ROAM Enterprise Operation, Programming and Maintenance Manual

Project Name:
Project Location:
Acuity Agency:
Order #:
PO #:
Project ID:
Date:

Controls Tech Support:

1-800-535-2465 - option 1: nLight; option 2: SSI; option 3: Fresco; option 4: Synergy; option 5: LC&D/Bluebox; option 6 ROAM

To preschedule a call with tech support (providing a 4 hour business lead time) go to the following link:
http://www.acuitybrands.com/resources/schedule-support-request

Additional Technical Literature:

https://www.acuitybrands.com/products/controls/roam

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ROAM Concierge/Enterprise User Guide

Version 1.11

Revised: November 17, 2015

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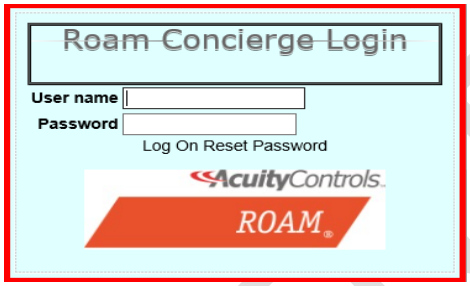
Getting Started

Minimum System Requirements

The portal can be accessed using Internet Explorer 10+, Google Chrome or Mozilla Firefox.

Logging-In

ROAM Concierge (ROAM Hosted version)
Open your internet browser and type in the ROAM URL – https://ww3.roamportal.net. The ROAM Concierge Login Screen will appear.



Type in your username and password, then click "Log-In". This will take you to the main page.

ROAM Enterprise (Locally Hosted version)
Open your internet browser and type in the server IP address set up for use with the ROAM software in the URL bar, followed by /roamportal (ex: 127.167.30.1/roamportal or baselightsvr/roamportal). The ROAM Enterprise Login Screen will appear.

Type in your username and password, then click "Log-In". This will take you to the main page.

Note: Passwords require a minimum of 8 characters, using at least one capital and one lower case letter, one number and one symbol.

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Terms & Definitions

Node - A node is a ROAM photocontrol, which collects data from the lighting asset and sends the data wirelessly to the Gateway.

120-277V Node

480V Node

Integral Dimming Node

Decorative Node

Dimming Control Module (DCM) - A DCM is a ROAM dimming control module that is preinstalled inside a dimming LED fixture. The DCM controls the dim level of a fixture by adjusting the input to the dimmable driver of the fixture. The DCM is paired with the node installed on the same fixture during that activation process to allow dimming to occur through schedules, events and commands.

MacID - The 8 digit hexadecimal MacID is ROAM's unique identifier assigned to the internal radio of all nodes and DCMs. The values of the barcode MacID will only consist of hexadecimal values, 0-9 or A-F. Once activated, this MacID is associated with the light on which it is mounted. All attributes and location captured at installation create a one-to-one association between the light and the ROAM node, which is why it is important to follow ROAM node replacement processes.

Gateway - The gateway is the backhaul device that collects all the data from the nodes and transmits the information back to the Network Operation Center, or NOC. The Gateway will also have a MacID located on the front panel, although it consist of only 6 digits.

Server – The physical computers dedicated to run the ROAM Enterprise portal software, run the data software services and store the data files necessary to maintain the Enterprise program.

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Diagnostic Definitions

Normal

- Fixture/lamp is functioning normally.

Partial Report

- Insufficient data (less than 20 hourly data reports) was received from the field to accurately diagnose the condition. Lack of data can be due to loss of power, intermittent power, low voltage, distance to mesh exceeding 1000' limitation, obstruction of view to another node, failure of the ROAM node or RF interference.

Warnings

- Fixture/lamp is functioning (emitting light), however it is not performing optimally. Problems can include (but are not limited to) cycling, day-burning, miswired fixtures, low voltage, high voltage, high v-delta, low wattage, excessive wattage, high current or failed ROAM node. It is likely that a fixture in this condition would be observed burning at night and off during the day (unless it is a day-burning issue).

Fixture Malfunction

- Fixture/lamp is not operating normally. The fixture is operating below the fixture malfunction threshold (default value is set to the expected ballast only wattage – see wattage chart) for at least 2 reports during the on period. Problems can include (but are not limited to) the lamp, starter, ballast, capacitor, failure of the ROAM node or voltage issues. It is likely that a lamp in this condition would not be observed burning at night due to the extremely low wattage.

No Comm

- Contact with the ROAM node has been lost for 1 to 3 days, rendering the ROAM node incapable of diagnostics. Nodes that exceed the 3 day threshold will begin reporting as Extended No Comm. Problem can include (but is not limited to) loss of power to the ROAM node, a bad fixture, node lock-up, cellular/Ethernet backhaul disruption, failure of the ROAM node or RF interference.

Extended No Comm

- Contact with the ROAM node has been lost in excess of 3 days, rendering the ROAM node incapable of diagnostics. A fixture in this condition may or may not be observed burning at night. Problem can include (but is not limited to) loss of power to the ROAM node, a bad/mis-wired fixture/receptacle, node lock-up, cellular/Ethernet backhaul disruption, failure of the ROAM node or RF interference.

No Power

- There was no power at the time the ROAM node was installed and activated. Once the power is restored, the node will register and begin reporting properly.

Unregistered

- ROAM node was activated on a light with power, but has not registered on the system. Problem can be improper activation (ex: incorrect MacID entered), power, fixture or ROAM node.

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Menu Bar - Tab Overview

There are ten main tabs at the top of the portal screen. Some tabs feature sub-tabs with control and filter functions to direct the information displayed in the content window or map. Below is a description of the information found under each tab.

Dashboard – System-wide performance summary for any date or date range

Maps

- Assets are color-coded to display current diagnostic status and displayed in map view format
- Asset information and historical performance on lighting asset (both general and detail)
- Ability to create work orders, add user notes and send immediate commands to a lighting asset

History - Historical lighting asset performance and detail information

Reports - Status exception reporting based on date range

Charts – Graphical representation of system energy usage

Calendars/Events - Allows user to create and manage calendars and events to be applied against a group of assets

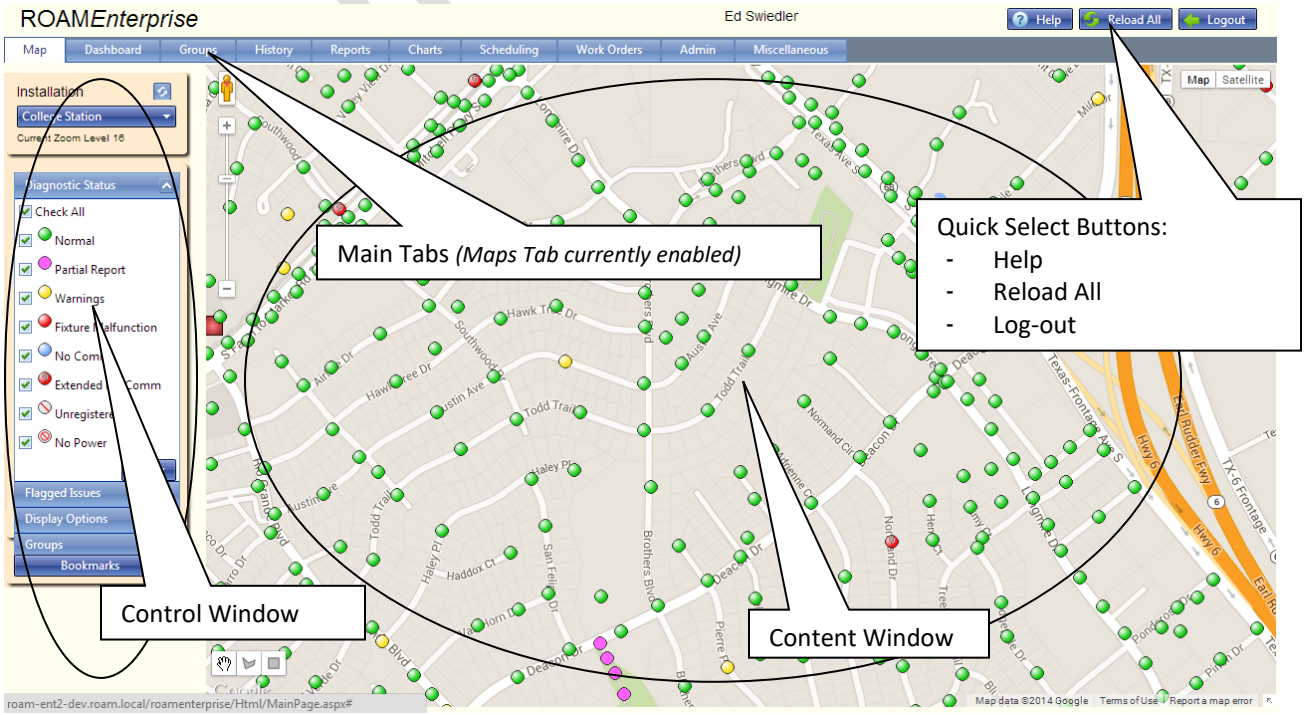
Groups - Allows user to group assets according to their business rules/preferences and work with the groups to view historical data and apply previously created schedules and events

Work Orders - Allows user to create, assign and track work orders for light assets in need of repairs

Admin - Allows user to manage users and system preferences

Miscellaneous - Allows user to change the theme of the portal and re-run diagnostics

Referenced below are some other common navigation terms to help familiarize users with the portal:



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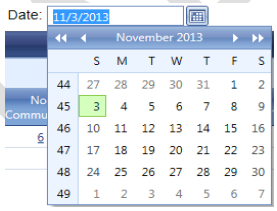
Dashboard Tab

Overview

The dashboard provides users with a summary of system performance for a single date or a range of dates for any given installation, according to the diagnostic conditions. If users have multiple installations, the current system performance can be shown for a single location or for all locations at one time. The dashboard view provides a breakdown of each device type utilized; nodes, dimming control modules, gateways and repeater nodes. If a user wants an overview of the entire asset base, then the Standard Tab should be chosen. The user can also look at only those assets that changed diagnostic conditions from the previous date by choosing the What Changed Tab.

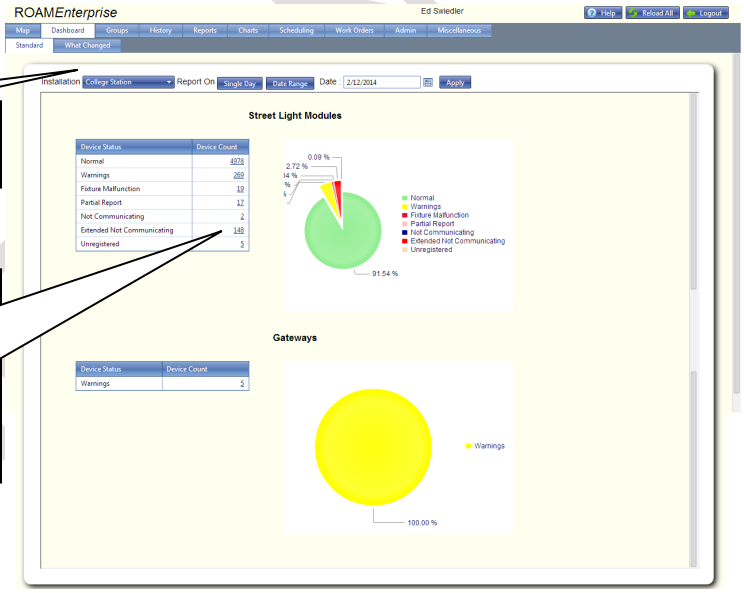
With any of the dashboard options, the user has the ability to view a Single Day or Date Range for the assets. The Single Date option defaults to yesterday's date (most recent/current status). The user may change the date by clicking on the calendar icon to choose the desired date or by simply entering in the desired date into field in mm/dd/yyyy format. The Date Range option defaults to the previous 30 days, but the user may change the dates requested, as mentioned above.



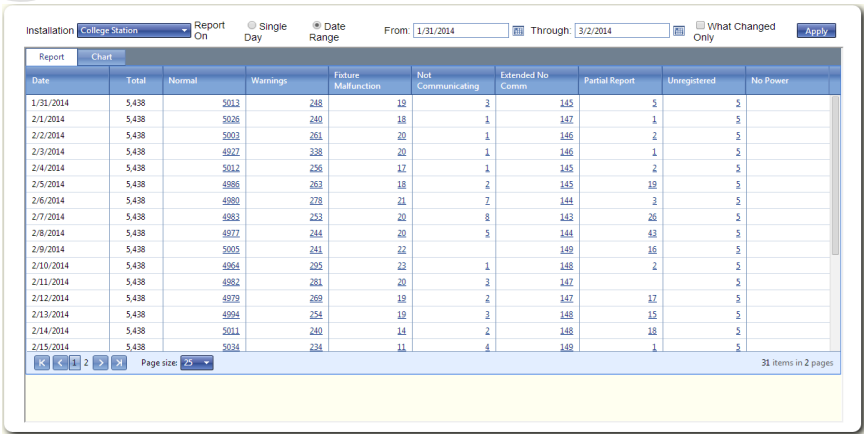
Single Day Dashboard

Choose a single installation or view all installations.

Left-clicking on the numbers in the columns will bring up a detailed list of light assets currently in that diagnostic condition *(See Dashboard Detail below)*



Date Range Dashboard



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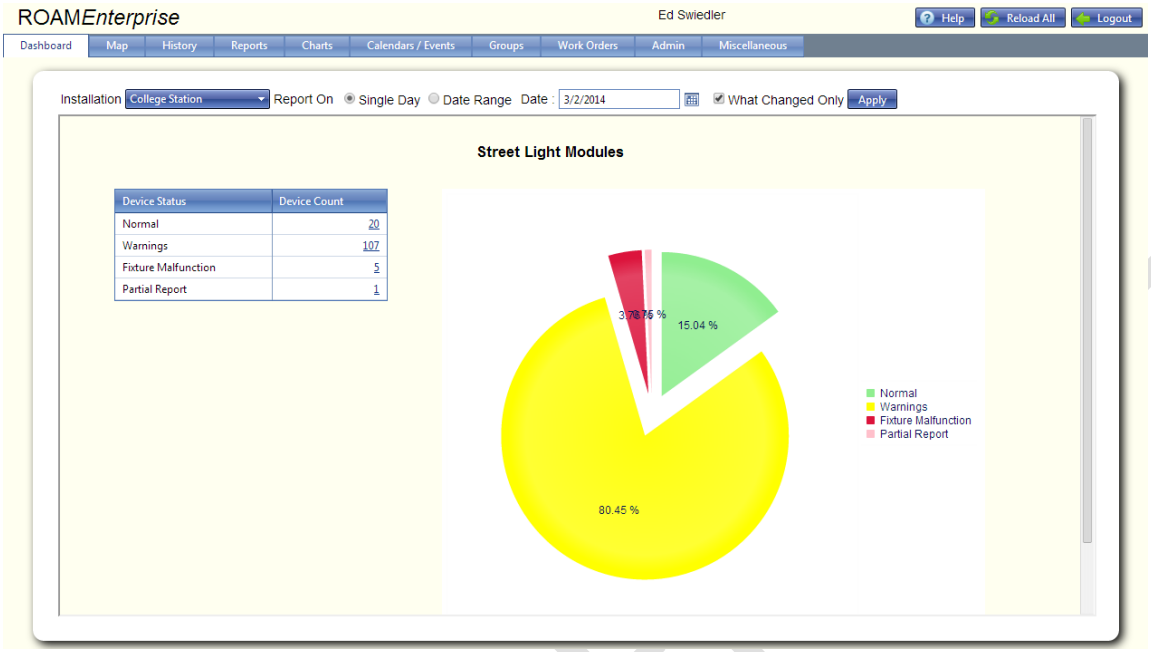
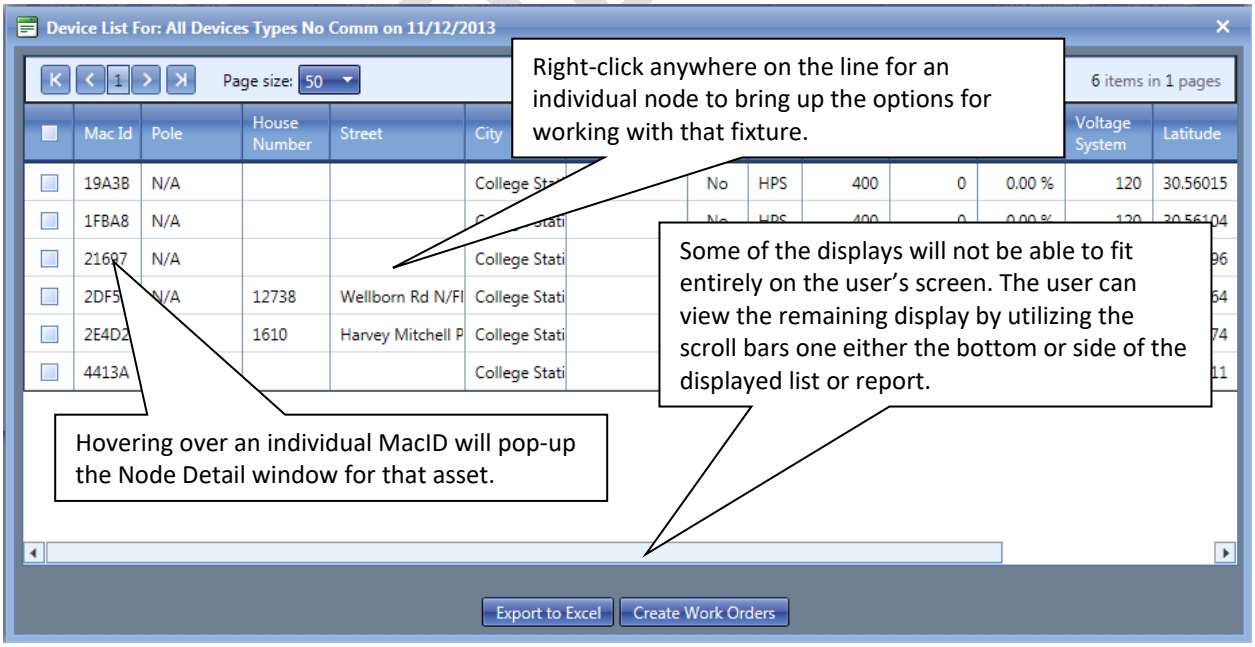
What Changed Only

The “What Changed Only” checkbox allows users to view the summary of only those assets that changed diagnostic status for the date(s) chosen.



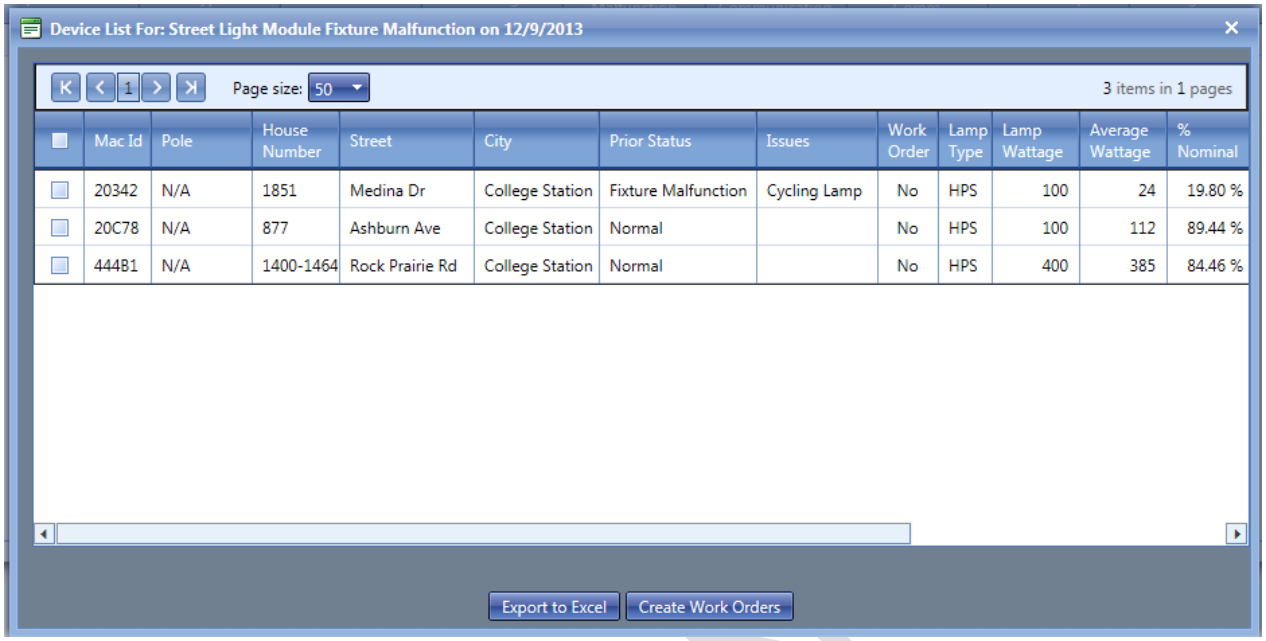
Dashboard Detail

After left-clicking on a number in the column on the dashboard, a list of light assets in that specific diagnostic condition will appear. Below is an example of the data available from Dashboard Detail:



Note: The user may resize the columns to better fit their display and data fields by left click and dragging in the header of a column once the double arrow displays.

When reviewing the What Changed Only dashboard detail, the report will show the previous status for any individual asset.



Mac Id	Pole	House Number	Street	City	Prior Status	Issues	Work Order	Lamp Type	Lamp Wattage	Average Wattage	% Nominal
20342	N/A	1851	Medina Dr	College Station	Fixture Malfunction	Cycling Lamp	No	HPS	100	24	19.80 %
20C78	N/A	877	Ashburn Ave	College Station	Normal		No	HPS	100	112	89.44 %
44481	N/A	1400-1464	Rock Prairie Rd	College Station	Normal		No	HPS	400	385	84.46 %

Active Links

Active links have been provided consistently in all lists and reports. These links include the following:

- Right-clicking on a specific device will display a list of options for that device.
- Left-clicking on Column Headings will sort the list using the data in that column. The sort will toggle between ascending and descending order with repeated clicks. Sorting can be done on two headings at a time with the second heading chosen being the secondary sort.
- Right-clicking on a specific WO (Work Order) field will display a list of options for the work order ticket for that asset.

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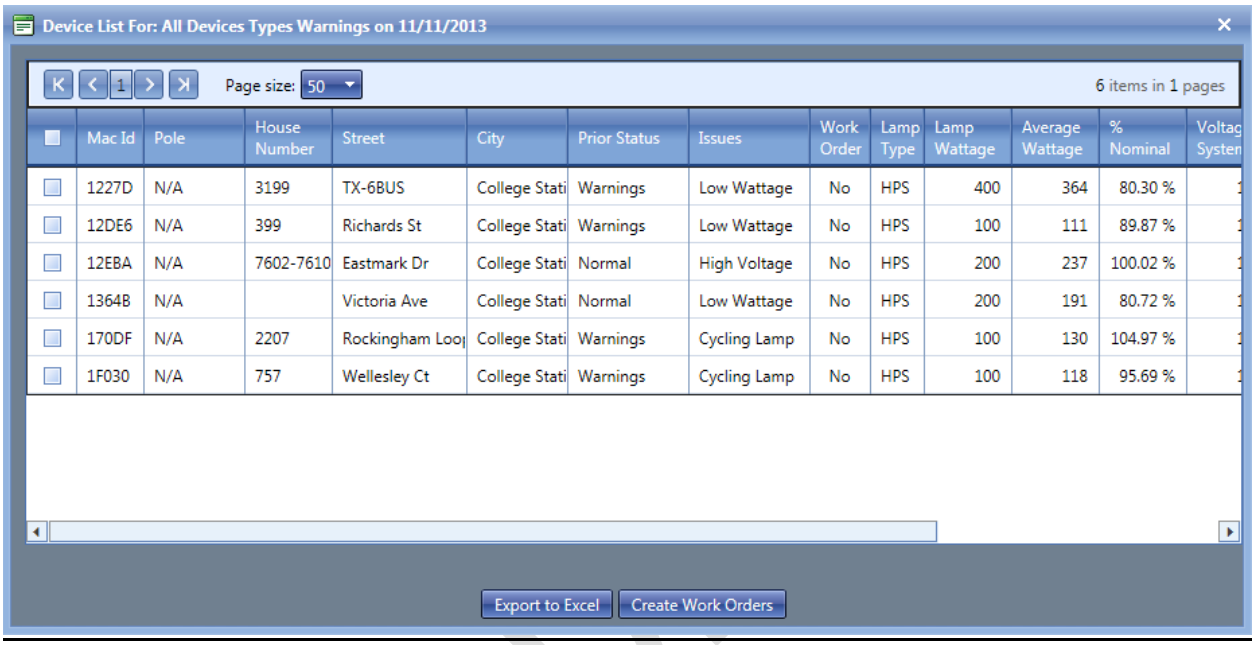
Exporting

Whenever the Export to Excel icon is shown on a list or report, the user may export the data within the list or report to Excel. The downloaded Excel spreadsheet will be contained in a .zip file.



Mac Id	Pole	House Number	Street	City	Prior Status	Issues	Work Order	Lamp Type	Lamp Wattage	Average Wattage	% Nominal	Voltag Systen
1227D	N/A	3199	TX-6BUS	College Stati	Warnings	Low Wattage	No	HPS	400	364	80.30 %	1
12DE6	N/A	399	Richards St	College Stati	Warnings	Low Wattage	No	HPS	100	111	89.87 %	1
12EBA	N/A	7602-7610	Eastmark Dr	College Stati	Normal	High Voltage	No	HPS	200	237	100.02 %	1
1364B	N/A		Victoria Ave	College Stati	Normal	Low Wattage	No	HPS	200	191	80.72 %	1
170DF	N/A	2207	Rockingham Loo	College Stati	Warnings	Cycling Lamp	No	HPS	100	130	104.97 %	1
1F030	N/A	757	Wellesley Ct	College Stati	Warnings	Cycling Lamp	No	HPS	100	118	95.69 %	1

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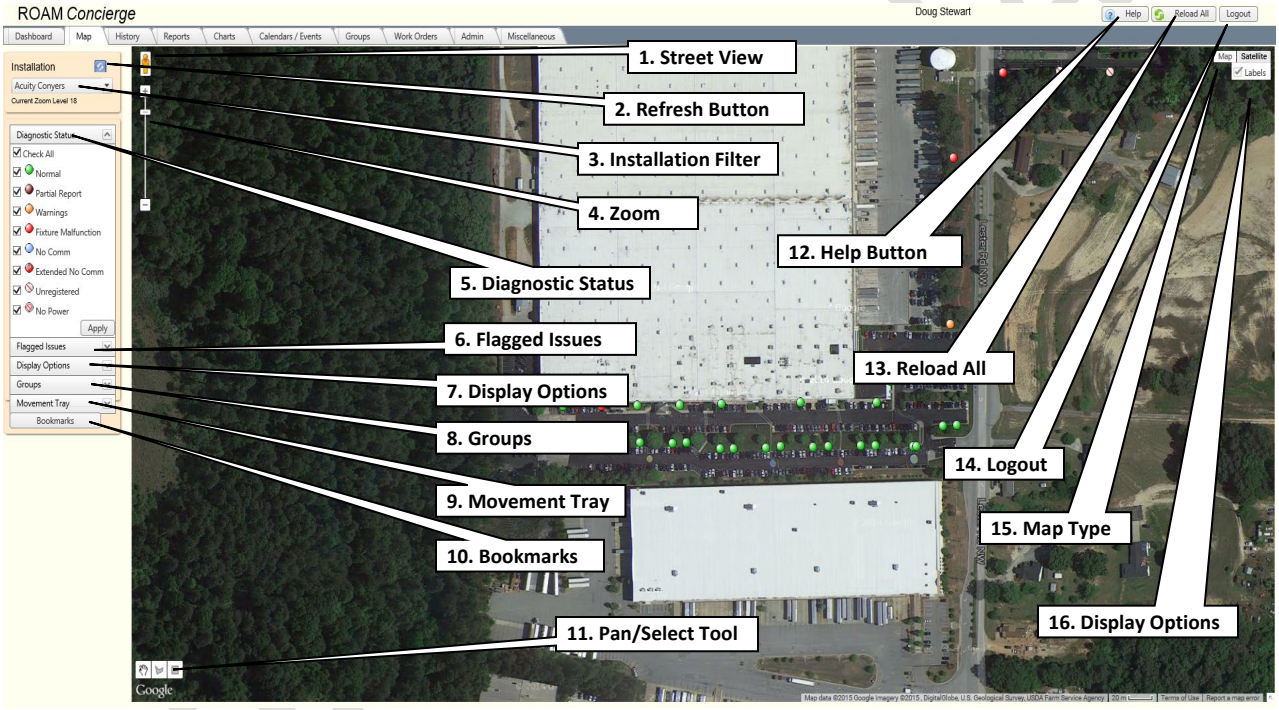
Maps Tab

Overview

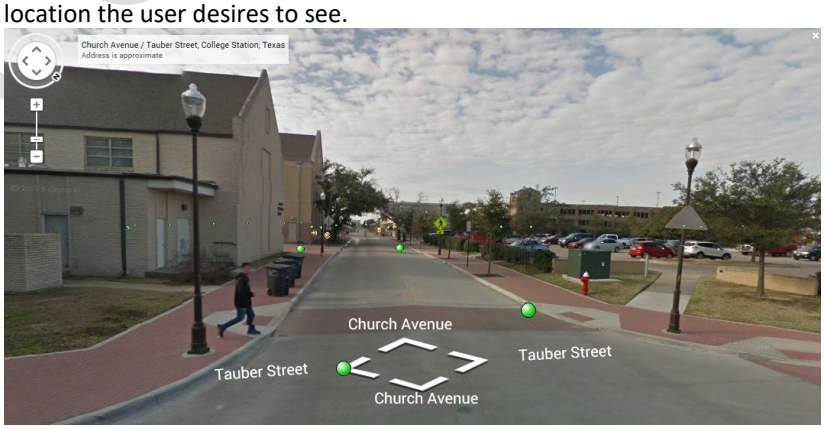
The Maps Tab displays lighting assets in a graphical map-view format. Normal operating lights, as well as those in a malfunction condition, are color coded for easy identification on the map. From the map screen, users can quickly identify malfunctioning lights, access and edit details for each light, view operating history, send commands, create work orders and more. The mapping database used for ROAM Enterprise is Google maps, so much of the navigation is similar to how Google Maps operates on the web.

Basic Navigation

Below is a reference for basic navigation on the map tab. Descriptions are shown below for frequently used functions:



1. **Street View** – For many of the streets within the mapping database, it is possible to see images from a street level view. This can be seen by left-clicking and holding, while dragging the person to the street location the user desires to see.



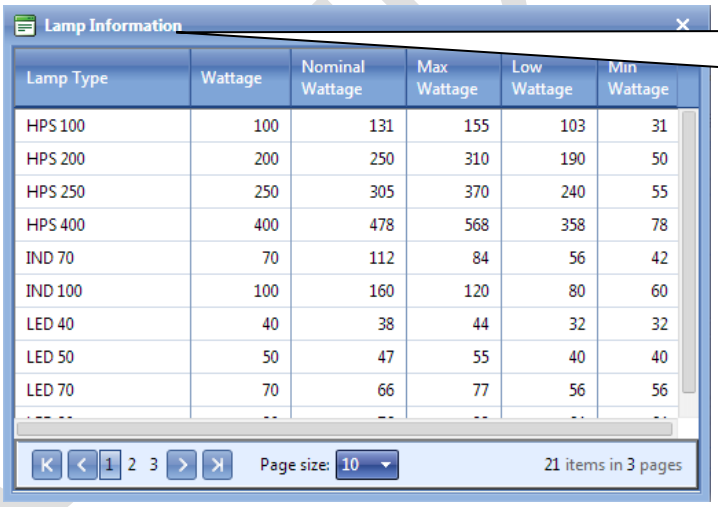
2. **Refresh Button** – The Refresh button will update the list of available installations the user may work with. This should only be needed if a new installation has been added during the current working session.

3. **Installation Filter** – Customers with multiple installations can choose which installation to display on the map.

4. **Zoom** – Allows user to control zoom level inside the content window. The '+' button zooms in and the '-' button zooms out. The same can be accomplished using the scroll wheel on the mouse, if one is exists, while inside the map area. When using the '+' & '-' buttons, the zooming will be centered in the middle of the screen. If the scroll wheel is used, then the zooming is centered where the mouse is located. The zoom level will display in the left-hand side under the bookmarks button. The minimum zoom level is 12 and the maximum is 20. Asset detail and asset selection are only available at levels 16 and lower.

5. **Diagnostic Status Filter** – The diagnostic filter allows the user to choose which assets to make active, based on the diagnostic condition displayed. Only assets that are included in the diagnostic conditions that are checked may be selected and subsequently worked with. Anytime a change is made to the check boxes, the user must click the Apply button at the bottom of this section to initiate the change(s).

   Lamp Wattage Table
   The lamp wattages displayed when the user clicks on the Fixture Malfunction icon are the values used to determine Fixture Malfunction, Low Wattage and Excessive Power statuses, plus provide the % of Rated Wattage for the various types of lamps. These values were entered in when the user initially set up the different lamp options in the admin tab and can be updated at any point in time by anyone with admin rights. Many of the HID lamp types were included as defaults in the original software package and contained average industry rated values for the different types of HID lamps provided by manufacturers.



Lamp Wattage reference appears in pop-up box after clicking once on the circular icon for Fixture Malfunction.

6. **Flagged Issues Filter** – The flagged issues filter allows the user to choose which assets to display, based on the specific issue flags that have been set. Only those issues that are currently diagnosed for that installation will be displayed as options. When using the Flagged Issues filter, only those assets that have the issue flags that are checked will be displayed and may subsequently be selected and worked with. Anytime a change is made to the check boxes, the user must click the Apply button at the bottom of this section to initiate the change(s).

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7. **Display Options** – Allows the user to choose additional options for display on the map.
    a. **Show Gateways Only** – Allows the user to view only gateways on the map.
    b. **Show What Changed** – Allows the user to view only those assets whose diagnostic condition changed from the previous day, regardless of the Diagnostic or Issues Filters chosen.

8. **Groups** – Allows the user to show on the map the assets included in the selected group.

9. **Movement** – Allows the user to select multiple nodes to individual relocate.

10. **Bookmarks** – Allows the user to create, edit and save bookmarks for specific views, enabling the user to quickly return to those specific views throughout the session or upon a future log-in.

11. **Pan/Select Tool** – Allows users to choose between panning and selecting assets on the map. Once assets are highlighted using the polyline or rectangle selection tool, the assets can then be worked with in subsequent screens. If the pan tool is selected, the user can pan by left clicking the mouse button, holding down and dragging to a new position on the map. Once the polyline select tool is activated, the user can select the desired nodes by left-clicking any number of times to draw a freeform closed polyline around the desired nodes. The rectangle selection box is slightly different in that the user can select the desired nodes by left-clicking and holding while dragging the mouse to the desired area. All nodes inside the drawn box will be selected. Additional nodes can be selected by repeating either of the two selection methods.

12. **Help** – The help button provides general online explanations to the ROAM portal. More detailed information is available in this user guide.

13. **Reload All** – Allows user to reload the entire site without logging out and back in. This would be used if permissions are changed during an open session.

14. **Logout –** Allows user to discontinue use of the ROAM portal, ensuring a proper disconnection. Once logged out, the internet browser may be closed.

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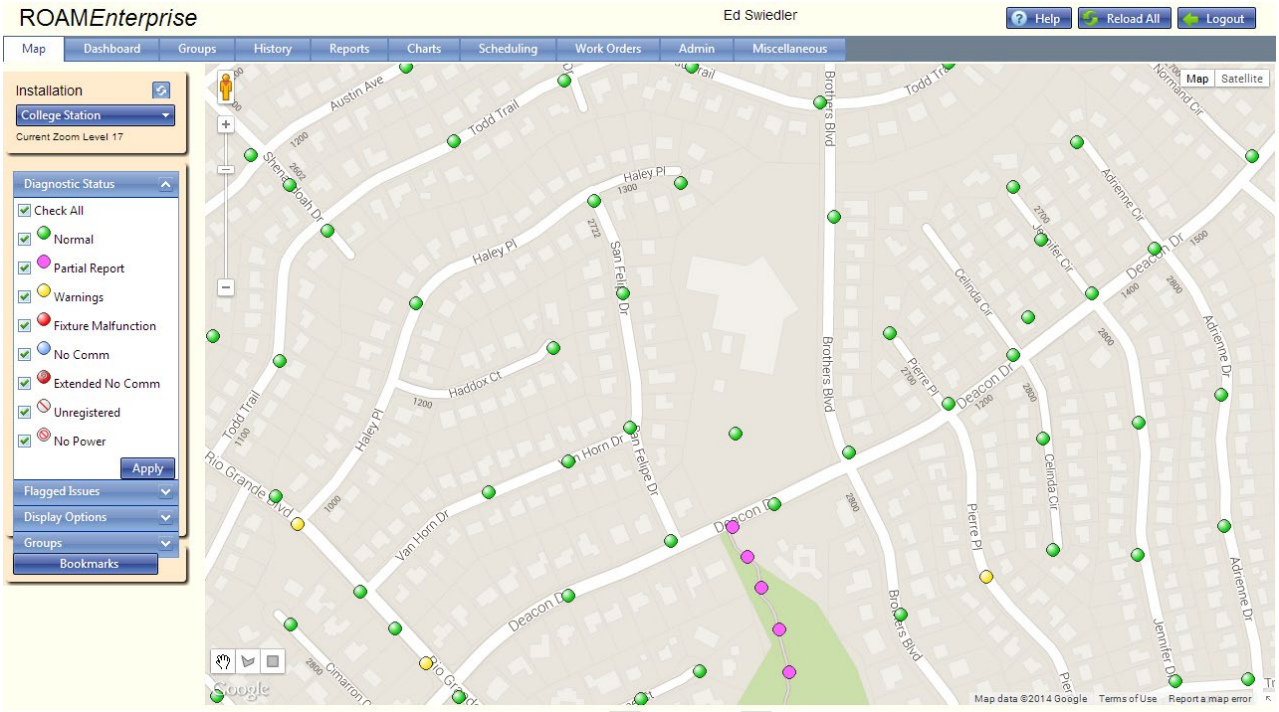
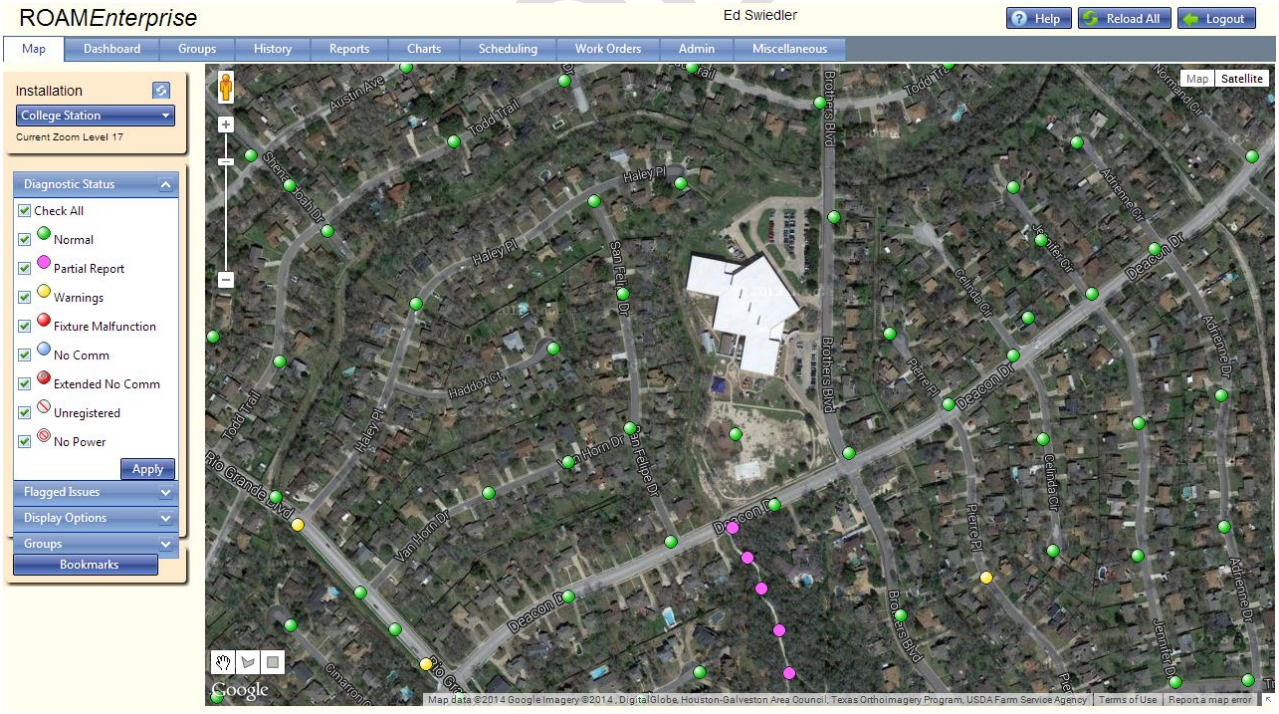
15. **Map Type** – Allows the user to choose between map view and satellite view.

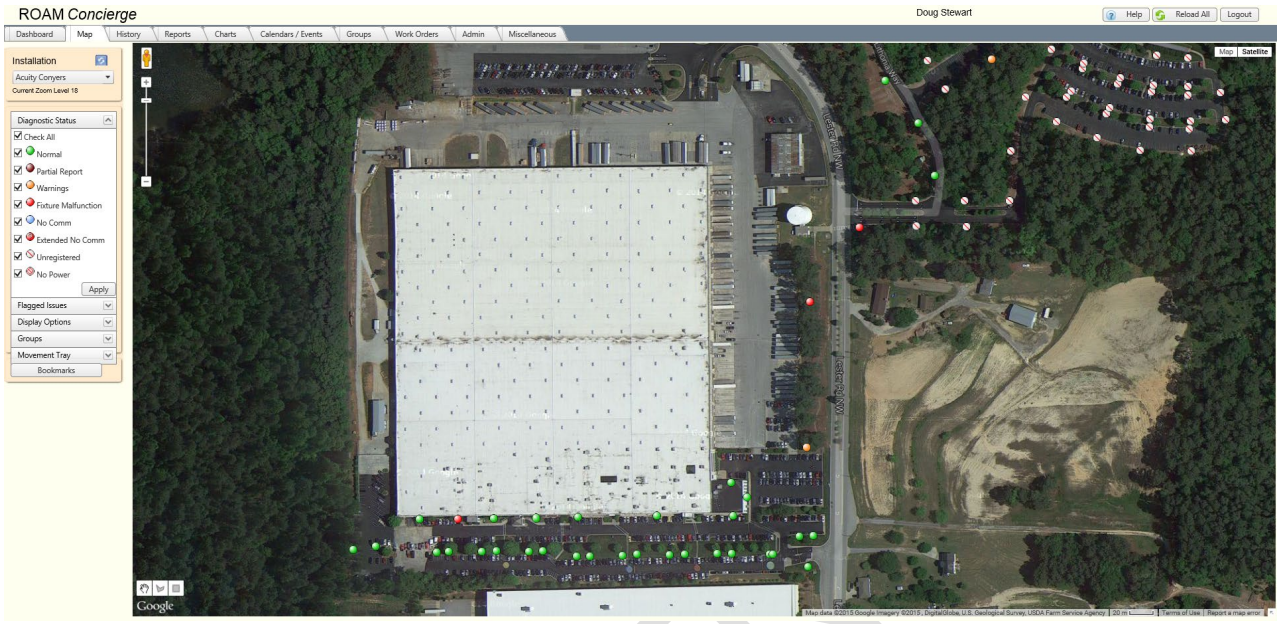


Map view

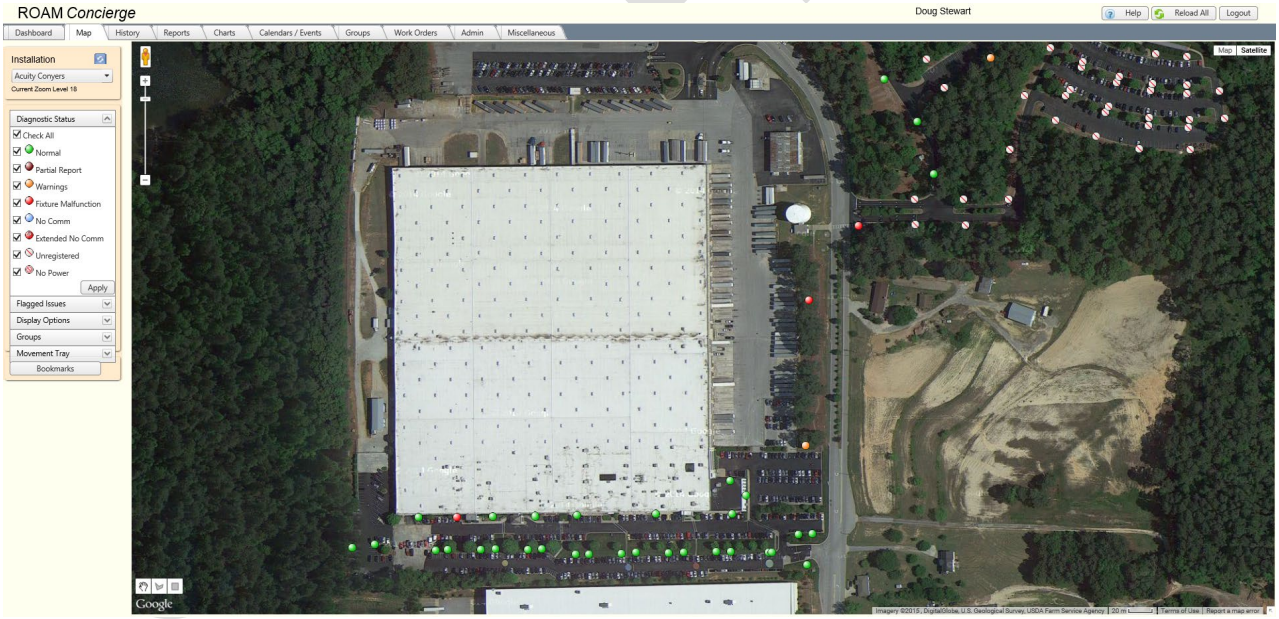


Satellite view

16. **Mapping Display Options (Labels Checkbox)** – The Labels checkbox appears when the satellite mapping option is selected. When the Labels checkbox is selected, the street names will display on the satellite image.



Satellite view, labels selected

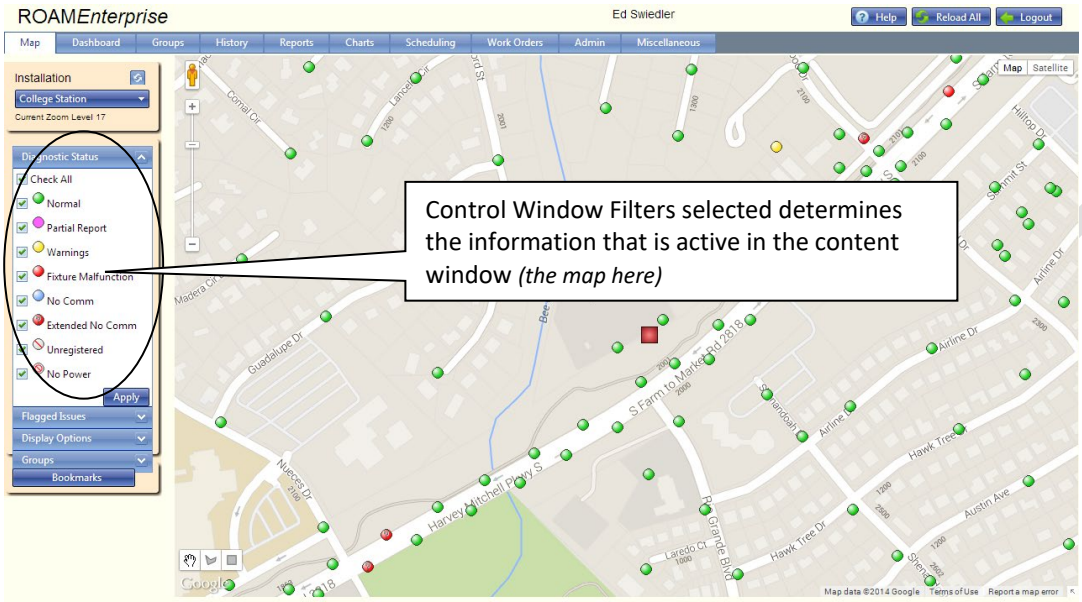


Satellite view, labels deselected

Control Window & Filters

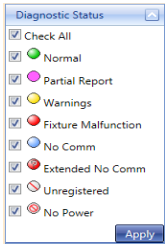
The Control Window defines the display of information in the Content Window or Map view.

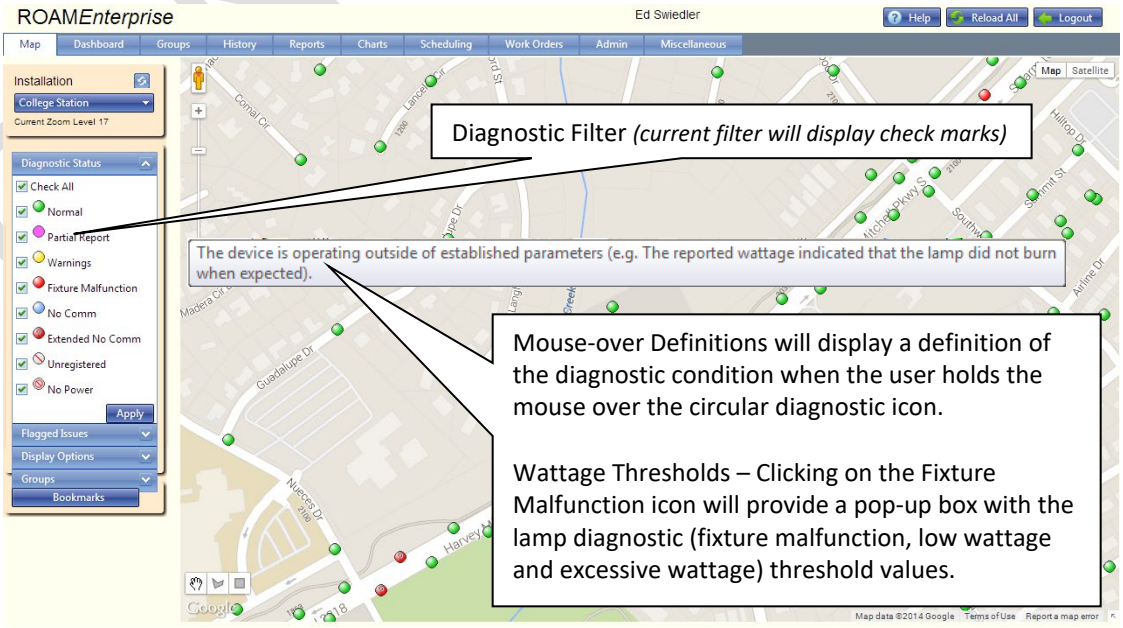
Overview - The Control Window includes 3 filter overlays including Diagnostic Status, Flagged Issues and Display Options.



Diagnostic Status

Users can select specific malfunction conditions to display on the content window or map by checking and un-checking malfunction types (See Terms & Definitions sections for description of diagnostic conditions on page 7). Only lights with the diagnostic condition(s) checked will be active (dark in color) on the map. All other lights will display lightly shaded. Although the diagnostic color will still display, these lights are inactive and cannot be selected. Once the selections are made, the user must hit the apply button for the choices to be updated on the screen.

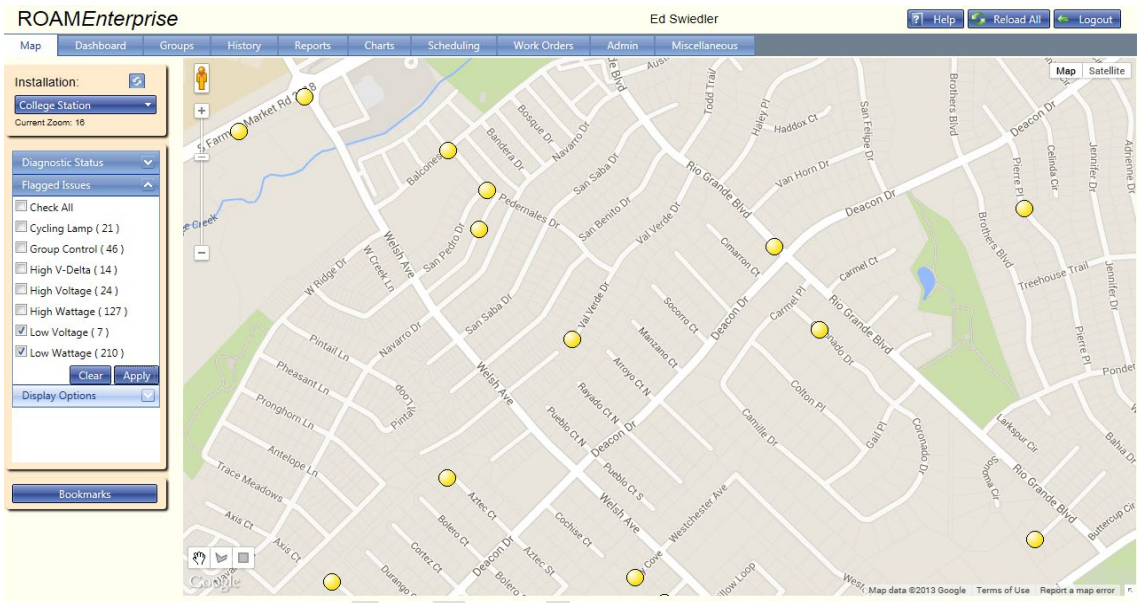




Flagged Issues

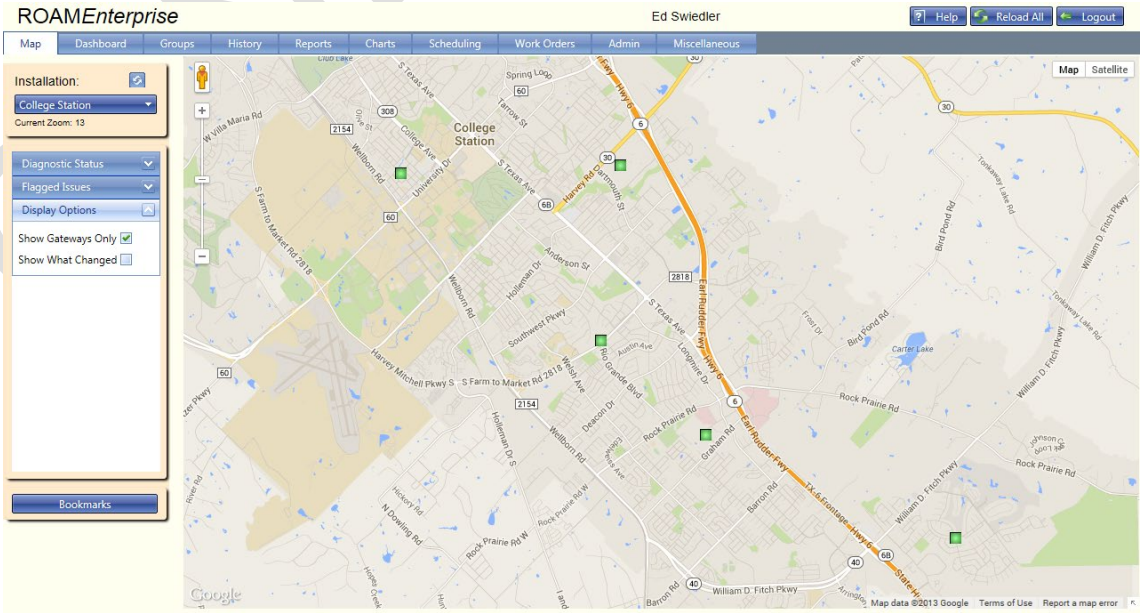
ROAM includes a diagnostic category called Warnings. As described earlier, a fixture in this category can be experiencing a number of different issues. If the NOC determines that one or more of the issues exist, then the NOC will set diagnostic flags for the each of the various concerns for that asset. The flagged issues button allows the user to select the specific flag(s) they want to display on the portal. Only the lights with the diagnostic flag(s) checked will be shown on the map. Selections for the Flagged Issues will be limited to those detected at the installation. In order for the selections chosen to become active, the Apply button must be selected.

NOTE: Before returning to the Diagnostic Status display, the Clear button must be selected.



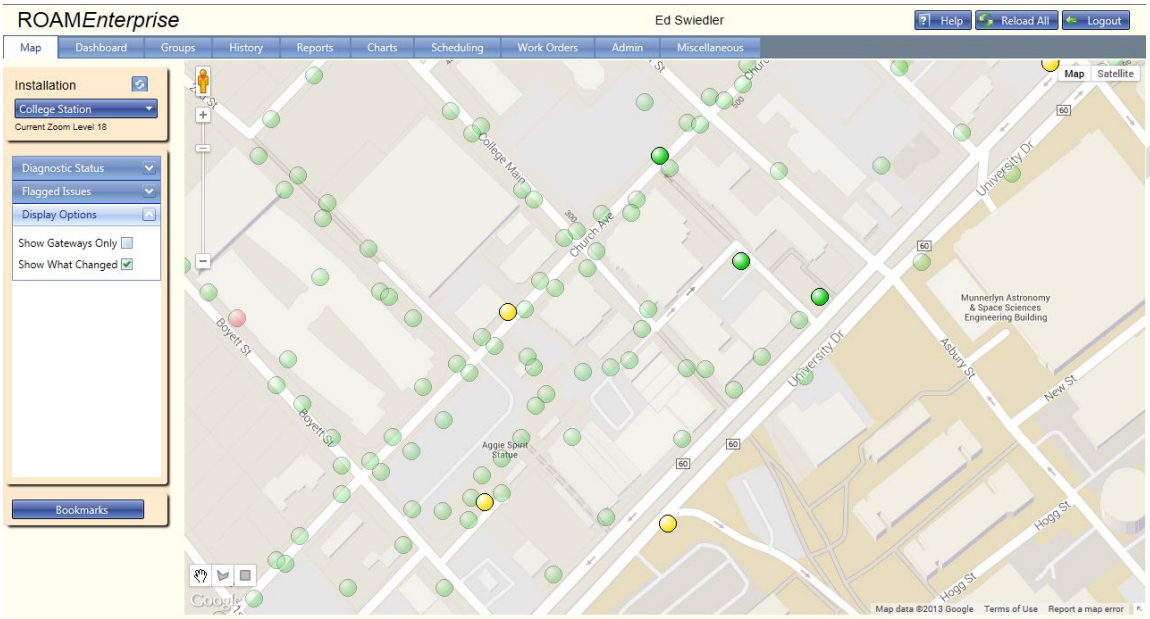
Display Options - Show Gateways Only Filter

Selecting the Show Gateways Only box will remove all device types, except gateways, from the content window so the user can quickly determine gateway status and location. Gateways that have not communicated with the Network Operations Center within 6 hours will display red. Green gateways indicate that ROAM is receiving data from them as expected.



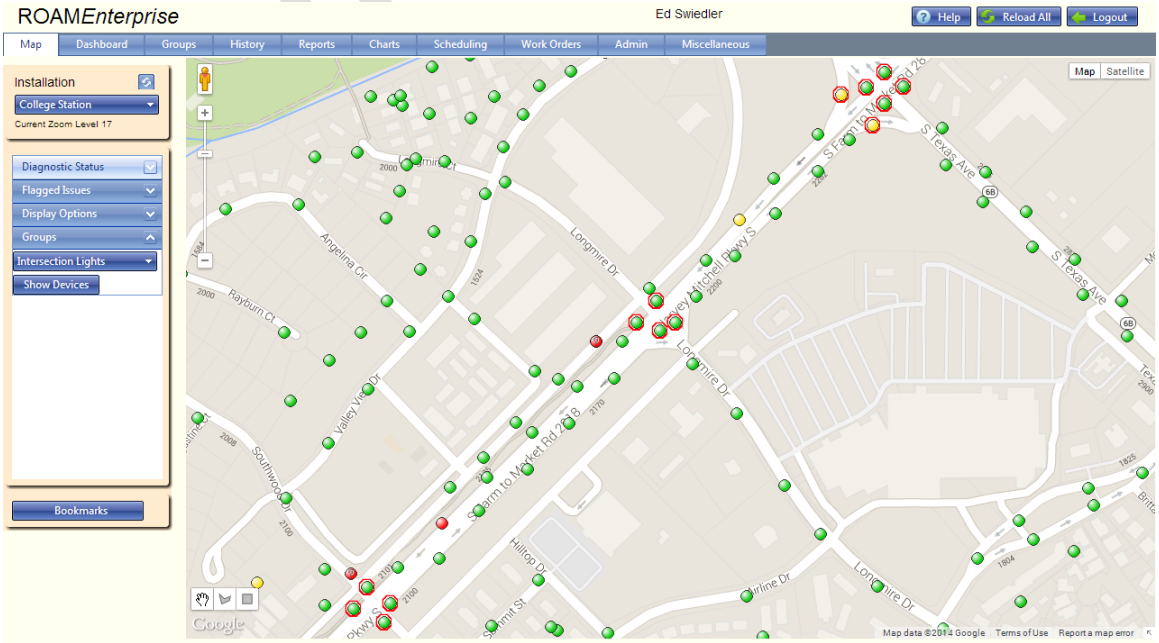
Display Options - Show What Changed Filter

This function allows the user to quickly identify, and possibly target for repair, those assets that changed diagnostic status from the previous day. When selected, only assets that changed status from the previous day are now active and showing in full color. Assets that did not change diagnostic status from the previous day will appear translucent on the map.



Groups Filter

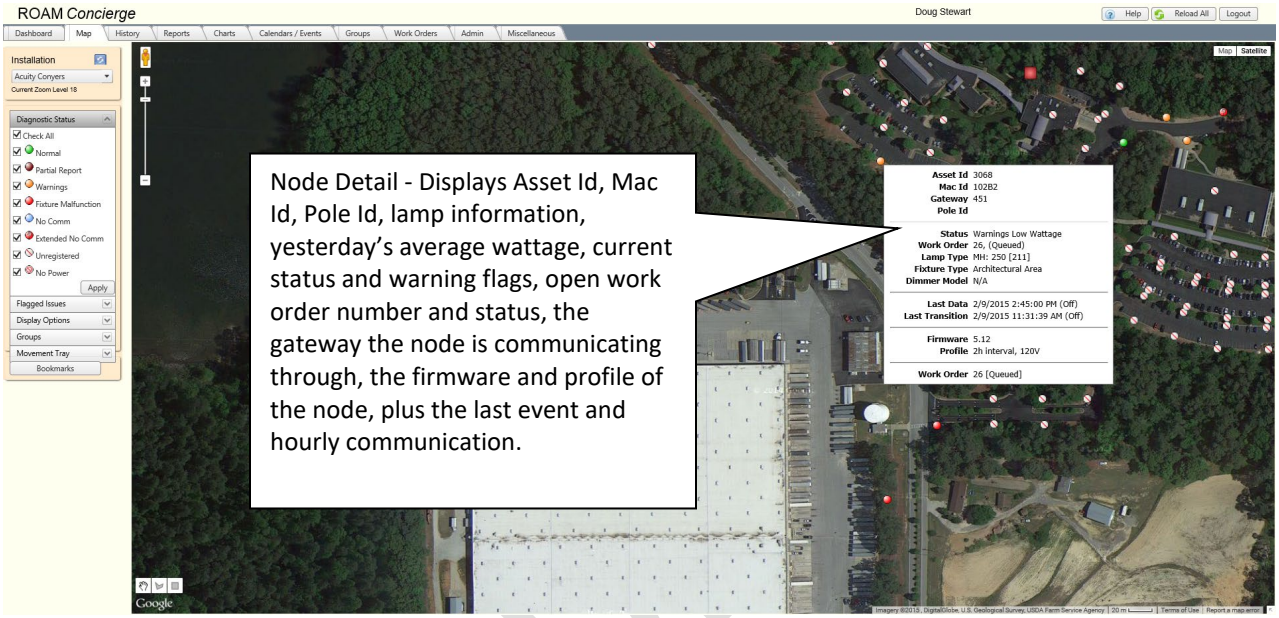
This function allows the user to quickly identify those assets that have been assigned to a specific group. To identify the assets first select a group from the drop down menu, then click the Show Devices button. Any assets included in this group will now be selected on the map (red circle around them).



Lighting Asset Information

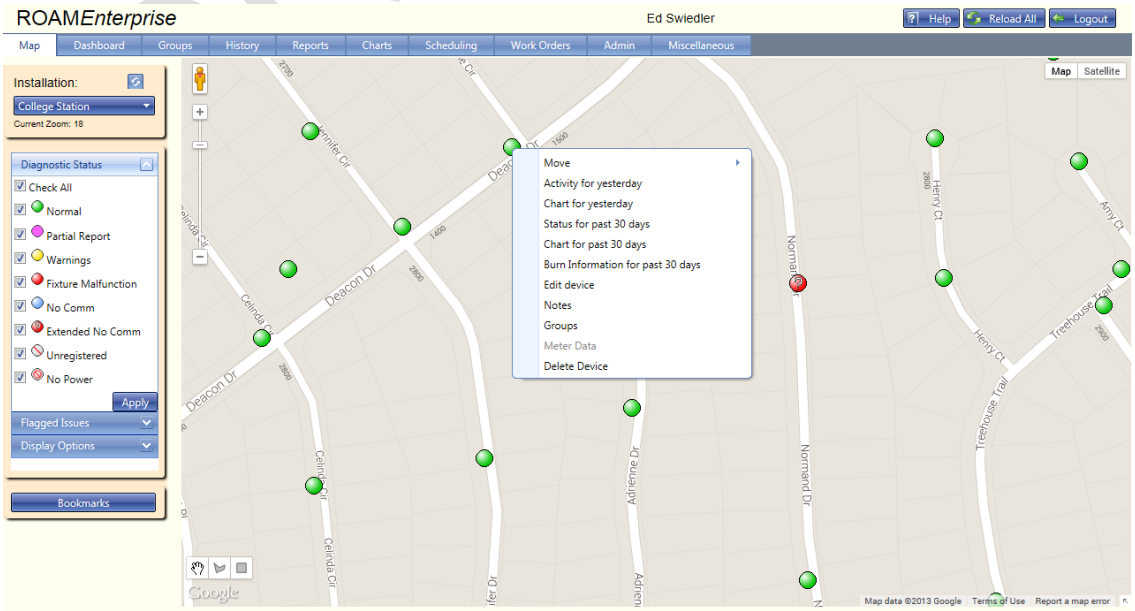
Node Detail Popup

Each light asset in the ROAM system has a unique node "MacID". A MacID is the 8 digit number that distinguishes light assets from one another. The node's MacID will appear in the Node Detail popup window anytime the user hovers over an asset. In addition to the light's MacID, pertinent information about the asset will display in the Node Detail Pop-up window. *Note: The user must be at a zoom level of 16 or closer for this feature to work.*



Individual Node Options Window

Options for working with a specific light asset can be obtained by right-clicking on the light on the map. A pop-up box will appear with 11 options; Move, Activity for yesterday, Chart for yesterday, Status for past 30 days, Chart for past 30 days, Burn information for past 30 days, Edit device, Notes, Groups, Meter Data and Delete Device.
Note: The user must be at a zoom level of 16 or closer for this feature to work.



Move

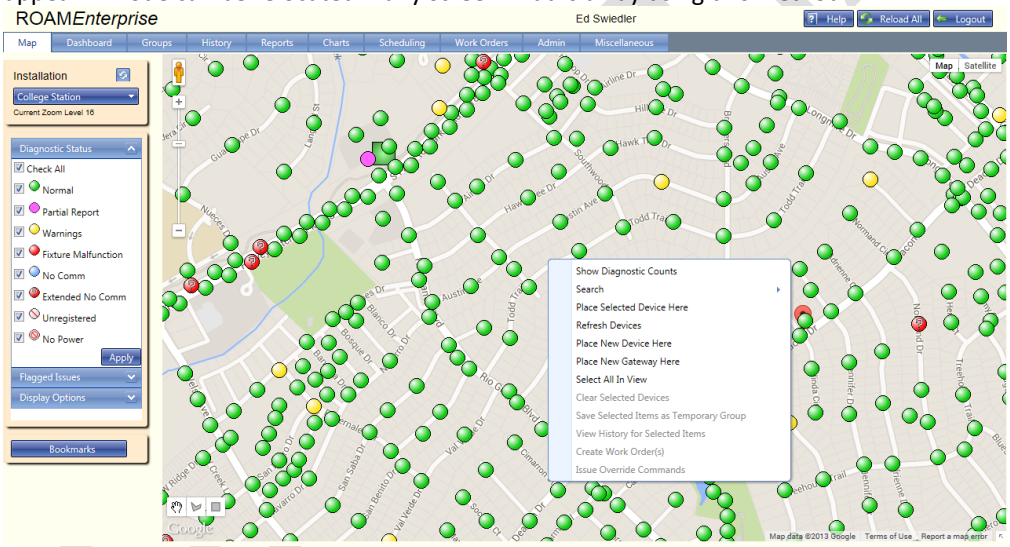
Occasionally, it may become necessary to modify the Latitude/Longitude coordinates of a node or multiple nodes. Reasons for relocating a node may be relocation of a pole, inaccurate or missing GPS points collected during activation or to provide clarity when viewing on the portal. The location of a node can be changed by either of three methods; Drag and drop, Set new location or Use Movement Tray.

Drag and drop

When a user needs to relocate a node a short distance, it is recommended that the Drag and drop method is used. After choosing the drag and drop method, left click and hold the mouse button in on the node that you selected to move. Drag the node to the desired location and release the left mouse button. The system has permanently relocated the node to this new location and has recorded the Latitude and Longitude values to reflect the new position.

Set new location

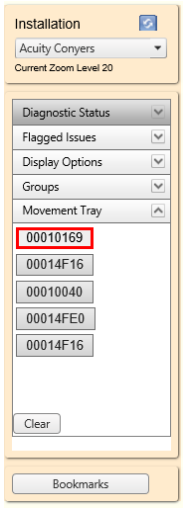
When a user needs to relocate a node outside the current map view, it is recommended that the Set new location method is used. After choosing the set new location method, move the mouse to the desired location and right click. Choose Place Selected Device Here from the options that appear. A node can be relocated many screen widths away using this method.



Use movement tray

When a user needs to relocate several nodes, it may be easier to first add the desired nodes into the movement tray. Each node can then be quickly relocated following these steps:

1. Choose the movement tray in the selection window
2. Select the node to relocate first (red outline will be placed around this MacID
3. Move the map to desired area and right click on the new location for this node
4. Select the Place Selected Device Here option to relocate the node



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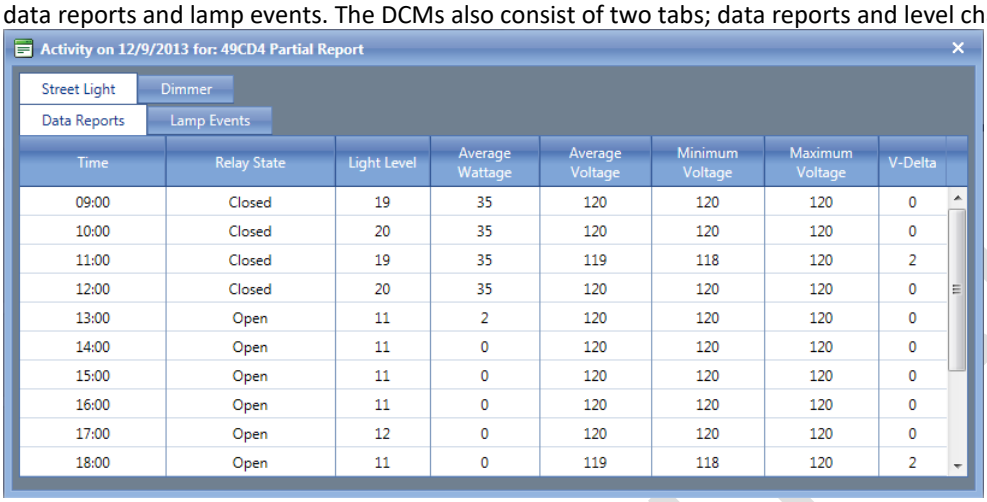
Activity for Yesterday

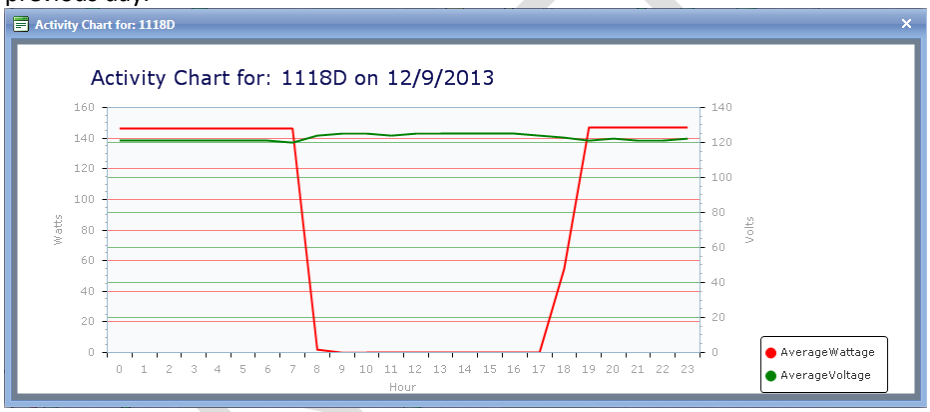
Users can access the all of the data collected from the node and dimming control module, for fixtures that have DCMs installed, for the previous day by choosing this selection. The node data consists of two tabs; data reports and lamp events. The DCMs also consist of two tabs; data reports and level changes.



Time	Relay State	Light Level	Average Wattage	Average Voltage	Minimum Voltage	Maximum Voltage	V-Delta
09:00	Closed	19	35	120	120	120	0
10:00	Closed	20	35	120	120	120	0
11:00	Closed	19	35	119	118	120	2
12:00	Closed	20	35	120	120	120	0
13:00	Open	11	2	120	120	120	0
14:00	Open	11	0	120	120	120	0
15:00	Open	11	0	120	120	120	0
16:00	Open	11	0	120	120	120	0
17:00	Open	12	0	120	120	120	0
18:00	Open	11	0	119	118	120	2

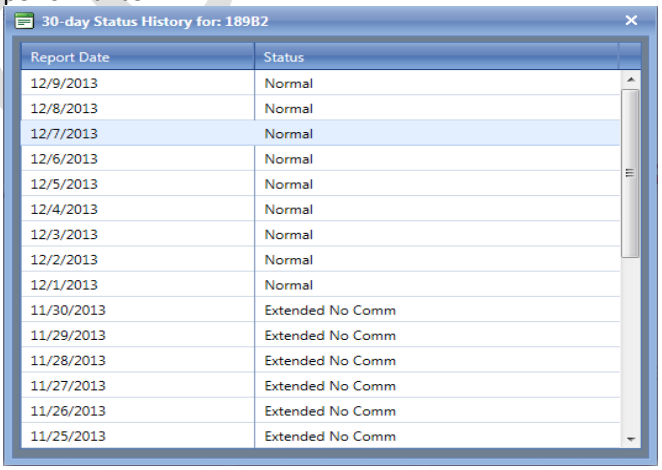
Chart for Yesterday

Users can access a line graph that shows the average wattage and average voltage for that fixture for the previous day.



Status for Past 30 Days

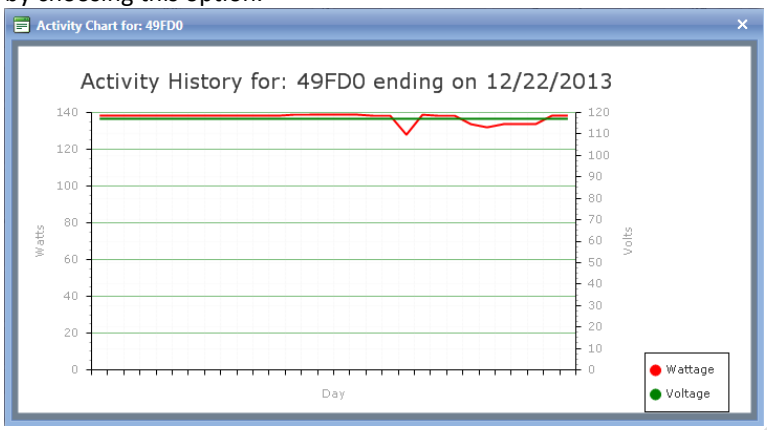
Selecting “Status for past 30 days” provides user with the previous 30-day history on the light asset’s performance.



Report Date	Status
12/9/2013	Normal
12/8/2013	Normal
12/7/2013	Normal
12/6/2013	Normal
12/5/2013	Normal
12/4/2013	Normal
12/3/2013	Normal
12/2/2013	Normal
12/1/2013	Normal
11/30/2013	Extended No Comm
11/29/2013	Extended No Comm
11/28/2013	Extended No Comm
11/27/2013	Extended No Comm
11/26/2013	Extended No Comm
11/25/2013	Extended No Comm

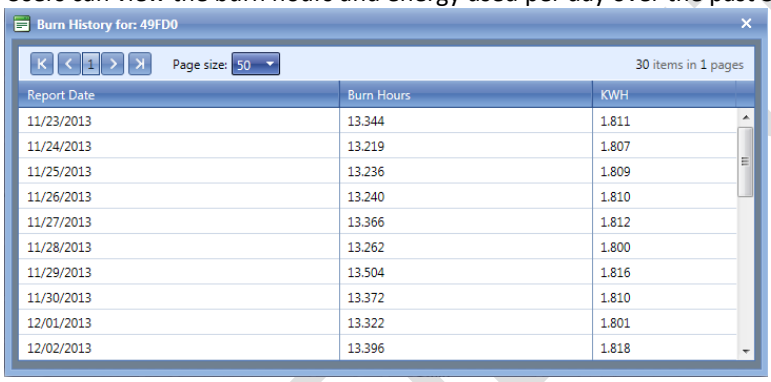
Chart for Past 30 Days

Users can view a line graph of the average of the hourly wattages and voltages reported for the past 30 days by choosing this option.



Burn Information for Past 30 Days

Users can view the burn hours and energy used per day over the past 30 days.



Report Date	Burn Hours	KWH
11/23/2013	13.344	1.811
11/24/2013	13.219	1.807
11/25/2013	13.236	1.809
11/26/2013	13.240	1.810
11/27/2013	13.366	1.812
11/28/2013	13.262	1.800
11/29/2013	13.504	1.816
11/30/2013	13.372	1.810
12/01/2013	13.322	1.801
12/02/2013	13.396	1.818

Edit Device

The edit device option allows the user to update any of the attributes associated with this asset, including the Node and DCM MacIDs. The attributes are divided into 6 different categories. All of these attributes can be manually updated by clicking on the appropriate tab and the Edit button found at the bottom of the page.

The ROAM software uses the Node MacID, DCM MacID (if one exists), plus the fixture voltage, lamp type and wattage to determine the diagnostic condition of the fixture.

Therefore, it is imperative that certain fields in this option be correct for the diagnostics to function properly. If any of these values are incorrect, then the ROAM portal will most likely show an issue of some type. As an example, if the voltage or wattage are incorrect, then ROAM could diagnose low/high voltage or low/high wattage issues.

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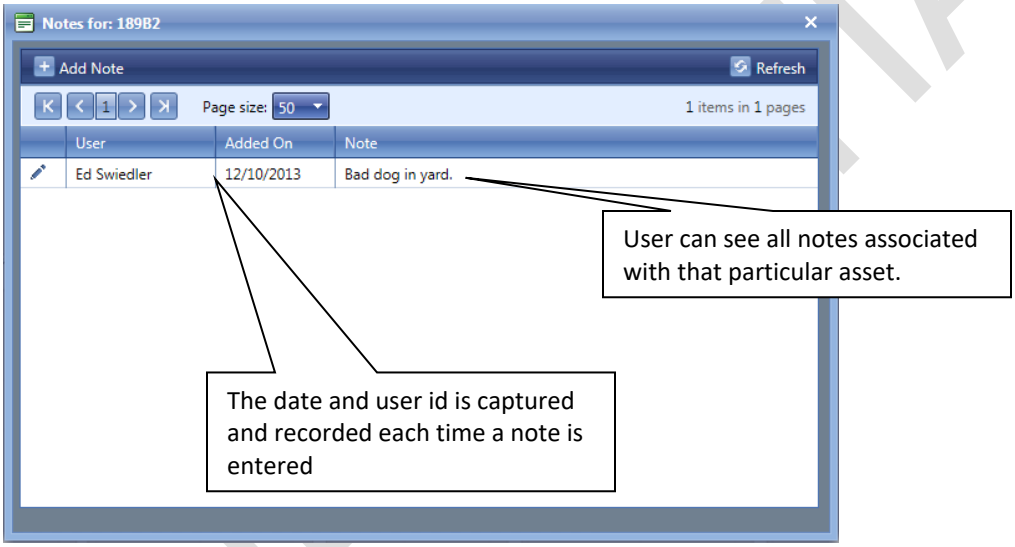
When ROAM nodes or DCMs are replaced in the field during routine maintenance, the new replacement device's unique MacID will need to be updated on the ROAM portal. A fully implemented work order management program will handle this through the handheld devices. If the work order management feature on the handheld device is not being utilized, then the MacID of the device should be updated manually on the portal. Otherwise, the asset will display a communication issue exists until the new MacID is recorded.

Address Locked – If this checkbox is selected, then the assets address will remain the same even if the asset is relocated through the portal. If the checkbox is not selected, then the ROAM system will determine an address through a feature called reverse geocoding. Reverse geocoding will assign an address by using the closest addressable location that is within the Google mapping database. This does not mean it will match the physical address that is found in the field.

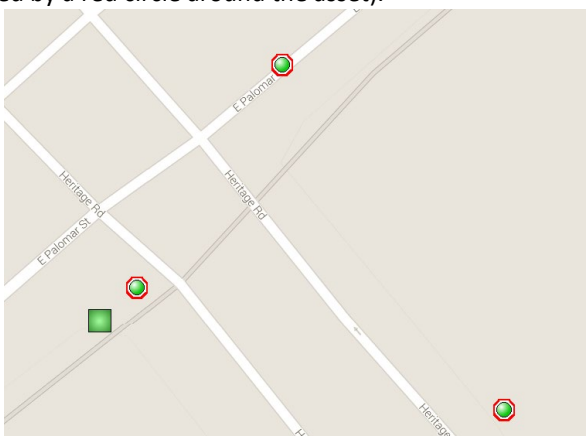
Notes

Selecting "Notes" will display the history of user and work order management notes for the light asset, as well as allow the user to add additional user notes by choosing the "+" Add Note button.



Groups

If the asset is included in a group, then the Groups option can be selected for this asset. Otherwise, this option will appear grayed out and can't be chosen. Choosing this option will bring up a list of the group(s) that the asset is a part of. All assets within that group can be displayed on the map by selecting the check box by the Group name and clicking on the Apply button at the bottom. All assets within that group are now "Selected" on the map image (indicated by a red circle around the asset).



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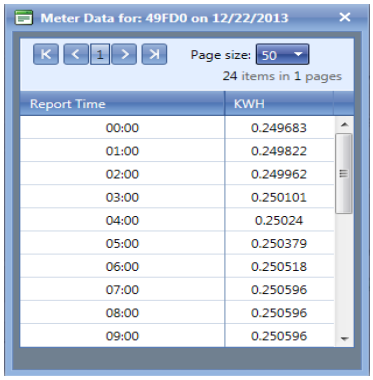
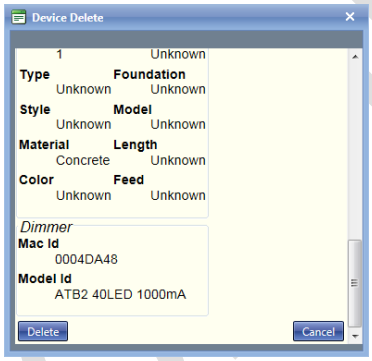
Meter Data

If the asset selected has a meter-grade node installed, then the Meter Data option can be selected for this asset. Otherwise, this option will appear grayed out and can't be chosen. Choosing this option will bring up the hourly meter (kWh) readings for yesterday's date for that asset. Because the readings are cumulative and do not reset, the actual energy used for a given hour can be determined by subtracting the readings between the two hourly reports.



Delete Device

If a device has been removed from the field, a user can choose to permanently delete the asset from database. Utilizing this option will delete the all records associated with the asset from the database, so this option should be used with caution. To help protect from accidental deletions, the user will be required to scroll down to the bottom of the screen and select the Delete button a second time before the asset is permanently deleted.



View Work Order Ticket

If a device has an open work order, then the View Work Order Ticket can be selected. Viewing the work order will display a copy of the work order ticket, which can then be printed, if desired.

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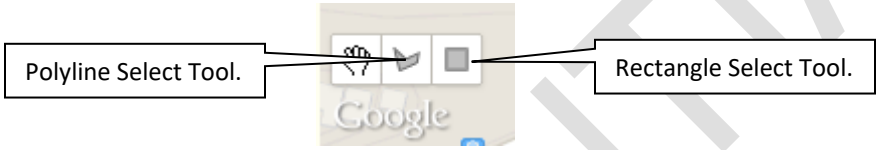
Database/Multiple Node Options Window

Options for working with the ROAM database records or a group of selected assets can be obtained by right-clicking on an area of the map that does not contain an asset. A pop-up box will appear with 11 options; Show Diagnostic Counts, Search, Place Selected Device Here, Refresh Devices, Place New Device Here, Place New Gateway Here, Select All In View, Clear Selected Devices, View History for Selected Items, Create Work Order(s) and Issue Override Commands. Several of these options will only be active if one or more nodes have been previously selected using the rectangle or polyline selection tool. If not, these options will be shown grayed out. *NOTE: The user must be at a zoom level of 16 or closer for this feature to work. At a level of 15 and further away, the Show Diagnostic Counts, Search and Refresh Devices option will still display.*

Selecting Light Assets

To this point, this document has covered accessing general and detail information, exercising options and commands for individual lighting assets from the Map tab by right clicking on an individual asset. However, users also have the ability to select lighting assets. Selection of assets is most commonly used in the retrieval of information for reporting and history purposes, but there are also the options to issue on/off commands and create work orders for multiple lights.



Polyline Select Tool - To select a group of light assets on the map using the polyline method, click the left mouse button on the polyline icon in the bottom left portion of the map area. The polyline tool is now active and will remain active until one of the other options is chosen. To select a group of assets, left click any number of times to draw a freeform closed polyline around the desired nodes. The last click must be placed on top of the first click location to complete the polyline. Once chosen, the selected light assets will display with a red circle around them. Additional assets can be selected or unselected by repeating the polyline selection procedure.

Rectangle Select Tool - The rectangle select tool is slightly different in that the user can select the desired node(s) by left-clicking and holding while dragging the mouse to the desired area. All nodes inside the drawn box will be selected. In order to select individual lights that are not contiguous, use the left mouse button to drag a box around each light you wish to select. Additional assets can be selected or unselected by repeating the rectangle selection procedure.

NOTE: Only the assets displaying the diagnostic conditions selected from the Control Window will be selected using the box-banding method.

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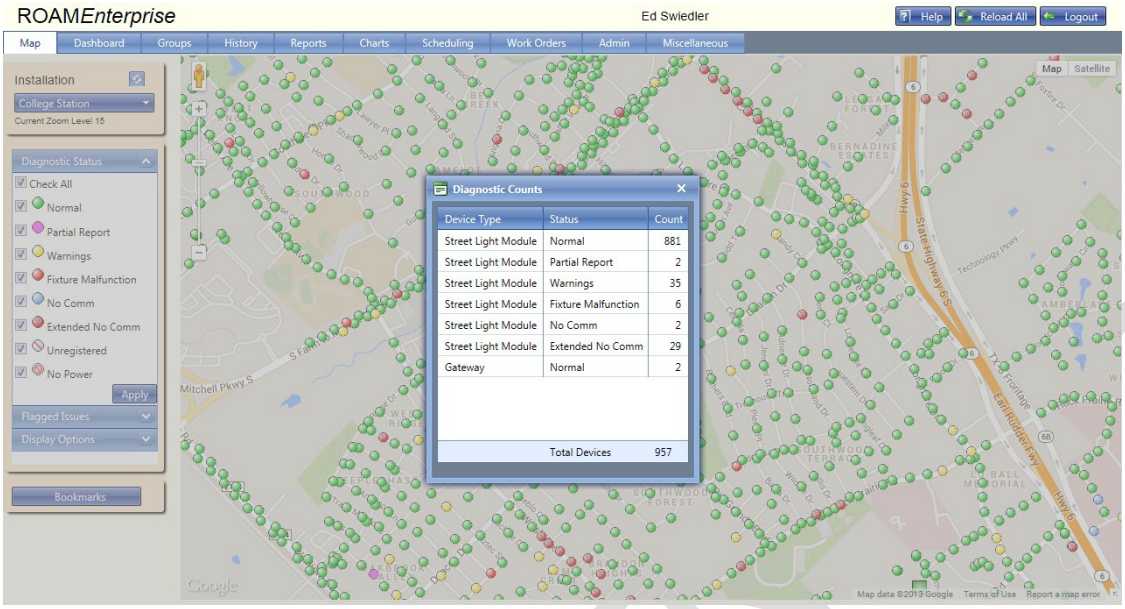
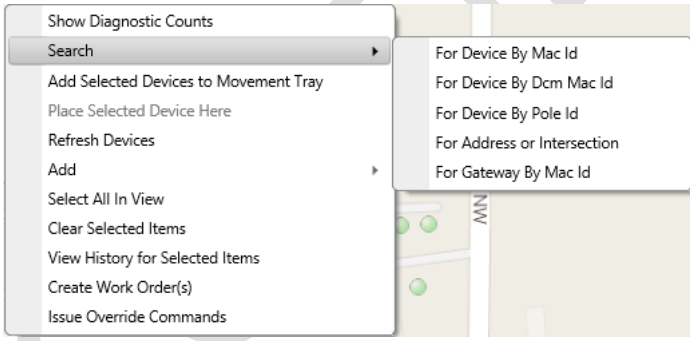
Show Diagnostic Counts

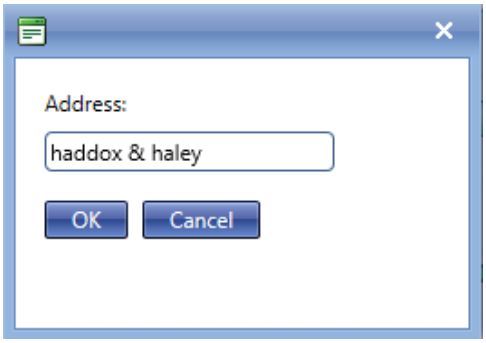
Users can obtain a breakdown of all the different diagnostic conditions that exist for all assets within the field of view for the map image displayed using this option.



Search

Users can search for a particular asset by one of the following methods; Mac ID, DCM Mac ID, Pole ID, Address/intersection of streets or Gateway MacID. When searching by Mac ID, DCM Mac ID or Gateway MacID, only the 4 or 5 significant digits are required (leading 0's do not need to be entered). Addresses can be entered with or without City name, as it will locate the closest match. Intersections should be entered with the two cross streets separated by an "&" symbol.





Add Selected Devices to Movement Tray

When a user needs to relocate several nodes, it may be easier to first add the desired nodes into the movement tray. Using one of the selection tools, a user can choose several nodes to add to the movement tray at one time. Use of the movement tray was discussed previously.

Place Selected Device Here

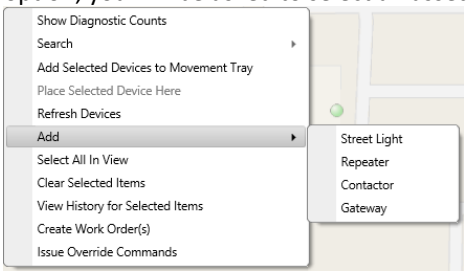
This option is used for relocating a single device to a new location and was discussed previously. See instructions for Move, using the Set New Location method described in the Individual Node Options section.

Refresh Devices

This option will refresh the asset icons on the map screen to obtain any recent changes that might have occurred.

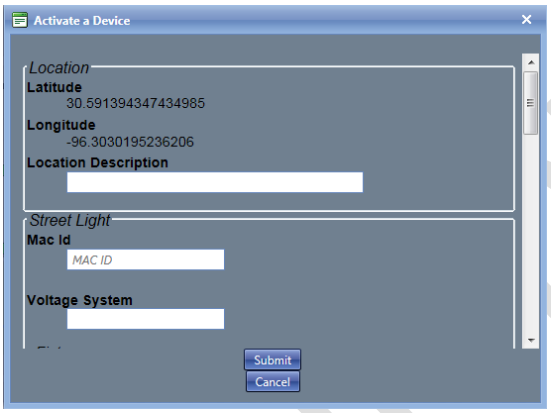
Add

This option is used for manually adding new asset records to the database. The new asset will be added at the coordinates for where the mouse pointer is located at the time you right click on the map. After clicking the Add option, you will be asked to select an asset type, depending on the purpose of the device being installed.



Street Light

Street light should be chosen for any nodes installed on an asset where the load is to be monitored. The required fields for a Street Light asset are Street Light MacID, DCM MacID (if installed), Voltage System and Lamp Type. If the attribute selection is not available from the drop down list, then this choice will need to be added prior to activating the new asset. Please see instructions for adding attributes in the Admin section described later in this document. Once the information has been entered, the user must choose the Submit button to save the record.

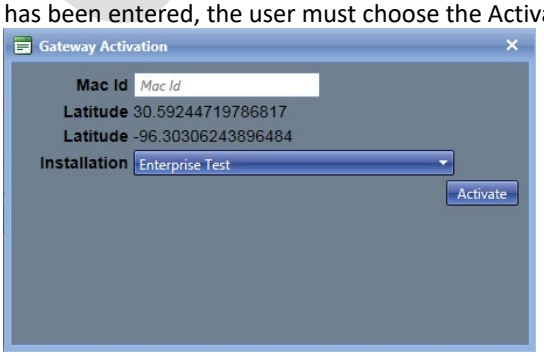


Repeater and Contactor

If a node is installed as a repeater or a contactor, device diagnostics will be adjusted to only determine if the node is communicating properly.

Gateway

This option is used for manually creating a new gateway record at a specific location. Once the option is chosen, the user will be able to enter the Gateway MacID and Installation that the gateway should be assigned to. The Latitude and Longitude values will automatically be assigned based on the location of the mouse at the time the right click occurred. The MacID of the gateway must be entered without any leading 0's. Once the information has been entered, the user must choose the Activate button to save the record.



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Select All In View

This option can be used to quickly select all assets in the map view.

Clear Selected Devices

This option will de-select any assets previously chosen in the map view.

View History for Selected Items

This option allows the user to view the historical data for those nodes selected. The History view is described in more detail later in the User Guide. See additional information in the History section.

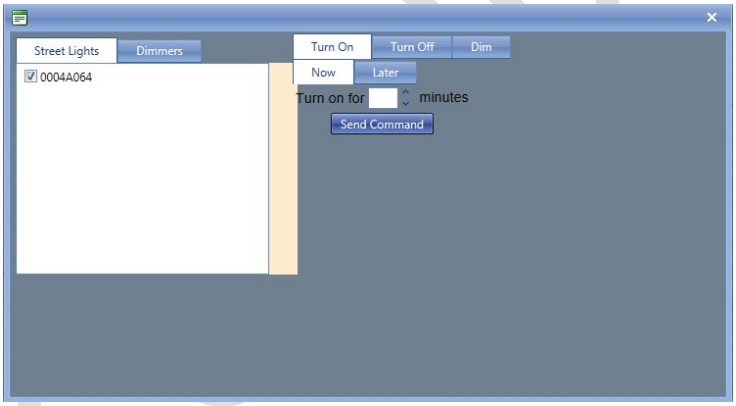
Create Work Order(s)

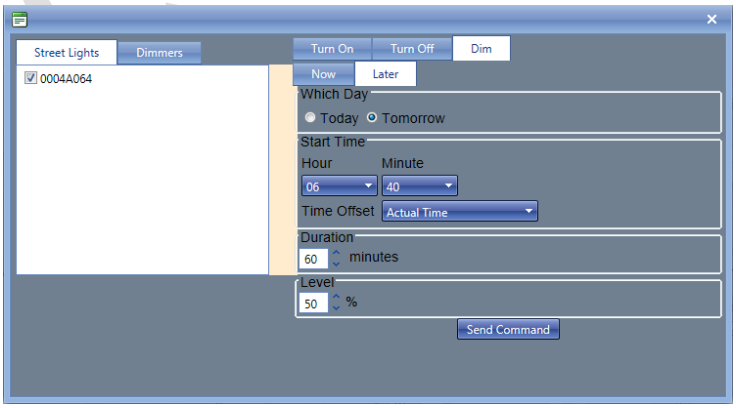
This option allows the user to create work orders for the selected assets. The Work Order functionality is described in more detail in the Work Orders section of the User Guide. See additional information in the Work Orders section.

Issue Override Commands

Users with appropriate permission can send On/Off and dimming commands (if customer has dimmable LED fixtures) to individual or multiple assets through the Issue Override Commands option. The Dimmer/Dim tabs will only show if the customer has DCM's installed. Override commands have the highest priority of any command, so sending one will supersede any schedule(s), event(s) or photocontrol operation(s) previously sent. Also, a node or DCM is only capable of performing one override command at a time. Therefore, a new override command will also supersede any previous override commands that might still be in effect.

Override commands can be sent immediately or programmed to be sent later that day or the next and can contain on/off or dim actions. The length of time for the action must be limited to 1440 minutes (24 hours). Latency of the command taking affect will depend on the mesh network configuration, but will generally occur within a couple of minutes from execution.





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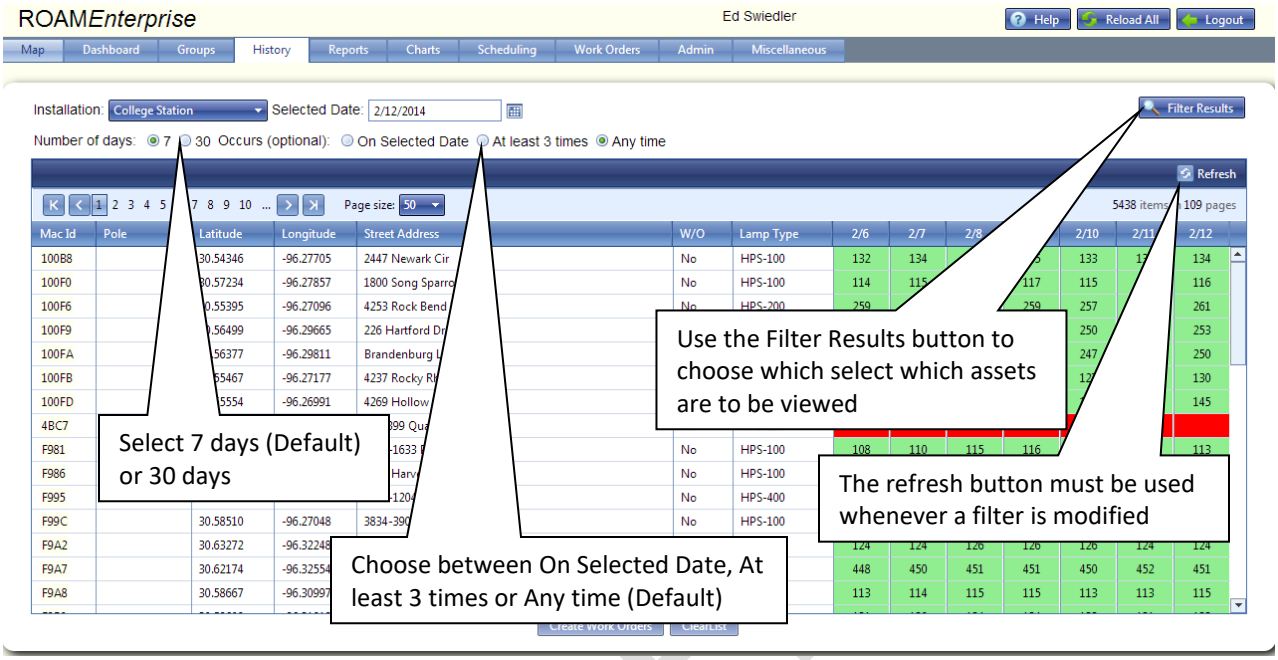
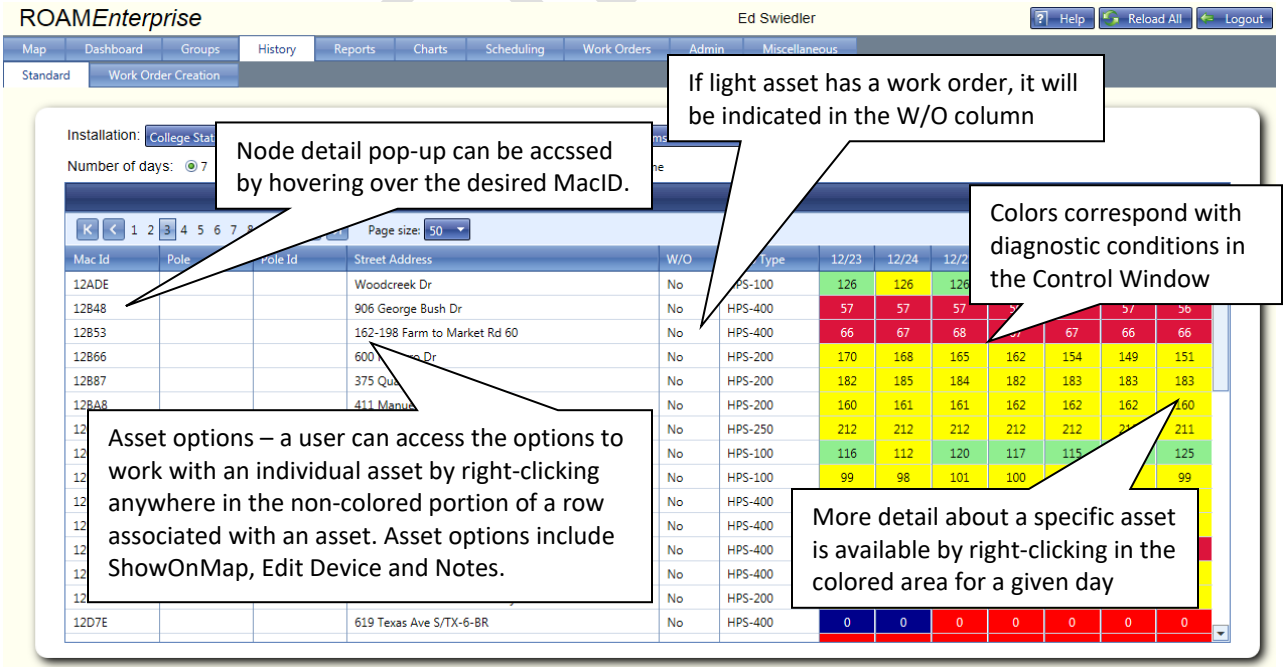
History Tab

The History Tab is available to assist the user in viewing performance history for the lighting asset (Standard Tab), plus allows the user to create work orders for any number of assets (Work Order Creation Tab).



The user can choose to review either 7 or 30 days of historical data for a light asset. The data can then be further manipulated or filtered using the available options for selected date, on selected date, at least 3 times or any time, in addition to all of the options included under Filter Results. The filter options are explained below:



Installation: The user can select the installation they wish to work with from the drop down box.

Selected Date: The date chosen here will be the most recent date shown on the history screen. The data displayed with either go back 7 or 30 days from that date. The date in this field will default to yesterday.

Filter Results Options – The Filter Results button is provided on many of the report screens to limit the selections within the report to those chosen by the user. Information can be limited to an individual asset by entering in the specific MacID or Pole ID. Reports can also be generated by a number of other attributes, including electrical feed, diagnostic status or issue, lamp type, wattage range, fixture type or pole type. The selection lists under each category is automatically generated and only includes those options that can be found for the installation the user is working with.

Filter Results Options

Number of Days: The historical data can be viewed for 7 or 30 days.

On Selected Date/At least 3 times/Any time: Only one of these three buttons can be chosen and the option is referring to the diagnostic condition being met during the 7 or 30 days.

- **On Selected Date –** The asset must have diagnosed as one of the selected statuses for the specific date entered for the asset to be listed on the report.
- **At least 3 times –** The asset must have diagnosed at least 3 different times as one of the selected statuses during the 7 or 30 day window to be listed on the report.
- **Any time –** The asset must have diagnosed at least one day as one of the selected statuses during the 7 or 30 day window to be listed on the report.

Colors/Numbers displayed on History screen – The color shown in the history screen represents the diagnostic condition for the node for that specific day and correlates to the colors shown on the map screen. A number will display for most of the diagnostic conditions. This number shown is the average wattage for the fixture for all hourly reports where the fixture is on for more than 15 minutes for that day. If there are no numbers in a red box, the malfunction condition is such that communication with that node has been lost for at least 24 hours (one day) and no data was received at the NOC. In other words, there is no detailed hourly information to display.

Asset Options – When viewing the list of assets under the History tab, a limited number of options are available to the user for working with individual assets. The user can choose to view a specific asset on the map, edit the asset or view/add nodes to the asset. To access these options, right click anywhere in the non-colored portion of the row associated with the MacID.

ShowOnMap – This option will jump to the Map tab and will display the asset and will have it selected (red circle around it).

Edit Device – The edit device option allows the user to update any of the attributes associated with this asset, including the Node and DCM MacIDs, as described earlier in this user guide.

Notes – Selecting "Notes" will display the history of user and work order management notes for the light asset, as well as allow the user to add additional user notes by choosing the "+" Add Note button.

Add to list for creating Work Orders – Selecting this option will place the device in a temporary list to be used to create a group of work orders. Once you have selected all of the devices desired for work orders, click the Create Work Orders button at the bottom of the screen.

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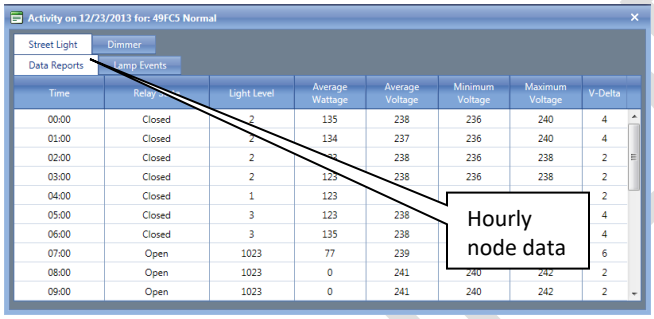
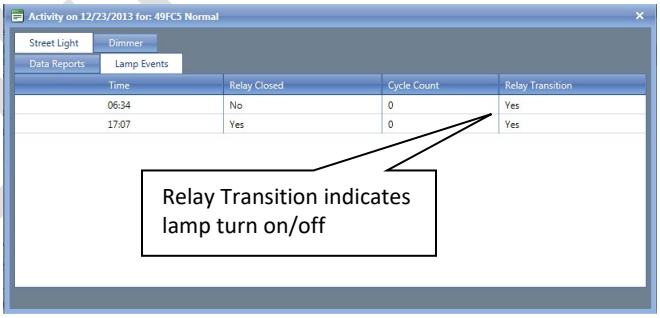
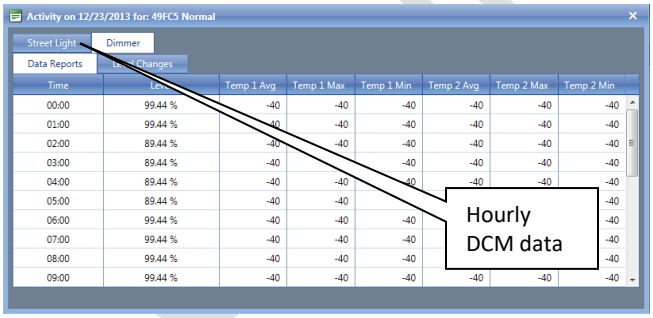
Detailed Data for Asset – Right-clicking inside one of the colored boxes will bring up a list of options available for detailed historical data for that asset. To assess a specific date, the user should right-click in the column under the desired date. Options available to the user include Activity for the day, Chart for the day, Status for the previous 30 days, and Activity for the previous 30 days and Burn information for the previous 30 days.

Activity for the day – This option display all of the Data Reports for both nodes and dimming control modules, Lamp Events (Lamp On, Lamp Off, Power Reset, etc.) and Dimmer Level changes. The detailed data can be viewed by left-clicking on any of the tabs.







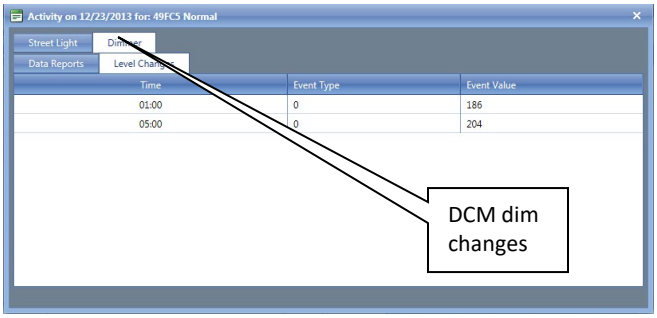
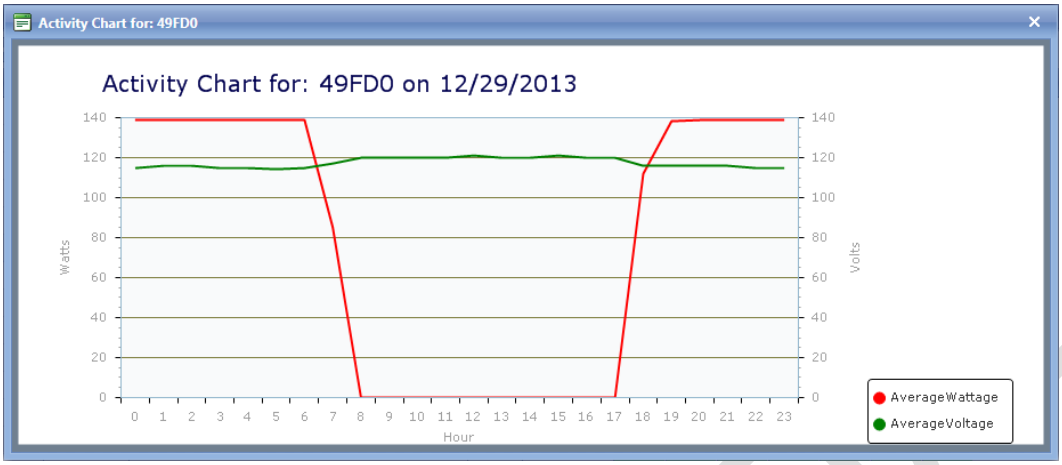
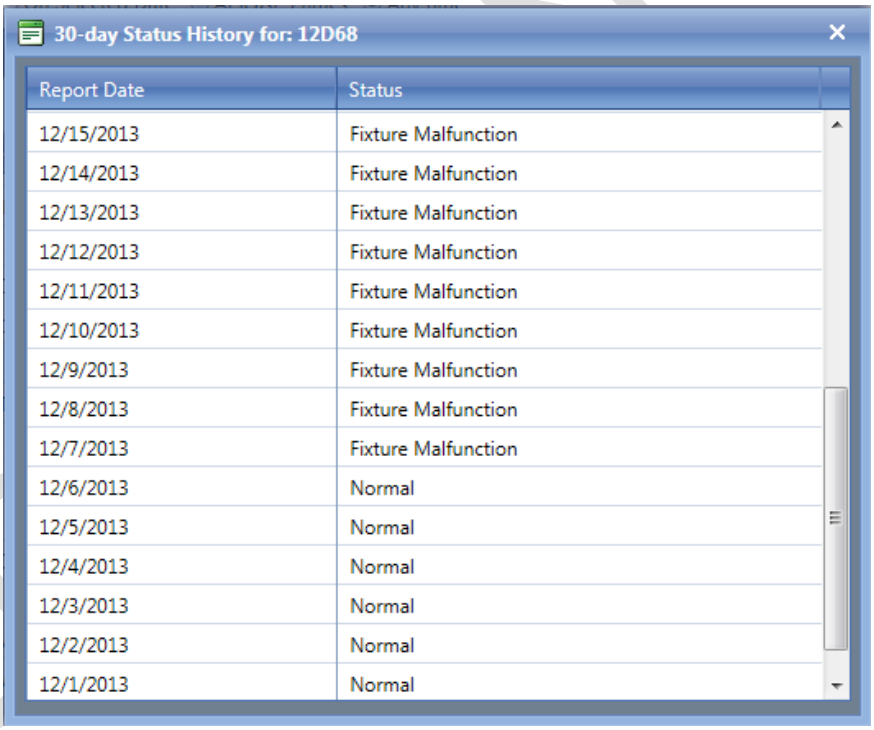


Chart for the day – This option will produce a line graph depicting the power and voltage readings for the day.

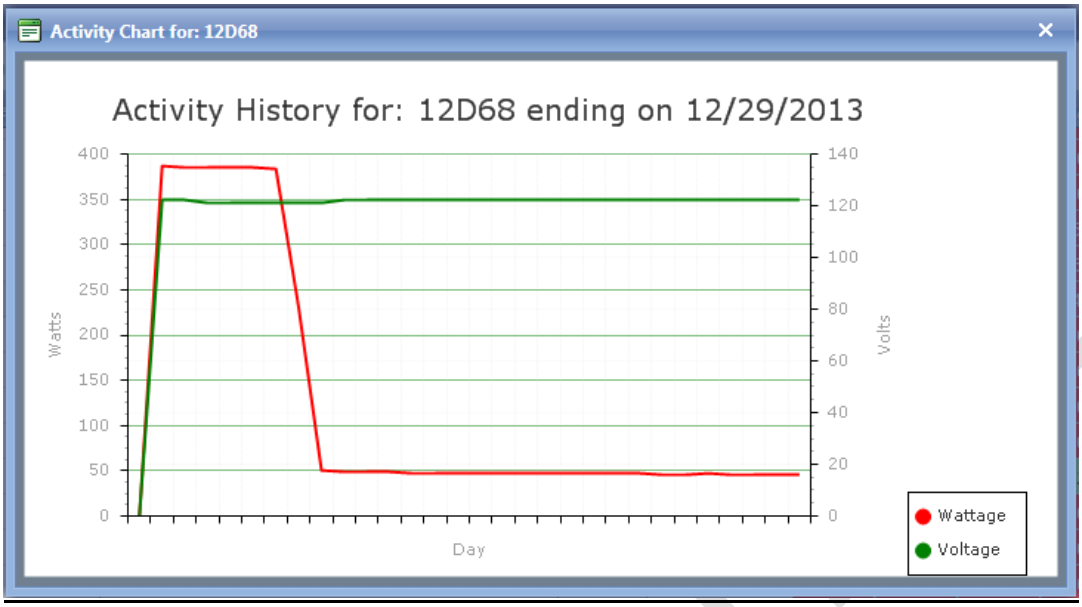


Status for the previous 30 days – This option provides user with the previous 30-day history on the light asset's performance.

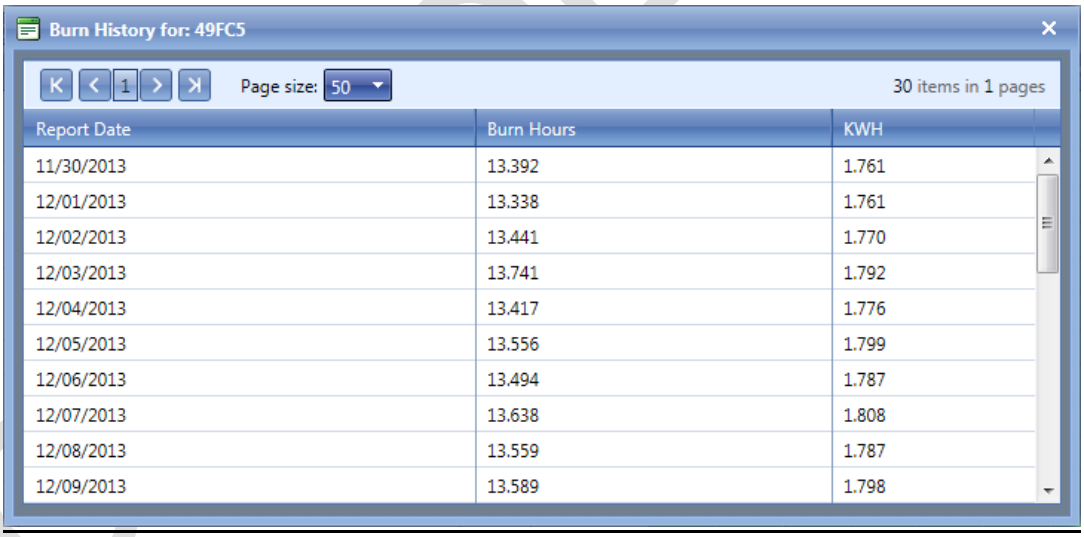


Report Date	Status
12/15/2013	Fixture Malfunction
12/14/2013	Fixture Malfunction
12/13/2013	Fixture Malfunction
12/12/2013	Fixture Malfunction
12/11/2013	Fixture Malfunction
12/10/2013	Fixture Malfunction
12/9/2013	Fixture Malfunction
12/8/2013	Fixture Malfunction
12/7/2013	Fixture Malfunction
12/6/2013	Normal
12/5/2013	Normal
12/4/2013	Normal
12/3/2013	Normal
12/2/2013	Normal
12/1/2013	Normal

Activity for the previous 30 days – This option will produce a line graph depicting the power and voltage readings for the previous 30 days.



Burn information for the previous 30 days – This option will provide the daily burn hours and energy (KWH) used for each of the previous 30 days.



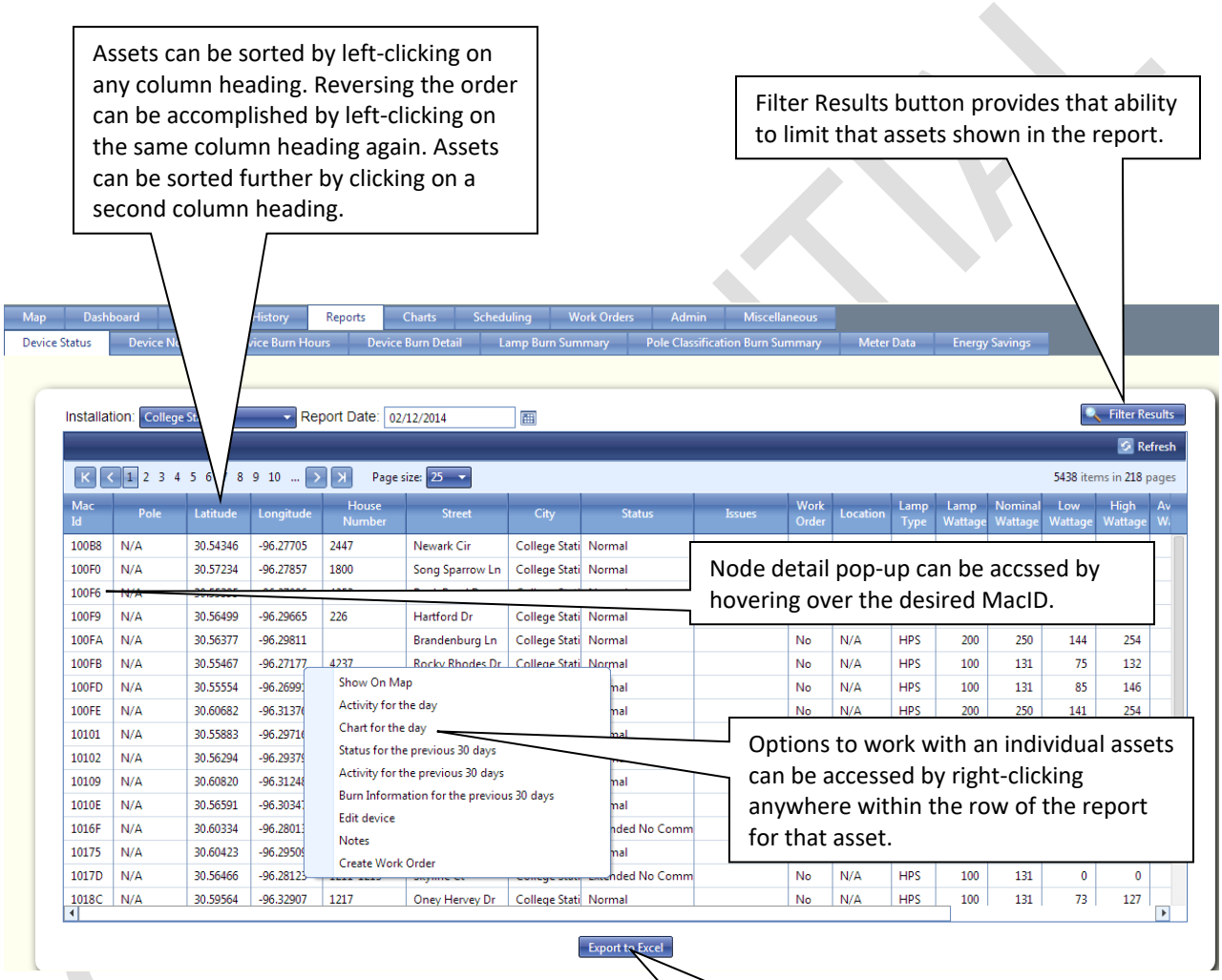
Report Date	Burn Hours	KWH
11/30/2013	13.392	1.761
12/01/2013	13.338	1.761
12/02/2013	13.441	1.770
12/03/2013	13.741	1.792
12/04/2013	13.417	1.776
12/05/2013	13.556	1.799
12/06/2013	13.494	1.787
12/07/2013	13.638	1.808
12/08/2013	13.559	1.787
12/09/2013	13.589	1.798

Reports Tab

The Reports Tab has eight (8) sub-tabs; Device Status, Device Notes, Device Burn Hours, Device Burn Detail, Lamp Burn Summary, Pole Classification Burn Summary, Meter Data and Energy Savings.

Device Status Report

The Device Status Report provides the user with exportable reports indicating the latest status of selected assets. This report will also let the consumer create a list of assets with specific diagnostic issues, such as cycling, dayburner or voltage issues.



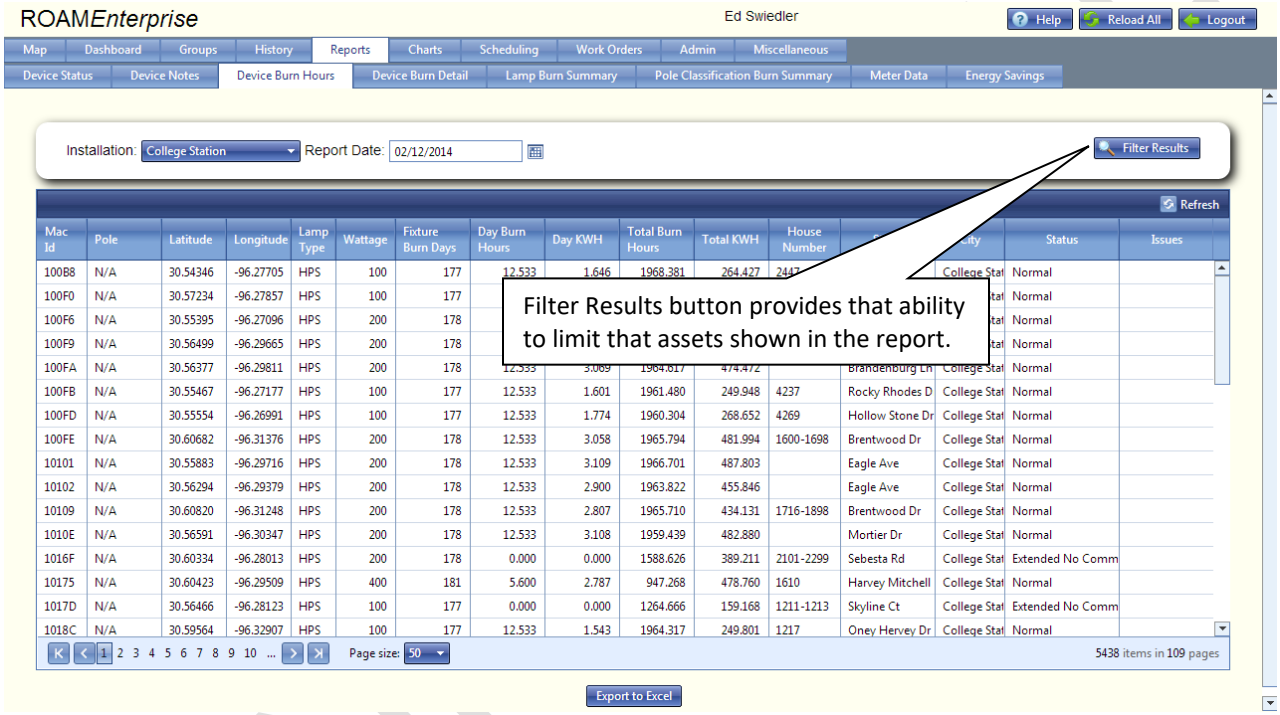
As previously mentioned, the Filter Results button is provided on many of the report style screens to limit the selections within the displayed list to those chosen by the user. See additional information in the History section.

Device Notes Report

Device Notes report allows user to retrieve a list of the various notes entered for all assets, based on a user selected date range. User enters a start date and end date by left-clicking on the calendar icons beside each entry, and clicking on the desired date. Once the date range has been selected, click the Refresh button.

Device Burn Hours Report

The Device Burn Hours report provides burn hours and kilowatt hours for the specified date, along with the cumulative total of days of operation, burn hours and kilowatt hours beginning with the date the node is activated or when the lamp install date is updated on the portal for all assets at a specific installation. The report can be filtered by lamp type/wattage to limit the data.



Mac Id	Pole	Latitude	Longitude	Lamp Type	Wattage	Fixture Burn Days	Day Burn Hours	Day KWH	Total Burn Hours	Total KWH	House Number		City	Status	Issues
100B8	N/A	30.54346	-96.27705	HPS	100	177	12.533	1.646	1968.381	264.427	2447		College Stat	Normal	
100F0	N/A	30.57234	-96.27857	HPS	100	177							tat	Normal	
100F6	N/A	30.55395	-96.27096	HPS	200	178							tat	Normal	
100F9	N/A	30.56499	-96.29665	HPS	200	178							tat	Normal	
100FA	N/A	30.56377	-96.29811	HPS	200	178	12.533	3.069	1964.617	474.472		Brandenburg Ln	College Stat	Normal	
100FB	N/A	30.55467	-96.27177	HPS	100	177	12.533	1.601	1961.480	249.948	4237	Rocky Rhodes D	College Stat	Normal	
100FD	N/A	30.55554	-96.26991	HPS	100	177	12.533	1.774	1960.304	268.652	4269	Hollow Stone Dr	College Stat	Normal	
100FE	N/A	30.60682	-96.31376	HPS	200	178	12.533	3.058	1965.794	481.994	1600-1698	Brentwood Dr	College Stat	Normal	
10101	N/A	30.55883	-96.29716	HPS	200	178	12.533	3.109	1966.701	487.803		Eagle Ave	College Stat	Normal	
10102	N/A	30.56294	-96.29379	HPS	200	178	12.533	2.900	1963.822	455.846		Eagle Ave	College Stat	Normal	
10109	N/A	30.60820	-96.31248	HPS	200	178	12.533	2.807	1965.710	434.131	1716-1898	Brentwood Dr	College Stat	Normal	
1010E	N/A	30.56591	-96.30347	HPS	200	178	12.533	3.108	1959.439	482.880		Mortier Dr	College Stat	Normal	
1016F	N/A	30.60334	-96.28013	HPS	200	178	0.000	0.000	1588.626	389.211	2101-2299	Sebesta Rd	College Stat	Extended No Comm	
10175	N/A	30.60423	-96.29509	HPS	400	181	5.600	2.787	947.268	478.760	1610	Harvey Mitchell	College Stat	Normal	
1017D	N/A	30.56466	-96.28123	HPS	100	177	0.000	0.000	1264.666	159.168	1211-1213	Skyline Ct	College Stat	Extended No Comm	
1018C	N/A	30.59564	-96.32907	HPS	100	177	12.533	1.543	1964.317	249.801	1217	Oney Hervey Dr	College Stat	Normal	

1 2 3 4 5 6 7 8 9 10 ... Page size: 50 — 5438 items in 109 pages

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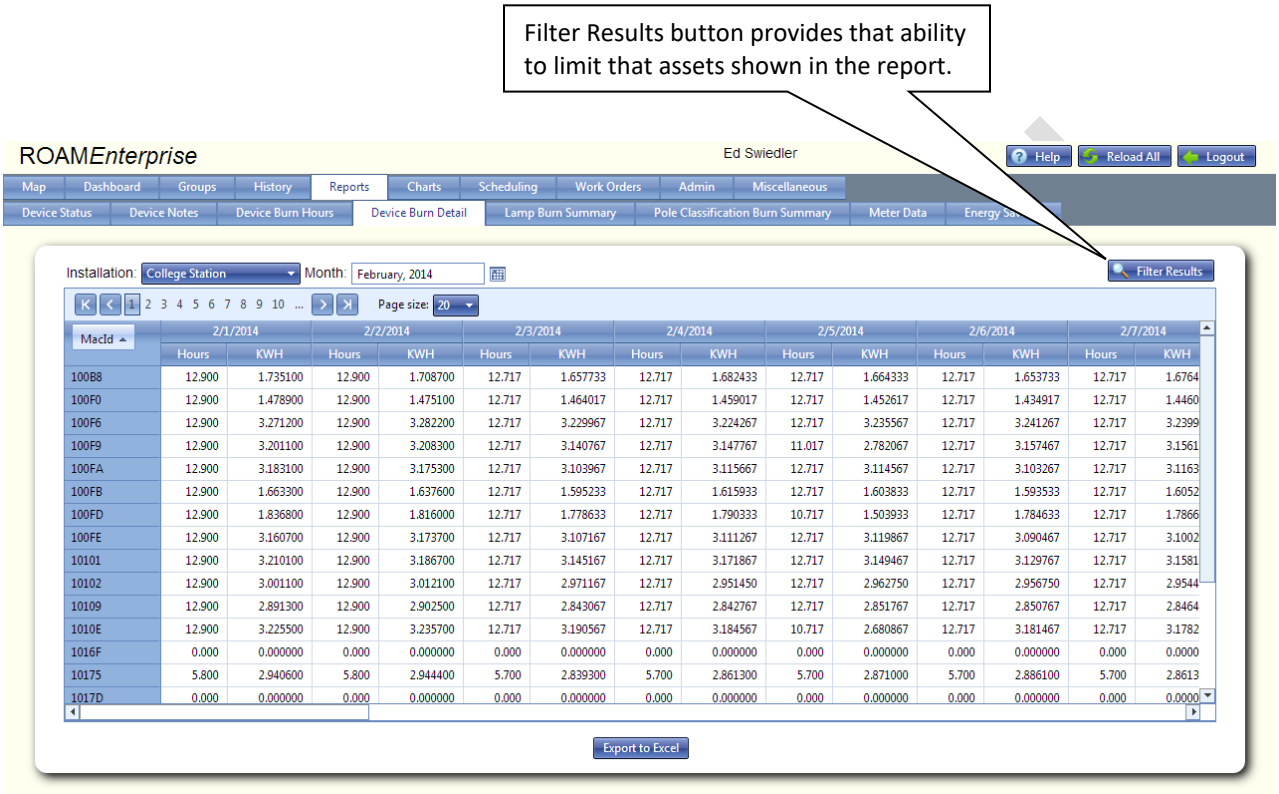
Device Burn Detail Report

The Burn Hour Detail report provides the number of operating hours and kilowatt hours used for each day of the specified month, plus the monthly totals, for all assets at a specific installation. The report can be filtered by lamp type and lamp wattage. The report can be filtered to view a specific MacID or limit the list to include only specific lamp types/wattages.



MacId	2/1/2014		2/2/2014		2/3/2014		2/4/2014		2/5/2014		2/6/2014		2/7/2014	
	Hours	KWH	Hours	KWH	Hours	KWH	Hours	KWH	Hours	KWH	Hours	KWH	Hours	KWH
100B8	12.900	1.735100	12.900	1.708700	12.717	1.657733	12.717	1.682433	12.717	1.664333	12.717	1.653733	12.717	1.6764
100F0	12.900	1.478900	12.900	1.475100	12.717	1.464017	12.717	1.459017	12.717	1.452617	12.717	1.434917	12.717	1.4460
100F6	12.900	3.271200	12.900	3.282200	12.717	3.229967	12.717	3.224267	12.717	3.235567	12.717	3.241267	12.717	3.2399
100F9	12.900	3.201100	12.900	3.208300	12.717	3.140767	12.717	3.147767	11.017	2.782067	12.717	3.157467	12.717	3.1561
100FA	12.900	3.183100	12.900	3.175300	12.717	3.103967	12.717	3.115667	12.717	3.114567	12.717	3.103267	12.717	3.1163
100FB	12.900	1.663300	12.900	1.637600	12.717	1.595233	12.717	1.615933	12.717	1.603833	12.717	1.593533	12.717	1.6052
100FD	12.900	1.836800	12.900	1.816000	12.717	1.778633	12.717	1.790333	10.717	1.503933	12.717	1.784633	12.717	1.7866
100FE	12.900	3.160700	12.900	3.173700	12.717	3.107167	12.717	3.111267	12.717	3.119867	12.717	3.090467	12.717	3.1002
10101	12.900	3.210100	12.900	3.186700	12.717	3.145167	12.717	3.171867	12.717	3.149467	12.717	3.129767	12.717	3.1581
10102	12.900	3.001100	12.900	3.012100	12.717	2.971167	12.717	2.951450	12.717	2.962750	12.717	2.956750	12.717	2.9544
10109	12.900	2.891300	12.900	2.902500	12.717	2.843067	12.717	2.842767	12.717	2.851767	12.717	2.850767	12.717	2.8464
1010E	12.900	3.225500	12.900	3.235700	12.717	3.190567	12.717	3.184567	10.717	2.680867	12.717	3.181467	12.717	3.1782
1016F	0.000	0.000000	0.000	0.000000	0.000	0.000000	0.000	0.000000	0.000	0.000000	0.000	0.000000	0.000	0.0000
10175	5.800	2.940600	5.800	2.944400	5.700	2.839300	5.700	2.861300	5.700	2.871000	5.700	2.886100	5.700	2.8613
1017D	0.000	0.000000	0.000	0.000000	0.000	0.000000	0.000	0.000000	0.000	0.000000	0.000	0.000000	0.000	0.0000

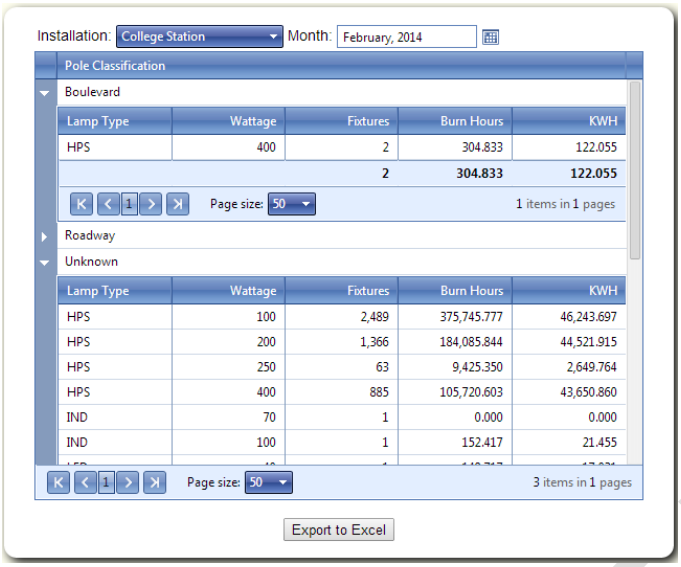
Lamp Burn Summary Report

The Lamp Burn Summary report provides a breakdown of the quantity, burn hours and KWH totals of each lamp type/wattage found in the chosen installation for the selected month.

Lamp Type	Wattage	Fixtures	Burn Hours	KWH
HPS	100	2,489	375,745.777	46,243.697
HPS	200	1,366	184,085.844	44,521.915
HPS	250	63	9,425.350	2,649.764
HPS	400	888	106,175.853	43,826.596
IND	70	1	0.000	0.000
IND	100	1	152.417	21.455
LED	40	1	149.717	17.031
LED	50	3	457.017	31.159
LED	70	33	6,141.506	408.348
LED	80	1	274.417	12.811
LED	100	1	152.417	21.461
LED	150	9	1,368.982	217.151
LED	250	108	16,170.988	4,165.626
MH	70	3	350.291	31.004
MH	100	409	63,956.557	7,847.982
		5,438	771,706.927	151,910.270

Pole Classification Burn Summary

If the installation selected utilizes the pole classification attribute option, then the burn hour report can be separated by pole classification. This can be helpful when a portion of the lighting assets might be billed according to the pole classification (i.e. street lighting versus private back yard lights).



Installation: College Station Month: February, 2014

Pole Classification

Boulevard

Lamp Type	Wattage	Fixtures	Burn Hours	KWH
HPS	400	2	304.833	122.055
		2	**304.833**	**122.055**

Page size: 50 — 1 items in 1 pages

Roadway

Unknown

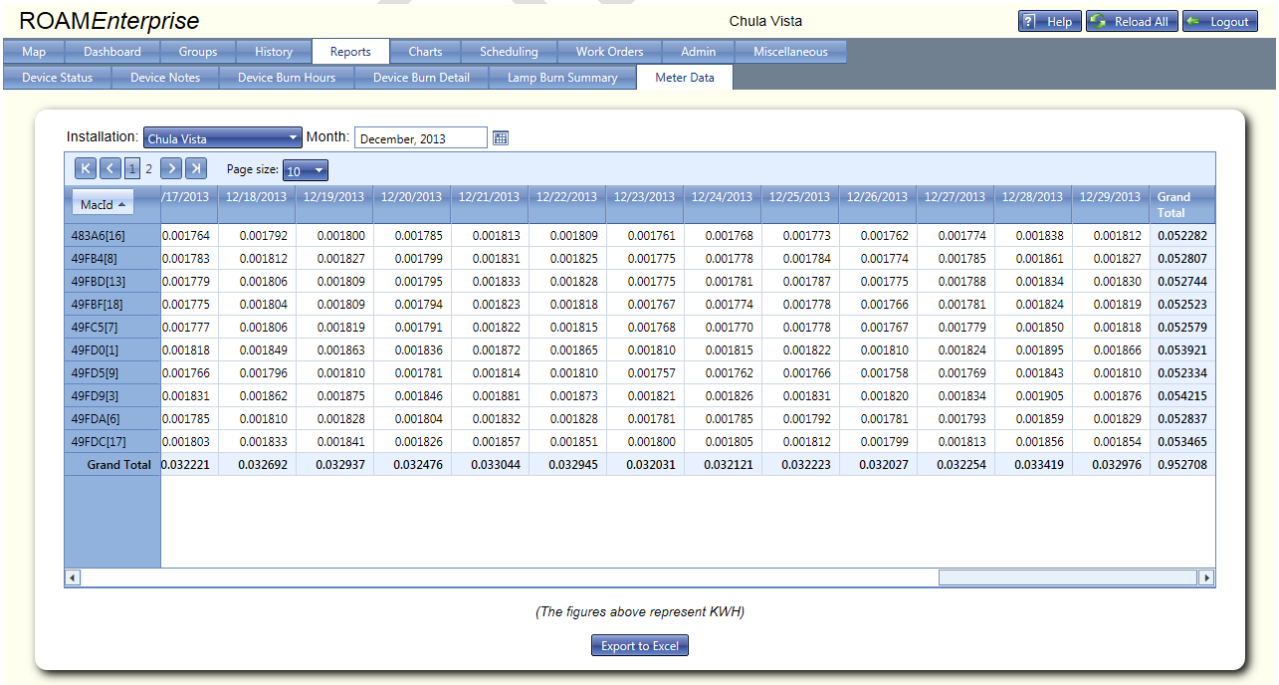
Lamp Type	Wattage	Fixtures	Burn Hours	KWH
HPS	100	2,489	375,745.777	46,243.697
HPS	200	1,366	184,085.844	44,521.915
HPS	250	63	9,425.350	2,649.764
HPS	400	885	105,720.603	43,650.860
IND	70	1	0.000	0.000
IND	100	1	152.417	21.455

Page size: 50 — 3 items in 1 pages

Export to Excel

Meter Data Report (if available)

If the installation selected has any meter-grade nodes installed, then a Meter Data report can be generated. The Meter Data report will bring up the daily energy (kWh) usage for each date in the chosen month for all assets with meter-grade nodes installed. Total energy usages are shown for each day, plus a grand total for the month by node and for the entire installation.



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Map | Dashboard | Groups | History | Reports | Charts | Scheduling | Work Orders | Admin | Miscellaneous

Device Status | Device Notes | Device Burn Hours | Device Burn Detail | Lamp Burn Summary | Meter Data

Installation: Chula Vista Month: December, 2013

Page size: 10

MacId	/17/2013	12/18/2013	12/19/2013	12/20/2013	12/21/2013	12/22/2013	12/23/2013	12/24/2013	12/25/2013	12/26/2013	12/27/2013	12/28/2013	12/29/2013	Grand Total
483A6[16]	0.001764	0.001792	0.001800	0.001785	0.001813	0.001809	0.001761	0.001768	0.001773	0.001762	0.001774	0.001838	0.001812	0.052282
49FB4[8]	0.001783	0.001812	0.001827	0.001799	0.001831	0.001825	0.001775	0.001778	0.001784	0.001774	0.001785	0.001861	0.001827	0.052807
49FBD[13]	0.001779	0.001806	0.001809	0.001795	0.001833	0.001828	0.001775	0.001781	0.001787	0.001775	0.001788	0.001834	0.001830	0.052744
49FBF[18]	0.001775	0.001804	0.001809	0.001794	0.001823	0.001818	0.001767	0.001774	0.001778	0.001766	0.001781	0.001824	0.001819	0.052523
49FC5[7]	0.001777	0.001806	0.001819	0.001791	0.001822	0.001815	0.001768	0.001770	0.001778	0.001767	0.001779	0.001850	0.001818	0.052579
49FD0[1]	0.001818	0.001849	0.001863	0.001836	0.001872	0.001865	0.001810	0.001815	0.001822	0.001810	0.001824	0.001895	0.001866	0.053921
49FD5[9]	0.001766	0.001796	0.001810	0.001781	0.001814	0.001810	0.001757	0.001762	0.001766	0.001758	0.001769	0.001843	0.001810	0.052334
49FD9[3]	0.001831	0.001862	0.001875	0.001846	0.001881	0.001873	0.001821	0.001826	0.001831	0.001820	0.001834	0.001905	0.001876	0.054215
49FDA[6]	0.001785	0.001810	0.001828	0.001804	0.001832	0.001828	0.001781	0.001785	0.001792	0.001781	0.001793	0.001859	0.001829	0.052837
49FDC[17]	0.001803	0.001833	0.001841	0.001826	0.001857	0.001851	0.001800	0.001805	0.001812	0.001799	0.001813	0.001856	0.001854	0.053465
Grand Total	0.032221	0.032692	0.032937	0.032476	0.033044	0.032945	0.032031	0.032121	0.032223	0.032027	0.032254	0.033419	0.032976	0.952708

(The figures above represent KWH)

Export to Excel

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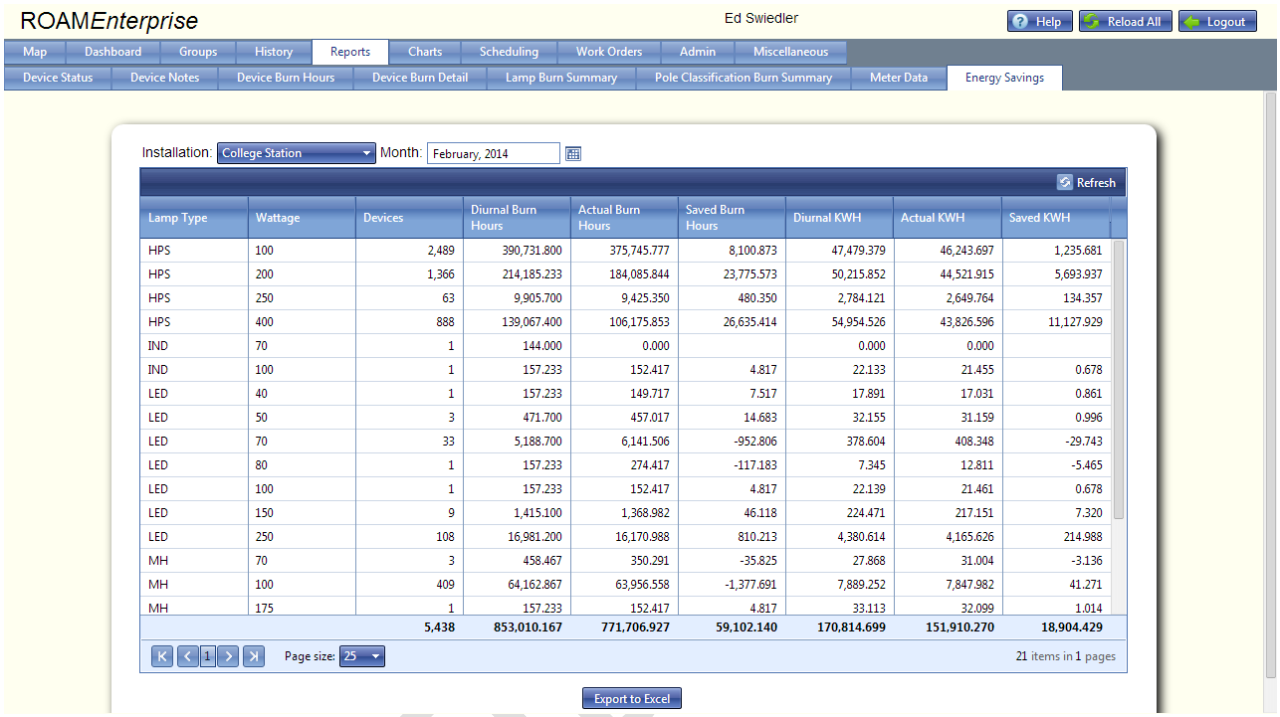
Energy Savings

The energy savings report will provide an estimated energy savings for a particular month for the installation chosen. The energy savings is based on the actual energy used in comparison to the theoretical energy that would have been used if the lighting assets had burned at 100% of full load from sunset to sunrise every day for the month chosen. The savings is broken down into the different lamp categories.



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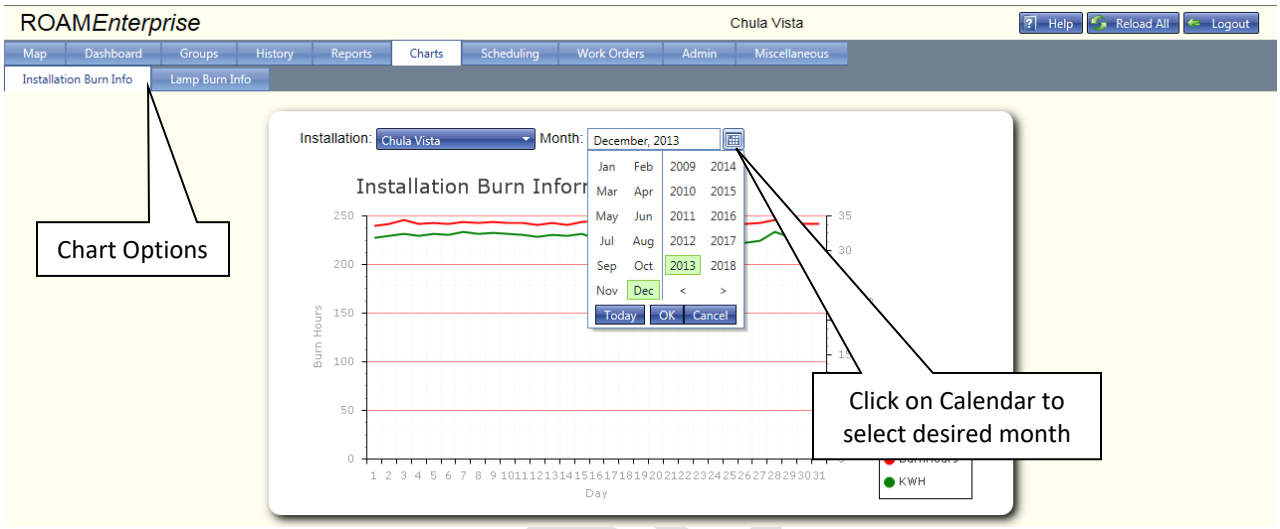
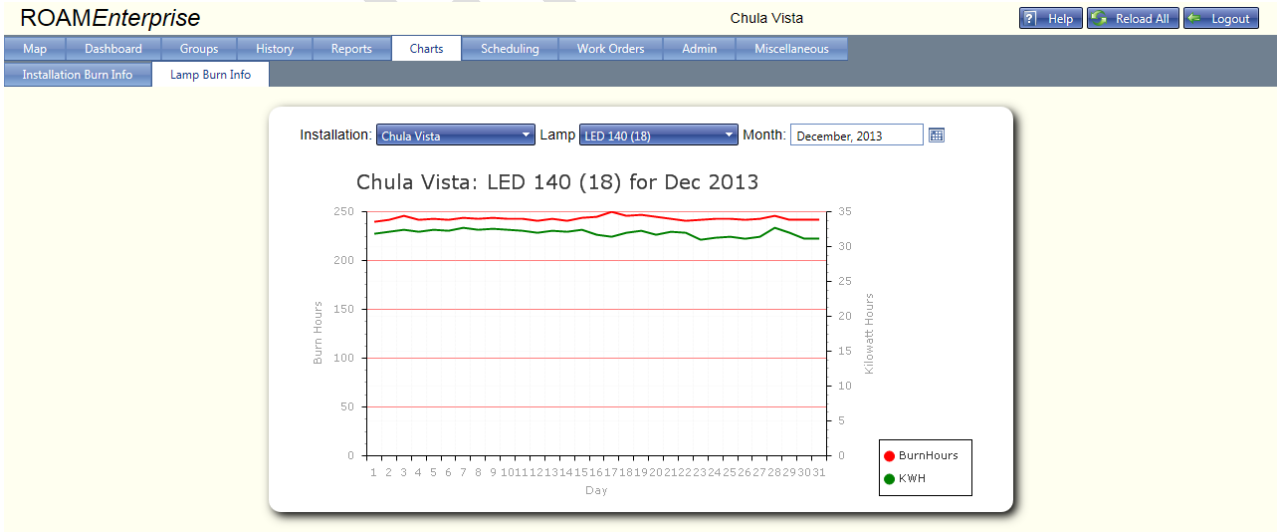
Charts Tab

Overview

The Charts tab allows the user to obtain a graphical representation of the burn hour and energy usage information for an entire installation (Installation Burn Info) or a subset fixtures based on the lamp type/wattage (Lamp Burn Info) for any desired month. The two reports are identical in the data that presented in the charts, with the exception of the assets included in the reports.



Installation Burn Info



Lamp Burn Info

Calendars/Events Tab

Overview

The Calendars/Events Tab is where Calendars and Events are created, modified and stored. ROAM allows the use of several types of commands to control a light fixture. These different commands include photocontrol operation, calendars, events and instant commands. The priority level of the operations are in this same order, with instant commands having the highest priority. If no other action is called for, then the node will operate based off the photocontrol, which has the lowest priority. A description of each type of command is defined below:

Photocontrol Operation
The ROAM nodes include a light sensor as part of the architecture of the device. This sensor will determine when it is dark/light and close/open the relay on the node to turn the light on/off. In the absence of any other type of command, nodes will revert to photocontrol operation, which is their default. The default operation for a Dimming Control Module (DCM) is 100% illumination.

Calendar
Calendars are the next level of priority over photocontrol. Anytime a calendar is applied, it will override photocontrol operation. On/Off and dimming commands for a Calendar are set up with both a weekday and weekend entry, allowing for more flexibility with a single Calendar. If the desired actions are the same for both weekday and weekends, it will still be required to complete both sections, as the time slots are stored separately in memory on the device. In other words, if the calendar is scheduled for a Saturday, then the desired actions must be loaded into the weekend portion of the calendar, otherwise the device will function on photocontrol operation (default status). Calendars are sent to affected devices each day at 10:00PM your local time and reside on non-volatile memory on the node, which allows the node to continue executing the calendar after recovering from a power loss. Calendars are designed to be used for recurring commands as a base level of operation such as turning the lights on 10 minutes before sunset and off 10 minutes after sunrise every day.

Events
Events are priority level above calendars, so they will override calendars and photocontrol operation for the duration of the event. On/Off and dimming commands for an Event are sent 2 hours before the event start time and are stored in volatile memory with the action start time and duration. If power is lost to the device after the event command is sent, then the device will no longer execute the Event commands and will return to the previous state. Events are designed to be used for occasions where the lights will need to operate differently than the standard calendar. An example might be creating an event for lights to be on and at 100% illumination from 5:00PM to 12:00AM on a specific day.

Override Command
On/Off and dimming commands that can be sent to a single device or a group of devices to be executed immediately and will override all other operations.

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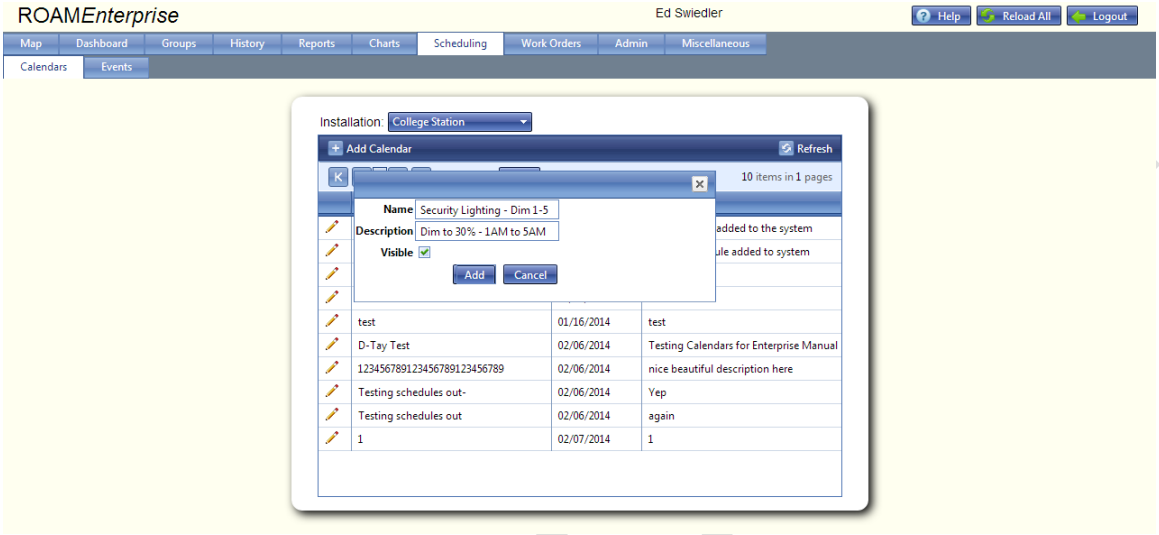
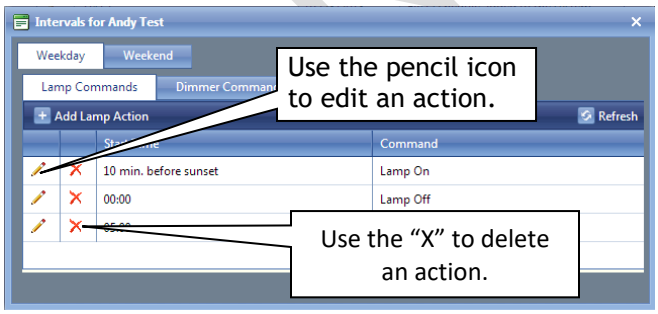
Calendars

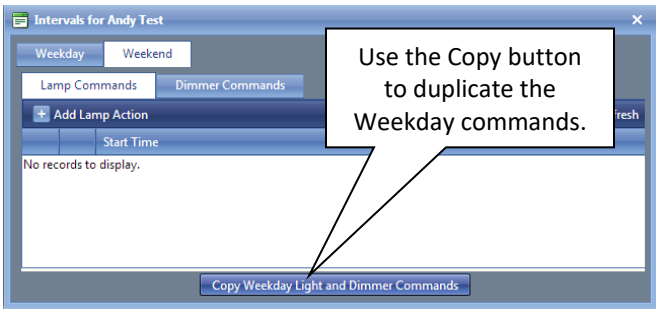
To create a new calendar, navigate to the Scheduling main tab and then to the Calendars sub tab. Click on the Add Calendar button to begin. It is recommended to name calendars so they are descriptive of the calendar actions (i.e. *Dim 50% @12AM*), as opposed to the groups you will use them in. Use the Description field to input more details about your calendar. Click Add to save your new calendar and it will populate in the calendar list. Once a calendar is in the list, you may edit the Name and Description by left-clicking on the pencil icon to the left of the schedule.

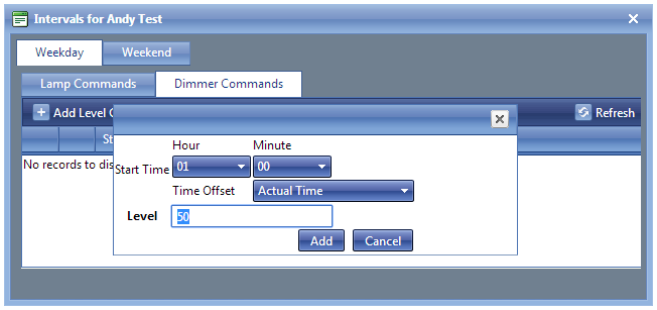


After the calendar is created, calendar actions still need to be created. To create the calendar actions, right-click on the calendar and click Intervals. The calendar is divided into Weekday and Weekend commands. If your weekend commands are the same as your weekday, you can use the Copy Weekday Light and Dimmer Commands button to automatically fill in the Weekend commands. Use the Lamp Commands tab to schedule on/off functionality. Dimming levels can be set from 1-100% under the Dimmer Commands tab, with 100% being full illumination and 1% being the lowest illumination level that the driver can achieve (typically 15-20% of full illumination). Note that each command initiates one action, such as turning the lamp on. An additional command would then be needed to turn the lamp off or to return it to photocontrol operation. Once the desired commands have been added, click on the Add button at the bottom to save to the Calendar.

Note: Schedules are limited to 4 lamp commands and 4 dimmer commands per day.







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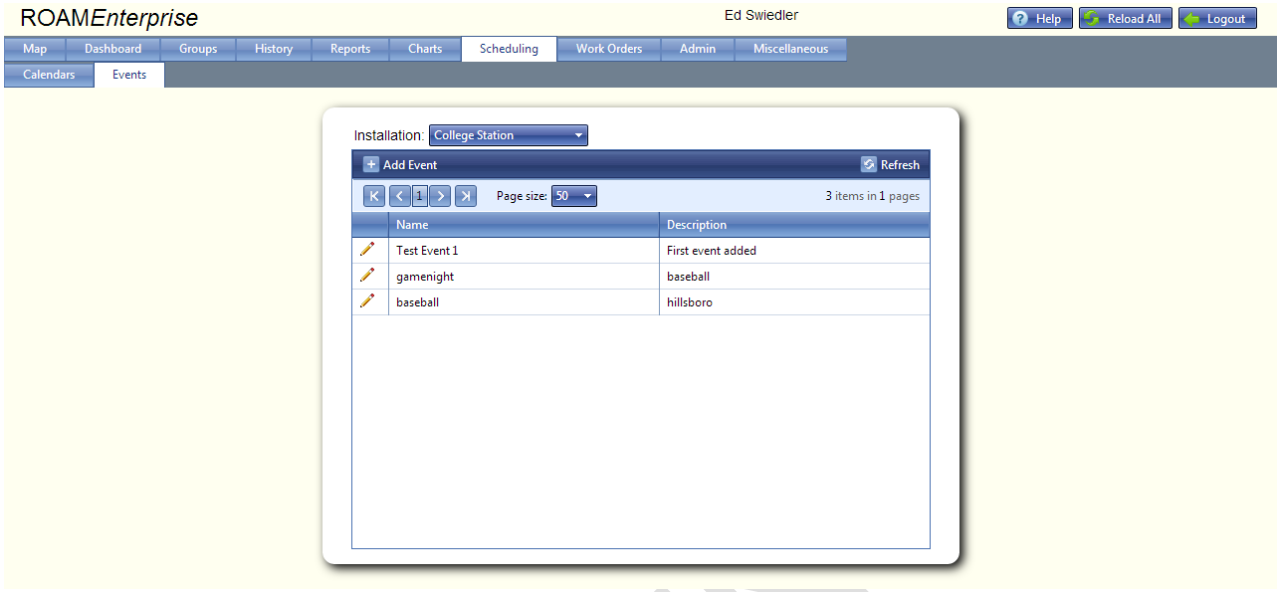
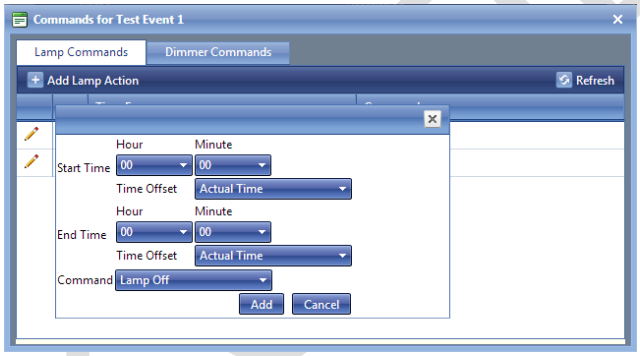
Events

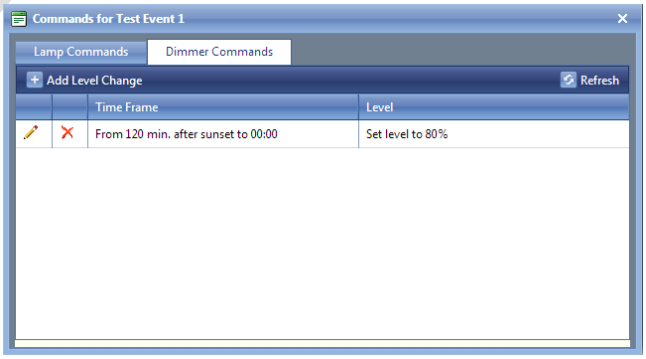
Creating an Event is similar to creating a Calendar. To create a new Event, navigate to the Scheduling main tab and then to the Events sub tab. Use the Add Event button to name and describe the Event.



Right-click the event to add commands. Unlike Calendars, Event commands have a start time and end time for the specified action. Once the desired commands have been added, click on the Add button at the bottom to save to the Event.

Note: Events are limited to 4 lamp commands and 4 dimmer commands per day.





Groups Tab

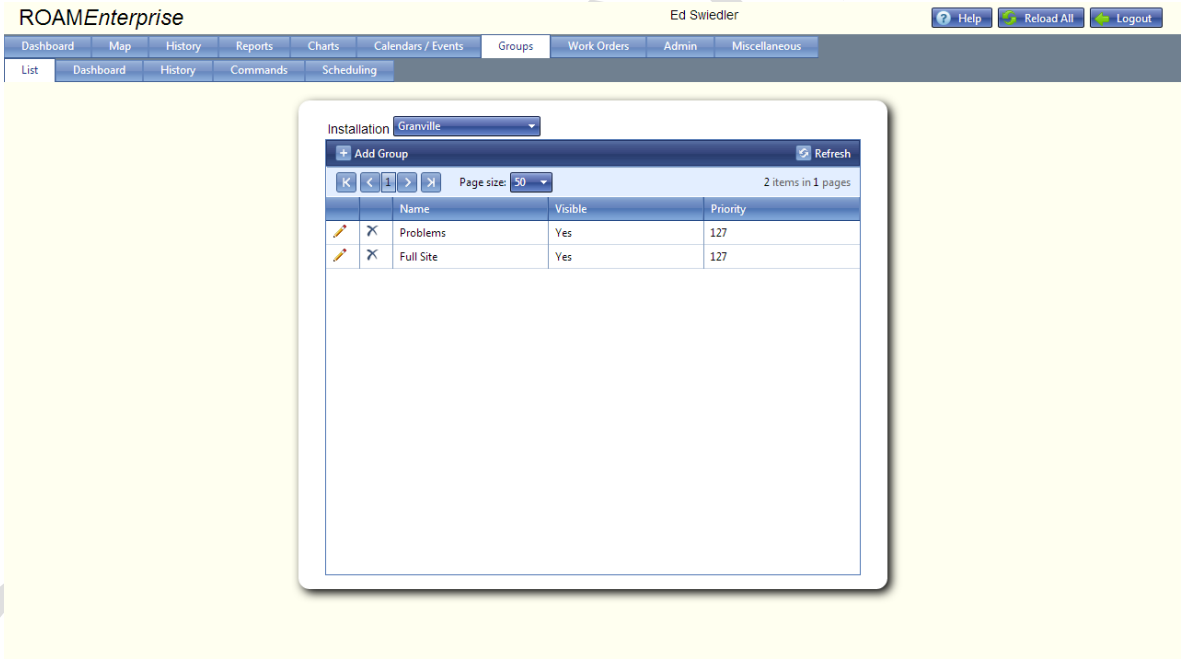
Overview

Groups allow the user to create a group of assets to manage and control, giving the user the ability to review a dashboard, look at history, send commands or set schedules by group. Lighting assets can be grouped for administrative use, selective reporting, and controlling assets (scheduling, events, and immediate commands). Lights must be assigned to a group or groups in order to utilize the Scheduling functions. Lighting assets are allowed to reside in more than one group through the use of priority levels. Each permanent group must be assigned a priority level from 1-255, with 1 having the highest priority. The priority level is used to determine what Calendar or Event is send to an individual node that resides in multiple groups when there are conflicting commands. The Calendar or Event that is scheduled for the group with the highest priority will be sent for those instances.

The Groups Tab has five (5) sub tabs; List, Dashboard, History, Commands and Scheduling, which are described below.

List

Clicking on the List tab will display all of the existing permanent groups that have been created. From this page, a user can create a new group, edit the name and settings of an existing group, delete an existing group or modify the assets within the group.

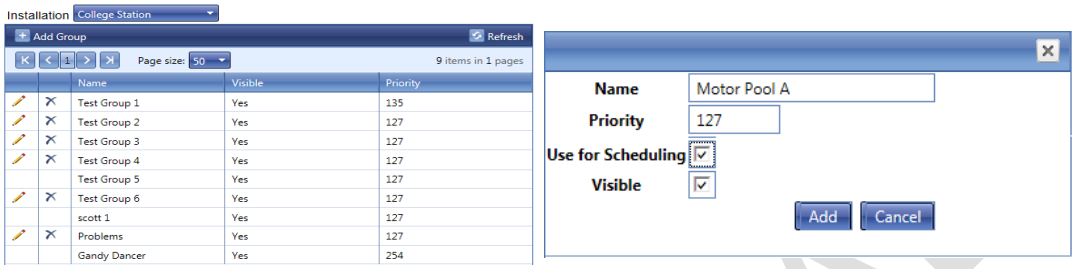


NOTE: Only the creator (or 'owner') of a list can make changes to or delete a group. Other users may view or use the group.

NOTE: Assets added to a group are static, so any assets added by Diagnostic Status will remain in the group until it is removed by the owner of the group. If the asset's status changes due to a malfunction or a repair, it will still remain in the group.

Add a New Group

1. Click on the correct installation. The list of previously created groups for this installation will be displayed.
2. Click on the Add Group button. Enter in the desired name for the new group, along with a priority level. The default priority is set to 127(Remember that the highest priority is 1 and the lowest is 255). The priority can be modified at any time to meet scheduling requirements.



3. Use for Scheduling should be checked if you are planning to apply calendars or events to the group.
4. The Visible button should be checked if you want to be able to work with this group through the drop down lists.
5. Click Add to create the new group.
6. The new group will appear in the group list.

Edit the attributes for an Existing Group

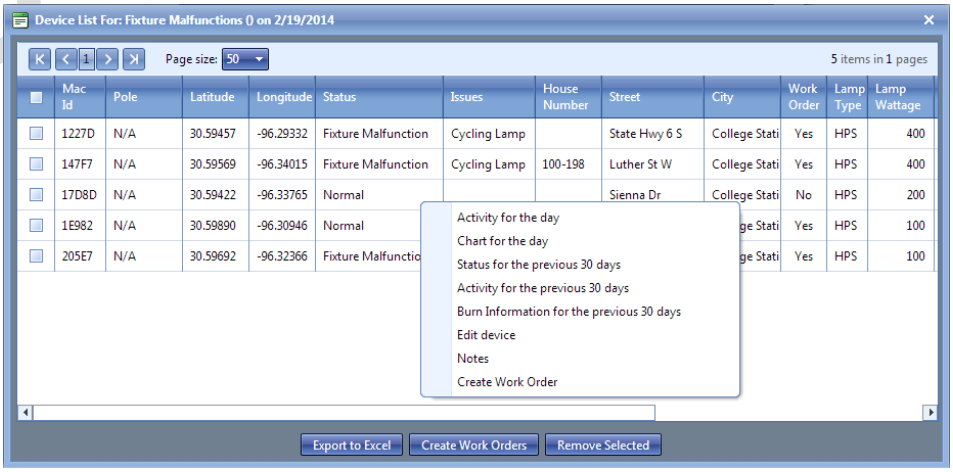
1. Click on the pencil icon to the left of the group name.
2. Enter the desired changes to the name or settings for the group.
3. Click Update to save the information.

Delete an Existing Group

1. Click on the “x” icon to the left of the group name.
2. A confirmation box will appear. Click the OK button to permanently delete the group.
3. The group will now be removed from the database and will no longer show on the group list.

Working with the assets within an Existing Group

1. Right click on the name of the group to work with the assets included in the group.
2. Choose an option to List Devices, Add Devices or Remove Devices based on the action the user wants to perform.
    a. List Devices – Choosing List Devices will display a list of all of the assets included in the list, along with the current status and any issues that the asset may have. From here you can choose to create work orders or delete specific devices from the group by placing check marks beside the desired assets and clicking on the Create Work Orders button or Delete Asset button, respectively. Right clicking in a row will bring up the options menu for that device.



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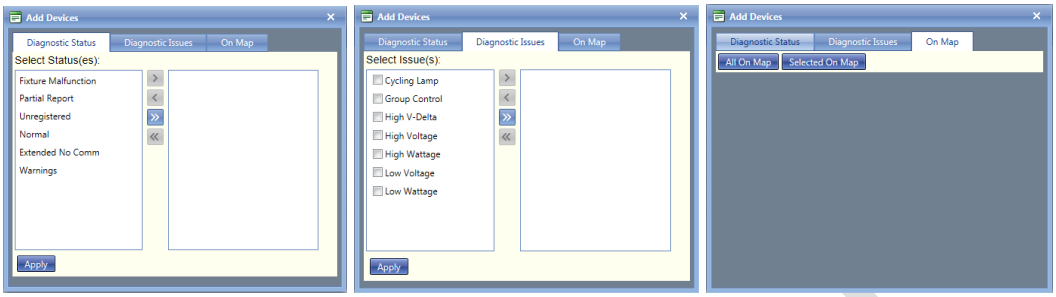
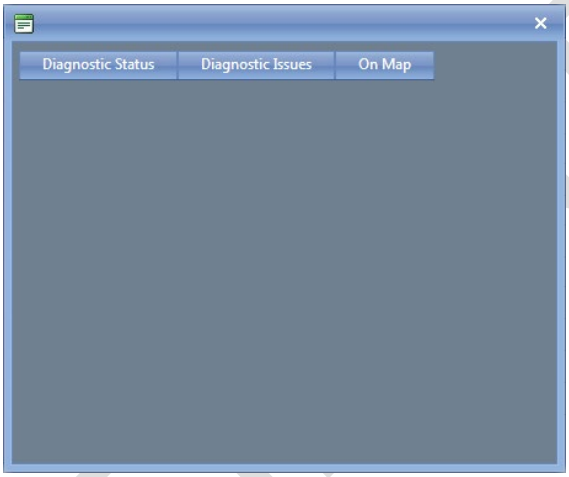
b. Add Devices – A permanent group can also be created using by filtering using diagnostic status, diagnostic issue or working with the map.



c. Remove Devices – Choosing Remove Devices will bring up three separate options for deleting assets included in the list. The user can then either delete assets based on their current diagnostic status, diagnostic issues that they might be experiencing or by selecting specific assets on the map.



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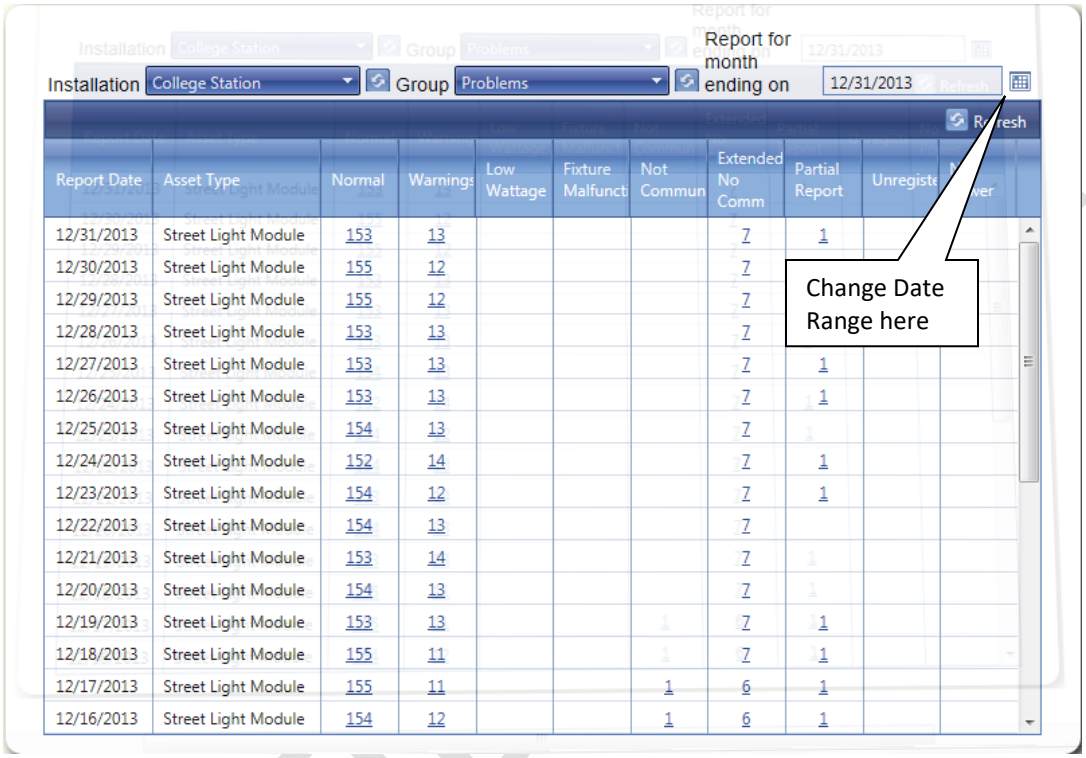
Dashboard

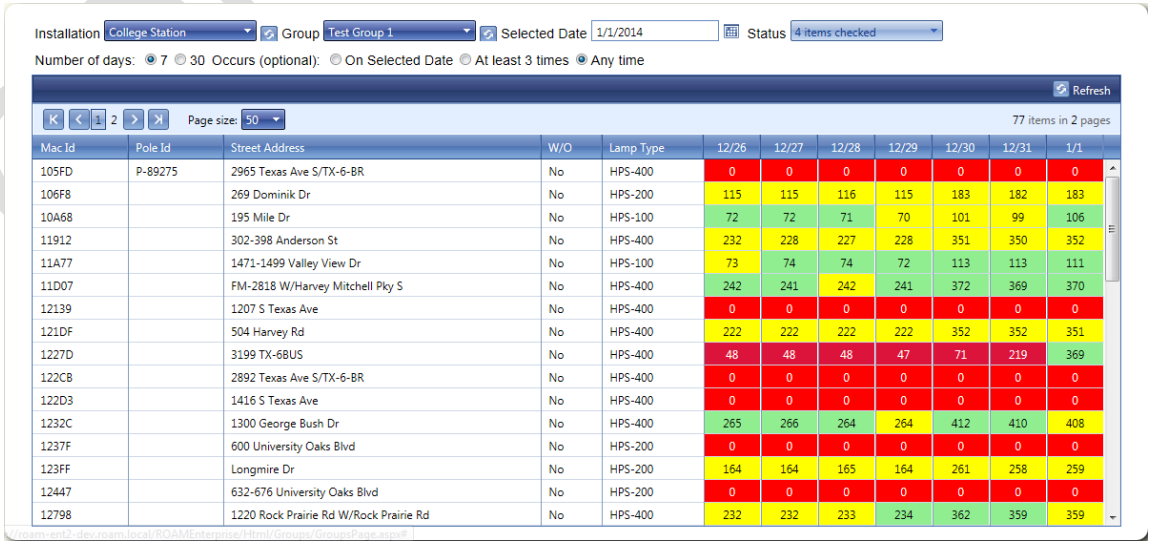
Clicking on the Dashboard tab will display a visual summary of the performance for the previous 30 days for any given group, according to the diagnostic conditions. As described in detail in the Dashboard Tab section, the user can view all the assets with a certain status by left clicking on the number underneath the status. The user can view a different timeframe by modifying the reports end date.



Report Date	Asset Type	Normal	Warnings	Low Wattage	Fixture Malfunct	Not Commun	Extended No Comm	Partial Report	Unregiste	ver
12/31/2013	Street Light Module	153	13				7	1		
12/30/2013	Street Light Module	155	12				7			
12/29/2013	Street Light Module	155	12				7			
12/28/2013	Street Light Module	153	13				7			
12/27/2013	Street Light Module	153	13				7	1		
12/26/2013	Street Light Module	153	13				7	1		
12/25/2013	Street Light Module	154	13				7			
12/24/2013	Street Light Module	152	14				7	1		
12/23/2013	Street Light Module	154	12				7	1		
12/22/2013	Street Light Module	154	13				7			
12/21/2013	Street Light Module	153	14				7			
12/20/2013	Street Light Module	154	13				7			
12/19/2013	Street Light Module	153	13				7	1		
12/18/2013	Street Light Module	155	11				7	1		
12/17/2013	Street Light Module	155	11			1	6	1		
12/16/2013	Street Light Module	154	12			1	6	1		

History

The user can choose to review either 7 or 30 days of historical data for the lighting assets in a group. The data can be further manipulated using the available options for selected date, status, on selected date, at least 3 times or any time. More detailed History functionality is described in the main History Tab section of the User Guide.



Mac Id	Pole Id	Street Address	W/O	Lamp Type	12/26	12/27	12/28	12/29	12/30	12/31	1/1
105FD	P-89275	2965 Texas Ave S/TX-6-BR	No	HPS-400	0	0	0	0	0	0	0
106F8		269 Dominik Dr	No	HPS-200	115	115	116	115	183	182	183
10A68		195 Mile Dr	No	HPS-100	72	72	71	70	101	99	106
11912		302-398 Anderson St	No	HPS-400	232	228	227	228	351	350	352
11A77		1471-1499 Valley View Dr	No	HPS-100	73	74	74	72	113	113	111
11D07		FM-2818 W/Harvey Mitchell Pky S	No	HPS-400	242	241	242	241	372	369	370
12139		1207 S Texas Ave	No	HPS-400	0	0	0	0	0	0	0
121DF		504 Harvey Rd	No	HPS-400	222	222	222	222	352	352	351
1227D		3199 TX-6BUS	No	HPS-400	48	48	48	47	71	219	369
122CB		2892 Texas Ave S/TX-6-BR	No	HPS-400	0	0	0	0	0	0	0
122D3		1416 S Texas Ave	No	HPS-400	0	0	0	0	0	0	0
1232C		1300 George Bush Dr	No	HPS-400	265	266	264	264	412	410	408
1237F		600 University Oaks Blvd	No	HPS-200	0	0	0	0	0	0	0
123FF		Longmire Dr	No	HPS-200	164	164	165	164	261	258	259
12447		632-676 University Oaks Blvd	No	HPS-200	0	0	0	0	0	0	0
12798		1220 Rock Prairie Rd W/Rock Prairie Rd	No	HPS-400	232	232	233	234	362	359	359

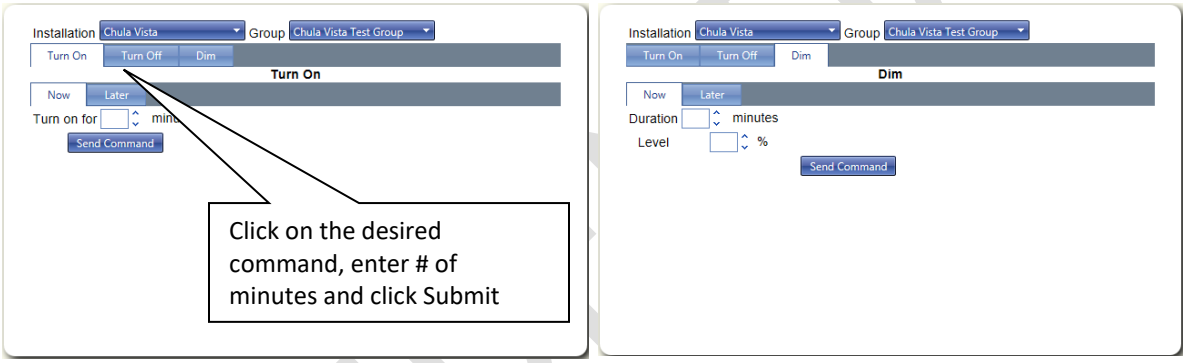
Commands

From the Commands tab, users with Scheduling permission can send instant ON, OFF or Dim commands to all assets within a Group. Once an Installation and Group has been chosen, the user can select the appropriate command type to be sent by clicking on the correct sub tab; Turn On, Turn Off or Dim. A new window will appear with two additional sub tabs to choose from. The Now tab will send out the instant command immediately once the Send Command button is chosen. The user can also choose to delay the instant command up to 24 hours by choosing the Later sub tab.

Now option

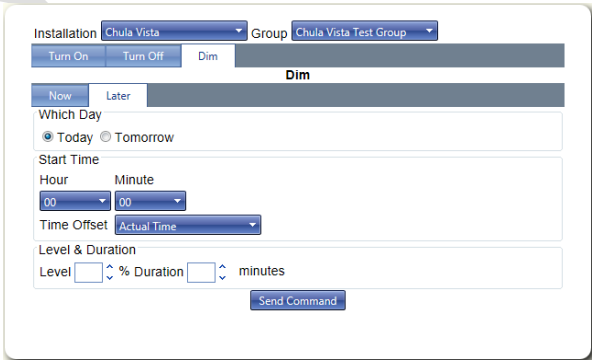
With the Turn On and Turn Off commands, a duration must be specified. Instant commands are limited in duration to 1440 minutes (24 hours). With the Dim command, the user must also specify the dim level (1-100%) they want to achieve through the command. Once the user is ready, the Send Command button can be clicked on to execute the command option.

Note: If the fixture is not currently on, then two separate instant commands will need to be sent, one to turn the fixture on and the second to dim the fixture.



Later option

In addition to the duration, a start time must be entered, along with whether the time is for today or tomorrow. The start time can be entered as actual time or as an offset to sunrise or sunset for that installation. As with the Now option, the user must also specify the dim level (1-100%) if they want to dim the fixtures through the instant command method. Once the user is ready, the Send Command button can be clicked on to execute the command option.



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Scheduling

The Scheduling sub tab will display a monthly calendar along with drop down boxes to select the Installation and Group. This is where calendars and events created in the main Scheduling tab are applied. The process of applying a calendar or event is similar to adding a meeting on an Outlook calendar.

Calendars are communicated to the assets by the NOC at 10:00 PM local time (default time) on the day applied or modified, so the schedule will essentially be effective the following day. The time that the calendars are sent can be modified to accommodate unique situations for the user, if needed.

Events are sent out from the NOC two (2) hours in advance of the event start time. Consequently, the event must be posted to the schedule at least two (2) hours before the requested start time.

Calendars and Events may be applied to one or more groups designated for scheduling. Any active Calendars and Events are displayed on the calendar for each group. However, only one set of Calendar actions and one set of Event actions can be loaded on a device on a single day.

Group Priorities

Assets may be assigned to multiple groups to provide reporting and control flexibility. The ROAM enabled nodes store one recurring calendar with a maximum of 4 lamp commands and 4 dimming commands per day and one event with a maximum of 4 lamp commands and 4 dimming commands in one day. To avoid applying more than one calendar or event to an asset on any one day, the groups must include a priority level. If an asset resides in two or more groups and has multiple calendars or events applied, then the asset will receive the calendar and/or event applied to the highest priority group.

> Example: MacID # 102A3 is included in three different groups. Two groups have schedules applied and two groups have events scheduled on Thursday.
>
> | | | |
> |---|---|---|
> | Group A - Priority 5 | Calendar 1 “Security” (on dusk to dawn) | |
> | Group B - Priority 100 | (No schedule –photocontrol) | Event 1 on 6 PM – 2 AM |
> | Group C - Priority 150 | Calendar 3-Energy saving (off at midnight) | Event 2 on 7 PM – 11 PM |
>
> MacID 102A3 will receive the Group A Calendar and the Group B Event based on the priorities.

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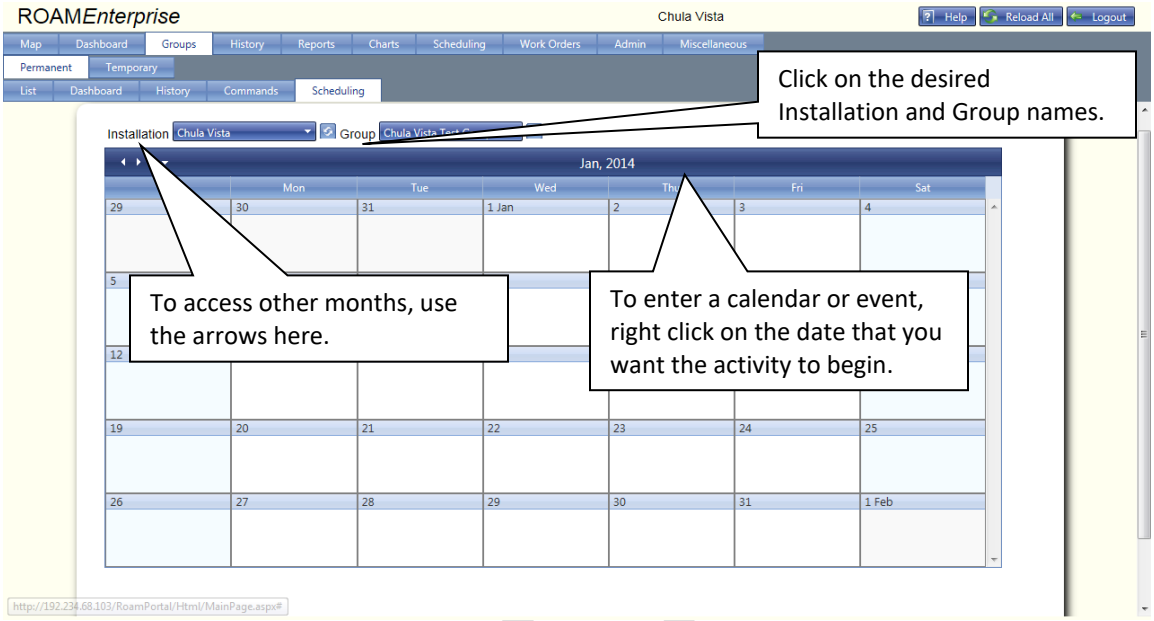
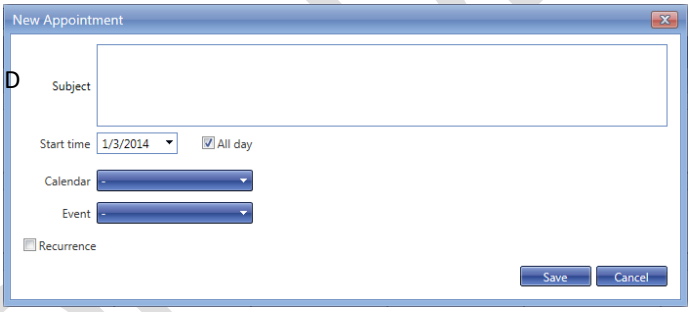
Adding a Calendar or Event to the Schedule

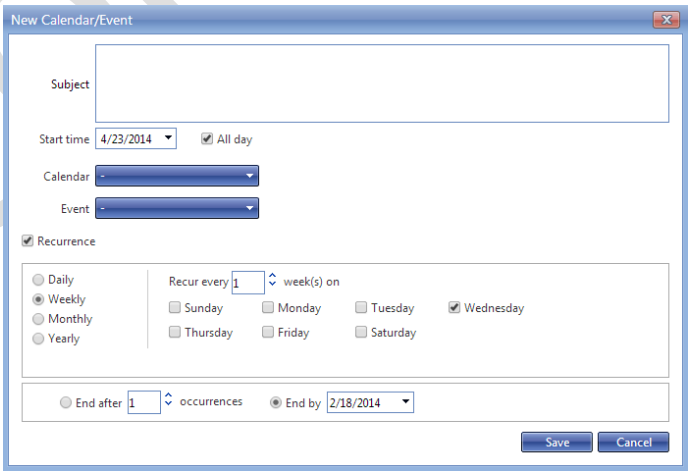
To add a Calendar or an Event to the schedule, the user should right click on the date they want the calendar or event to begin. Use the arrows on the date header bar to move to a different month or year. The left and right arrows should be used for jumping ahead one or two months. The down arrow can be used to access dates further away more efficiently.



1. Right click on the specific date to start and select either New Calendar/Event, for a single entry, or New Recurring Calendar/Event, for multiple entries. The New Appointment window will display.

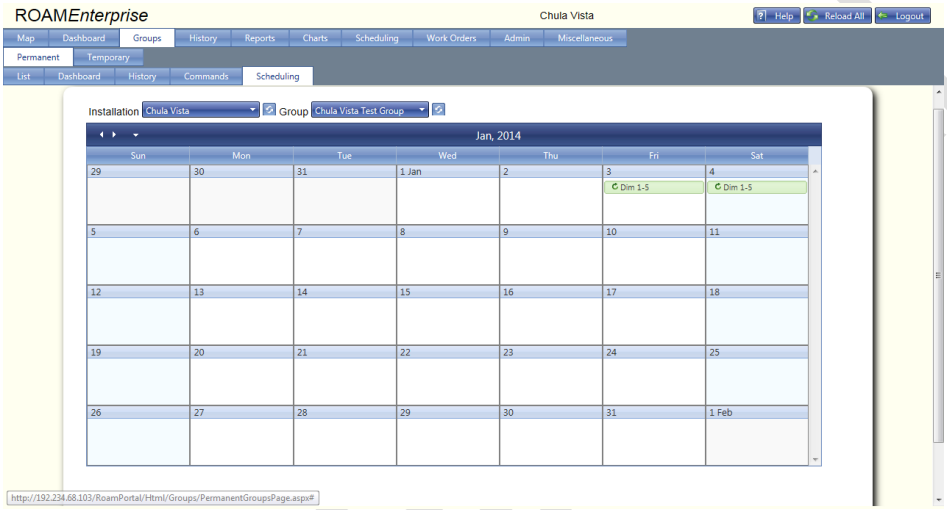


Default Screen for single date entry



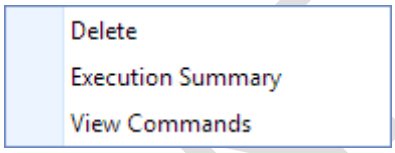
Default Screen for multiple date entry

2. Add a description in the Subject field or it will automatically be added with the title of the Calendar or Event that is added.
3. Check that the start time date is correct. If this needs to be adjusted, then click on the arrow in the date field. Move to the appropriate month in the window and click on the desired date.
4. Choose the Calendar or Event that is desired by selecting from the dropdown list available. The dropdown lists will auto populate from calendars and events created by the user(s).
5. Verify that a check the box beside Recurrence is present if the actions extend more than that single date.
6. Select the appropriate recurrence features and an end date.
7. Click Save to add the Calendar or Event.
8. The Schedule should now show the Calendar or Event for the dates requested.

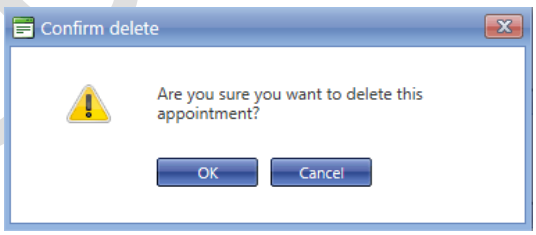


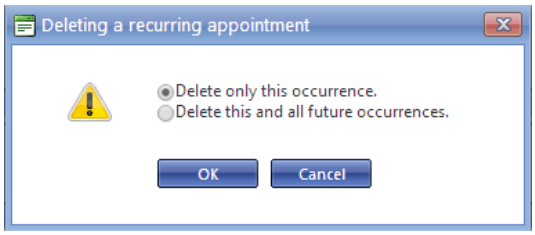
Working with a Calendar or Event on the Schedule

Once a Calendar or Event has been placed on the schedule, the user may work with this calendar by right clicking on it. Right clicking will bring up three options: Delete, Execution Summary and View Commands.



Delete – The user may delete the Calendar or Event. If the appointment is a single occurrence, you will be asked to confirm the deletion. If the appointment is recurring, choose to delete the entire series or just the occurrence on the date chosen.





Execution Summary – The Execution Summary will display the success rate in sending the Calendar or Event to the assets in the group.

View Commands – The View Commands option will display the commands included in the Calendar or Event. Editing the commands will still require the user to go to the Scheduling tab.

Work Orders Tab

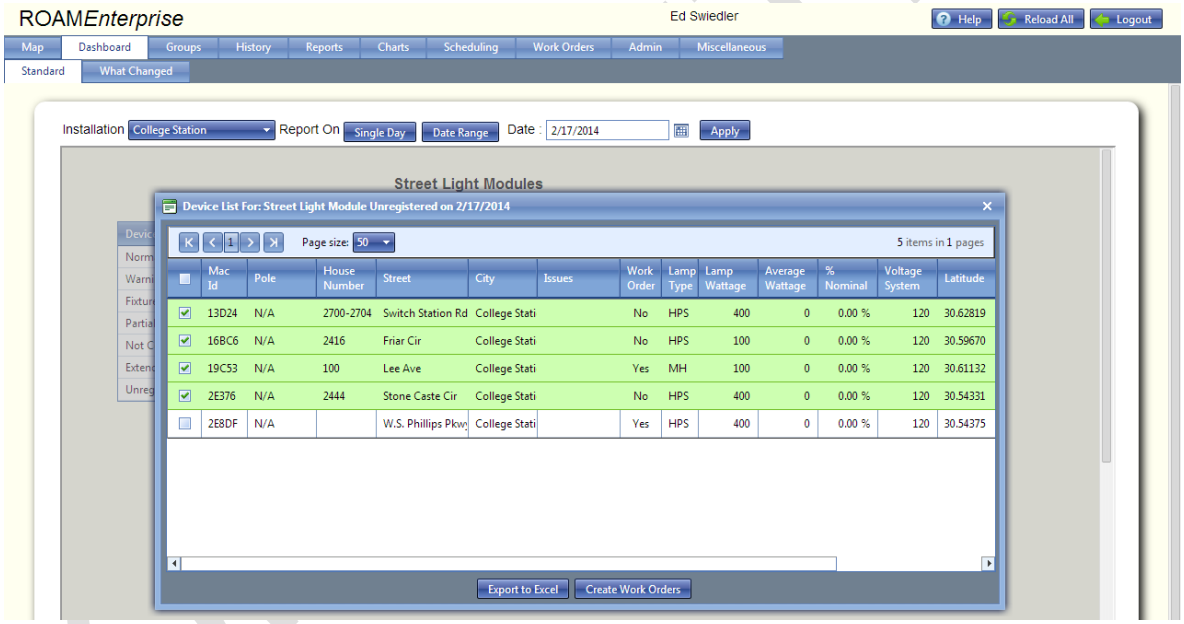
General Functionality

The Work Order management feature of ROAM gives the user the ability to manage their lighting system by allowing the user to generate work order tickets for assets needing repair, assigning the tickets to specific crews and tracking the ticket through completion. Once the work order has been returned by the crew, the system will automatically close any work orders that can be confirmed as fixed.

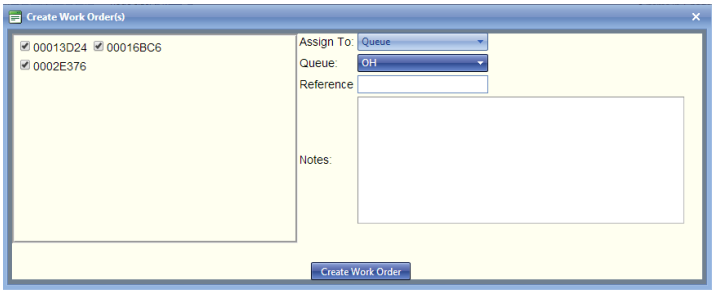
Work Order Creation

Work orders can be generated through many of the tabs, including Dashboard, Maps, History, Reports and Groups. The overall procedure of creating work orders in the different tabs is nearly the same, but the method for generating the list of devices to create work orders for may differ. Each method is described below.

Dashboard – When reviewing a list of devices through the Dashboard Detail, a user can select any number of devices to generate work orders for by placing check marks in the boxes to the far left of the specific MacIDs. Once all of the check marks have been placed, click the Create Work Orders button at the bottom.



Once all of the check marks have been placed, click the Create Work Orders button at the bottom. Since the ROAM system will only allow one open work order per device, the available list of MacIDs shown on the Create Work Order page will only include those MacIDs without existing open work orders (See example to right)



In the Create Work Order(s) screen, the user can choose any number of the MacIDs listed to be assigned to specific Queues or Crews. Once the Create Work Order button is selected, these MacIDs will be removed from the list of available MacIDs remaining. The Work Order will be generated with sequential numbers automatically. The reference field can be used to tie the work order to an external work order management system, if needed.

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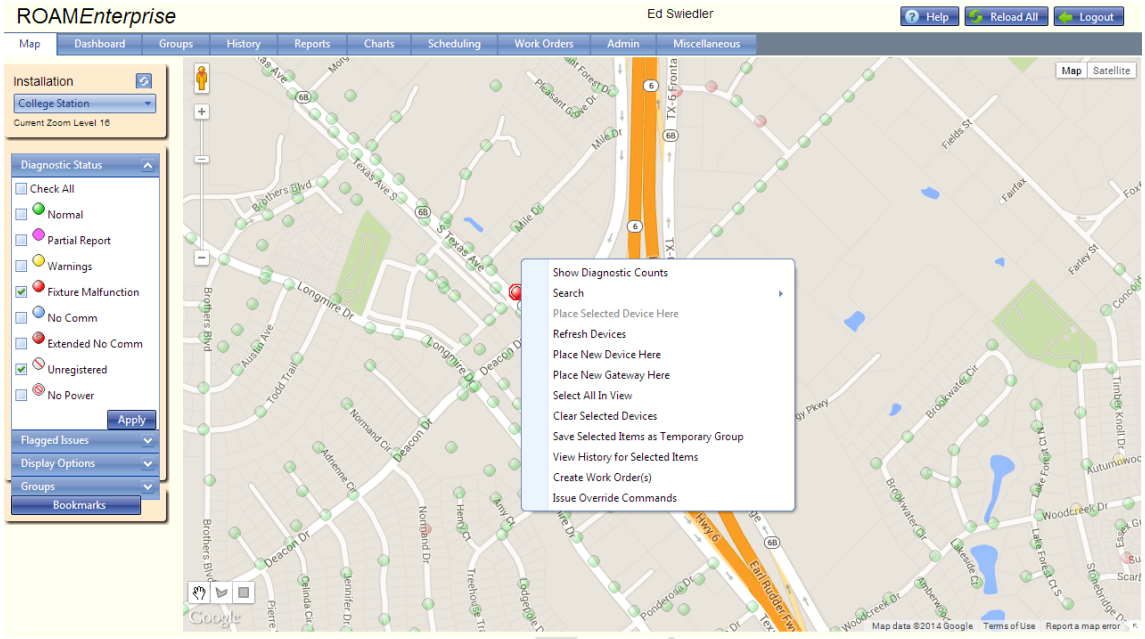
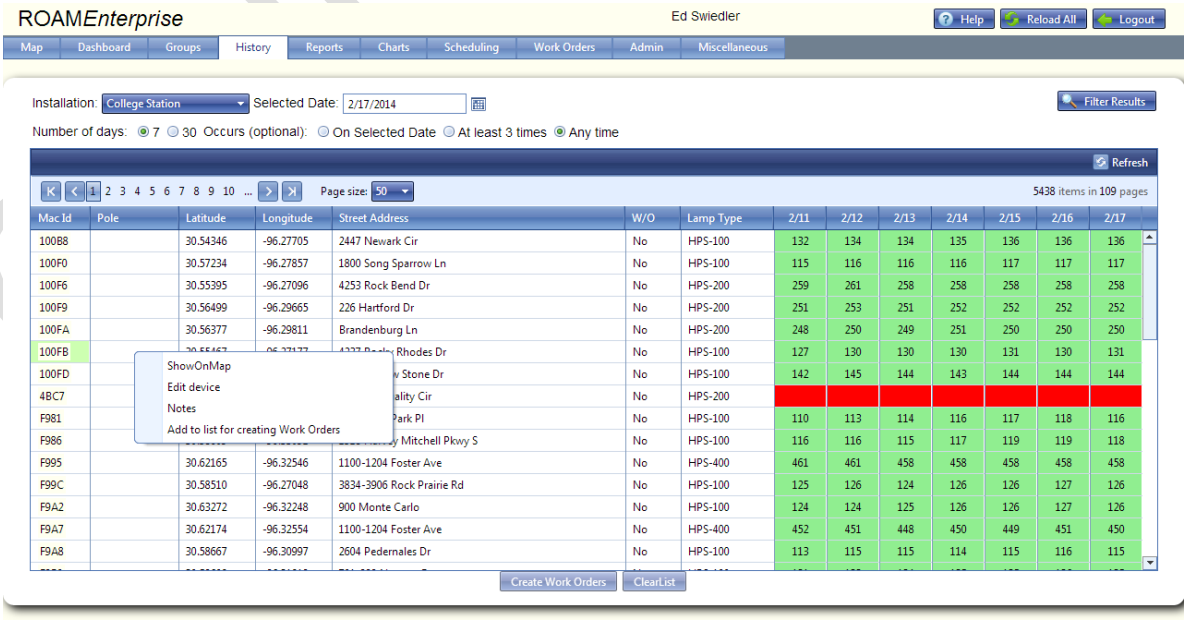
Map – Work orders can be created for a single node or multiple nodes by first selecting the node(s) using the polyline or rectangle select tool on the map. Once banded, the selected light assets will display with a red circle around them. Additional assets can be added or deleted by repeating either of the two select methods. Once all of the assets have been selected, right click on an area of the map where no assets exist choose “Create Work Order(s)” to begin creating the work order(s). This will bring you to the same described on the previous page.



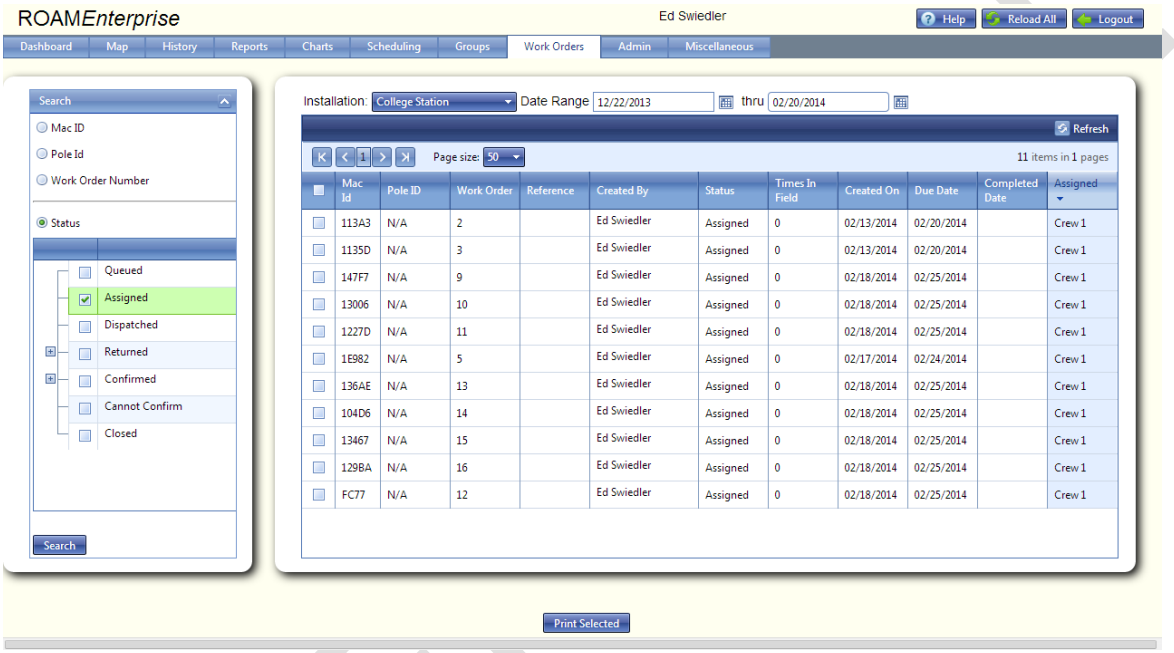
History – Work orders can be created for a single node or multiple nodes by first adding the node(s) to a temporary list that will be used to create the work orders. To add a node to the list, right click on the row containing the desired asset in the area that does not contain the MacID or the historical data. Once the options box pops up, choose Add to list for creating work orders. Once you have chosen all of the desired assets, click on the Create Work Orders button at that bottom. This will bring you to the same described on the previous page.



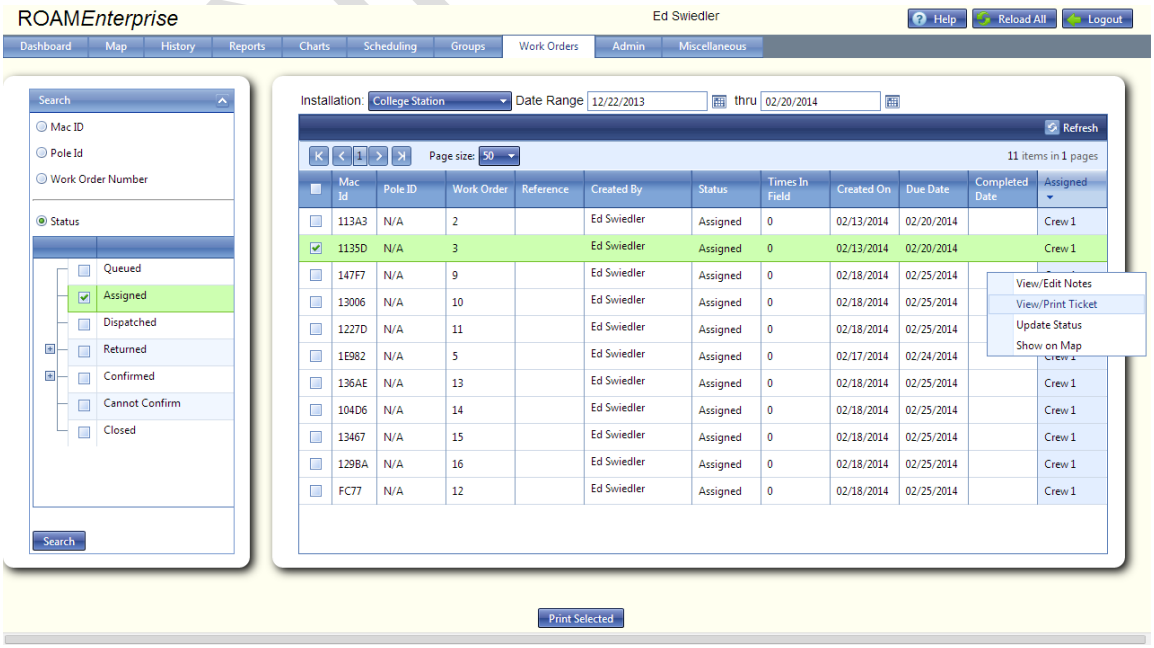
Managing Work Orders

Once a Work Order ticket has been created, any manual updates to the Work Order ticket or individual items should be handled through the Work Orders tab. Any changes made using a handheld device will automatically update the system once the data has been synchronized.

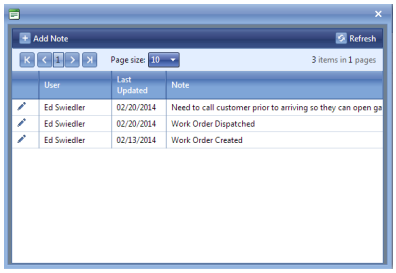
In the Work Orders tab, work orders can be viewed based on their status. A Work Order can have the following statuses; Queued, Assigned, Dispatched, Returned, Confirmed, Cannot Confirm and Closed. A list of work orders in any given status can be viewed by choosing the desired status, installation and date range, followed by clicking on Search button. The date range refers to the date the work order was created.



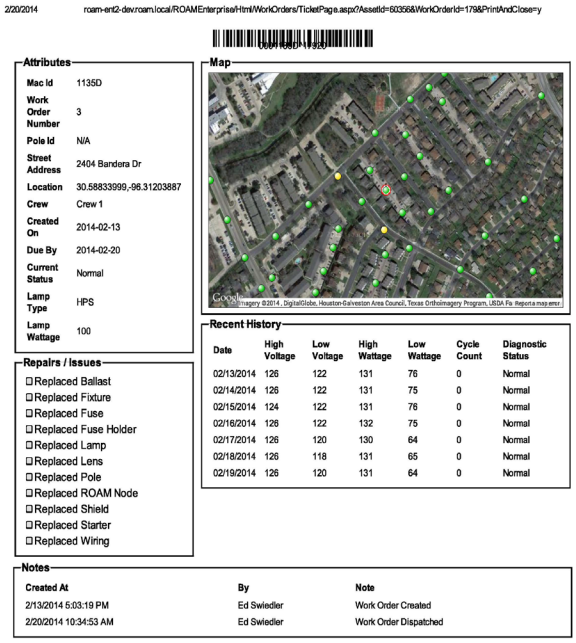
To work with and individual work order, right click anywhere on the row of the desired asset to bring up the list of options to deal with the Work Order.



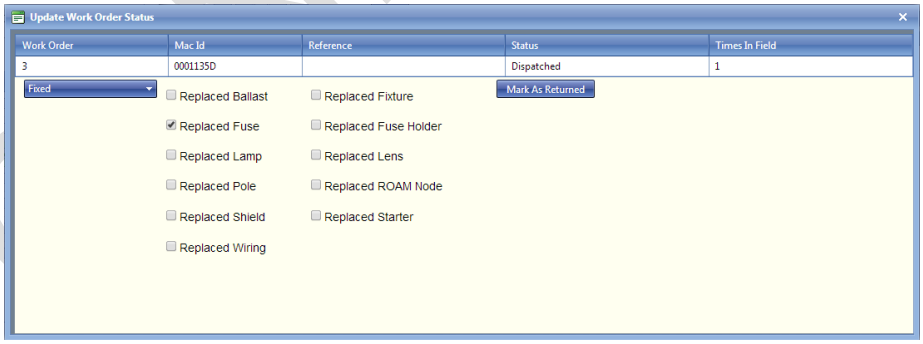
View/Edit Notes – This option will display all system generated notes, as well as any user notes that have been added to the work order ticket. User notes can be added to provide additional information that might be necessary for the field crews to complete the work order.



View/Print Ticket – Once the Work Order has been assigned to a crew, a Work Order Ticket should be printed for each Work Order by clicking on the checkbox to the left of the MacID or using the View/Print option, when you right click on a row. This ticket will print a barcode at the top that can be used in conjunction with the handheld device to complete the work order in the field. The work orders can also be downloaded to the handheld, for a paperless option. Work Order tickets should be printed with a quality printer to ensure the handheld device will be able to read the bar code.



Update Status – The user can manually update the status of the work order ticket through this option. If the field crew made any field repairs through the handheld device, this will automatically be updated in the system. However, if the handheld is not used, then the repairs can be tracked manually.



Show on Map – Choosing this option will take the user back to the Map tab. The device with the work order selected will be centered in the map screen and will be selected on the map with a red circle around it.

Admin Tab

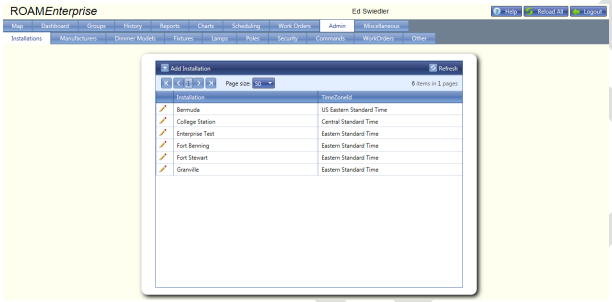
General Functionality

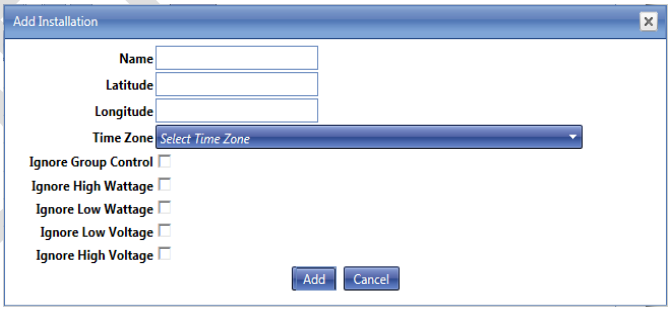
The Admin tab is not visible to all users. It will only be accessible by those that have been given the proper permissions when the user is set up. The Admin tab will be used to manage many of the asset management fields within the database, including installations, manufacturers, fixtures, lamps, dimmer models, poles, security settings, commands, report distribution, mail configuration and activation control. The information contained in these tabs allows ROAM Enterprise to become a powerful asset management tools, in addition to being a remote monitoring and control system.

In general, the information in these tabs will need to be completed prior to loading any of the asset records into the database, as this information is the basis by which the records are collected. The entries will be used to build drop down lists to simplify and standardize the information gathering process. In many of the sub-tabs, there is a column or checkbox titled “Visible”. This refers to whether this selection should be shown the in the drop down boxes during activation or when editing a device. The Enterprise database has been preloaded with a number of common choices, which can be removed during the software set-up, if desired.

Installations

The ROAM Enterprise system is designed to allow flexibility in how a user manages their lighting system. All assets can be included in a single installation or separated into multiple installations. The Installations tab allows the user to create a new installation, plus edit existing installations.





Add Installation

1. Click on the “+” Add Installation button.
2. Enter a Name for the installation.
3. Enter the Latitude and Longitude for the approximate center of the installation. The Lat/Long will be used to determine the appropriate sunrise/sunset times, should these be used for scheduling.
4. Enter the appropriate time zone setting
5. Following the Time Zone setting, there are 5 checkboxes. These checkboxes allow the user to ignore some of the flagged issues that will cause a node to diagnose a fixture as “Warnings”. By selecting a checkbox, the diagnostic process will still determine the flagged issue to exist, but will leave the node diagnostic in the Normal status, as long there is nothing else wrong. In other words, if the user does not want to be warned of the issue, the checkbox should be checked. A brief description of each flagged issue is given below:
    a. Group Control – When power to a series of fixtures are controlled by a master controller (photocontrol, time clock, relay, etc.).
    b. High Wattage – Wattage recorded by the node exceeds the maximum wattage threshold.
    c. Low Wattage – Wattage recorded by the node falls below the low wattage threshold.
    d. High Voltage – Voltage recorded by the node exceeds 110% of rated voltage.
    e. Low Voltage – Voltage recorded by the node falls below 85% of rated voltage.
6. Click the Add button at the bottom of the window.

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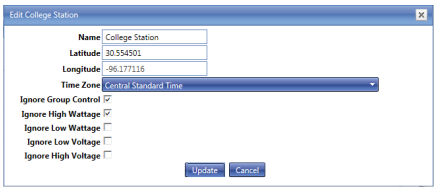
Edit Installation

To edit an existing installation, click on the Pencil Icon beside the installation to update. Edit the information necessary and then click on the Update button at the bottom of the window.

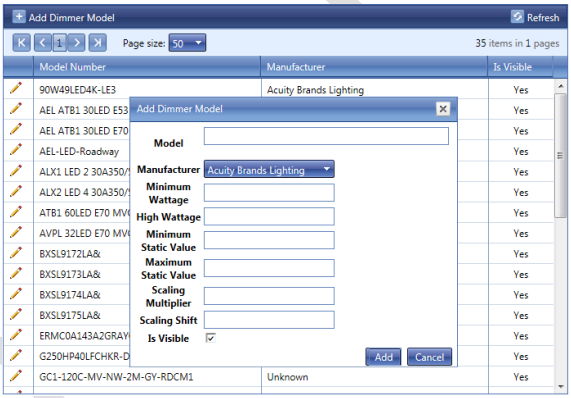


Manufacturers

The user will develop and maintain a list of manufacturers that will be used during the activation process to collect information on the fixtures and lamps installed. The Enterprise database has been preloaded with a number of common choices. Click the Add button to create additional selections.

Dimmer Model

If the installation includes dimmable fixtures, it is important that information about the different dimming drivers for each fixture is entered into the system. The information that is needed involves the specific dimming curve parameters of each fixture. These parameters will define the maximum and minimum wattage that the fixture can achieve, along with the corresponding DC voltages required to achieve these levels. The information required will be max/min wattage, max/min static values, scaling multiplier & scaling shift. Developing the dimmer models will also assist in the diagnostic performance by defining what the wattage should be based on the dim level set. Please contact your ROAM deployment personnel if you have questions regarding this information.

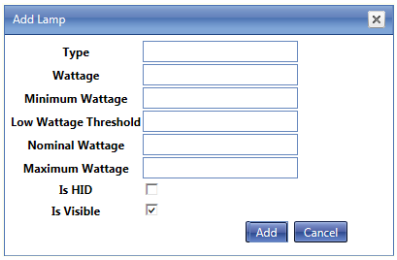


Fixtures

The user will develop a list of fixture types that will be used in the activation process to input the type of fixture installed. The Enterprise database has been preloaded with a number of common choices. Click the Add button to create additional selections.

Lamps

The user will develop a list of lamp types that will be used in the activation process to input the type of installed, along with the wattage. The information placed in the lamp fields is used in the diagnostics, so some thought should be given to the values entered for the various wattages. A description of how each is used is provided below. The Enterprise database has been preloaded with a number of common choices. Click the Add button to create additional selections.



- Type – This field is open to customer preference, but the defaults have been entered to show industry standard abbreviations, such as HPS for high pressure sodium, MH for metal halide, etc.
- Wattage – This is what will display on any reports or work order tickets and will be the manufacturers rated wattage.
- Minimum Wattage – The Minimum Wattage is the wattage at which ROAM will diagnose a “Fixture Malfunction”. For HID fixtures, the minimum wattage would typically be set to the ballast only load. For LED fixtures, there are no industry standards, since LED fixtures will most likely be emitting light at any wattage greater than zero. Until an industry standard is available, you might want to use 60% of rated wattage for this field.
- Low Wattage Threshold – The Low Wattage Threshold is the wattage at which ROAM will diagnose a fixture as “Warnings”, with a “Low Wattage” flag. For HID fixtures, there are industry standards for an operating range for the various fixture wattages, the defaults set in the ROAM system use the industry standards to provide the Low Wattage threshold value. For LED fixtures, there are no industry standards for determining when a fixture’s light output may become a concern. Until an industry standard is available, you might want to use 80% of rated wattage for this field.

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- Nominal Wattage – The nominal wattage is the average wattage that the entire fixture will draw. For HID, this will be the lamp wattage, plus the ballast wattage.
- Maximum Wattage – The Maximum Wattage is the wattage at which ROAM will diagnose a fixture as "Warnings", with an "Excessive Wattage" flag. For HID fixtures, there are industry standards for an operating range for the various fixture wattages, the defaults set in the ROAM system use the industry standards to provide the Excessive Wattage threshold value. For LED fixtures, there are no industry standards for determining when a fixture's light output may become a concern. Until an industry standard is available, you might want to use 120% of rated wattage for this field.

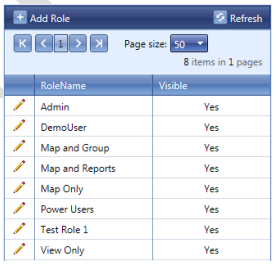
Poles

The Poles tab has several sub tabs that will allow the user to collect several different attributes associated with the pole and lighting asset type. The field types include Type, Style, Color, Material, Foundation, Classification, Power Feed, Length and Model. The Enterprise database has been preloaded with a number of common choices. Click the Add button to create additional selections.

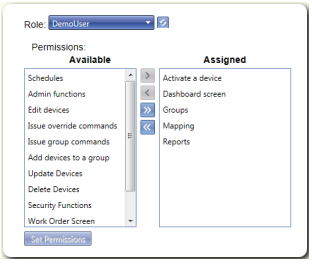
Security

The Security tab has several sub tabs that will allow the admin user to control who has access to the various installations and the permissions those users will have. The sub tabs include Roles, Role Permissions, Users and User Installations.

- Roles – The Enterprise database has been preloaded with a number of common Roles. This tab is used only to define the name of the role and whether it is visible in the selection box. Click the Add button to create additional selections.



- Role Permissions – This tab is where specific permissions are given to the Roles. First select a role name. Move any permissions from the Available column over to the Assigned column to give those permissions to any User that is assigned that Role. Since the Enterprise database has been preloaded with some common Roles and Role permissions, you may choose to modify some of the chosen permissions.



- Users – The user section allows the admin person to set up additional User Names to provide access to the portal.
- User Installations – The User Installations section allows the admin person to select which installations each user is able to view on the portal.

Commands

The Commands tab allows the user to view a list of previous commands sent out, along with the details of those commands. The User sub-tab will only display the commands sent by the user, while the System sub-tab will display all commands, regardless of who issued the command.

Work Orders

The Work Orders tab allows the user to develop a list of Crew names, Crew installations and Queue names that will be options within the Work Order Management section.

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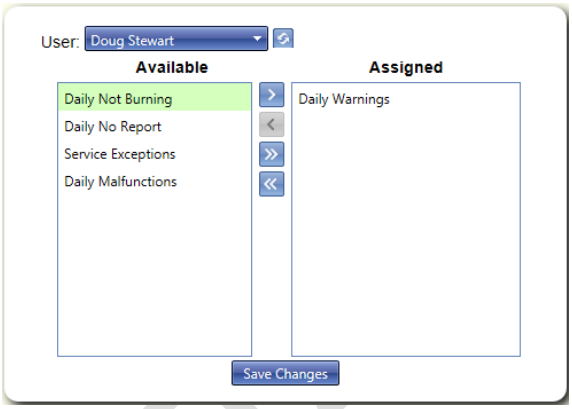
Other

The Other tab allows the user to define who will receive the various reports through e-mail, if this is desired. There is also tabs for Mail Configuration and Activation Control.

- Report Distribution – The Enterprise system has the capability of e-mailing several reports on a daily basis to any of the users set up in the system. These reports are predefined and cannot be edited by the user. The reports include Daily Warnings, Daily Not Burning (Fixture Malfunction), Daily No Report (No Comm and Extended No Comm), Service Exceptions (Windows Services Failures) and Daily Malfunctions (List of all issues-Daily Warnings, Daily Not Burning and Daily No Report)



    - Select the user to receive the report(s)
    - Highlight the desired report and click the arrow to move it to the assigned field
    - Click Save Changes

- Mail Configuration – A mail server must be specified so that the reports in the above section can be transmitted. Contact your IT department to find out if you have a local SMTP (Simple Mail Transport Protocol) server and the credential required to send mail through it.

- Activation Control – Used to define which fields should be shown on the PDA for node activation. If there are going to be multiple installations and all will share the same settings, then it is only necessary to setup the 'Default' Installation and all others will use its settings. Each field has three options associated with it:
    - Is Visible – Show this field as an option on the Activation PDA
    - Is Required – Will require the user to collect this piece of data before the activation can be saved
    - Can Be Same As Last – The Activation software provides a shortcut where data from the previous activation can be quickly duplicated. If this field is checked, then this data would be copied over from the previous activation.

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Miscellaneous Tab

General Functionality

The Miscellaneous Tab gives the user the ability to set some preferences that affect the look and feel of the site that is specific to their login, monitor the daily diagnostics process, monitor commands sent to the nodes and check on the data processing queues.

Preferences

The Preferences tab is used to change certain settings that are specific to the current user:

- Appearance – The system has a set of predefined color-schemes. By changing this field, the default colors of the system will change at the next reload.
- Report Distribution – When a user is created, the Admin will define which reports the user could receive each morning. The Report Distribution tab allows the user to manage the specific reports they wish to receive.
- Change Password – The Change Password tab will allow the user to specify a new password.

Device Diagnostics

The Device Diagnostics tab will list the status of each daily diagnostics run for the selected consumer. If there was an issue with processing, it will be listed in the Result column. To rerun diagnostics for a given date, click on the Rerun button and the diagnostics for that date and all subsequent dates will be queued for processing. Use the refresh button to update the display to view the results of the rerun.

Commands

The Commands tab will list the commands that the current user has executed in the past.

Queue Dashboard

The Queue Dashboard tab will list the processing status of Enterprise Data Queues. Each Data Queue is responsible for processing a specific type of data as it comes in. If there are a high number of errors listed under any queue, please notify the Enterprise Admin so that the issue can be resolved.

Data Download

The Data Download tab will allow the user to create an Excel list of all Street Light modules, Dimmer Control modules or Gateways. This list will include the MacIDs, along with every attribute that has been entered that is associated with the device.

Pending Moves

Installations that are using nodes with embedded GPS chips will utilize this tab. When a node with a GPS chip detects that its new location is more than 25’ away from its previous location, it will diagnose in the Warning category for diagnostics (Warning GPS Relocated), plus it will be shown in a list under this tab. By right clicking on a MacID in the list, the user can choose to accept the new location or remove (ignore) it from the list.

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ROAM Technical Support

For any questions or comments about this user guide, please contact ROAM Technical Support.

E-mail:

roamsupport@acuitybrands.com

Phone:

(800) 535-2465

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ROAM TROUBLESHOOTING GUIDE

PORTAL STATUS	POSSIBLE ISSUE (MOST TO LEAST LIKELY)	TROUBLESHOOTING ORDER
Extended No Comm *No reports received from node in more than 96 hours*	1 No power to fixture/blown fuse 2 Locked up, damaged or failed ROAM node (fixture may be dayburning) 3 Broken or loose neutral wire to node (fixture may be dayburning) 4 Low voltage (<92 volts) to ROAM node (fixture may be dayburning) 5 ROAM node removed or incorrect MAC ID (recently replaced) in database 6 Internal wiring problem or short in fixture 7 Radio interference	1 Confirm location by checking MAC ID of node, correct if necessary 2 Verify sufficient voltage under load at terminal block and NEMA receptacle (103V-305V), check for blown fuse or wiring issues and make necessary repairs 3 Reset ROAM node (Unplug for 30 seconds) 4 Replace ROAM node 5 Replace fixture 6 Relocate or shut down nearby radio interference
No Comm *No reports received from node in 96 hours or less*	1 No power to fixture/blown fuse 2 Locked up, damaged or failed ROAM node (fixture may be dayburning) 3 Broken or loose neutral wire to node (fixture may be dayburning) 4 Low voltage (<92 volts) to ROAM node (fixture may be dayburning) 5 ROAM node removed or incorrect MAC ID (recently replaced) in database 6 Internal wiring problem or short in fixture 7 Radio interference	1 Confirm location by checking MAC ID of node, correct if necessary 2 Verify sufficient voltage under load at terminal block and NEMA receptacle (103V-305V), check for blown fuse or wiring issues and make necessary repairs 3 Reset ROAM node (Unplug for 30 seconds) 4 Replace ROAM node 5 Replace fixture 6 Relocate or shut down nearby radio interference
Fixture Malfunction *Wattage is below the ballast only threshold*	1 Bad lamp 2 Bad ballast 3 Bad starter 4 Bad capacitor 5 Broken wire between ROAM node and ballast/lamp 6 Bad NEMA receptacle or connection 7 Incorrect lamp data on portal 8 Failed Current Sensor in ROAM node	1 Confirm location and MAC ID of node 2 Confirm lamp data is accurate, correct if necessary 3 Check/replace lamp 4 Check/replace capacitor, starter or fixture 5 Verify sufficient voltage under load at terminal block and NEMA receptacle (103V-305V), check for wiring issues and make necessary repairs 6 Verify nominal current with clamp-on ammeter 7 Replace ROAM node
No Power at Activation *Voltage reading at pole during activation is 0 volts (only used when Acuity is contracted to install)*	1 No/intermittent power to fixture/blown fuse 2 Locked up, damaged or failed ROAM node (fixture may be dayburning) 3 Broken or loose neutral wire to node (fixture may be dayburning) 4 Internal wiring problem or short in fixture 5 ROAM node removed or incorrect MAC ID entered at activation	1 Confirm location by checking MAC ID of node, correct if necessary 2 Verify sufficient voltage under load at terminal block and NEMA receptacle (103V-305V), check for blown fuse or wiring issues and make necessary repairs 3 Reset ROAM node (Unplug for 30 seconds) 4 Replace ROAM node
Unregistered *Node activation record received by NOC, but node has not reported in*	1 No/intermittent power to fixture/blown fuse 2 Locked up, damaged or failed ROAM node (fixture may be dayburning) 3 ROAM node removed or incorrect MAC ID entered at activation 4 Broken or loose neutral wire to node (fixture may be dayburning) 5 Internal wiring problem or short in fixture	1 Confirm location by checking MAC ID of node, correct if necessary 2 Verify sufficient voltage under load at terminal block and NEMA receptacle (103V-305V), check for blown fuse or wiring issues and make necessary repairs 3 Reset ROAM node (Unplug for 30 seconds) 4 Replace ROAM node
Warnings **Day Burner** *Relay is commanded off , but fixture is still drawing power during day*	1 Failed ROAM node due to welded relay	1 Confirm location and MAC ID of node 2 Replace ROAM node
Warnings **Cycling Lamp** *Cycle count is 5 or more a night*	1 Bad lamp 2 Lamp not seated properly 3 Intermittent or low line voltage 4 Broken/loose wire between ROAM node and ballast/lamp 5 Bad ballast	1 Confirm location and MAC ID of node 2 Inspect/replace lamp 3 Verify constant/sufficient voltage under load 4 Check for wiring issues and make necessary repairs 5 Replace fixture
Warnings **Low Wattage** *Wattage is below the low wattage threshold and above the ballast only threshold*	1 Bad/incorrect capacitor 2 Bad/incorrect lamp 3 Bad/incorrect ballast 4 Bad starter (Not if lamp starts) 5 Low voltage 6 Incorrect lamp data on portal 7 Failed Current Sensor in ROAM node	1 Confirm location and MAC ID of node 2 Confirm lamp data is accurate, correct if necessary 3 Verify sufficient voltage under load at terminal block and NEMA receptacle (103V-305V), check for wiring issues and make necessary repairs 4 Check/replace lamp 5 Check/replace capacitor, starter or fixture 6 Replace ROAM node

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ROAM TROUBLESHOOTING GUIDE

PORTAL STATUS	POSSIBLE ISSUE (MOST TO LEAST LIKELY)	TROUBLESHOOTING ORDER
Warnings **High Wattage** ***Wattage is above excessive power threshold***	1 Incorrect fixture selection for voltage supply 2 Incorrect lamp type installed 3 Fixture wiring not configured properly for voltage present 4 High line voltage 5 Bad ballast 6 Bad capacitor 7 Bad lamp 8 Short to fixture housing	1 Confirm location and MAC ID of node 2 Verify sufficient voltage under load at terminal block and NEMA receptacle (103V-305V) 3 Verify that fixture type is correct for above voltage observed 4 Inspect/replace lamp 5 Verify taps in fixture are selected properly for actual supply voltage 6 Check for wiring issues and make necessary repairs 7 Check/replace capacitor 8 Replace fixture
Warnings **Low Voltage** ***Voltage is 15% below the system voltage***	1 Low distribution line voltage 2 Circuit over capacity or conductor worn/undersized 3 Bad NEMA receptacle contact 4 Broken/crack wire between terminal block and NEMA receptacle 5 Intermittent short to fixture housing	1 Confirm location and MAC ID of node 2 Verify sufficient voltage under load at terminal block and NEMA receptacle (103V-305V) 3 Check for wiring issues and make necessary repairs 4 Replace/repair NEMA receptacle 5 Replace fixture
Warnings **High Voltage** ***Voltage is 10% above the system voltage***	1 High distribution line voltage 2 Broken or loose neutral wire to node (fixture may be dayburning) 3 Bad NEMA receptacle neutral contact 4 Broken/crack wire between neutral terminal block and NEMA receptacle 5 Intermittent short to fixture housing	1 Confirm location and MAC ID of node 2 Verify sufficient voltage under load at terminal block and NEMA receptacle (103V-305V) 3 Check for wiring issues and make necessary repairs 4 Replace/repair NEMA receptacle 5 Replace fixture
Warnings **High V-Delta** ***High Voltage minus Low Voltage (for the day) divided by system voltage is greater than 10%***	1 Circuit over capacity or conductor worn/undersized 2 Intermittent line voltage (poor distribution power quality) 3 Bad ballast 4 Bad capacitor 5 Bad NEMA receptacle or connection 6 Intermittent short to fixture housing	1 Confirm location and MAC ID of node 2 Verify sufficient voltage under load at terminal block and NEMA receptacle (103V-305V) 3 Check for wiring issues and make necessary repairs 4 Repair/ replace fixture
Warnings **Group Control** ***3+ consecutive days of nightly reports but no reports between 10am and 4 pm***	1 Fixture on timer or manual switched circuit 2 Intermittent power to fixture	1 Confirm location and MAC ID of node 2 Connect fixture to always-on power supply 3 Verify constant voltage to terminal block and NEMA receptacle
Warnings **Dimmer No Report** ***No reports from received DCM***	1 No power to fixture/blown fuse 2 Internal wiring problem with connections to DCM 3 Failed DCM 4 Incorrect DCM MAC ID entered at activation	1 Confirm location and MAC ID of DCM, correct if necessary 2 Replace DCM or fixture
Warnings **Dimmer Partial Report** ***Less than 20 hrs of reports from DCM***	1 DCM is wired incorrectly (Should not be wired to output of PC receptacle) 2 Internal wiring problem with connections to DCM 3 Failed DCM	1 Confirm location and MAC ID of DCM 2 Make necessary wiring change 3 Replace DCM or fixture
Partial Report ***Less than 20 hours of reports were received. If at least 4 were received during night, then diagnostics are still performed.***	1 Intermittent power to fixture 2 Low voltage (<92 volts) to ROAM node (fixture may dayburning) 3 Locked up, damaged or failed ROAM node (fixture may be dayburning) 4 Internal wiring problem or short in fixture 5 Radio interference	1 Confirm location by checking MAC ID of node 2 Verify sufficient voltage under load at terminal block and NEMA receptacle (103V-305V), check for blown fuse or wiring issues and make necessary repairs 3 Reset ROAM node (Unplug for 30 seconds) 4 Replace ROAM node 5 Replace fixture 6 Relocate or shut down nearby radio interference

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ADDITIONAL ROAM RESOURCES

(hyperlinks provided below)

User Guides

ROAMview Setup Guide
Deco Utility Installation Guide
DCM Installation Guide
ROAMview System Information Requirements
ROAMview Installation Worksheet
ROAM Enterprise / Concierge Manual Installation Worksheet
Cellular Gateway Quick-Start Guide
Ethernet Gateway Quick-Start Guide
ROAM Enterprise / Concierge Activation Options
ROAM Concierge Pre-Deployment Checklist
ROAM Enterprise Pre-Deployment Checklist
Onsite Service Request Form
DCM Installation Guide