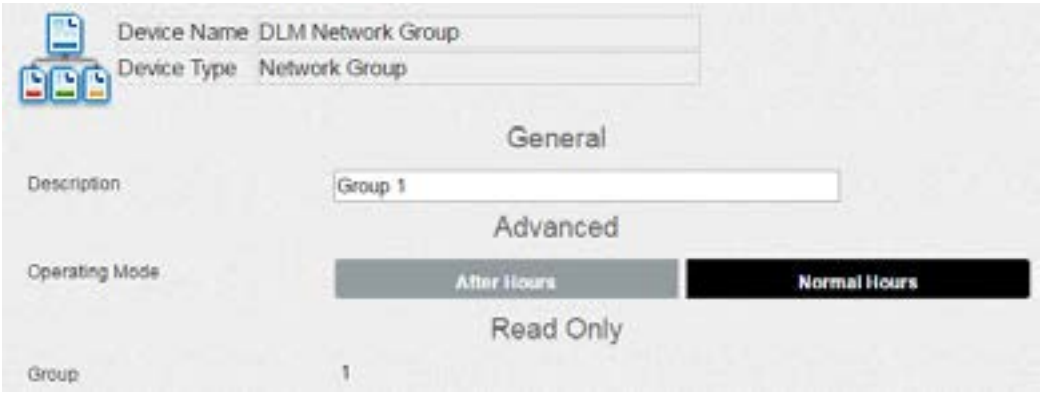
Click the “+” to the left of the **Network Group** folder to expand the tree to show an icon for each panel or room controller with members in that group. The name of the panel is displayed, followed by the group number (which will be the same for all members).

Each panel has 99 memory slots and each bridge has 16 memory slots for storing group parameters. Those groups may be numbered between 1 and 65,534. Each group can include any of the loads (relays) in that panel or bridge, plus any loads from room controllers or other panels connected to the panel or bridge via DLM Network ports. (If you want loads in different panels or bridges to be part of the same group, then you assign them to the same group number in each panel or bridge.)

If you expand the icon for a specific group number, you will see an icon for each panel with members in that group. The name of the panel is displayed, followed by the group number (which will be the same for all members).

Click the icon for an individual panel. The screen will display current parameter settings for that group.

NOTE: The LMBC-300 must have version 7.xx or later firmware to support network groups.



Advanced

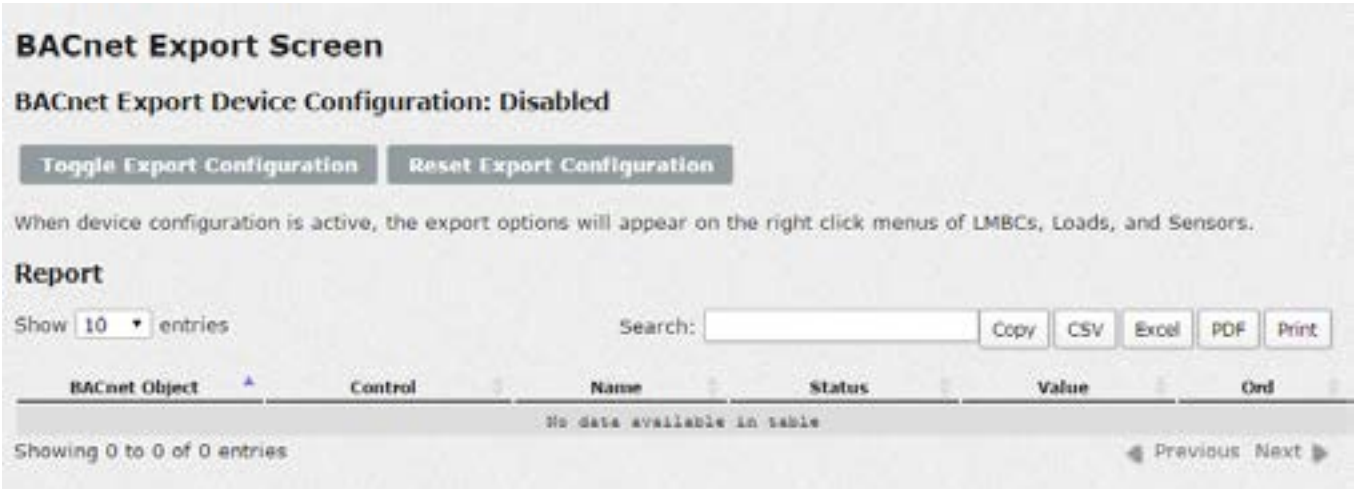
Operating Mode – The schedule property has two modes, normal hours and after hours. The current schedule mode for the group is indicated by the button that is selected (black). You can force the group into a schedule mode for testing or other purpose by clicking the appropriate button.

Read Only

Group – This displays the group number saved in the panel.

BACNET EXPORT TAB

The BACnet export function exposes individual points for access by BAS or other BACnet enabled application. You have control over which specific points are available.



Click **Toggle Export Configuration** so that the display indicates **BACnet Device Export Configuration: Enabled**. Once export is

enabled, the **Mass Export** button appears. At this point you have two choices:

- You can select one or more specific individual devices to expose points in those devices.
- You can use the Mass Export feature to expose one or more types of points for all devices in the BACnet network. There are three export options for the exposed points:

  Writable (Priority 16) – This allows an external application to read the points and to change the priority 16 value.

  Write All Priorities – This allows an external application to read the points and to change all priority values.

  Read Only – This allows an application to read but not change values. (This is the only option for some points.)

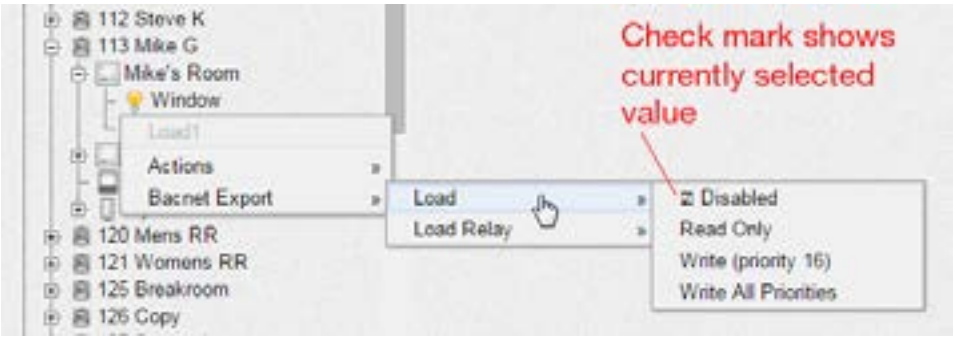
Once BACnet points have been exported, the **Report** section of the tab shows details on the exported objects.You can then export this information in .csv, Excel, or .pdf formats by clicking the appropriate button. Or click **Copy** to copy the data to the clipboard and paste it into the application of your choice.

Individual Device Export

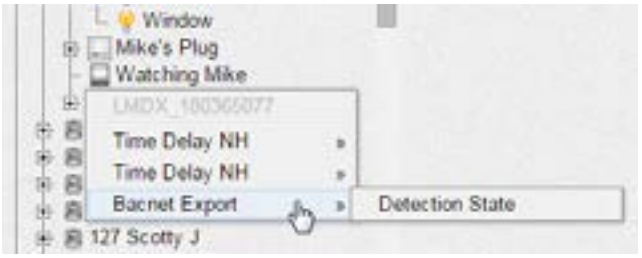
Once export is enabled,click the **Devices** tab, and expand the tree until you find the desired device, then right-click the icon for that device. If there are points on that device available for export, there will be a **BACnet Export** option in the pop-up menu. (Note that not every device has points available for export—if none are available you will not see this menu option.) Highlight the option to open a secondary menu that displays one or more points that can be exposed.

If the individual point has read and write export options, “>>” indicates a third pop-up menu. Select the desired option. If the point is read only, select that point.

Example of a point that has Read and Write export options



Example of point that has only the Read option available



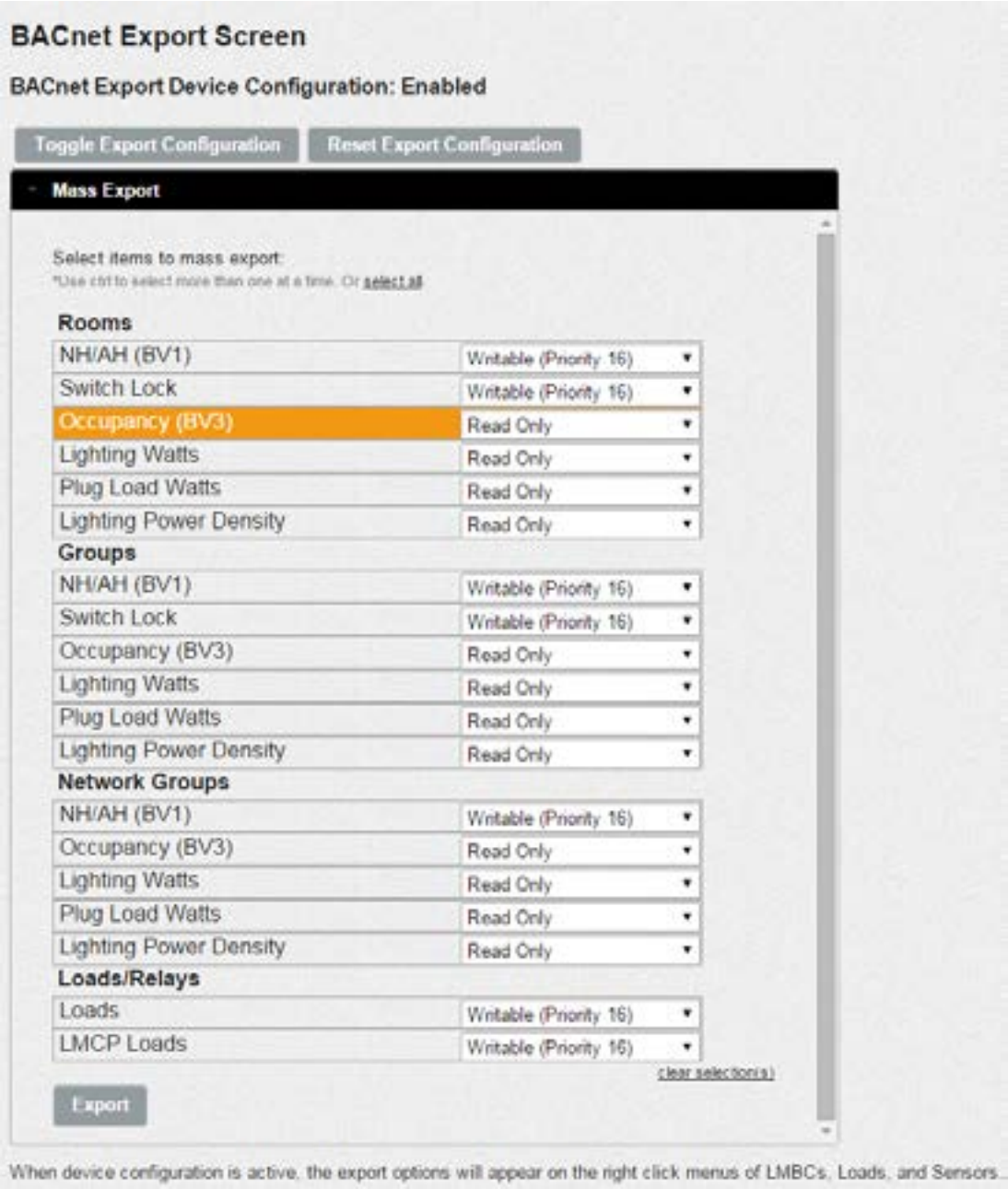
Once you have exported the point, you can continue to select other points by right-clicking other individual devices. If you return to the BACnet Export tab, you will see a list of the items you have exported.

Mass Export

When you click **Mass Export**, the BACnet Export screen expands to show specific items that you can export. Click on an item in the list to highlight and select it. Click the link above the list to select all items. As in any typical application you can Ctrl click to select multiple items.

Click **Export**. A confirmation dialog appears. Click **Proceed** to export the points. A checkbox on this dialog also provides the option to remove any previously exported points from the current list before exporting the points you have just selected.

NOTE: Once exported, the points do not automatically display in the list at the bottom of the screen. You must either refresh the browser page or navigate away from the page and back to it before the points are listed.



Viewing and Exporting the Points to Another Format

Once exported, the list of points will appear at the bottom of this screen, and also in the BACnet Export Table Report (see "Appendix A: Reports" on page 67). As noted previously, you must refresh the screen after a Mass Export to see the list.

This list can be printed or exported in CSV, Excel, or PDF format by clicking the appropriate button. You can also click **Copy** and then paste the data into any application as tab delimited text.

NOTE: Regardless of whether the Export Configuration is enabled or disabled, once the points are included on the list, they are available for access from an external BACnet application. Enabling the configuration simply means that points can be added to the list. In order to remove all points so that no access is possible, click **Reset Export Configuration** to empty the list.

List of Exported Points

Export Table Objects (Segment Manager GUI v1.2.4 or higher)

Available Object	Object Range	Object Values	Number of Objects
Room Occupancy State	BV1001-2000	Occupied or Unoccupied (read only)	One per DLM local network
Room Schedule Mode	BV1-1000	Normal Hours or After Hours	One per DLM local network
Room Switch Lock State	BV2001-3000	Locked or Not Locked	One per DLM local network
Room Lighting Power (available with LMRC-200 Series room controllers)	AV4001-5000	Total Watts (read only)	One per DLM local network
Room Plug Load Power (available with LMPL-200 Series plug load controllers)	AV5001-6000	Total Watts (read only)	One per DLM local network
Relay State	BO1-1000	On or Off	One per relay
Light Level	AO1-1000	Percent from 0-100	One per dimmed load
Occupancy Sensor Detection State	BI1-1000	On or Off (read only)	One per occupancy sensor
Group State	BV3001-4000	On or Off	One per group
Channel Schedule Mode (available with LMCP panels)	BV4001-5000	Normal Hours or After Hours	One per channel
Panel Relay State	BV5001-6000	On or Off	One per relay

REPORTS TAB

The **Reports** tab provides access to five different reports:

- **Network Health** – Lists a summary of tests performed on the network such as network number, firmware version and network fault.
- **Audit Log** – Contains the entire contents of its audit log as well as any alarms or events
- **BACnet Export Table** –
- **SegMan Configuration Settings** – A summary report of Segment Manager's own settings
- **Detailed Room Report** – Contains the parameter settings for all devices in all networked rooms, listed on a per room basis.

Select the report and click **Generate** to create the report. After completion, it will display. You can also click **Load last report (if any)** to display the most recently run report without generating a new one.

These reports are described in "Appendix A: Reports" on page 67.

CONNECTIONS TAB

On the Supervisor platform, this tab displays all Segment Managers connected to the Supervisor over the IP Network. On the SegMan platform, it displays the parent Supervisor that the Segment Manager is connected to. If there is no Supervisor, this will be blank.

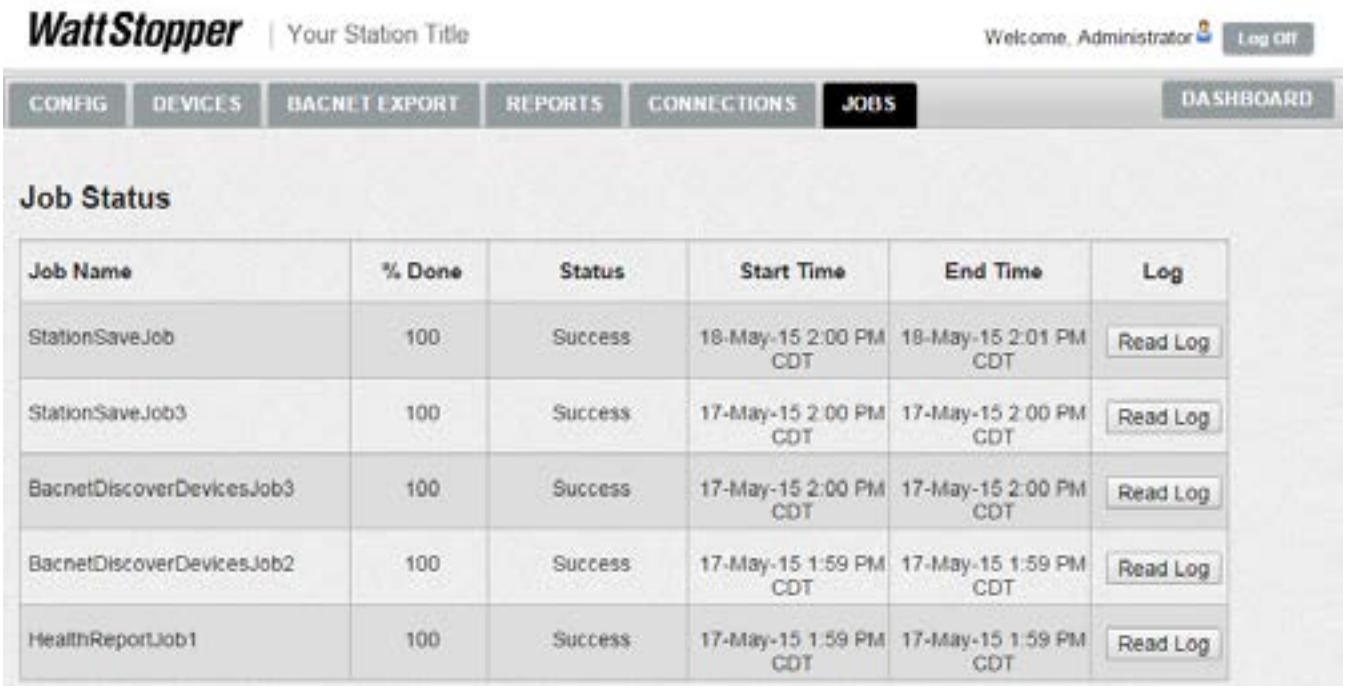
NOTE: The functionality on this tab is needed only on the Supervisor platform.

If you click **Sync**, all of the points from the various devices on that network are imported into the Supervisor application. After the Supervisor is synced, click **Groups**. This will create tiles (displayed in Dashboard mode) for all rooms (network bridges) and panels connected to that Segment Manager.

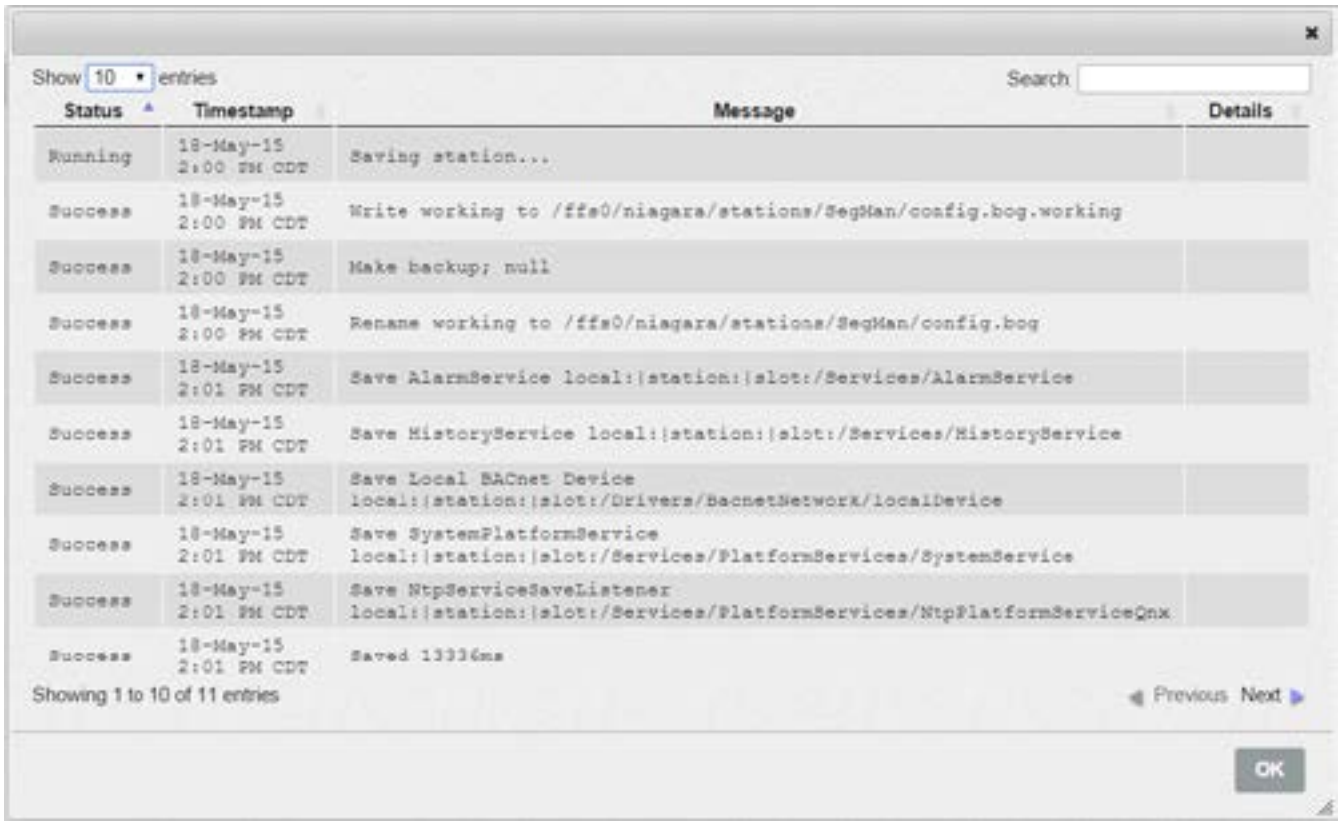
Typically, syncing of the Segment Managers for the Supervisor platform is done by WattStopper technicians during the setup process and does not need to be done again. However, if any devices are added or removed form a network, you can use this process to update the Supervisor. Keep in mind that those devices must be discovered on the Segment Manager first before syncing to the Supervisor.

JOBS TAB

This tab displays a list of background jobs run on the application. If you are viewing the Supervisor platform, you will only see jobs run on the Supervisor, and not any run individual SegMan platforms.



Click **Read Log** to view log information for that particular job.



Show 10 entries Search

Status	Timestamp	Message	Details
Running	18-May-15 2:00 PM CDT	Saving station...	
Success	18-May-15 2:00 PM CDT	Write working to /ffs0/niagara/stations/SegMan/config.bog.working	
Success	18-May-15 2:00 PM CDT	Make backup; null	
Success	18-May-15 2:00 PM CDT	Rename working to /ffs0/niagara/stations/SegMan/config.bog	
Success	18-May-15 2:01 PM CDT	Save AlarmService local:|station:|slot:/Services/AlarmService	
Success	18-May-15 2:01 PM CDT	Save HistoryService local:|station:|slot:/Services/HistoryService	
Success	18-May-15 2:01 PM CDT	Save Local BACnet Device local:|station:|slot:/Drivers/BacnetNetwork/localDevice	
Success	18-May-15 2:01 PM CDT	Save SystemPlatformService local:|station:|slot:/Services/PlatformServices/SystemService	
Success	18-May-15 2:01 PM CDT	Save NtpServiceSaveListener local:|station:|slot:/Services/PlatformServices/NtpPlatformServiceQnx	
Success	18-May-15 2:01 PM CDT	Saved 13336ms	

Showing 1 to 10 of 11 entries Previous Next

OK

DASHBOARD MODE

Dashboard mode provides a graphic interface that displays current and historical usage. Rooms can be grouped into both location based and custom groups. Alerts are provided when an individual room or group exceeds normal usage, based on predetermined target usage. Several other features are available in this mode. Dashboard mode consists of the following tabs:

- **Monitor** – Displays energy usage. Creation of custom groups is also done on this tab
- **Manage** – Provides the ability to modify a limited set of parameters for individual devices in a room. Some of the primary functions include switching between Normal Hours and After Hours, selecting a scene, and locking/unlocking a switches.
- **Schedule** – Displays currently scheduled events. You can also create, edit and delete events on this tab.
- **Report** – On this tab, you can run a usage report for the currently selected group, panel, or room.
- **Demand Response** – On this tab, you Force, Override, or Cancel the Demand Response command.

Differences Between SegMan Platform and Supervisor Platform in Dashboard Mode

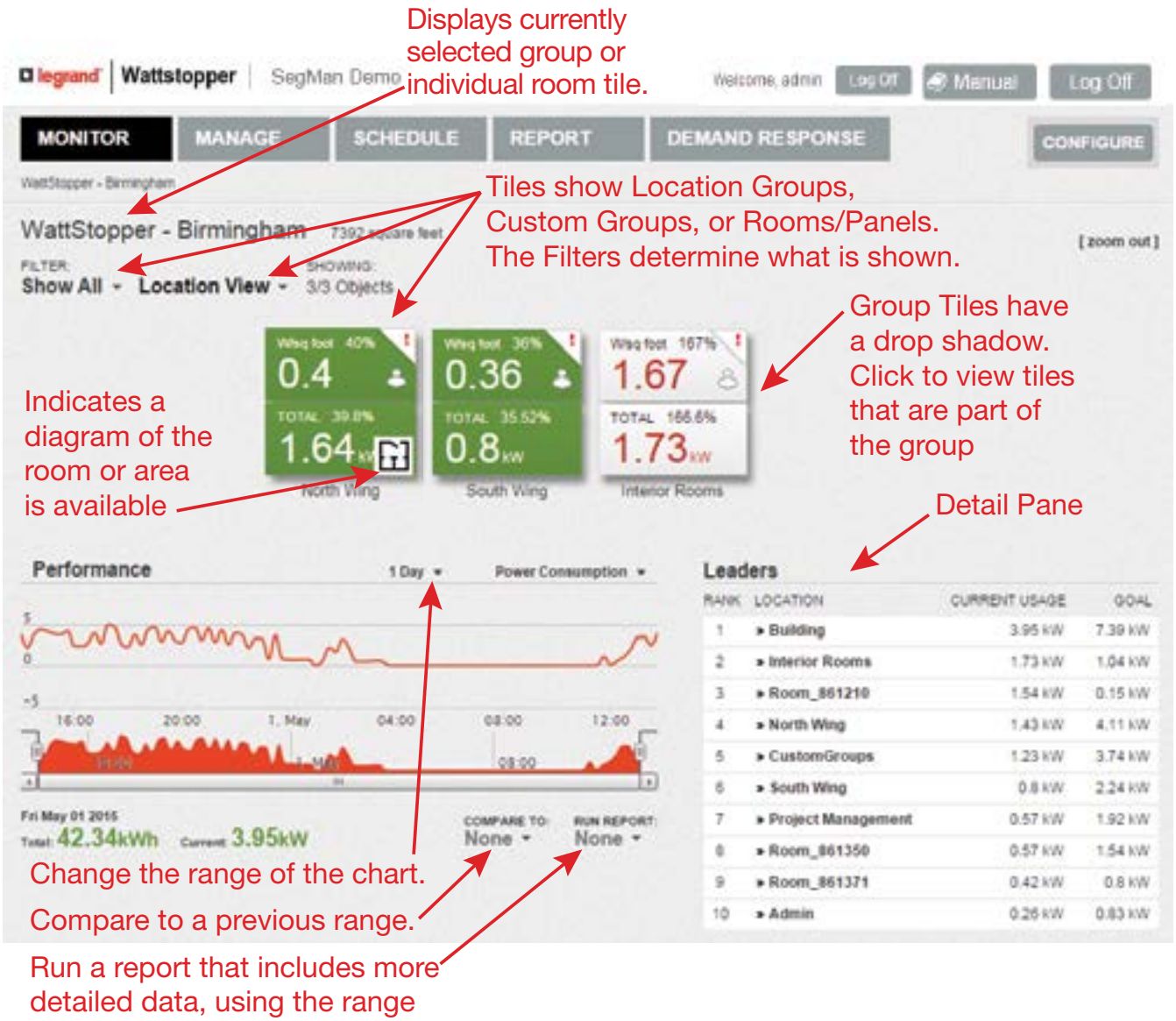
- The **Manage** tab is displayed only on the SegMan platform, so no modification of device parameters can be done on the Supervisor platform, other than events in a schedule.
- Because of memory limitations with in the Segment Manager, usage history on the SegMan platform is only shown for groups, not rooms or panels, and the history is limited to five days. When a room is selected, the usage chart disappears.
- On the Supervisor, you can view tiles of rooms connected to multiple Segment Managers, and create groups that include rooms from more than one Segment Manager.

MONITOR TAB

The **Monitor** tab is the primary tab in Dashboard mode. It is the tab that displays when the application is first opened, and the tab that displays when switching from Configuration mode to Dashboard mode. It is divided into three sections:

- **Room, Panel and Group tiles** – Displays current usage for a room, panel, location group, custom group, or network group. See “Tiles” on page 45 for details.
- **Performance chart** – Displays historical usage for the currently selected group or individual room tile. See “Performance Chart” on page 48 for details.
- **Detail pane** – The detail pane changes depending on what is currently selected. If you are viewing the top level of the architecture (the “building”), it displays a list of the top energy consumers. Both groups and individual rooms/panels are included in the list. Once you select a room, panel, or group, it changes to show associated devices, schedules and groups.

If you hover the mouse over a tile, a pop-up dialog allows you to select that tile for group assignment. This changes the Detail pane to Selection mode, where you can add the tile to a an existing or new group. See “Detail Pane” on page 50 for details.



Tiles

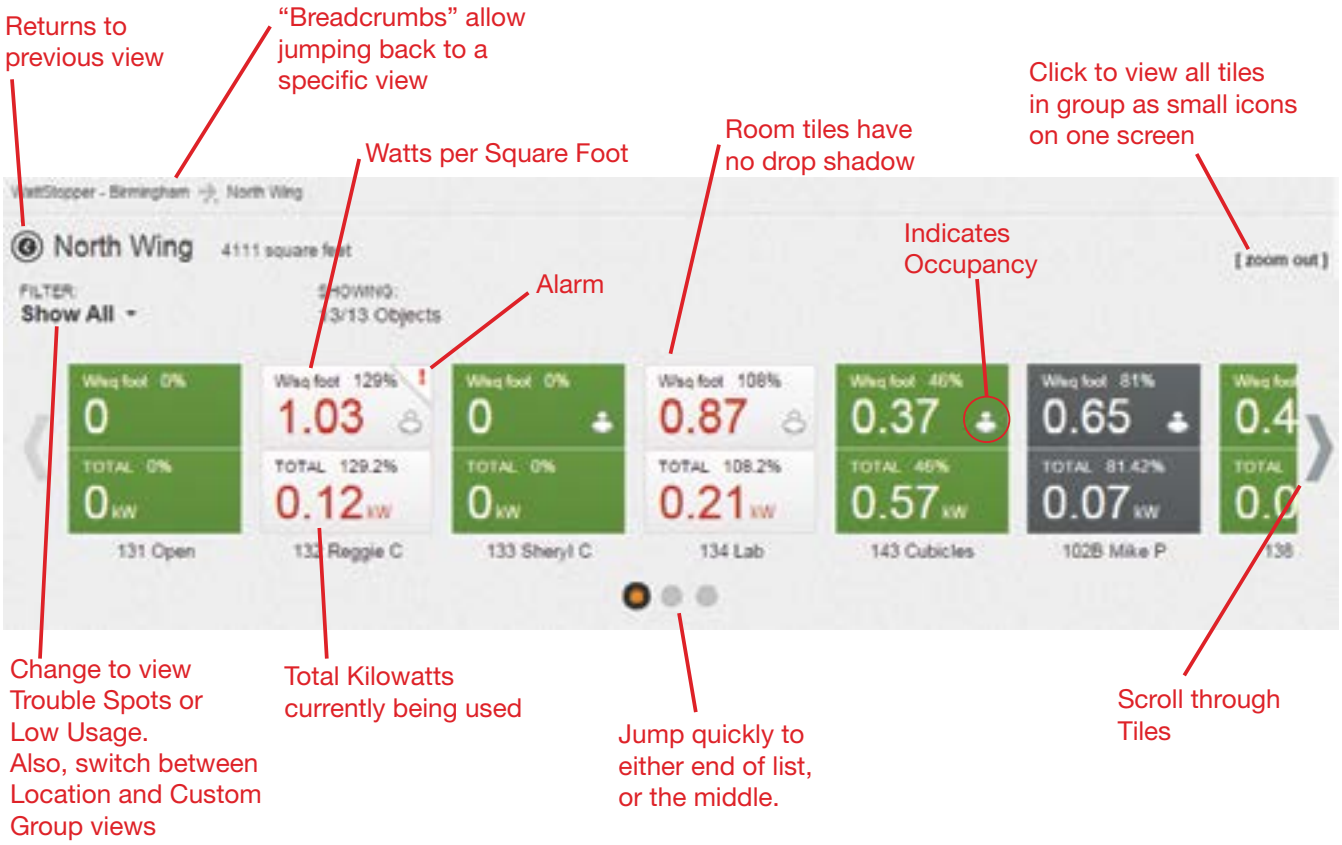
When initially opened, Dashboard mode defaults to displaying the top level (for example a building, site, or campus) in Location View. Tiles for each Location Group are displayed, as shown in the screenshot above.

Depending on the view you are looking at, tiles will display for rooms, panels, and groups. To help provide a quick visual cue, group tiles have a drop shadow, while room and panel tiles do not.

There are two different views available. You select the current view using the **Filter** drop-down:

- **Location View** – This view displays rooms and panels by physical location. These groups are set up in LMCS-100 software during the design of the network. However, it is possible to assign a room/panel to a specific location in the SegMan application. See"Moving a Room or Panel from One Location Group to Another" on page 54 for details. Location groups can be nested. For example, you can have a location group for each floor in a building, and then have location groups for north and south wings within a floor. When you click a Location Group tile, the screen changes to show tiles for all rooms and panels and/or subgroups assigned to that Location Group, as shown in the screenshot below
- **Custom Views** – There are two types of group tiles in Custom Views: **Custom Groups**, are created in Dashboard mode, or in LMCS-100 using tags. Unlike location groups, custom groups cannot be nested. A **Network Groups** tile is displayed only if there is one or more LMCP panels connected to the BACnet network. When you click the Network Groups tile, the screen changes to show tiles for all group numbers assigned within the LMCP panel(s). Note that these group number are specific to the LMCP, and are not the same as SegMan groups. LMCP groups include specified relays in the panel, as well as any loads controlled by devices connected to the panel via the DLM Local Network (not BACnet).

The Tile Section Interface



The first thing you notice about the tiles is the color. Each tile has **two parts** and the two parts may be two different colors.

The **Top Part** shows the watt usage per square foot. This calculated by dividing the amount of watts consumed by the square footage of the room. The 200 series room controllers have the ability to monitor the amount of watts used. But for the 100 series room controllers and panel relays, this is a fixed amount, entered in LMCS-100.

For a room tile, the amount of square feet is entered in the **Room Size** field of the Network Bridge screen in the **Devices** tab or in LMCS-100. For a panel tile, this amount is entered in the **Area** field of the Panel Load screen the same tab, or in LMCS-100. For a group, the amount is calculated by adding the square footage of all the rooms and panels assigned to that group.

For the **Top Part**, the color is based on the energy usage targets set using the **Watts/Sq. Ft Targets** slider on the **Energy Targets** screen of the **Config** tab. (See "Energy Targets" on page 19.) The slider has two movable points. As long as the current usage remains below the amount set for the lower end point of the slider, the tile for that room will be green. If the usage is in between the lower and upper end points, the tile will turn gray. And if it goes above the upper endpoint, the tile will turn white with red lettering.

For a group, a tile can remain green even though a tile for a room within that group has turned white. This is because the amounts for all tiles within that group are averaged.

In each section a **percentage** figure is displayed. This percentage reflects the amount of current usage as a percentage of the target amount. The target amount is the **Target Lighting Density** amount set on the **Energy Targets** screen of the **Config** tab. (See "Energy Targets" on page 19.)

For the **Top Part,** the calculation is as follows:
Target Lighting Density Amount / Watts per square foot = Percentage

The **Bottom Part** of the tile shows the total amount of kilowatts currently being used.

For the **Bottom Part**, the color is relative to the (Area * Target Lighting Density). For Example: if the room is 144 square feet and the target density is set to .9, this will equal a target amount of 132 watts. That amount is then compared to the actual kilowatts. If the target amount is equal to smaller than the actual amount, the tile will be green. If the target is larger than the actual amount, the tile will be white

The percentage shown in the **Bottom Part** is based on on the current wattage relative to the lighting target. This is calculated as: (Current Wattage) / (Area * Target Lighting Density).

NOTE: Only lighting usage is included when measuring energy usage. Plug Loads are not included.

If there is a red exclamation point in the upper right hand corner of a tile, that means an **alarm** has been triggered. In the case of a room or panel, this mean the current usage is exceeding the **Target Lighting Density** amount. In the case of a group, this means that one or more of the rooms in that group have an alarm. Since the color of the tile is based on the average of all the rooms, the alarm on a group tile provides a way to indicate that a room in the group is exceeding usage, even when the group as a whole is not.

NOTE: Since the alarm is based on the value of the **Target Lighting Density** amount, but the color of the tile is based on the **Watts/ Sq. Ft Targets** slider, if the upper limit on that slider is not set to the same amount as **Target Lighting Density**, it is possible for a tile to be white but no alarm is indicated. For example, if the **Watts/Sq. Ft Targets** slider is set to .8 watts per square foot, but the **Target Lighting Density** amount is set to .9 watts per square foot, if the energy usage is between .80 and .89, the tile will be white but no alarm will be shown.

An icon of a person's head and shoulders is used to indicate **occupancy**. This is determined by the status of any occupancy sensors within that room. If **any** connected occupancy sensor in the room is occupied, the room is considered occupied. Additionally, if any room in a group is occupied, the group will also indicate occupancy.

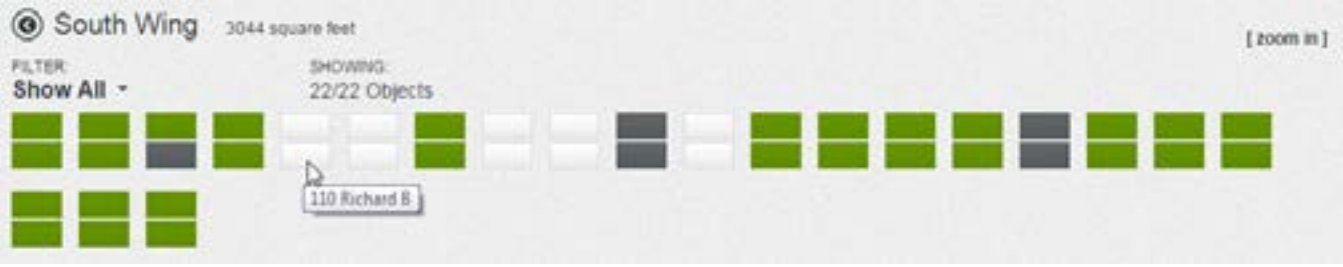
NOTE: A room can indicate occupancy even if the current usage shows 0 kW. If the occupancy sensor is set to manual on, it will not turn lights on automatically when occupancy is detected, so a person may be in the room but lighting has not been turned on.

Filtering and Changing the Tile View

The two drop-downs in the upper left corner allow you to filter which tiles are shown:

- Within the currently selected group, you can switch between showing tiles for **All** rooms and panels, **Troublespots** (rooms with Alarms), or **Lowest Priority Usage (Bottom 10%)** (rooms using the least power)
- For groups, you can switch between showing Location Group tiles or Custom Group tiles

Additionally, a **[zoom out]** function, will switch the display so that all room and panel tiles within a group are shown in miniature. Hover the mouse over a tile to show the name of that room/panel.



Highlighting a Tile

If you hover the mouse over a tile, a pop-up dialog appears. If the tile has an alarm, it will indicate the amount of time since the alarm began. The pop-up shows a sparkline graph, similar to the chart in the Performance Chart section but for this tile only. Note that as with the Performance Chart, on the SegMan platform individual room tiles will not have sparkline graphs, since no historical data is saved for rooms on that platform.

There is also a **[select]** option. Click this to change the Detail Pane to a Selection List, where you can assign the room to one or more groups. See "Detail Pane" on page 50 for details.

Pop-up in Location View

Pop-up in Custom View

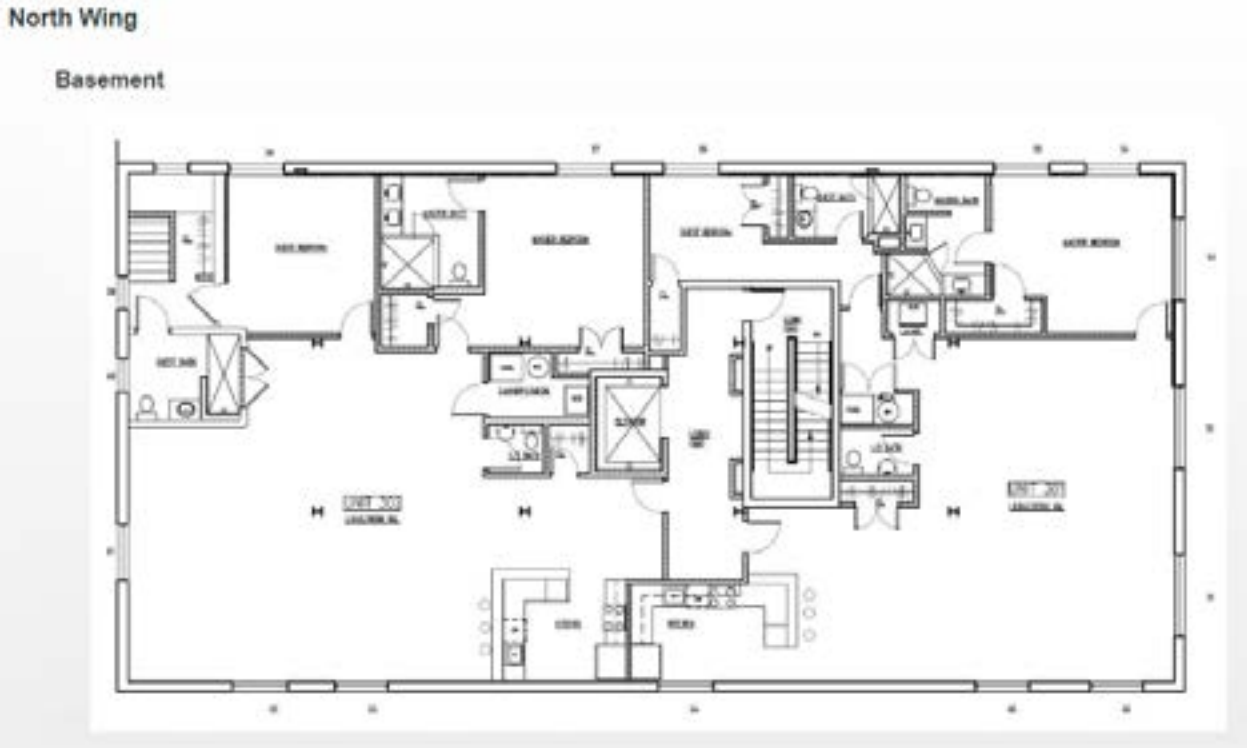
When in Custom View, an additional option, **[remove from group]**, appears. If the highlighted tile is a room, clicking this option will remove that tile from the currently selected group. If the highlighted tile is a custom group, clicking this option will delete the group. (The individual room tile associate with that group will **not** be deleted. If they are part of other custom groups, they will show up when those groups are selected. If they are not part of any other custom groups, they will show up in Location View when the appropriate Location tile is selected.

Floor Plan Diagrams

Floor Plan Diagrams can be uploaded to the Segment Manager and assigned to a Location Group or Room tile (see "Floor Plan Upload" on page 17). Once assigned, a small floor plan icon appears in the bottom right corner of the tile, as shown below.

NOTE: You cannot assign a diagram to a Custom Group, since the purpose of a Custom Group is to group together rooms irrespective of their physical location.

Click on the icon to open the diagram.



To assign a chart to a Room or Location group see the section on the **Detail Pane**, starting on page 50.

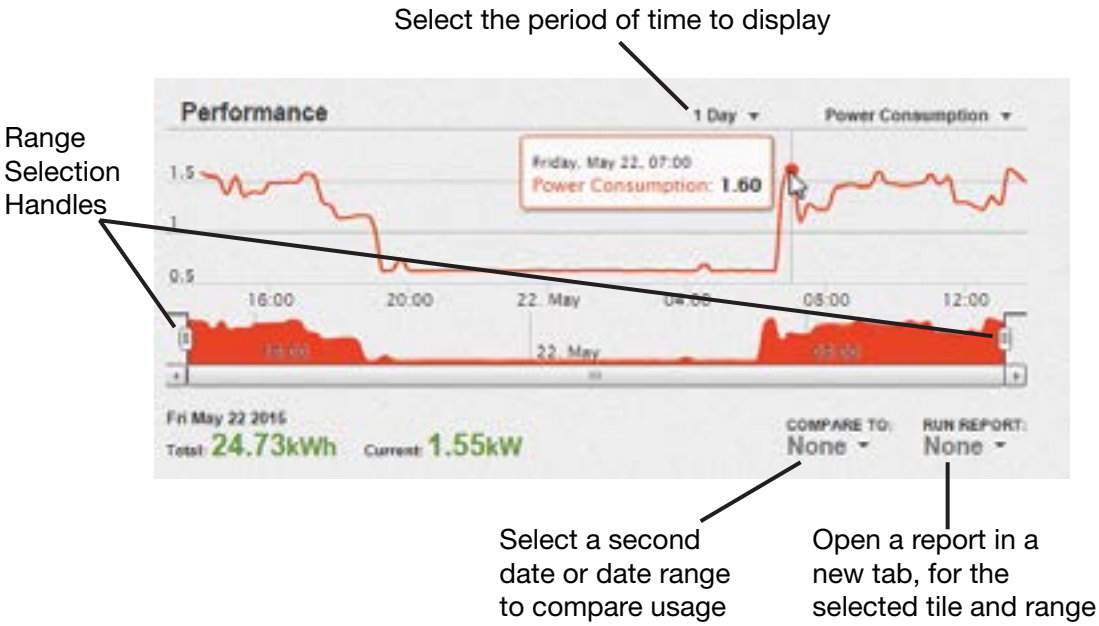
Performance Chart

The Performance chart displays historical usage for the currently selected tile. Use the drop-down to select the range of history to display: 1 Day, 1 Week, 1 Month, or 1 Year.

NOTE: The SegMan Platform saves usage history for groups only, not rooms or panels. Additionally, the history is limited to approximately five days.

The chart is divided into two sections. The lower section displays the entire range chosen with the drop-down. The top section can be zoomed in and out by using the range selection handles in the lower section.

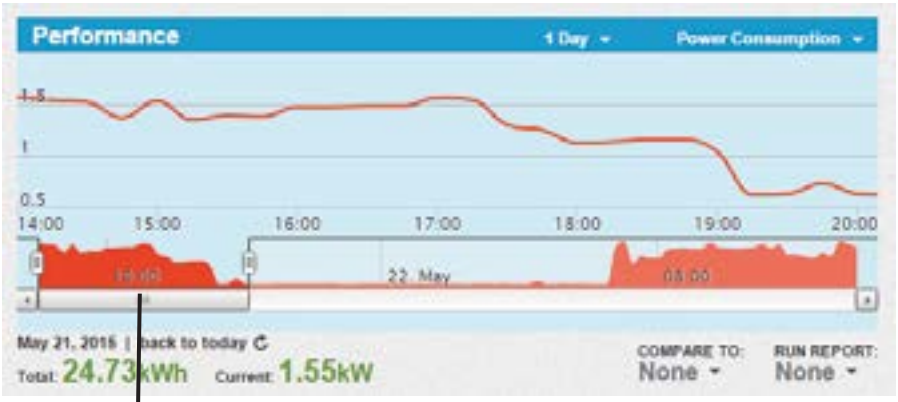
If you hover the mouse over a specific place in the upper section, a pop-up displays the time and date and amount of power consumed.



If you drag one or both of the range selection handles, the top part of the chart changes to show only that selection of data, as shown in the following screenshot.

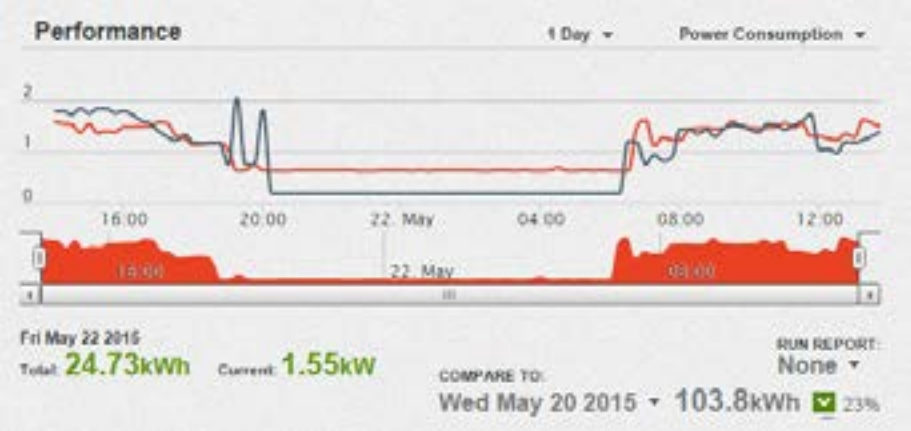
If you move the right range selection handle to the left, the chart background turns blue to indicate you are looking at past usage. At the top of the window, text appears with the message “Viewing Past Performance”, followed by the date.

Once you have moved the handles to select a certain range of time, for example a one hour period, you can click and hold within the selected range to display different one hour time periods in the top part of the chart.



Comparing Usage to Previous Time Frames

You can select another time frame to view with the **Compare To** drop-down. It will display in black in the top section of the chart. The available comparisons change based on your currently selected time frame. So if you are viewing a one day time frame, the comparisons are the three previous days. If you are viewing a one month time frame, the comparisons are for previous months, and so on.



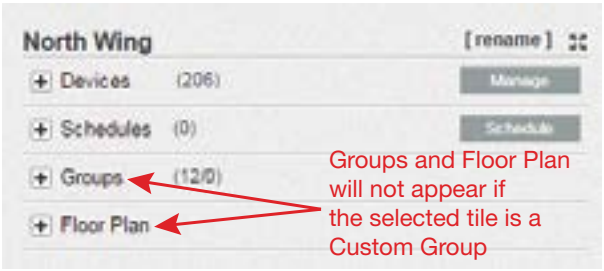
Viewing a report for the Currently Selected Time Frame.

If you select the **Run Report** drop-down, there are two options: “CSV” and “HTML”. The “CSV” option will save a file to your Downloads folder. The “HTML” option opens a report in a new tab. These reports are identical to the report that can be selected in the **Report** tab, but automatically run the report for the currently selected tile and time frame. For details on the report, see “Report Tab” on page 65.

Detail Pane

The Detail pane changes depending on what is currently selected. When viewing the top level of the tiles (at the building or campus level), a list of the top current energy consuming rooms and panels is shown.

Once you select a tile for a group or room, the pane changes to show the following.

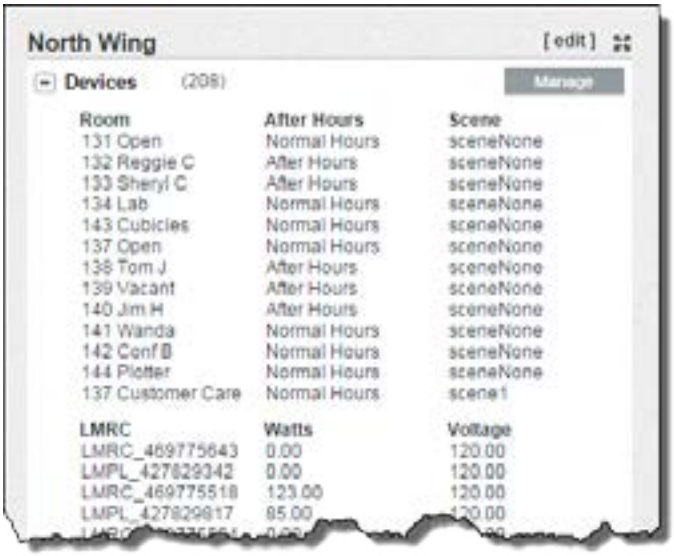


If you click **[rename]**, The name of the group/room/panel changes to a text box and you can change the name. After editing the name, click **[save]** to exit out of the edit mode.

When you click the appropriate “+”, the pane expands to show details on Devices, Schedules, and Groups associated with the currently selected tile.

Expand **Devices** to show a list of all the rooms in the group with their current schedule status (After Hours or Normal Hours) and currently selected scene. Following this is a list of every Room Controller, Load, Sensor, Switch and Button within the currently selected tile. If viewing a room, then the room section will contain only that room.

On the SegMan platform, a **Manage** button is displayed. This button functions identical to the **Manage** tab. See “Manage Tab” on page 55 for details. Note that since the **Manage** tab is not available on the Supervisor platform, this button is not visible on that platform.

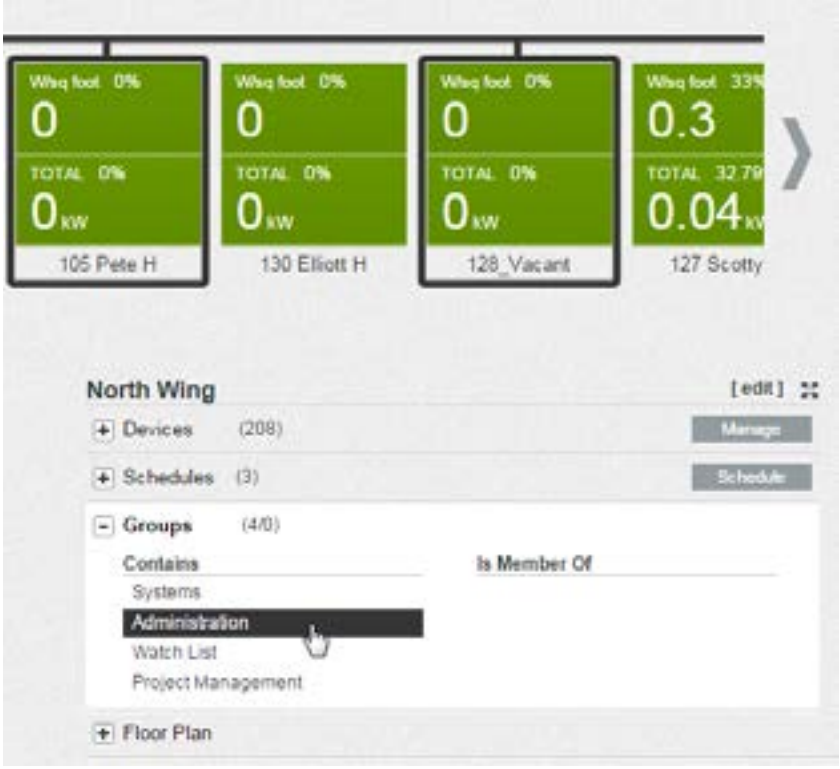


Expand **Schedules** to show schedules associated with the select tile. Click the Schedule button to go to the Schedule tab showing these schedules. (This is the same as clicking on the tab itself.

Expand **Groups** to show groups associated with the selected tile. If the selected tile is a Room that has been assigned to one or more Custom Groups, those group names will appear in the “Is Member Of” list. If the selected tile is a Location group, then if there are any Custom Groups associated with rooms included in the Location Group, those Custom Groups will appear in the “Contains” list, as shown below.

NOTE: If the currently selected tile is a Custom Group, the **Groups** section will not appear, since a Custom Group cannot contain or be a part of another Custom Group.

If you hover the mouse over a group in the list, room and panel tiles included in that group are highlighted in black, as shown in the following screenshot:



Expand **Floor Plan** to assign floor plan diagrams to a specific Location Group or Room or view previous assignments. If viewing an individual room, there will only be a singlerow foer that room, but if viewing a LocationGroup, you will see a row for the group plus rows for all rooms within that group. Click the drop-down next to the group or a room to assign a file. The drop down will show all files uploaded to the Segment Manager (see "Floor Plan Upload" on page 17).

To clear a previously assigned file without assignng another one, click the **Clear** button on the row for that room or group.

Managing Groups with the Selection List

If you hover the mouse over a tile, a pop-up dialog appears. Click **[select]** to change the Detail Pane to a Selection List, where you can assign the room to one or more groups.

You can add multiple rooms to the Selection List, by hovering the mouse over additional tiles and clicking **[select]**. The list will display the additional rooms. The rooms are sorted by location groups, as shown in the following screenshot.

NOTE: As long as the Selection List is displayed, you can navigate to any other tiles and any previously selected rooms and groups will remain in the Selection List. But if you click **[exit selection mode]**, all previously selected items are discarded and you will have to add them again if you want them in the list.

The selection list has three or four tabs, depending on what you are viewing. When you select a tab, the functionality of that tab will apply to all of the rooms or groups in the Selection List. In this manner, you can quickly perform a function, such as assigning a custom group to multiple rooms at once.:

- **Manage** – This tab switches to the **Manage** tab at the top of the screen for the current group or room/panel. See "Manage Tab" on page 55 for details. Note that this tab is not available on the Supervisor platform.
- **Add to Group** – Allows you to create a new custom group or assign a room or group of rooms to a custom group.
- **Move** – Allows you to move a room from one location group to another. Note that since custom groups are not assigned to a specific location (and in fact may contain rooms in more than one location), this tab does not appear for a custom group.
- **Run Report** – This tab switches to the **Report** tab at the top of the screen for the current group or room/panel. See "Report Tab" on page 65 for details.
- **Delete Location** –

Adding a Room or Group of Rooms to a Custom Group

Click **Add To Group** to add the room to an existing custom group or create a new custom group.

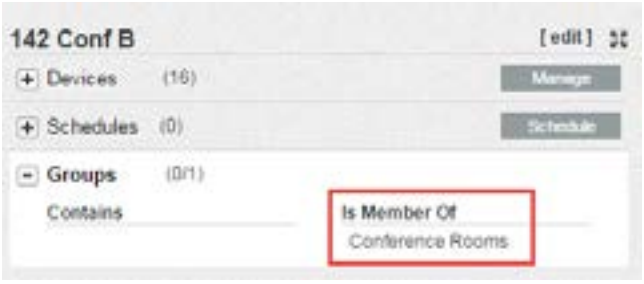
If the list contains only rooms, those rooms will be associated with the group you select. If a group is in the selection list, then the **rooms associated with that group will be associated with the new group**. So for example, if you have an existing group named Conference Rooms that has multiple conference rooms in it, and you want those rooms to also be part of an Administration group, you can select the Conference Rooms group to add it to the Selection List, then click **Add To Group** and add it to the Administration group.

NOTE: Custom Groups are not "nested". In other words, one group cannot be part of another group. But individual rooms can belong to more than one group. So the technique described in the example above provides a quick way to add previously grouped rooms to a new group.

Once you enter a new group name or select one from the drop-down, click **Save**. The application exits the Selection List and returns to the **Monitor** tab with the Detail Pane in regular mode. If you expand **Groups**, you will see the room is now part of the group.

NOTE: You return to the **Monitor** tab for the previously selected tab (the room or group named in the upper left hand corner of the screen). So if you have a location group selected and then highlight one of the room tiles to add to the selection list, you return

to the location group after adding the room to a custom group. But if you have a room selected and then add that room to the Selection List, you return to the tile for that room, as shown in the screenshot below.



NOTE: If you click **Save and View** instead of **Save**, when adding the room to the group, the application returns to the group tile for the group you just chose. So, in the example above, if you clicked **Save and View,** you would return to the **Monitor** tab with the Conference Rooms tile selected instead of the 142 Conf B tile selected.

Moving a Room or Panel from One Location Group to Another

The **Move** tab provides the ability to move a room from one location group to another. You must be in Location View to see this tab.

Navigate to the Location Group that contains the room(s) you want to move. Hover over the tile for that room and add it to the Selection List. Add additional rooms to the list if needed. Then, navigate to the Location Group you want to move the rooms to. Click **Move**. A dialog asks you to confirm you are moving the selected rooms to the new location.

As mentioned previously , locations are normally created in LMCS-100 software and then imported into the Segment Manager. But if you need to create a new location, you can create it on the Segment Manager if desired. Once at least one room is in the Selection List, then if the display is set to Location View, a blank gray tile will be visible, as shown below.

Click that tile to open a dialog where you can create a new location.

Assigning a Location to a Newly Created Room or Panel

If you add a new network bridge or panel to the building after importing a file from LMCS-100, and then run the discovery process, the Segment Manager will recognize that the new room or panel has no location. In this case a tile labeled “Unknown Location” will appear at the top level in Location View. Click that tile to view the newly discovered room or panel. Add it to the Selection List, then proceed with the steps described above to move it to the desired location.

MANAGE TAB

The **Manage** tab provides the ability to modify a limited set of parameters for individual devices in a room or for a panel and any devices connected to it. This tab is only available on the SegMan Platform, and not on the Supervisor. The bottom section of the screen displays a small pane with three tabs:

- **Info** –
- **Global Parameters** – This tab contains fields that apply to globally to the devices in the room or panel, such as Normal Hours/After Hours (for sensors), or Scenes (for switches).
- **Shared Parameters** – This tab contains separate fields for each device of a specific type. For example, if you are viewing sensors, you can set the time delay separately for each sensor in that room.

NOTE: The parameters on these two tabs are also found on the screens for individual devices in the **Devices** tab, in Configuration mode. However due to space considerations, they may be labeled differently. So any changes made here will be seen if you view the parameters on the **Devices** tab.

The pane refreshes automatically every few minutes to, show the current values for the parameters.

At the top of the pane is the **Devices** drop-down. It allows you to select rooms or a specific type of device. Available values include:

- **Rooms**
- **LMRCs** (includes both room and room plug load controllers)
- **Loads** (applies to room and room plug load controllers only)
- **Sensors**
- **Switches**
- **Buttons**
- **Panel Loads** (applies to panels only)
- **Light Sensors**

Global Parameters Tab

When you click a tile while in the **Manage** tab, It defaults to the displaying the Room and the **Global Parameters** tab.

If a group tile is selected, the number in parenthesis after “Rooms” is the number of rooms associated with the group. (If you have selected a room tile, the number will be 1.) If you select a different value from the **Devices** drop-down, the number will change to reflect the number of that type of device connected to the rooms (or loads in panels)

The list of parameters in the PARAM column will change depending on the value you select in the **Devices** drop-down. The STATE column displays one value for that parameter and then indicates the number of devices/rooms that currently are set to that value. For example, in the screenshot above, 1 out of 21 rooms is currently set to After Hours, while the other 20 are set to Normal Hours. The value displayed in the STATE column may changed. If all devices in the room or group are set to the same value, it will show that value. But if one or more are set to a different value, it will show that value. So for example, in the screen shot above, it displays “After Hours (1/21)”, but if that room is set to Normal Hours, the STATE will display “Normal Hours (21/21)”.

The SET column contains drop-downs for each parameter. If you want to set all the rooms or devices to a specific value, select that value (you can change multiple parameters at once), then click **Save**. A warning pops up, indicating you may be affecting a room that is currently occupied.

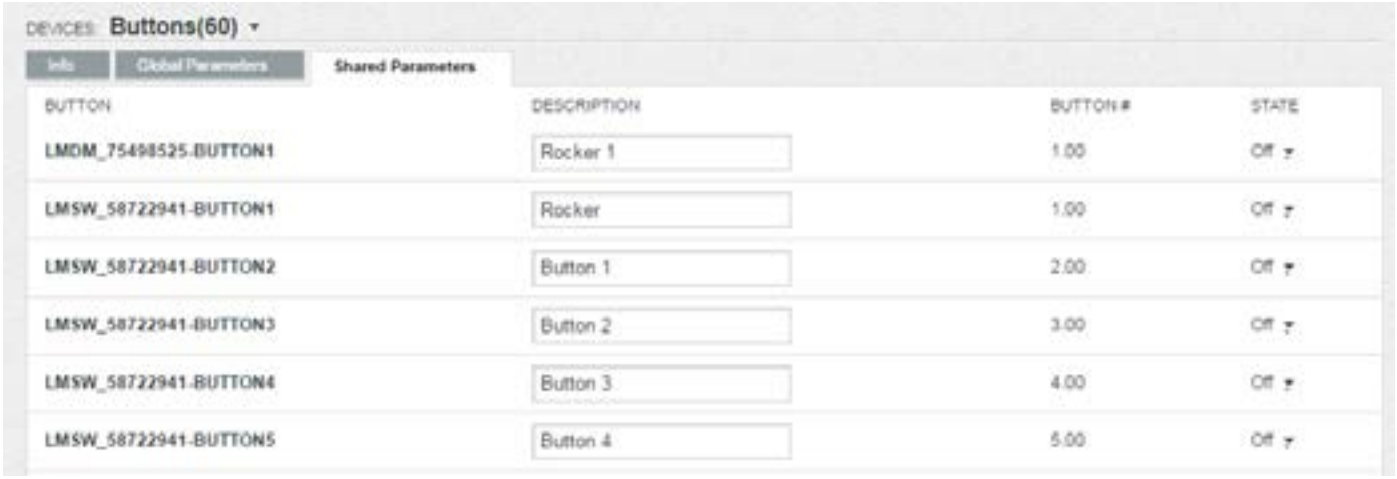
Click **Change Mode**. You return to the Manage tab.

NOTE: You may not see the new value immediately. But once the tab refreshes (within a few minutes) you will see the new value. Or, you can click the refresh button on the browser.

For a complete list of parameters on this tab, see “List of Global Parameters” on page 56.

Shared Parameters Tab

The **Shared Parameters** tab displays a list of editable parameters, with a separate row for each device of the selected type. The number of editable parameters varies depending on the type of device. Some displayed parameters are not editable.



Unlike on the **Global Parameters** tab, there is no Save button on the **Shared Parameters** tab. Therefore, new values are sent to the individual devices as soon as they are selected, or in the case of a text field, as soon as you tab or click out of the field.

List of Global Parameters

NOTE: There are no Global Parameters for LMRCs and Light Sensors.

Parameter	Selectable Values
Rooms	
After Hours	Sets all loads in the room/plug load controllers to After Hours or Normal Hours
Switch Lock	Determines whether the switch is currently in a locked or unlocked condition. If a switch is locked, then pressing any of the buttons on the switch has no effect. This will apply to all switches connected to the room controllers
Scene	Scene Undefined, Scene1–Scene16, Scene None

Parameter	Selectable Values
Loads	
Status	Sets the current level of all loads in each room/plug load controller. Available values: 0–100%
NH Trans	Sets a level for all loads when the schedule switches to Normal Hours. Available values: 0–100%, Last Non-Zero, Do Nothing, and Relinquish. The Last Non-Zero setting will return the load to the level it was at when it was last ON. The Relinquish setting will cause the load to go OFF unless another device in the room has it set to a non-zero level. The Do Nothing setting indicates that the load will not react to the transition.
AH Trans	Identical to Transition State NH, but the behavior occurs when the schedule switches to After Hours.
Sensor Mode NH	Determines how all loads responds when an associated occupancy sensor is activated during Normal Hours. Available values: Do Nothing, Manual On, On Only, and Auto On.
Sensor Mode AH	Identical to Sensor Mode NH, but occurs during After Hours.
Sensors	
Walkthrough NH	Walk-Through mode shortens the time delay to reduce the amount of time the load is ON after a brief moment of occupancy, such as returning to an office to pick up a forgotten item then immediately exiting. Applies during Normal Hours. Available values: Enabled, Disabled
Walkthrough AH	Identical to Walkthrough NH, but occurs during After Hours.
Switches	
Switch Lock Status	Determines whether the switch is currently in a locked or unlocked condition. If a switch is locked, then pressing any of the buttons on the switch has no effect.
Buttons	
State	Determines whether the button is On or Off.
Panel Loads	
Status	Determines whether all loads in the panel are On or Off
Area	Entering a value here will set each load in the panel to the same amount of square footage lit by that relay.
Baseline Power	Entering a value here will set each load in the panel to the same amount of wattage available from that relay.

List of Shared Parameters

NOTE: To save space, parameters that are duplicates of ones on the Global Parameters tab are not defined again.

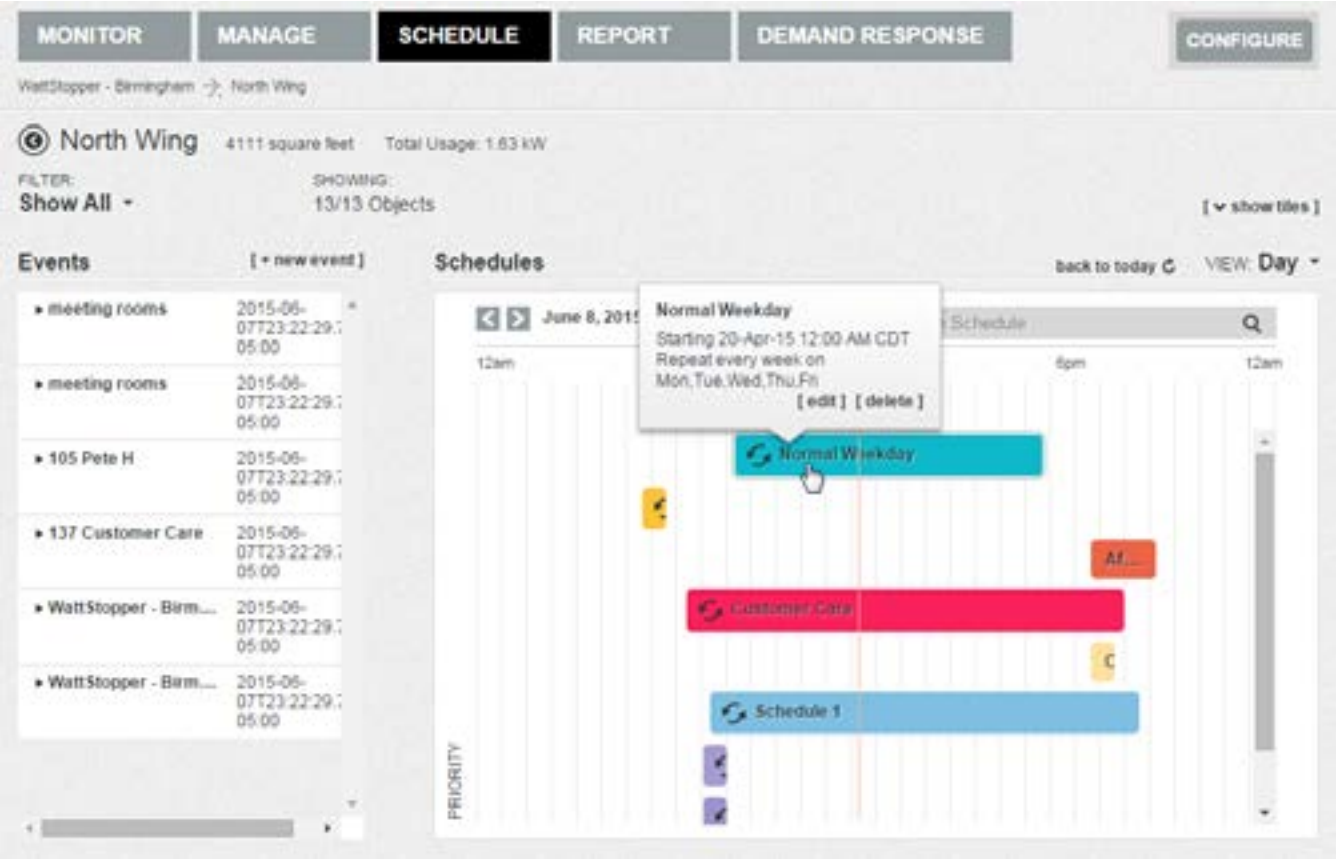
Parameter	Selectable Values
Rooms	
Description	The text entered here will appear as the label for the room tile. It also appears in the tree beside the icon in the **Devices** tab (in Configuration mode). By default, this is catalog number (model name). Keep in mind the default may have been changed in LMCS before importing the parameters. Maximum field length is 32 characters. All characters are allowed.
After Hours	See the Global Parameters table
Switch Lock	See the Global Parameters table
Scene	See the Global Parameters table
LMRCs	
LMRC	Displays the product (LMRC or LMPL) followed by the serial number.
Description	The text entered appears in the tree beside the icon in the **Devices** tab.
Watts	Watts is a calculated value based on the measured current in Amps and the user entered Voltage.
Current	Room controller models capable of measuring current will display the current in Amps.
Voltage	Displays the voltage entered manually in LMCS-100.
Loads	
Load	Displays the product (LMRC or LMPL) followed by the serial number, followed by the load number.
Description	The text entered appears in the tree beside the icon in the **Devices** tab.
Load Number	Indicates the specific load in the room/plug load controller
Status	See the Global Parameters table
NH Trans	See the Global Parameters table
AH Trans	See the Global Parameters table

Parameter	Selectable Values
Override NH	If a load is commanded to turn OFF when the schedule switches to Normal Hours, this is the amount of time the load will remain ON after manually being turned ON. When the amount of time expires, the load switches back to OFF.
Override AH	Identical to Override NH, but the behavior occurs when the schedule switches to After Hours.
Sensor Mode NH	See the Global Parameters table
Sensor Mode AH	See the Global Parameters table
Sensors	
Sensor	Displays the sensor type followed by the serial number.
Description	The text entered appears in the tree beside the icon in the **Devices** tab.
State	Indicates whether the sensor currently registers a state of Occupied or Unoccupied.
Time Delay NH	The amount of time the load remains On after no motion is detected, during Normal Hours.
Time Delay AH	Identical to Time Delay NH, but for After Hours.
PIR Sens NH	Sensitivity for the PIR detection during Normal Hours. Setting the sensitivity to zero (0) will disable PIR detection in the sensor.
PIR Sens AH	Identical to PIR Sensitivity NH, but for After Hours.
US NH	Sensitivity for the ultrasonic detection during Normal Hours. Setting the sensitivity to zero (0) will disable ultrasonic detection in the sensor.
US AH	Identical to Ultrasonic Sensitivity NH, but for After Hours.
Walkthrough NH	See the Global Parameters table.
Walkthrough AH	See the Global Parameters table.
Switches	
Switch	Displays the switch type followed by the serial number.
Description	The text entered appears in the tree beside the icon in the **Devices** tab.
Switch Lock Status	See the Global Parameters table
Buttons	
Button	Displays the switch type followed by the serial number, followed by the button number.
Description	The text entered appears in the tree beside the icon in the **Devices** tab.
Button #	Displays the button number.
State	See the Global Parameters table.
Panel Loads	
Description	The text entered appears in the tree beside the icon in the **Devices** tab.
Relay #	Displays the number of the relay in the panel.
Status	See the Global Parameters table.
Area	See the Global Parameters table.
Baseline Power	See the Global Parameters table.
Light Sensors	
Room	Displays “LMLS” followed by the serial number, followed by the button number.
Description	The text entered appears in the tree beside the icon in the **Devices** tab.

SCHEDULE TAB

Click the Schedules tab to open the Schedules page to view existing scheduled events and create new events. A scheduled event consists of one or more actions, that exist at a specific point in time.

The right side of the screen displays a chart of the schedules currently saved in the platform. Schedules will display if they are assigned to the currently selected group/room, for the currently selected date.



The drop-down on the right allows you to view schedules for the **Day**, **Week** or **Month**.

If you hover the mouse over a scheduled event, a pop-up dialog displays details about when the event occurs. There are also options to edit or delete the event. If you click, **[edit]**, the **Schedule an Event** dialog opens with the list of actions shown. See "Saving an Event" on page 64 for an example of the screen. If you click **[delete]**, the delete event dialog appears. See "Deleting an Event" on page 64 for details.

The left side of the tab displays **previously** scheduled events. If you click the name of the group or room in the list, that room or group will become the currently selected item and the schedule chart will change to show the schedules for that room or group.

Creating a New Schedule:

Click **[+ new event]** to open the **Schedule an Event** dialog. An event consists of one or more actions, that exist at a specific point in time. Since an event can consist of multiple actions, you can create a single event that will, for example, switch from after hours to normal hours, lock some switches so that their buttons do not respond when pressed, and change the levels of a specific set of loads.

Name – Enter a name to identify this schedule.

Color – The color you select here will be used to display the event on the main Schedule screen.

Description – Enter a description to help identify the purpose of this schedule (optional).

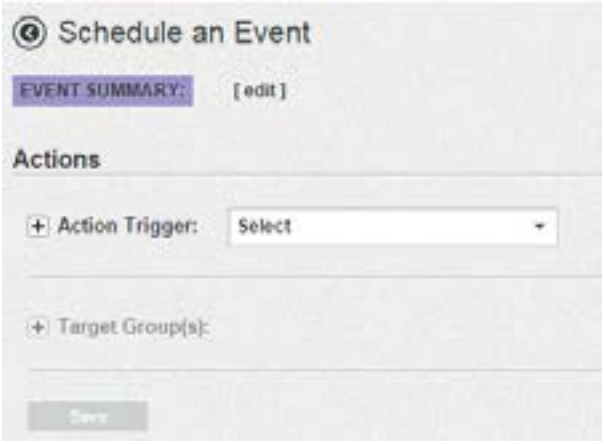
Take Effect – Determines when the event starts, either a single occurrence or the first in a series

Repeat Section – The fields in this section determine when the event will occur. You can set up recurring events daily, weekly, monthly, or yearly, or if you select “None”, it will only occur on the date specified above. For weekly, monthly, and yearly, you can set whether it occurs every week, month, or year, or at greater intervals (for example every 2 weeks or 3 months). If you select “Weekly”, then you can select the days of the week. If you select “Monthly”, you can choose either the same day of the month or same day of the week. These dates are based on the **Take Effect** date. So, if the start date is 6/3/15, “Same Day of Month” option would schedule the event for the 3rd of every month and the “Same Day of Week” option would schedule the event for the first Wednesday of the month (because 6/3/15 occurred on a Wednesday).

Exceptions Section – In this section you can set a range of dates or a single date in which the event will **not** occur. After selecting a date or start/end dates, click **add**. The date or date range is added to the **Selected** field. You can then add additional exceptions. If you add a date by mistake, hover over that date in the **Selected** list, and a red X will display. Click that X to remove the date from the list.

Last Occurrence – This parameter has three options. “Never” means, of course, that the even continues without stopping. If you select “After”, then the event will be removed from the schedule after a set number of occurrences. If you select ”By”, the event will be removed from the schedule on a specific date.

After entering scheduling details, click **Add Action**. The action selection dialog opens. There are three sections in this dialog: **Event Summary**, **Action Trigger** and **Target Group(s)**. The **Target Group(s)** section is initially hidden, but expands once you enter data in the required fields of the **Action Trigger** section.



The **Event Summary** section is initially hidden. It contains the exact same fields found on the initial **Schedule an Event** dialog. If you realize that you need to change a scheduling value, click **[edit]** and the screen expands to show the parameters. The colored box around “Event Summary” indicates the color that was chosen for the event.

Action Triggers

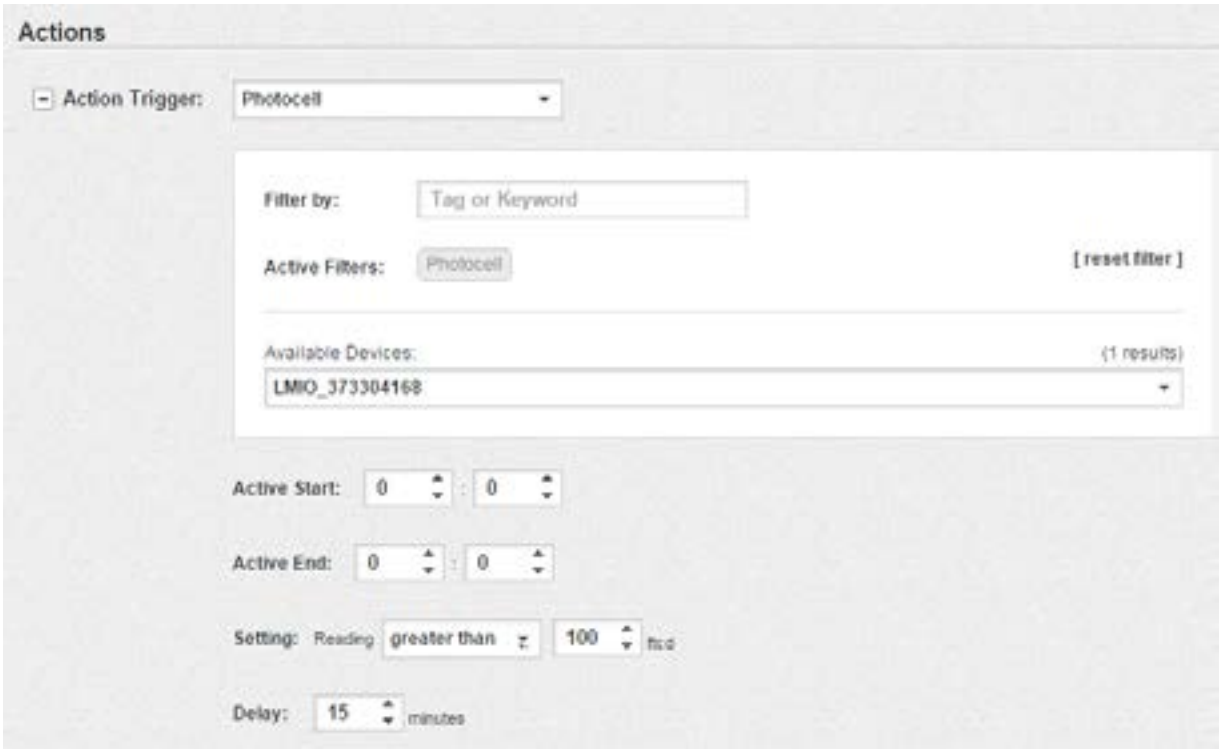
The **Action Trigger** section is used to specify what input will trigger an action. There are three types of inputs:

- **Photocell** – Can trigger an action when the photocell reads at, above, or below a set amount of foot candles.
- **Occupancy** – Can trigger an action based on occupancy or vacancy.
- **Time** – Can trigger an action based on sunrise, sunset, or a set time.

Once you select an option, this section expands to show related parameters.

Photocell

If you select **Photocell**, the screen expands as shown below. You must select the specific photocell from the **Available Devices** drop-down to enable the other parameters. If you have a long list of photocells to select from, you can search for a specific one using the name given to that specific device.



Active Start and **Active End** – Enter the time frame that this photocell can trigger an action. (Time is specified using a 24 hour clock).

Setting – Select an amount of foot candles and select whether it is that exact amount, (“-”), “greater than’ or “less than” that amount.

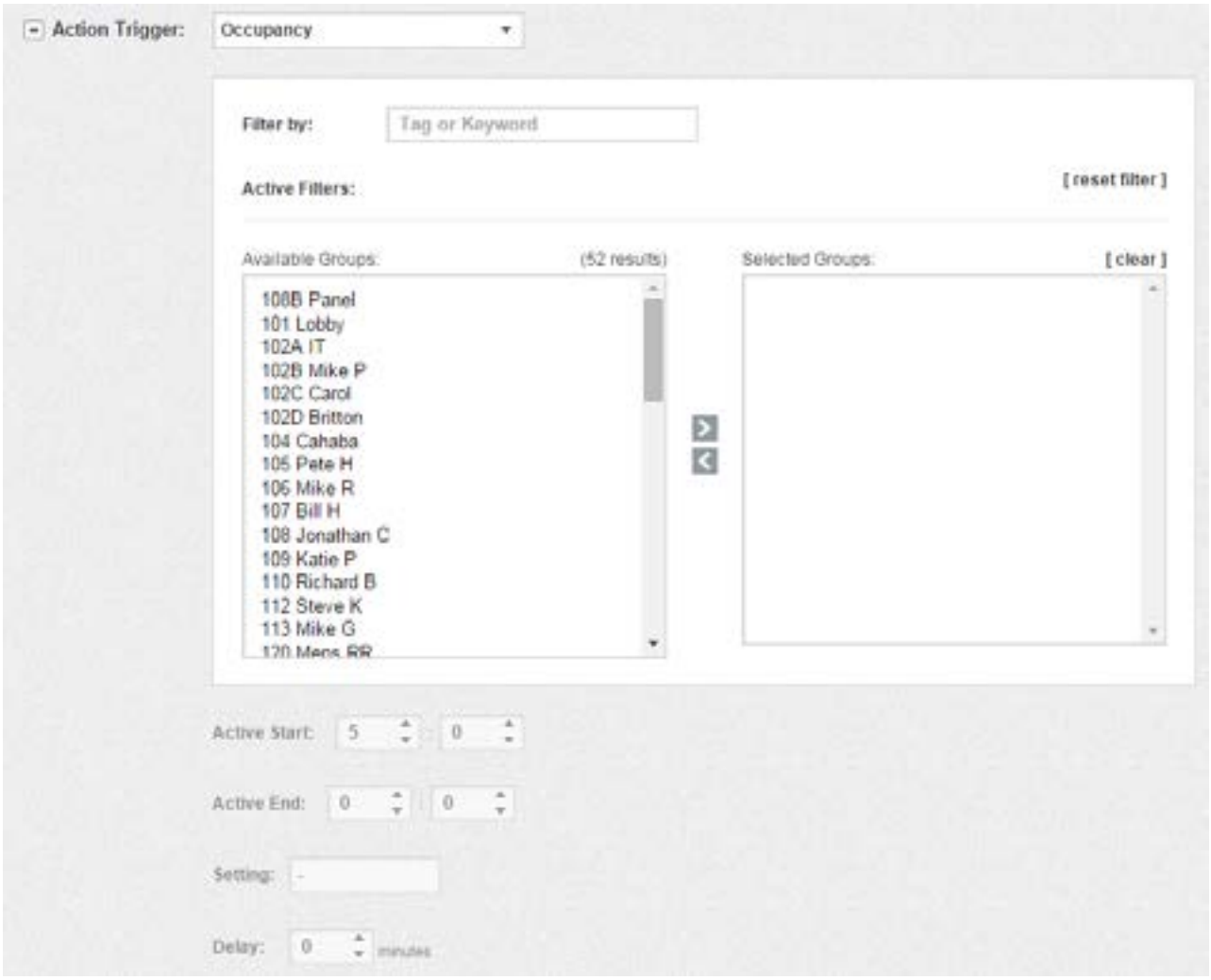
Delay – If the delay amount is 0, the action will trigger immediately when the photocell registers the specified foot candle amount. If there is a delay, the action will not be triggered unless the photocell registers that amount (or above or below it depending on what you specify) for the selected amount of minutes.

Occupancy

If you select **Occupancy**, the screen expands as shown below. Select one or more items from the “Available Groups” list and click **>** to move it to the “Selected Groups” list to enable the parameters below. This list contains all individual rooms and panels, plus all location groups and custom groups. The sensors in the rooms included in the Selected Groups section will be used to trigger an action, based on occupancy or vacancy.

NOTE: If multiple sensors are included in the Selected Groups list, then the following applies:

- If you select a value of “Occupied”, then if **any** sensor registers as occupied, the action will be triggered.
- If you select a value of “Unoccupied”, then **all** sensors must register as unoccupied in order for the action to be triggered.



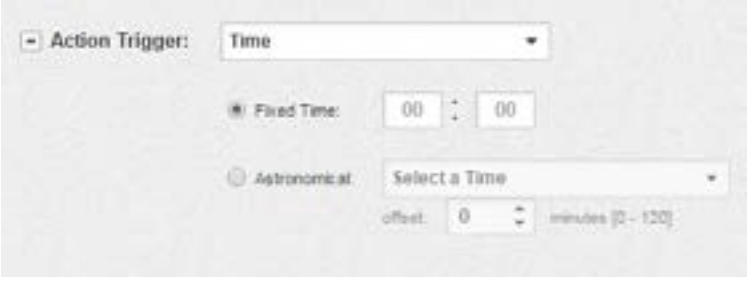
Active Start and **Active End** – Enter the time frame that this sensor can trigger an action. (Time is specified using a 24 hour clock).

Setting – Select whether the action will be triggered by the sensor registering a state of occupied or unoccupied.

Delay – If the delay amount is 0, the action will trigger immediately when the sensor triggers the specified value of **Setting**. If there is a delay, the action will not be triggered unless the sensor remains in that state for the selected amount of minutes.

Time

If you select **Time**, the screen expands as shown below.



Fixed – If you select Fixed, the action will trigger at the specific time you enter. (Time is specified using a 24 hour clock).

Astronomical – If you select Astronomical, the event will be triggered based on Sunrise or Sunset. The exact time is calculated, based on the latitude and longitude values entered on the **Sunrise/Sunset Settings** screen in the **Config** tab, in Configuration mode. See "Sunrise/Sunset Settings" on page 9. Available values: "Before Sunrise", "After Sunrise", "Before Sunset", "After Sunset".

These values work in conjunction with the **Offset** parameter. So for example, if you enter a value of 10 and select "Before Sunrise", the action will trigger 10 minutes before sunrise. (With a value of 0, the action will trigger exactly at sunrise, so there will be no difference in selecting "Before Sunrise" or "After Sunrise".)

Target Groups

This section has two parts. First you select the room, panels, or groups that the action will be applied to. This select window functions identically to the one described for the Occupancy action trigger. The second part is the **Response Action,** which is the functionality that occurs once action is triggered. There are four possible actions. Selecting an action change the values available in the second drop-down. For "Operating Mode", "Switch Lock", and "Scene", a command is sent to the rooms or panels within the Selected Groups list. For "Level", a command is sent to **all** loads in all room/plug load controllers and panels within the Selected Groups list.

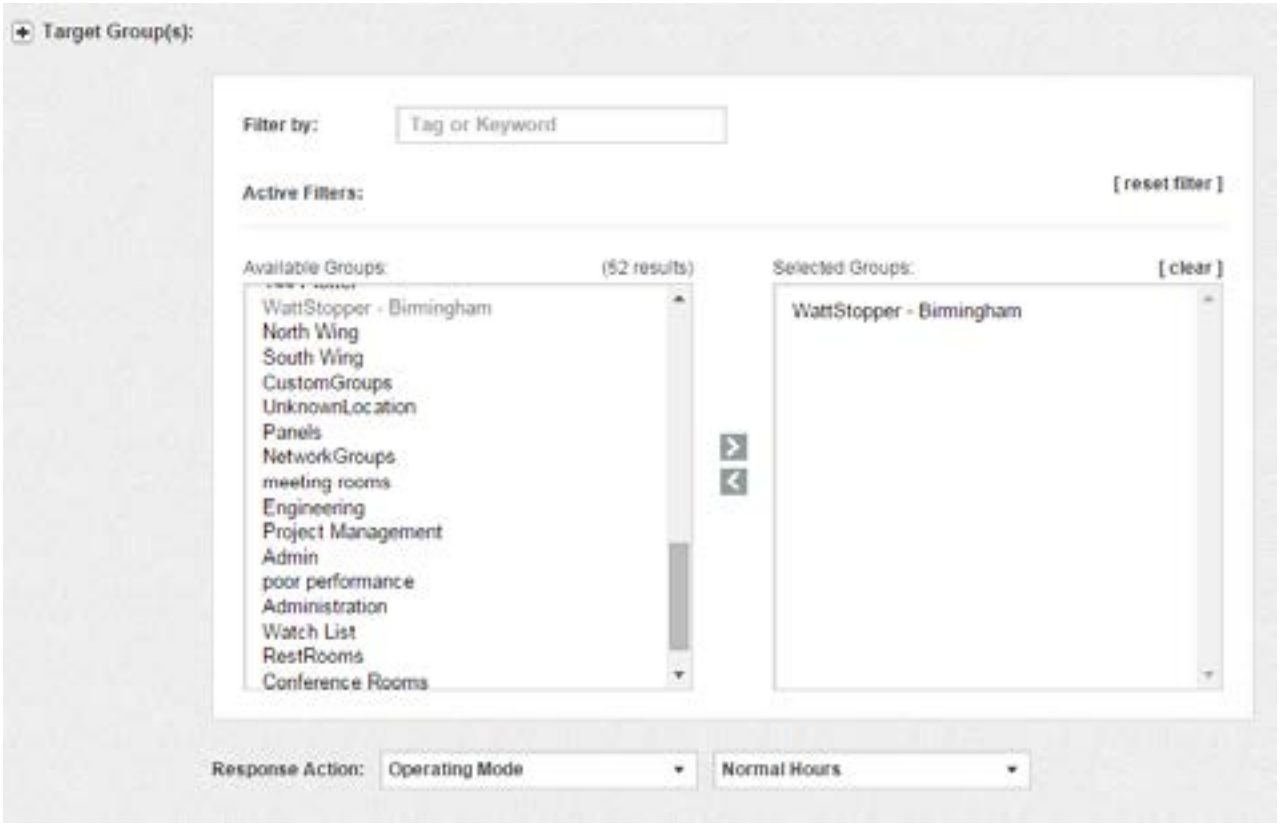
Operating Mode – With this action, you select a value of "Normal Hours" or "Operating Hours". The operating mode is used by the loads and occupancy sensors connected to the room(s) to control specific behaviors. See the parameter screens for loads and sensors in the **Config** tab for details.

Switch Lock – With this action, you select a value of "Switch Lock On" or "Switch Lock Off". If the **Keylock Mode Enable** parameter in LMCS-100 is enabled, then if the "Switch Lock On" value is sent, all switches connected to the room(s) will be locked so that pressing a button will have no effect.

NOTE: Keylock Mode Enable is available only in LMCS and can't be set in the Segment Manager.

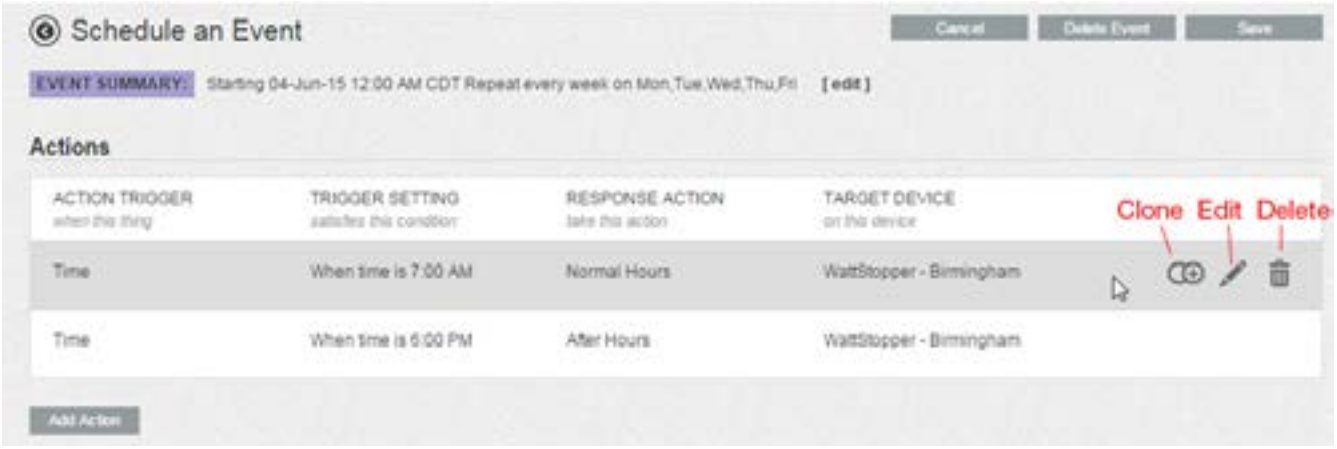
Scene – With this action, you select a specific scene number. All switches connected to the room(s) that have scene capability will switch to that scene.

Level – With this action, you select a specific level amount or "Last Non-Zero" or "Relinquish". The Last Non-Zero setting will return each load to the level it was at when it was last ON. The Relinquish setting will cause the load to go OFF unless another device in the room has it set to a non-zero level.



Saving an Event

Once you have selected all parameters, click **Save**. The display returns to the original **Schedule an Event** screen showing the event you created. The screenshot below shows an example with two events



At this point, you can add more actions for this event by clicking **Add Action**, return to the schedule graph by clicking **<** (to the left of “Schedule an Event”) or click a different tab.

Modifying an Event

As mentioned previously, if you click **[edit]**, the Event Summary section expands to show the parameters, for modification. Make any needed changes and click **Save**.

Additionally, If you hover the mouse over an action, that row is highlighted and three icons appear on the right side, as shown above.

If you click the **Clone** icon, a duplicate action is created and the action selection fields are displayed below the list of current actions. You can then make changes as needed to create a new action without having to start from scratch, as you would if you clicked **Add Action**.

If you click the **Edit** icon, a pop-up dialog appears with the action selection fields. Make any changes as needed, then click **Save** to return to the list of actions.

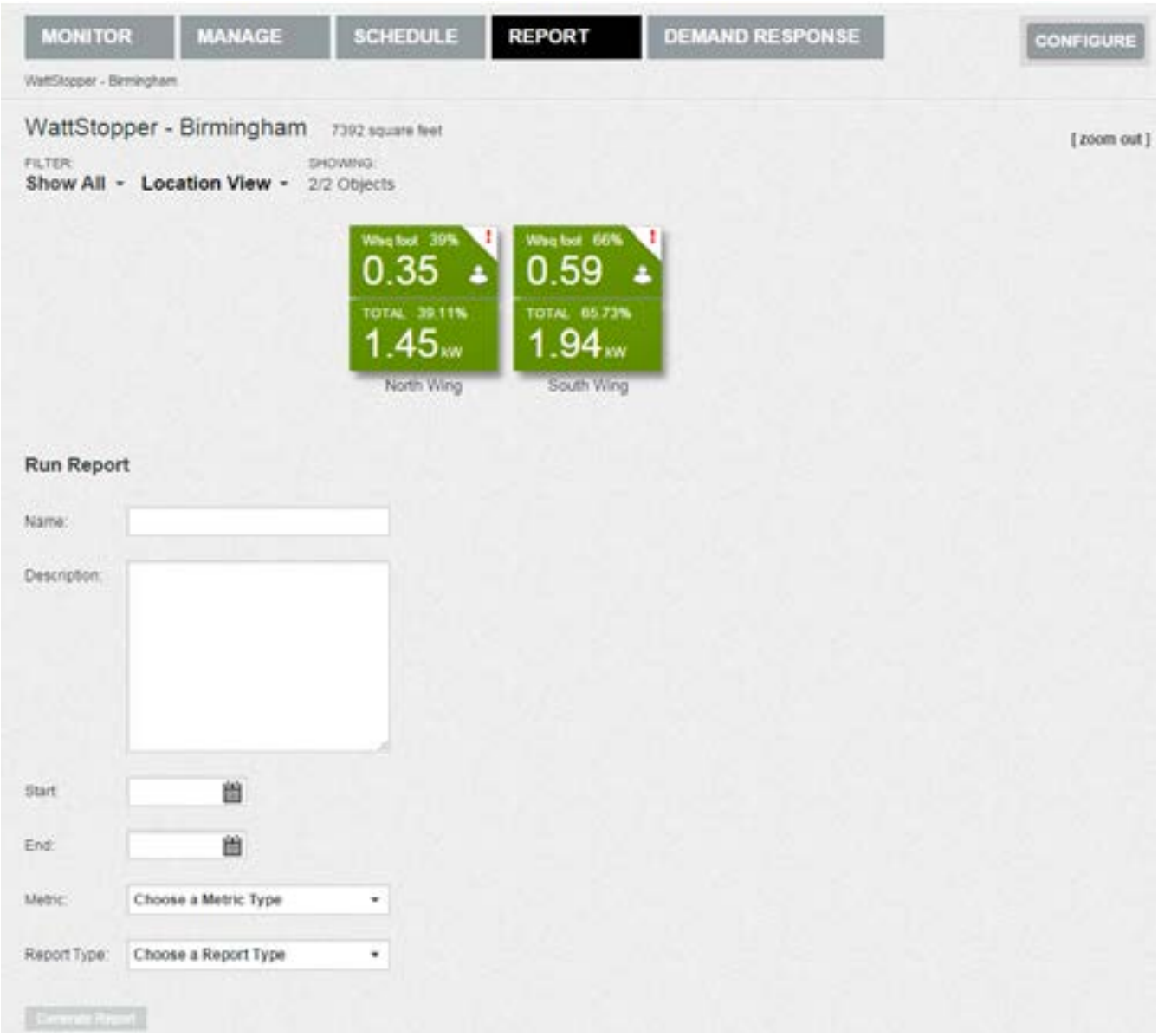
Deleting an Event

If you click **Delete Event** on the **Schedule an Event** screen or click **[delete]** when viewing the pop-up dialog on the schedule chart, the following screen appears. Click **Yes, Delete** to remove the event from the schedule.

REPORT TAB

On this tab, you generate a usage report for the currently selected room or group. Just as on the Monitor, and Manage tabs, you can navigate to a location Group, Custom Group, Room, or Panel while on this tab. The report will display data for the current selection.

The report can be displayed on the browser, or saved as a CSV file. The version that displays on the browser includes a graph, followed by a table with usage data shown at 15 minute intervals. The CSV file contains only the data from the rows and columns and not the usage graph.



Name – Text entered here will appear at the top of the report when you select the HTML option . (It is not included in the CSV file.)

Description – Text entered here will appear between the usage graph and the table data when you select the HTML option . (It is not included in the CSV file.)

Start and **End** – Select the start and end dates for the report. The start date will begin at the same hour as the current hour when the report is run. So for example, if you run the report at 8:10 or 8:47 AM, the report will begin at 8 AM. Date values cannot be set into the future.

Metric – Currently there is only one option available: Power Consumption

Report Type – Select either ”HTML” to display the report or “CSV” to save as a file.

Once you have entered values in the field, click **Generate Report**. If you chose “HTML, the report is displayed in a new tab on the browser. If you chose “CSV”, a file automatically downloads to your default downloads folder.

DEMAND RESPONSE TAB

If you click this tab, a pop-up dialog allows you to initiate or cancel a load shed command. The “Override” option initiates the load shed, but allows users to adjust the lighting levels. The “Force” option initiates the load shed and does not allow users to change the levels.

If you select **Force,** the screen returns to Dashboard mode, but now the Demand response tab is red, to provide a visual indication of the status. If you select **Override**, the tab turns orange.

APPENDIX A: REPORTS

This appendix includes examples of all reports located on the **Reports** tab in Configuration Mode.

For all of the reports, clicking on a column header will sort the report by that column. Clicking a second on the same column will switch from ascending to descending order.

Network Health

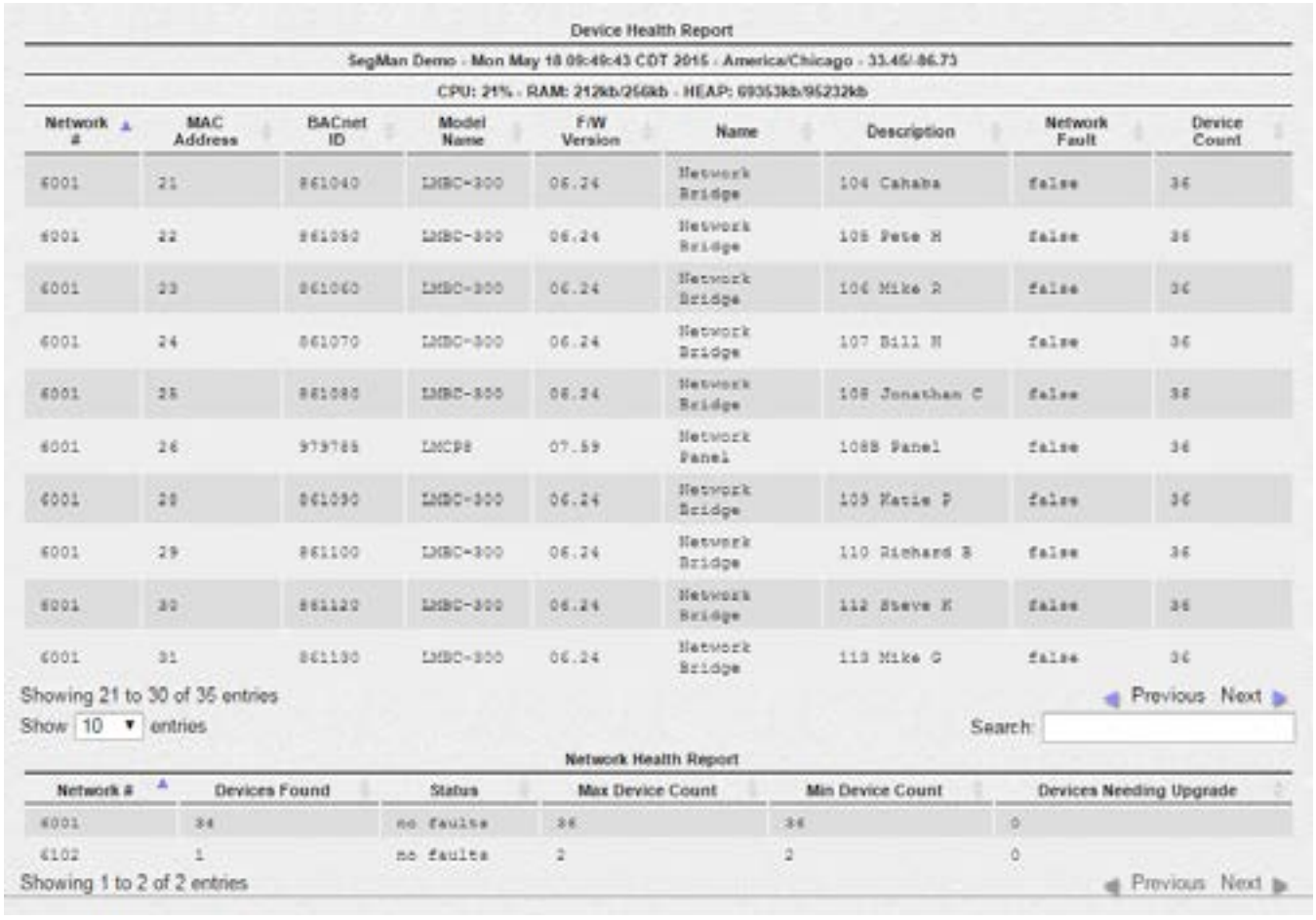
This report lists a summary of tests performed on the network such as network number, firmware version and network fault. It contains information on selected networks. For non-selected networks, see “Device Discovery” on page 14 for a second Network Health report.

The report has two sections. The first section lists each device in the network and displays information that the device sends about itself. The second part is the information that the router (or the Segment Manager if you are using its MS/TP ports) displays about what it finds on the network.

Each individual device will check the network to see how many devices it sees on the network. That number is reported in the **Devices Count** column. It should be identical for each device. If it is not, that indicates some type of problem.

In the bottom section, the **Devices Found** is the number of devices that the router or Segment Manager sees on that network. It does not count itself, so this number will always be **one less** than the number reported by the other devices. The **Min Device Count** and **Max Device Count** will normally be the same as the number reported by the other devices. But if there is a problem, they will show the lowest and highest numbers reported by the other devices. So for example, if there are 36 devices on the network, but one of the devices reports only seeing 35, then the **Min Device Count** would show as 35 and the **Max Device Count** would show as 36.

If any device on a network has a fault, the **Status** column will say “Fault detected”.



Device Health Report

SegMan Demo - Mon May 18 09:49:43 CDT 2015 - America/Chicago - 33.46/-86.75

CPU: 21% - RAM: 212kb/256kb - HEAP: 69353kb/95232kb

Network #	MAC Address	BACnet ID	Model Name	F/W Version	Name	Description	Network Fault	Device Count
6001	21	861040	LMBC-800	06.24	Network Bridge	104 Cahaba	false	36
6001	22	861050	LMBC-800	06.24	Network Bridge	105 Pete H	false	36
6001	23	861060	LMBC-800	06.24	Network Bridge	106 Mike R	false	36
6001	24	861070	LMBC-800	06.24	Network Bridge	107 Bill H	false	36
6001	25	861080	LMBC-800	06.24	Network Bridge	108 Jonathan C	false	36
6001	26	979785	LMCP8	07.59	Network Panel	108B Panel	false	36
6001	28	861090	LMBC-800	06.24	Network Bridge	109 Katie P	false	36
6001	29	861100	LMBC-800	06.24	Network Bridge	110 Richard B	false	36
6001	30	861120	LMBC-800	06.24	Network Bridge	112 Steve K	false	36
6001	31	861130	LMBC-800	06.24	Network Bridge	113 Mike G	false	36

Showing 21 to 30 of 36 entries Previous Next

Show 10 entries Search:

Network Health Report

Network #	Devices Found	Status	Max Device Count	Min Device Count	Devices Needing Upgrade
6001	34	no faults	36	36	0
6102	1	no faults	2	2	0

Showing 1 to 2 of 2 entries Previous Next

Audit Log

This report contains the entire contents of its audit log as well as any alarms or events.

Audit Report

SegMan Demo - Tue Jul 21 11:55:48 CDT 2015 - America/Chicago - 33.45° 86.73

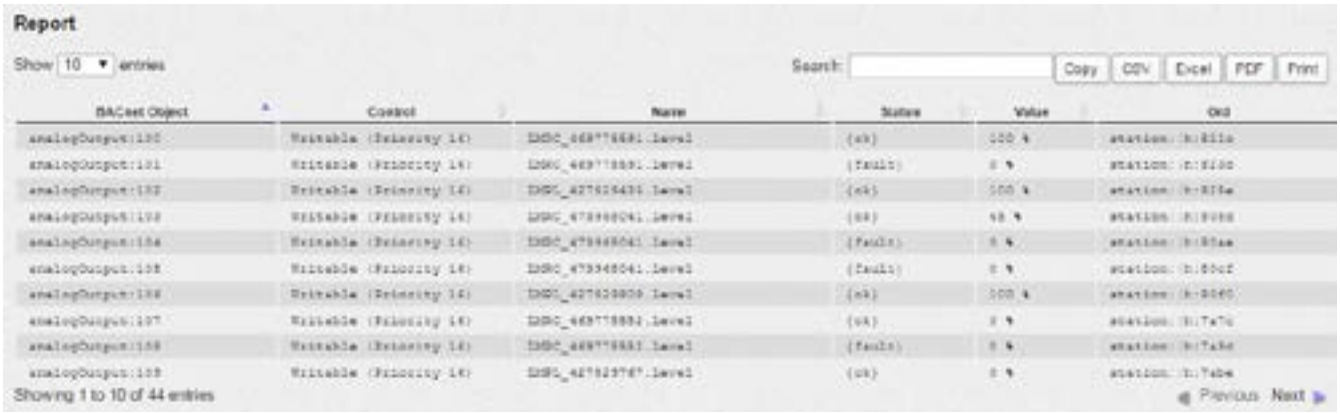
CPU: 21% - RAM: 211kb/256kb - WAP: 0f633bfb/9421Ab

Time	Operation	Target	Slot Name	Old Value	New Value	User
21-Jul-15 11:55 AM CDT	Invoked	/Services/JobService	summarize		Audit Report	Seglan
21-Jul-15 11:45 AM CDT	Changed	/Drivers/BacnetNetwork/Room_861130/points/evitchLock	fallback/value	Locked	Unlocked	Seglan
21-Jul-15 11:18 AM CDT	Changed	/Drivers/BacnetNetwork/Room_861130/points/roomSize	fallback/value	360 ft²	400 ft²	Seglan
21-Jul-15 11:17 AM CDT	Changed	/Drivers/BacnetNetwork/Room_861130/points/roomSize	fallback/value	14 ft²	360 ft²	Seglan
21-Jul-15 11:16 AM CDT	Changed	Station	Time Synch	21-Jul-15 11:15:59.784 AM CDT	21-Jul-15 11:16:00.000 AM CDT	6231:31
21-Jul-15 10:10 AM CDT	Changed	Station	Time Synch	21-Jul-15 10:10:59.771 AM CDT	21-Jul-15 10:10:00.000 AM CDT	6231:31
21-Jul-15 9:10 AM CDT	Changed	Station	Time Synch	21-Jul-15 9:09:59.730 AM CDT	21-Jul-15 9:10:00.000 AM CDT	6231:31
21-Jul-15 1:49 AM CDT	Changed	Station	Time Synch	21-Jul-15 1:48:59.694 AM CDT	21-Jul-15 1:49:00.000 AM CDT	6231:31
21-Jul-15 12:46 AM CDT	Changed	Station	Time Synch	21-Jul-15 12:46:59.674 AM CDT	21-Jul-15 12:46:00.000 AM CDT	6231:31

Showing 1 to 21 of 21 entries — First Previous 1 Next Last

BACnet Export Table

This report displays a list of points that were enabled for access by an eternal BACnet application. The points are enabled on the **BACnet Export** tab. This report is identical to the list displayed on that tab.



Report

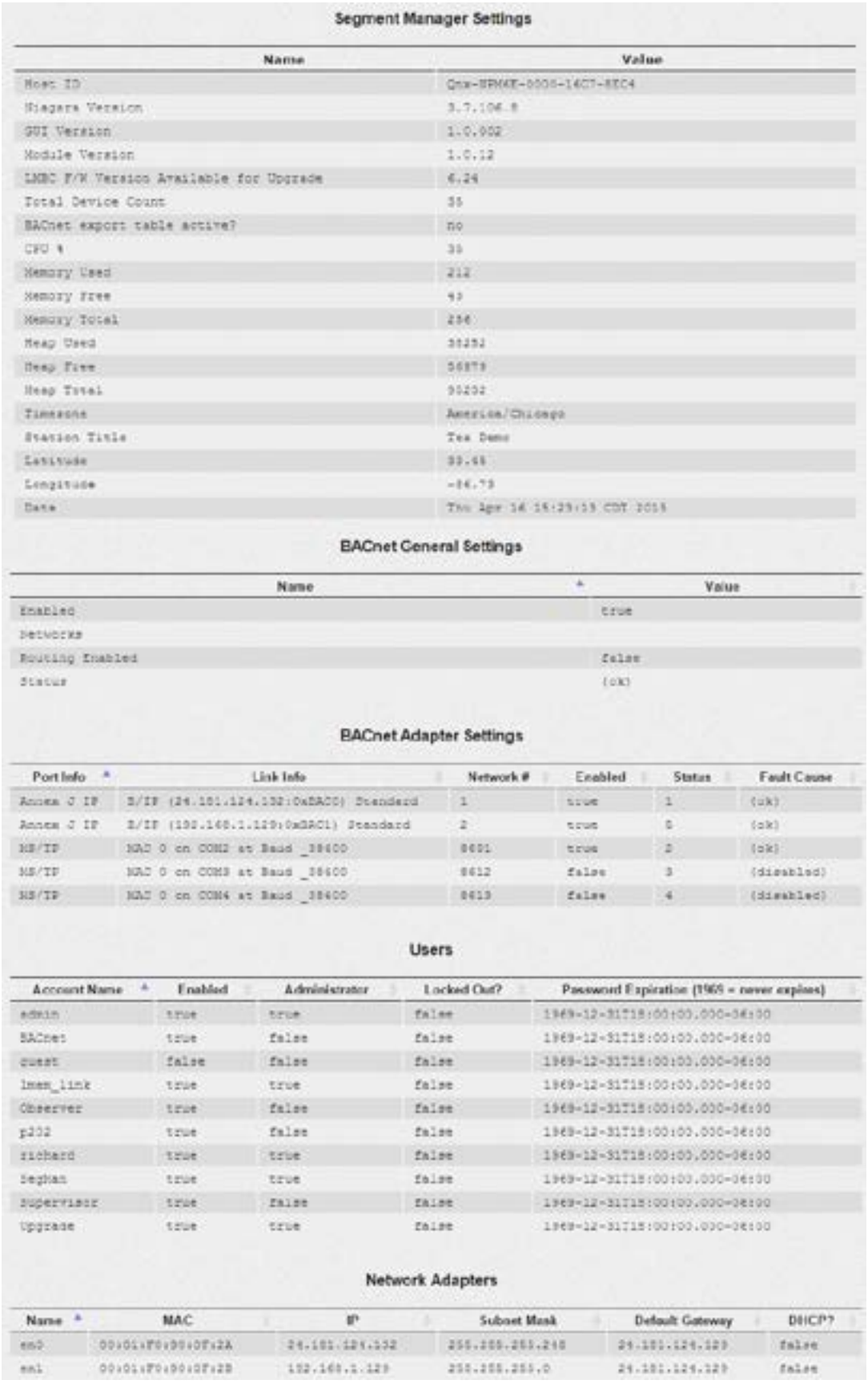
Show 10 entries — Search: — Copy CSV Excel PDF Print

BACnet Object	Control	Name	Status	Value	Old
analogOutput:130	Writable (Priority 16)	DSC_468775681.level	(ok)	100 %	station:h:811a
analogOutput:101	Writable (Priority 16)	DSC_468775591.level	(fault)	0 %	station:h:8130
analogOutput:102	Writable (Priority 16)	DSC_427635435.level	(ok)	100 %	station:h:815a
analogOutput:103	Writable (Priority 16)	DSC_473948041.level	(ok)	45 %	station:h:8068
analogOutput:104	Writable (Priority 16)	DSC_473948041.level	(fault)	0 %	station:h:85aa
analogOutput:105	Writable (Priority 16)	DSC_473948041.level	(fault)	0 %	station:h:85cf
analogOutput:106	Writable (Priority 16)	DSC_427635809.level	(ok)	100 %	station:h:8060
analogOutput:107	Writable (Priority 16)	DSC_468775551.level	(ok)	0 %	station:h:7e7c
analogOutput:108	Writable (Priority 16)	DSC_468775551.level	(fault)	0 %	station:h:7ab6
analogOutput:109	Writable (Priority 16)	DSC_427635767.level	(ok)	0 %	station:h:7abe

Showing 1 to 10 of 44 entries — Previous Next

SegMan Configuration Settings

This report provides a summary of the Segment Manager's own settings, including all network and field bus addressing information, all pertinent software and driver versions, total device count, currently available firmware version, user account names, and a yes/no indication of whether the export table contains any BACnet objects.



Segment Manager Settings

Name	Value
Host ID	Qnx-8PM4E-0000-14C7-8EC4
Niagara Version	3.7.106.8
GUI Version	1.0.002
Module Version	1.0.12
LMBC F/W Version Available for Upgrade	6.24
Total Device Count	35
BACnet export table active?	no
CPU %	39
Memory Used	212
Memory Free	43
Memory Total	256
Heap Used	30252
Heap Free	56879
Heap Total	91232
Timezone	America/Chicago
Station Title	Tea Demo
Latitude	33.65
Longitude	-84.73
Date	Thu Apr 16 15:29:13 CDT 2015

BACnet General Settings

Name	Value
Enabled	true
Networks	
Routing Enabled	false
Status	{ok}

BACnet Adapter Settings

Port Info	Link Info	Network #	Enabled	Status	Fault Cause
Annex J IP	B/IP (24.101.124.132:0xBAC0) Standard	1	true	1	{ok}
Annex J IP	B/IP (192.168.1.129:0xBAC1) Standard	2	true	0	{ok}
MS/TP	MAC 0 on COM2 at Baud _38400	8601	true	2	{ok}
MS/TP	MAC 0 on COM3 at Baud _38400	8612	false	3	{disabled}
MS/TP	MAC 0 on COM4 at Baud _38400	8613	false	4	{disabled}

Users

Account Name	Enabled	Administrator	Locked Out?	Password Expiration (1969 = never expires)
admin	true	true	false	1969-12-31T18:00:00.000-06:00
BACnet	true	false	false	1969-12-31T18:00:00.000-06:00
guest	false	false	false	1969-12-31T18:00:00.000-06:00
lmen_link	true	true	false	1969-12-31T18:00:00.000-06:00
Observer	true	false	false	1969-12-31T18:00:00.000-06:00
p232	true	false	false	1969-12-31T18:00:00.000-06:00
richard	true	true	false	1969-12-31T18:00:00.000-06:00
Seghan	true	true	false	1969-12-31T18:00:00.000-06:00
Supervisor	true	false	false	1969-12-31T18:00:00.000-06:00
Upgrade	true	true	false	1969-12-31T18:00:00.000-06:00

Network Adapters

Name	MAC	IP	Subnet Mask	Default Gateway	DHCP?
em0	00:01:F0:90:0F:2A	24.101.124.132	255.255.255.248	24.101.124.129	false
em1	00:01:F0:90:0F:2B	192.168.1.129	255.255.255.0	24.101.124.129	false

Detailed Room Report

This report contains the parameter settings for all devices in all networked rooms, listed on a per room basis.

Room_861010

Print | PDF | Copy | CSV | Excel

Room_861010 General

Param	Value
address	6001:23
plugloadWatts	0
roomOccupancy	false
deviceType	LMBC_300
switchLock	false
description	101 Lobby
lightingWatts	0
afterHours	false
name	Room_861010
area	210
serial	18885902
deviceName	Network Bridge

Room_861010 Controllers

Device	FW Version	Voltage	Load #	Status	SensorNH	SensorAH	TransNH	TransAH	TimerNH	TimerAH
LMRC_312	6.13	0	1	100	Auto On	Manual On	25	Relinquish	0	120
			2	100	Auto On	Manual On	25	Relinquish	0	120
LMPL_201	6.13	0	3	100	Auto On	Auto On	25	Relinquish	0	120

Room_861010 Occupancy Sensors

Device	FW Version	Sensor #	State	Time - NH	Time - AH	PIR % NH	PIR % AH	US % NH	US % AH	Walkthrough NH	Walkthrough AH
LMDC_100	5.04	1	Unoccupied	0	0	0	0	0	0	Disabled	Disabled

Room_861010 Switches

Device	FW Version	Description	Button #	State	Operation Mode	Momentary Mode	Network ID (if applicable)
LMSW_101	5.03	Button 1	1.0 (ok) 8 def	false	0	0	0

Room_861010 Daylight Sensors (Other)

Device	FW Version	Description	Sensor #
LMLS-500	2.24	LMLS_293612103	1

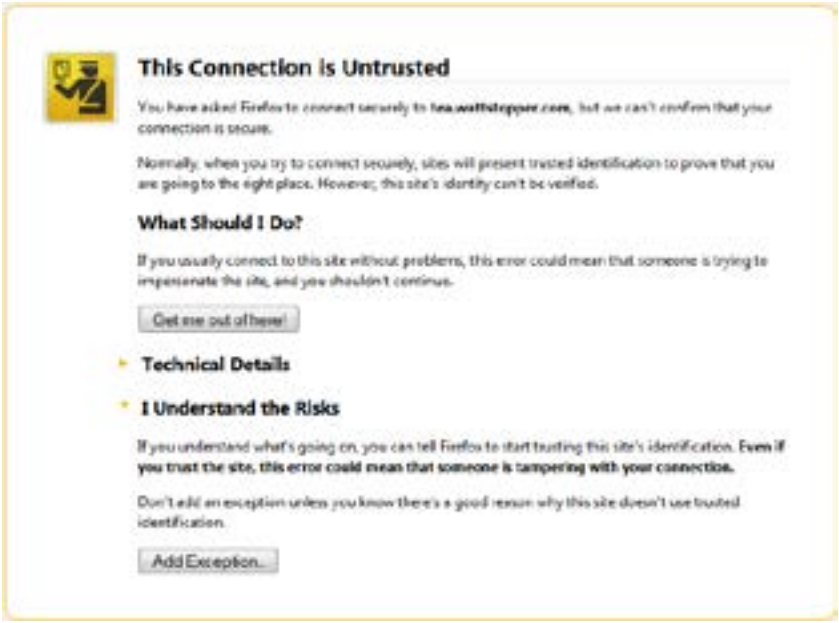
APPENDIX B: SECURITY ALERTS

The following security alerts appear prior to logging into Segment Manager

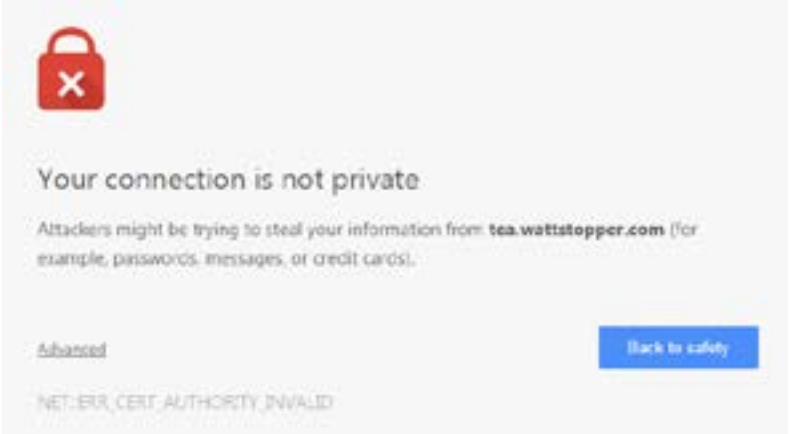
Firefox

Click **I Understand the Risks**

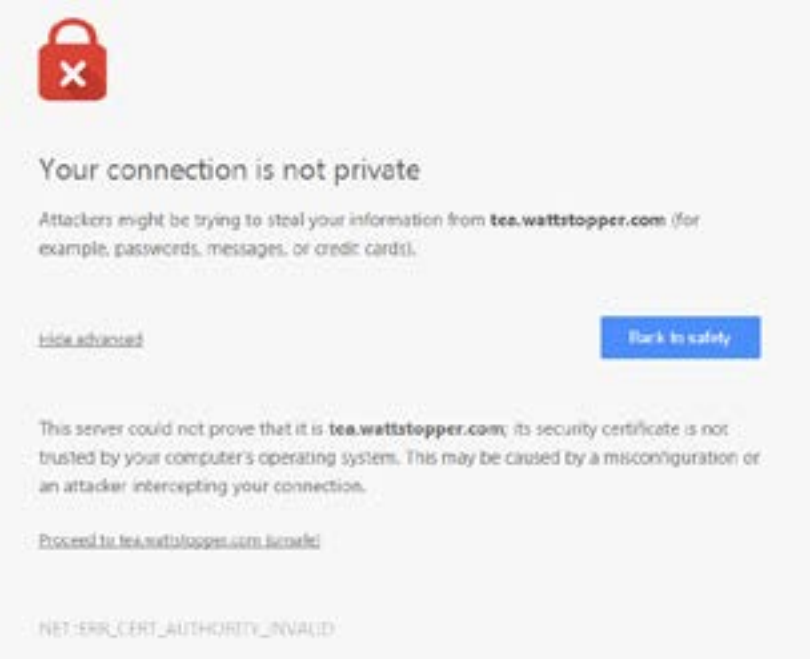
Click **Add Exception**



Chrome



Click **Advanced**



Click **Proceed to [name of ip address]**

Internet Explorer

Click **Continue to this website**.

APPENDIX C: UPGRADING THE SEGMENT MANAGER SOFTWARE

Follow the steps below to upgrade the software running within the Segment Manager (for the Segman Platform).

NOTE: This procedure is not used to upgrade the software on the Supervisor platform.

1. Download the most recent update. A link to the file will be provided by WattStopper technical support. Check with support to see if they have a URL. Save it to a PC that can access the Segment Manager.
2. On the browser, go to the URL for the login to the Segment Manager. Enter “Upgrade” for the user name and “w@ttstopper” for the password. The following screen appears:

3. If you are updating to an older version of the software, WattStopper recommends selecting the **Clear All Devices, Schedules, and Groups** checkbox.
4. Click **Choose File** and select the downloaded .zip file.
5. Click **Send File**. The file sent to the Segment Manager, which will automatically unzip the file and install it.

   NOTE: If the upgrade file is large and/or your network connection is slow, it may take a few minutes to upload the file and finish the post.
6. After the update is complete, the browser display a list of updated components. Click **Reboot**. It will take about four minutes for the Segment Manager to reboot.
7. Once the reboot is complete, the browser will inform you. Click **Logoff**. The browser returns to the login screen. Login to the Segment Manager using your normal User ID and password.Chrome

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