IMS

USER GUIDE

Illumination Management System

ILLUMINATION MANAGEMENT SYSTEM



NICOR IMS

NICORLIGHTING.COM/**SOLUTIONS/IMS**

Release Notes

Notes

Version	IMS 3.1
Software Version	3.1.0
Controller Version	IMSD2-2

Features

- DALI 2 Control Lighting System
- Zone Management: Full control of zoning and zone behavior
- Light Fixture and Control Device Identification by Flashing On and Off
- Scene Management: Add/Remove fixtures to a Scene, trigger Scene to set lights to preset levels.
- Manually Adjust Group Dimming and Turn Groups On/Off
- Astronomical scheduling based on longitude/latitude
- Single or Recurring Events, set minimum zone states at specific times and days/dates
- Event Management: Edit or Delete Events
- Emergency Settings for Power Loss

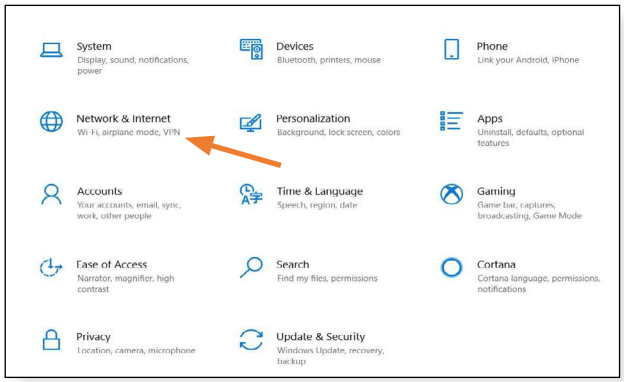
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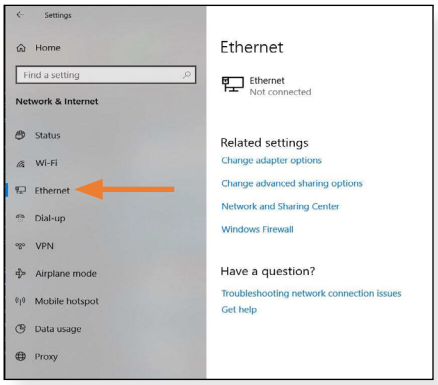
Network Configuration

To access the IMS user interface you must be connected to the controller via an Ethernet cable AND be on the same sub net as the unit.

1. Go to the settings menu and select Network & Internet.



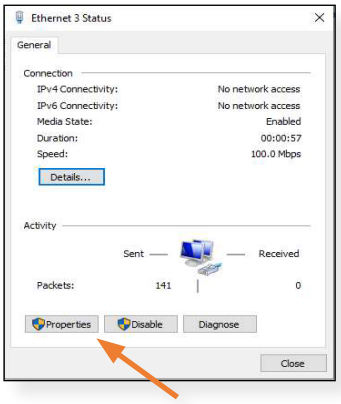
2. Select Ethernet.



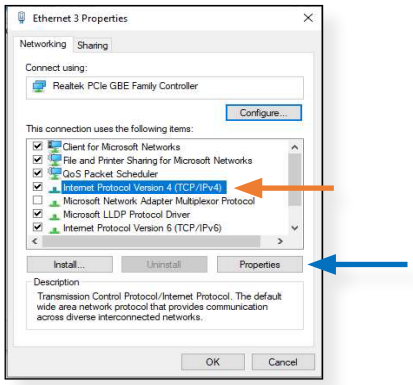
3. With the PLC connected select the Ethernet port that shows Unidentified network.



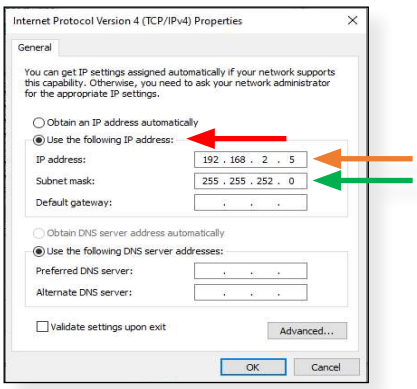
4. Select Properties.



5. Highlight Internet Protocol Version 4 (TCP/IPv4) (*Orange Arrow*) then select Properties (*Blue Arrow*).

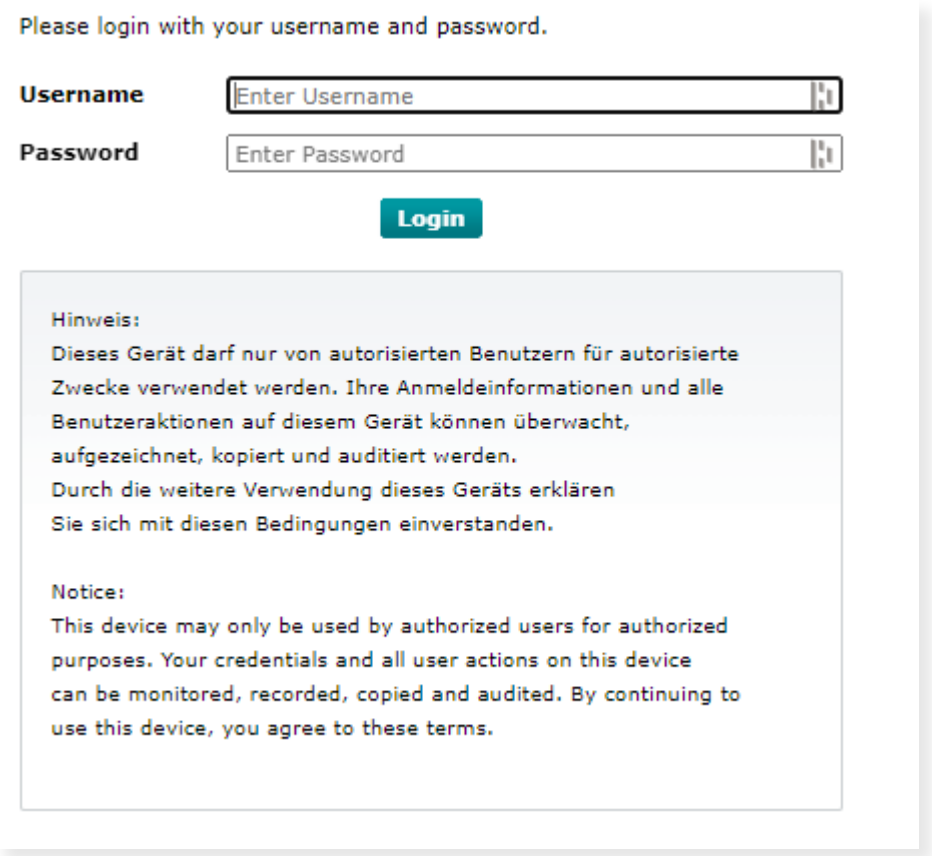


6. Select "Use the following IP address" (Red Arrow) and change the IP address (Orange Arrow) and Subnet mask (Green Arrow) to be on the same subnet as the labeled cabinet. Typically making the subnet the same as the IMS and the last digit of the IP address 1 higher or lower will work.



Network Management

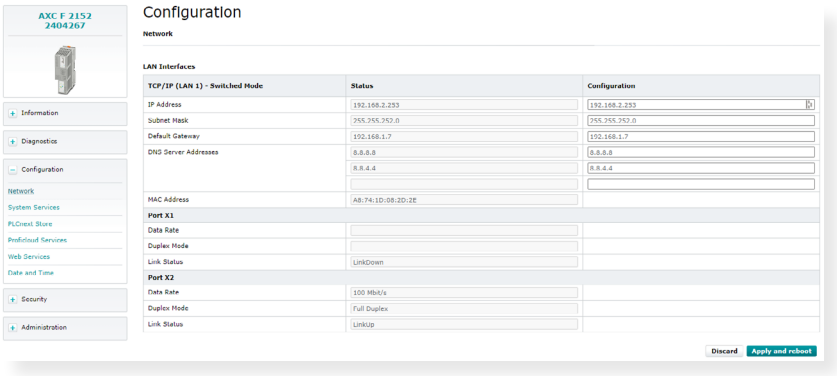
1. To change the network settings of the IMS, open a web browser to "http://<IP Address>/wbm" for example "http://192.168.2.253/wbm."



2. For the user name enter "admin."

3. The password is unique to each IMS and is printed on the front on the controller.

4. In the menu to the left, click Configuration and then network.



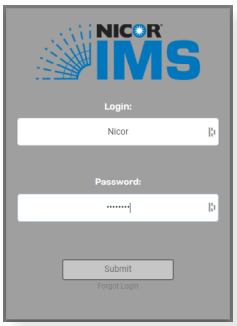
5. On this page the device's IP Address, Subnet Mask, Default Gateway and DNS settings can all be changed.

Initialization

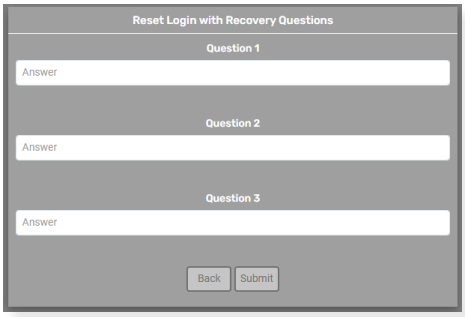
1. Connect a Cat6 Cable (not provided) from your computer to the port mounted to the LOTO shield inside the cabinet.

2. Open the IMS web page in your internet browser by entering the IMS's IP address followed by '/ims'.
The IMS web page is http://<IMS IP Address>/ims example: http://192.168.2.253/ims
Default address: 192.168.2.253

3. If it is the first time using the interface, press 'Submit.' If this is not your first time, enter your user name and password and click "Submit". If you have forgotten your login/password click "Forgot Login" and answer the recovery questions.

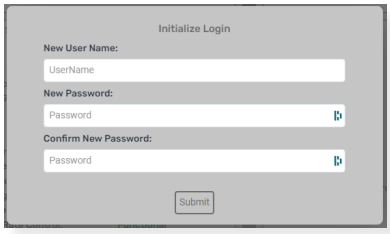


Login Window



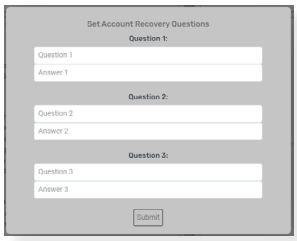
Login Recovery Window

4a. If this is the first time using the system, the system must be initialized. Use the installation wizard to initialize the IMS. Set a new user name and password, then 'Submit.'



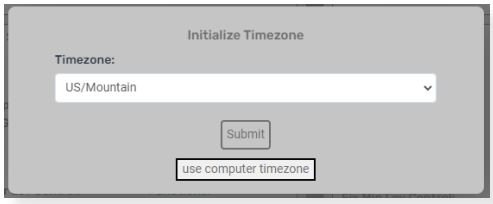
Initialize Login

4b. When setting up a new user account you will be prompted to set your Account Recovery Questions. After filling these out click "Submit."



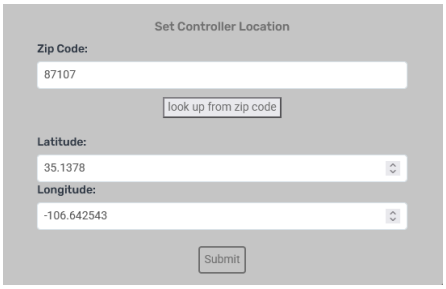
Recovery Question Window

5. Set the time zone manually, or select 'use computer time zone' to automatically generate this information.

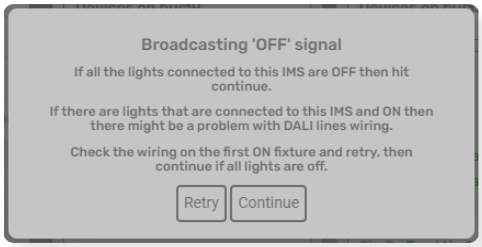


Initialize Date/Time

6. Set the cabinet's location by entering the Latitude and Longitude or looking up the coordinates using a zip code. Cabinet location is used to calculate sunrise and sunset times for scheduling.

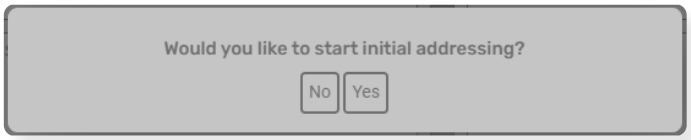


6 During system initialization if all fixtures are OFF press continue. If a fixture still remains on check the wiring connection of that fixture and then click retry.



Broadcast Signal Screen

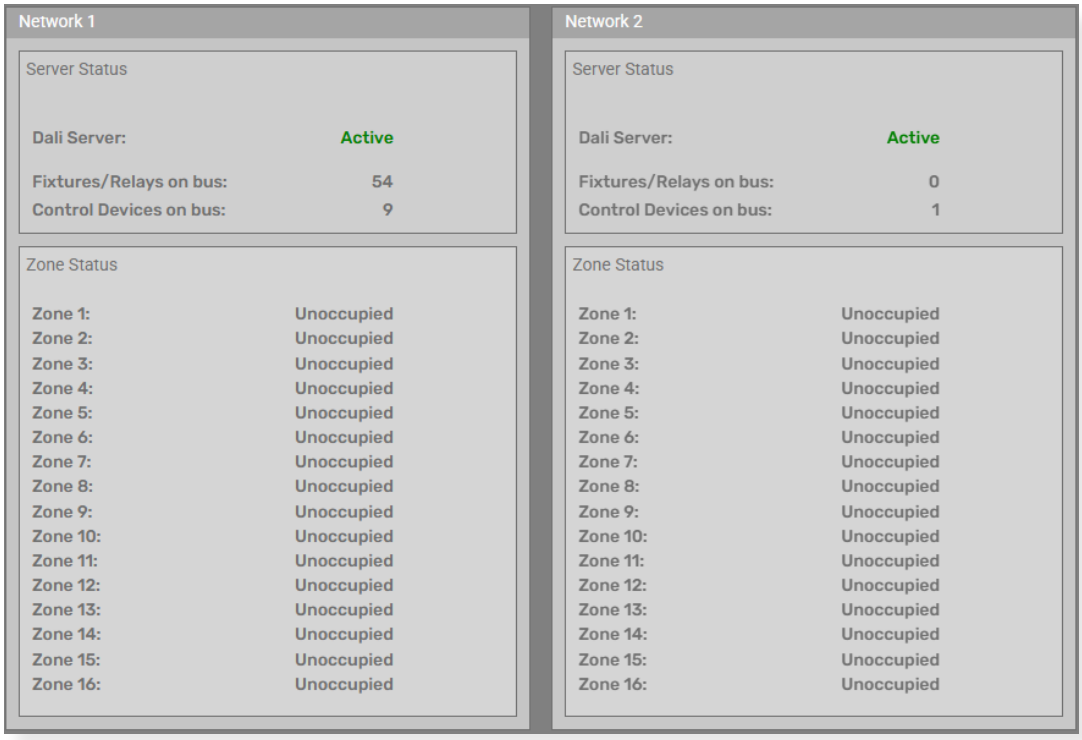
7 Start the initial addressing by selecting 'Yes.'



Initial Addressing

System Status

The system status page shows an overview of the system and zones. Displayed is the communication bus status, number of devices on bus, and the state of each zone on the system.



The communication bus status and number of devices is also available on the login page.

ZONE OVERVIEW

Zones are how the network of lights are divided up and controlled. Zones consist of several parts including groups of lights, zone states, control devices with associated control matrices and relay states. Using these components, an area and its behavior can be defined.

Zones consist of three main parts: A light group, zone states and one or more control devices instances with and associated control matrix

- Light groups are automatically associated with the zone of the same number (i.e. lights in group 1 are automatically associated with zone 1). All lights grouped together will behave together (unless a scene is triggered for that group).
- Zone behavior is managed through four different zone states which describe the Lighting Mode, Mode Level, Relay State, State Duration and Timeout State.
- A Control Matrix defines how inputs from an instance group should move the zone between states.

Zone States:

Zone States define four different states the zone can be in and how the zone should operate in those states. Each zone state has the following attributes that can be adjusted:

- **Lighting Mode** - Fixed light level, Daylight harvest or Scene trigger
- **Mode Level** - 0-100%, Foot candle target, Scene number
- **State Duration** - No time out - 1 hour
- **Time-out State** - Zone state to go to after State Duration has elapsed
- **Relay Addresses** - List of relay addresses that will act independently of the lights (i.e. plug load controllers)
- **Relay States** - Whether relays attached to this zone should be open or closed

While the Zone States are flexible, they generally are setup to be following:

- **Unoccupied** - General OFF state
- **Preliminary** - Warm-up state for areas that don't always need to be fully on
- **Occupied** - General ON state
- **Time out** - Warning state that zone in about to be Unoccupied

Control Matrix:

The **Control Matrix** defines how the zone should react to control device inputs.

Individual parts (or instances) of control devices, i.e. a button on a wall panel or the motion detector on a sensor, can be added to a zone and have its input mapped to the zone states.

Each control device event, like a short/long press on a wall panel button or motion detected on a sensor, will have and associated control matrix that defines how that event should be treated when in each state. The actions that can be triggered are:
- Do nothing
- Move to a zone state (selecting the same state will re-trigger the state action)
- Refresh the current state duration
- Cycle through scenes in current state
- Dim/Brighten current state

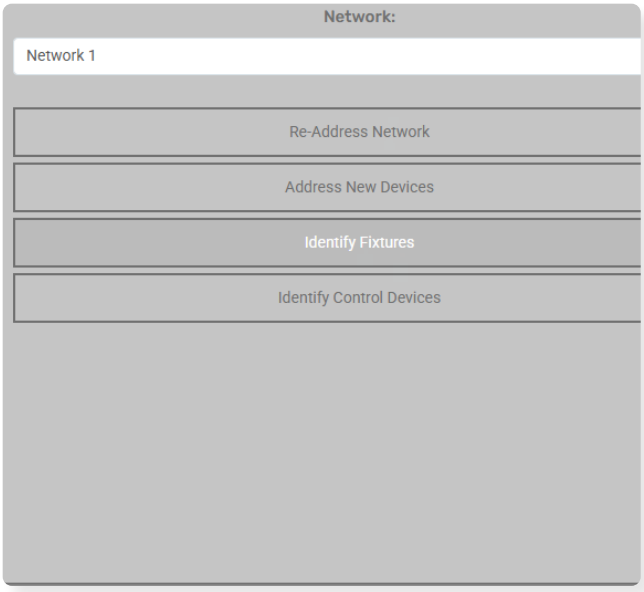
Using the trigging event on the Y-Axis and Zone State on the X-Axis you can define how the Zone should logically operate, i.e. IF the Zone is in State X AND event Y happens in this Instance Group, move the Zone to State Z.

Device Addr	Instance Addr	Event Type	Unoccupied	Preliminary	Occupied	Timeout
Wall panel (1)	Button (1)	Short Press	Occupied	Do Nothing	Occupied	Occupied
Wall panel (1)	Button (1)	Long press	Do Nothing	Do Nothing	Brighten	Brighten
Wall panel (1)	Button (2)	Short Press	Unoccupied	Do Nothing	Unoccupied	Unoccupied
Wall panel (1)	Button (2)	Long press	Do Nothing	Do Nothing	Dim	Dim
PIR sensor (2)	Motion sensor (1)	Motion detected	Occupied	Do Nothing	Refresh duration	Occupied

In the above example, the buttons on a wall panel with the DALI short address 1 is set to have an ON and OFF button with dimming and consideration for a timeout state. Additionally, a motion sensor with the DALI address of 2 is set to have the zone become occupied when motion is detected.

Commission

The commission section allows the addressing of new/all Fixtures and Control Devices and the ability to identify fixtures/devices on the selected network. Light fixtures and control devices have unique IDs that each device can also be distinguish by. The last 4 digits of the unique ID will be shown next to fixtures and control devices in the UI.



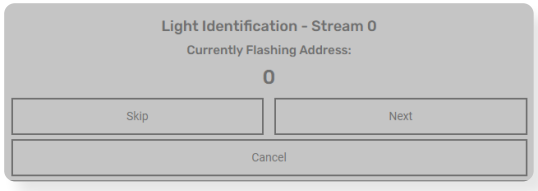
1. Select the Network that will be affected from the drop down.

2. Re-Address Network will give a new random address to every fixture and control device on the selected network.

   ***Note**: If an MCU is connected to the system, readdressing WILL cause the MCU to not function properly until it is recommissioned. A warning message will pop up before readdressing if an MCU has been connected in the past 5 days.*

3. Address new devices will give an address to any fixture or control device connected to the selected network that does not have an address.

4. Identify fixtures will flash each fixture in succession.



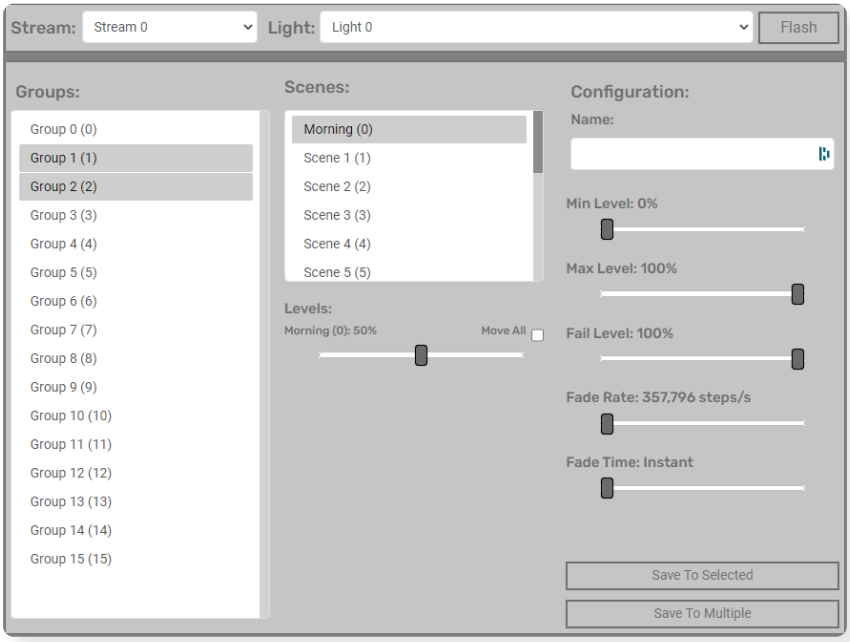
"Skip" adds the current address to the end of the list and proceeds to the next address.

"Next" discards the current address from the list and proceeds to the next address.

"Cancel" ends the identification process.

Light Configuration

1. Light Configuration allows you to change all settings of a fixture.



2. Start by selecting the network and light to change the setting, clicking the flash button, or use the last 4 digits of the light's unique id, to verify the correct fixture is selected.

3. The selected light's grouping and scene settings can be changed in the left and middle columns.

4. The right column can be used to change the light's name, minimum light level, maximum light level, system failure(Emergency) light level, Fade rate and fade time.

5. "Save to Selected" will save the changes to the fixture selected at the top.

Controls Configuration

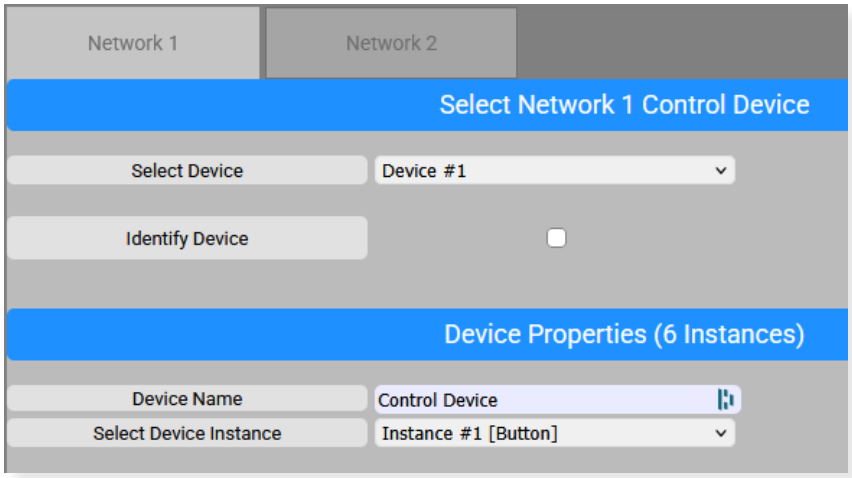
The Controls Configuration section allows editing of all settings on a control device connected to the system.
(Note: All control device settings are set automatically during addressing. Changing device settings here can cause the system to not function as expected.)

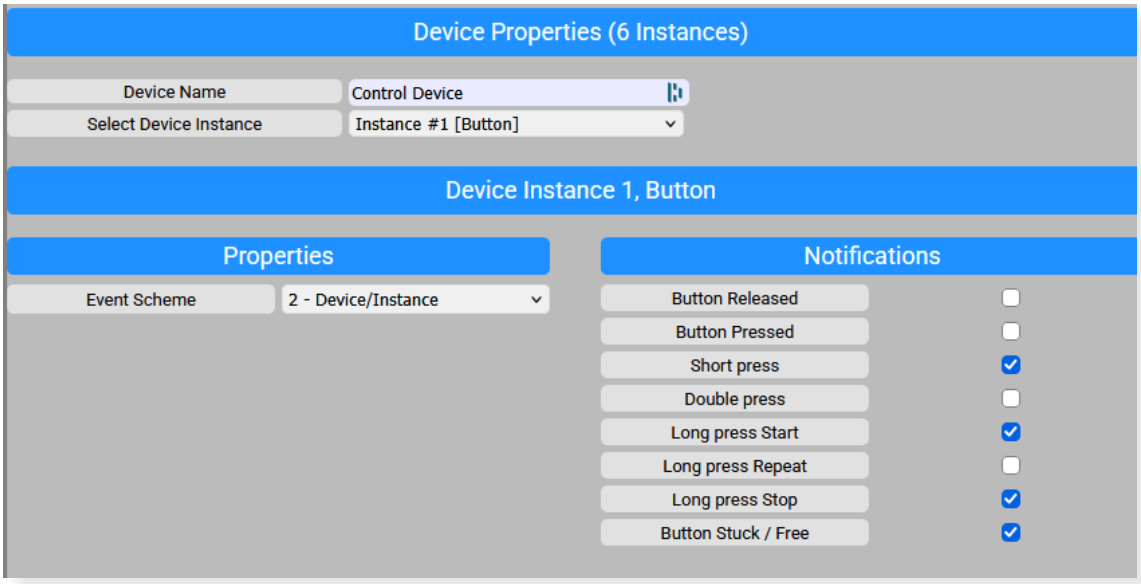
- Select a device from the dropdown to view the device's instances, change their settings or identify the device.

- The Identify Device button will cause the selected device to flash or play a tone so it can be located physically.

- All instances on the device will be shown in the Device Instance drop down.

- Selecting an instance will show all editable settings for that instance type.





Properties Of All Instance Types:

- Instance Enabled: Group designation for individual instance
- Event Scheme: How event messages are reported
- Notifications: Messages that will be sent by the instance

(Note: Button and motion sensor instances must have an instance group and have their event scheme set to "Instance Group". Photosensors must have an instance group and have their event scheme set to "Device")

Movement Sensors Properties:

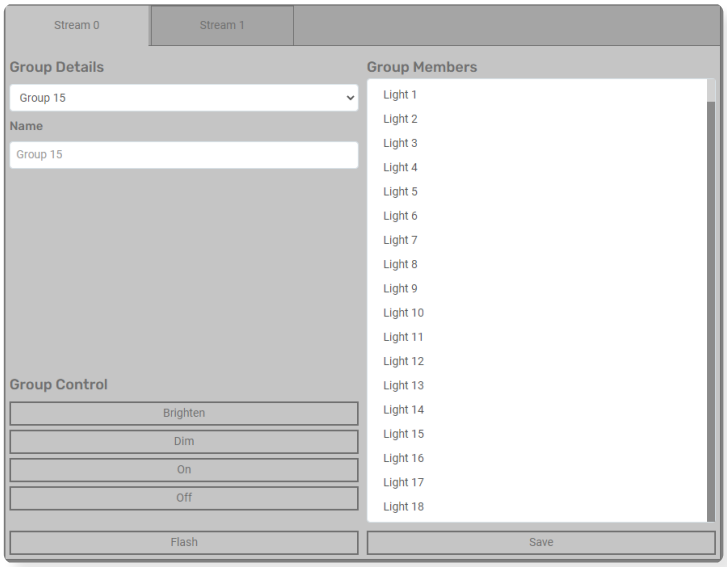
- Report Time: Time after event that "repeat" event becomes enabled
- Dead time: Time between notification events
- Hold Time: Hold time of an occupancy sensor after presence detection

Photosensors Properties:

- Report Time: Time in between light level reports if level is unchanged
- Dead time: Time between notification events
- Hysteresis: Indicates a percentage value of the margin around a measured light level
- Hysteresis Min: Prevents large fluctuations in the illumination at low illuminance

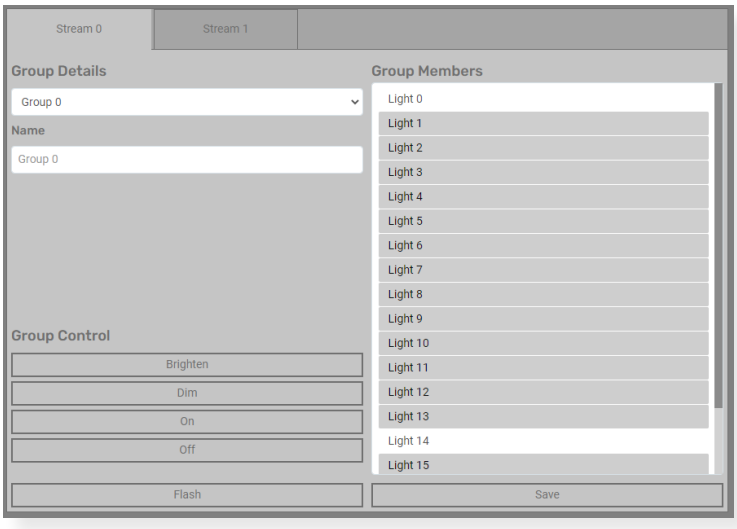
Grouping

1. Groups of lights can be made in the Create/Modify Groups section. Select the network, “Network 1” or Network 2”, that you would like to configure into groups. There are 16 groups available per network to modify. To select a group, use the GROUP: “dropdown”. Groups of lights are automatically synced with the zone that has the same address. (i.e. Lights in group 15 are automatically a part of zone 15)



Select the Group to be Modified

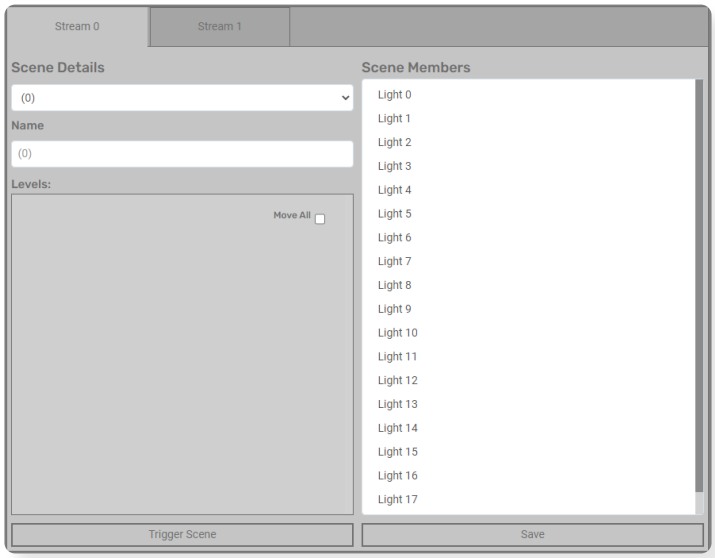
2. Add specific lights to the group by using a single-click on the lights name, ex “Light 3,” this light will then be highlighted in the list. To select multiple consecutive lights, hold SHIFT and select the first and last light of the group you would like to select. To select multiple individual lights, hold CTRL when selecting the lights. To remove a light from the group, hold CTRL and click on the lights name. Once the appropriate lights have been added to the group, click save to set the group.



(Note: Relay devices will not appear in the light zoning section and will need to be added to the zone in the Zones section)

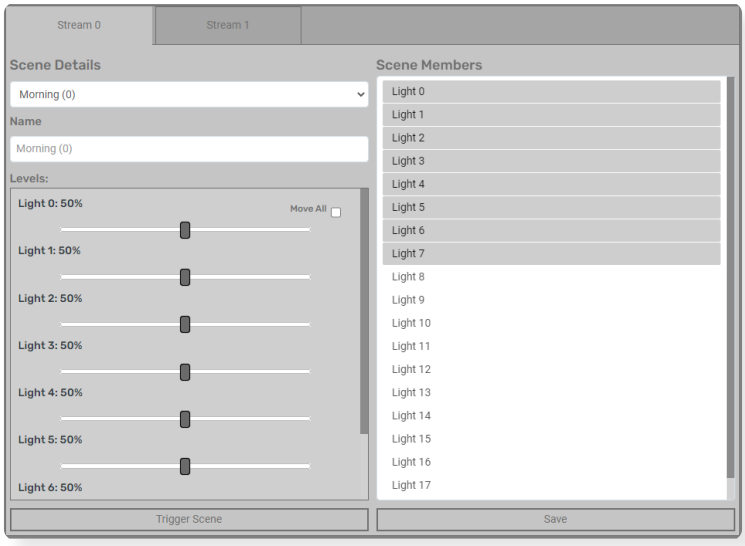
Scenes

1. Scenes allow you to set multiple lights to specific, individual levels all at once. There are 16 scenes that can be modified.



Scene Selection Before Modification

2. The Scene Title, Member Fixtures, and Lighting Level can all be adjusted when editing a scene. To select multiple lights in a scene, hold CTRL and click on the desired lights. To adjust the dimming (lighting level) use the slider for a given fixture in the 'Levels' drop down. Check the "Move All" box to move all of the sliders at the same time. Click 'Save Changes' when you are done adjusting the scene.

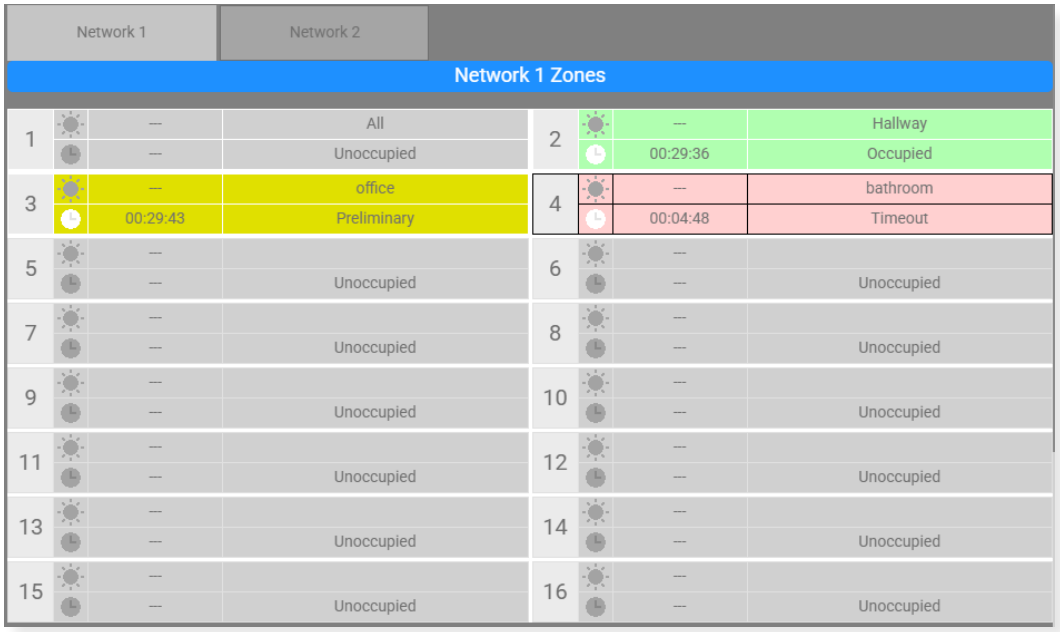


Example Scene 0: Lights 0 through 7 are selected and set to a light value of 50%

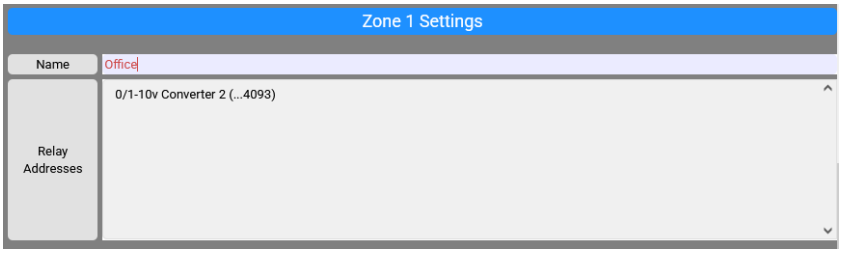
Zones

- The Zones section allows editing of zone settings and behavior
  (Note: Zones are automatically linked to Light Groups of the same address)

- Each zone is displayed in a compact form showing their address, light level, name, timer, and current zone state.



- Clicking a zone will show the editable settings for each zone state
- Relay List: Selecting relays in this list will add them to the zone. They will be controlled by the Relay Position setting for each zone state, independent of the lights.

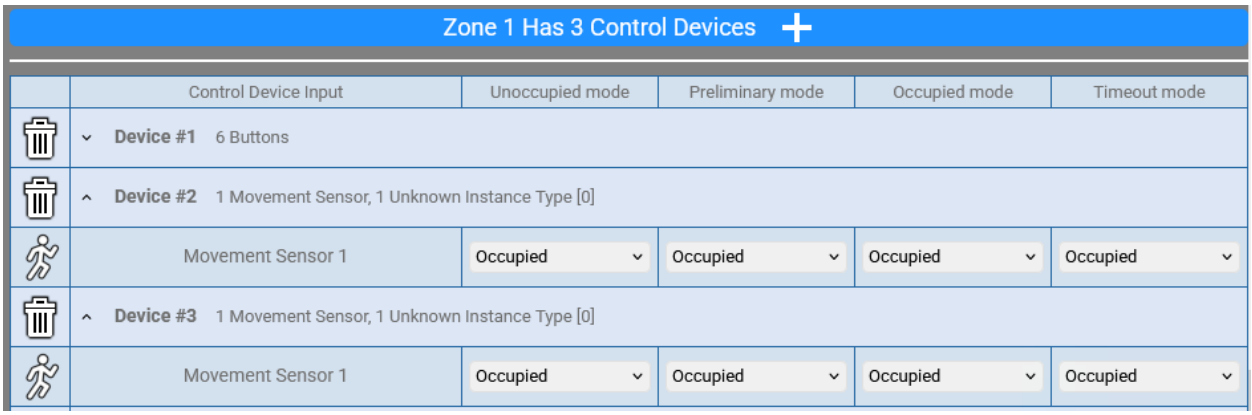


Zone State	Unoccupied	Preliminary	Occupied	Timeout
Lighting Mode	Daylight Harvest	Daylight Harvest	Daylight Harvest	Daylight Harvest
Daylight Harvest Level				
Fixed Light Level	Off	Light Level: 89.8%	Light Level: 100%	Light Level: 79.9%
Scene Selection				
Timeout Duration		30 Minutes	30 Minutes	5 Minutes
Timeout To		Unoccupied	Unoccupied	Unoccupied
Relay Position	Open	Open	Open	Open

- Clicking a zone will show the editable settings for each zone state

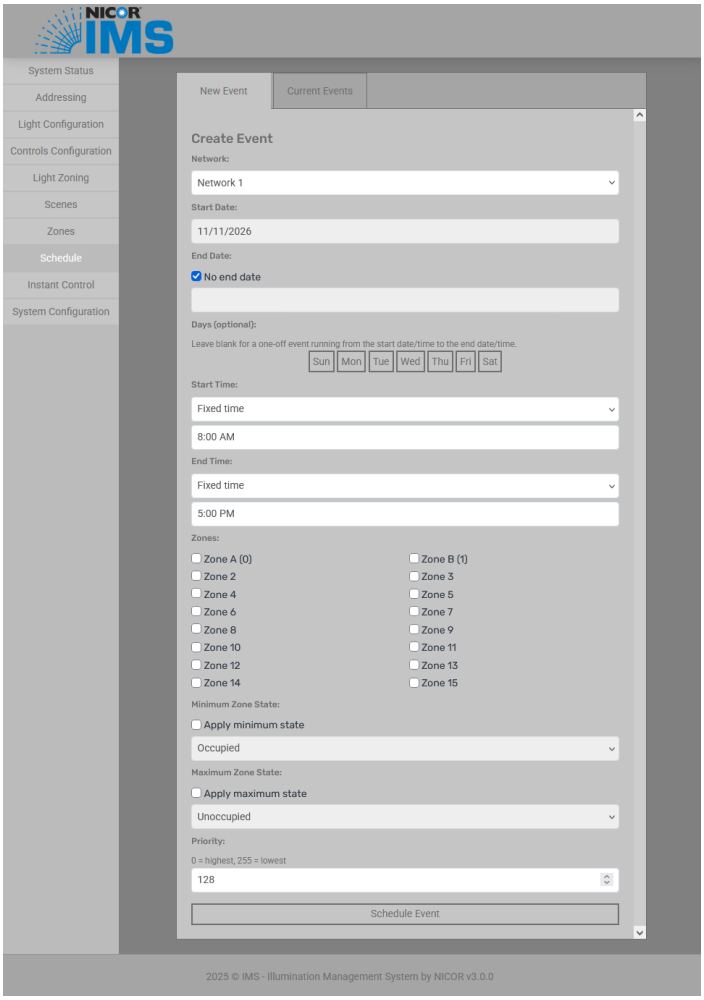
  - Lighting Mode: How the zone responds when entering the state. (i.e. Fixed light level, Daylight Harvest, Scene Trigger)
  - Daylight Harvest Level: Foot candle level that the zone will try to stay at if applicable
  - Fixed Light Level: Light level zone triggered if applicable
  - Scene Selection: Scene to be triggered if applicable
  - Zone Duration: How long the zone will remain in that state without input
  - Timeout State: State the zone will transition to after Zone Duration
  - Relay Position: State of the relays (open/closed) should be in when in this state

- Transitioning between states is handled by adding control device instances to the zone and setting up the control matrix
- Control device instance inputs can be added by clicking the '+' icon at the top of the Control device instance inputs heading
- Multiple control devices and instances can be added to a zone



- Use the '+' Icon at the top of the heading to open the device addition popup and select all the device/instances to add to the zone
- The selected device/instances will appear below with an attached control matrix
- Along the horizontal axis next to each device, 4 dropdown selectors will appear to describe what action to take when in each zone state AND the control device instance triggers
- Zone properties and device inputs can be saved by hitting the Apply Changes button at the bottom of the page
- All devices of the same type (button/sensor) can be programmed at once using the controls at the bottom of the page.

Schedule



Overview

The Event Scheduler holds zones within a range of states during a time window you set. An event does not switch a zone once and stop. For as long as it is active, it holds one or more zones at or above a minimum state, at or below a maximum state, or both. Each network can store up to 64 events.

Each event has:

- **When:** a start date and an optional end date
- **How often:** once, or on chosen days of the week
- **What time:** fixed clock times, or times set relative to sunrise or sunset
- **Where:** one or more zones on one network
- **What:** a minimum and/or maximum zone state
- **Priority:** decides which event wins when events overlap

Opening the Scheduler

Select Schedule in the main menu. The page has two tabs:

Tab	Use it to
New Event	Create an event, or change one you opened with **Edit**
Current Events	See every stored event on both networks, then edit or delete them

Creating an event

Open the **New Event** tab, fill in the fields below from top to bottom, then select **Schedule Event.** A **Publishing Events** window appears while the event is written to the controller. The event appears under **Current Events** when the window closes.

Field	What to enter	Default
Network	The network whose zones the event controls (Network 1 or Network 2)	Network 1
Start Date	The first day the event can run	Today
End Date	The last day the event can run. Tick **No end date** to let the event run indefinitely.	No end date

Field	What to enter	Default
Network	The network whose zones the event controls (Network 1 or Network 2)	Network 1
Start Date	The first day the event can run	Today
End Date	The last day the event can run. Tick **No end date** to let the event run indefinitely.	No end date

Days (optional)	The weekdays the event repeats on. Leave every day unselected for a one-off event.	None
Event spans (days)	Only shown when days are selected. How many days after each start day the event ends. 0 = it ends on the same day it starts.	0
Start Time	**Fixed time** (a clock time), **Relative to sunrise,** or **Relative to sunset**	Fixed, 8:00 AM
End Time	Same choices as Start Time	Fixed, 5:00 PM
Offset (minutes)	Shown for sunrise/sunset times. Negative = before, positive = after. Range –720 to 720.	0
Zones	Tick every zone the event applies to. Zones are listed by name and number.	None
Minimum Zone State	Tick **Apply minimum state** and pick the lowest state the zones may be in	Off (Occupied when ticked)
Maximum Zone State	Tick **Apply maximum state** and pick the highest state the zones may be in	Off (Occupied when ticked)
Priority	0 to 255. 0 is the highest priority, 255 the lowest.	128

Zone states, lowest to highest: **Unoccupied, Preliminary, Occupied, Timeout.**

How Events Run

Whether you select any days decides how the dates and times are used.

	No days selected (one-off event)	One or more days selected (weekly event)
Starts	Start Time on the Start Date	Start Time on each selected day
Ends	End Time on the End Date	End Time on the start day plus **Event spans** days
Start/End Date	When the single event begins and ends	The period in which the weekly event repeats
Event spans	Not used	0 = same day, 1 = next day, and so on

Overnight Weekly Events

To run a weekly event past midnight, set **Event spans** to 1. For example, Friday 10:00 PM with a span of 1 ends at the End Time on Saturday.

Sunrise and sunset times

Sunrise and sunset times follow the controller's sunrise and sunset for each day, so they move with the seasons. The offset shifts the time: **Relative to sunset, –30** starts 30 minutes before sunset. You can mix types, for example start at a fixed 6:00 AM and end at sunrise +15.

Minimum and maximum states

• **Minimum only:** the zones are held at that state or higher. Example: minimum Occupied keeps lights at the occupied level during business hours, even with no one detected.

• **Maximum only:** the zones are held at that state or lower. Example: maximum Unoccupied keeps a zone off overnight, even if a sensor triggers.

• **Both:** the zones are kept between the two. The minimum cannot be higher than the maximum.

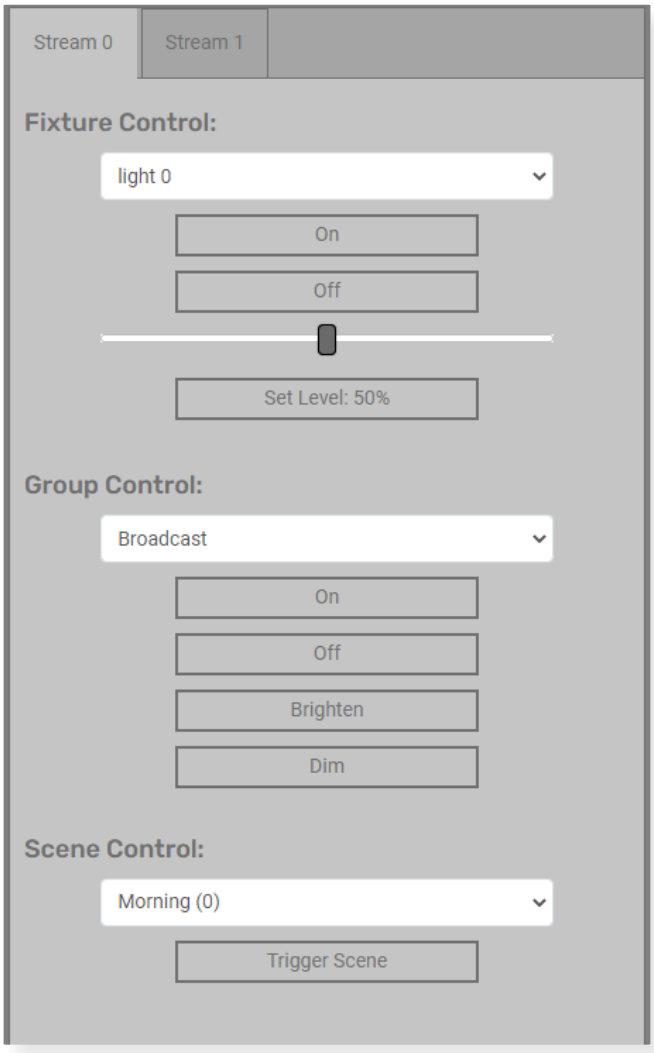
Outside the event's times, the zones go back to normal sensor control.

Priority

When two events control the same zone at the same time, the event with the lower priority number wins. Give exceptions such as holidays a lower number (higher priority) than everyday schedules.

Instant Control

Groups, scenes and fixtures can be manually controlled using the Instant Control. The Broadcast group consists of all the lights in the network. The lights can be turned on/off and the dimming can be adjusted. Dimming can be adjusted using the 'Up' and 'Down' buttons. Scenes can be triggered by selecting a scene and clicking 'Trigger Scene.'

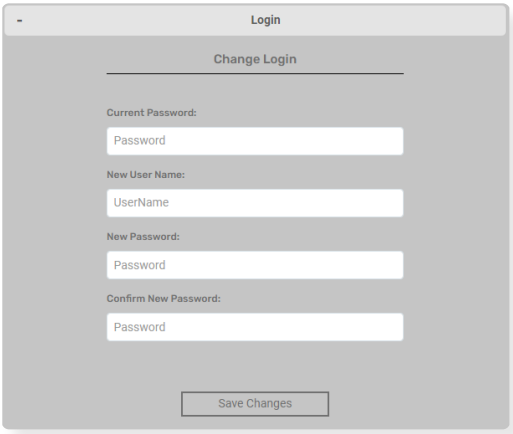


Group/Scene Control Section

System Configuration

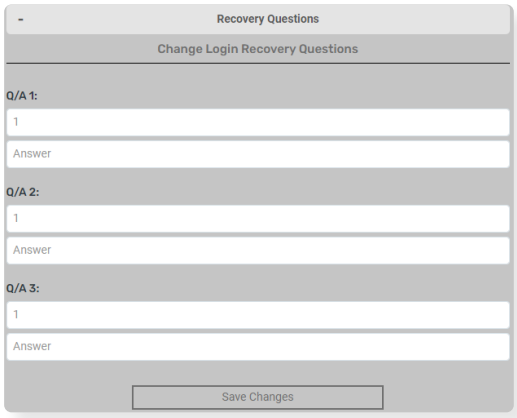
Changing Login Username and Password

To change the login user name and password click "Login" in the System Configuration section. You must know the current password to change the login information. You may enter the same user name if you only wish to change the password. After updating the login information press save, do not refresh the page.



Recovery Questions

The recovery questions section can be used to set the recovery questions in the event the password is forgotten.

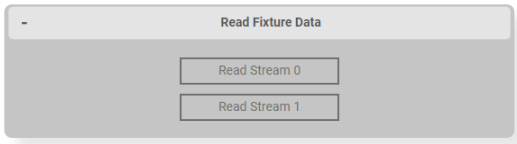


Reset System

Soft Reset: Clears all data on the DALI bus. Use if the system/controls are not responding.
Hard reset: Resets the IMS back to factory default. Will require re-initialization.

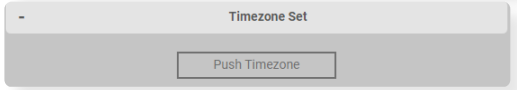
Read Fixture Data

Read fixture data will trigger the server to re-read all settings for currently connected fixtures. Click the button for whichever stream you would like to re-read and after a short period the page will automatically refresh and begin reading all fixture data.



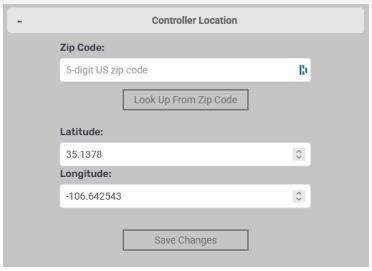
Time zone Set

Set the timezone manually by selecting it from the dropdown or automatically by selecting the "Push Timezone" button.



Location Set

Set the latitude and longitude of the cabinet to enable sunrise/sunset calculations. Set the latitude and longitude of the cabinet to enable sunrise/sunset calculations.



IMS Commissioning Check List

- ☑ Check for any loose connections.
- ☑ Check communication lines for dead shorts.
- ☑ Check communication lines for resistive shorts this reading should be > 1MΩ.
- ☑ Power on cabinet.
- ☑ Check all fixtures to ensure that all have powered on (Fix connection if fixture has not turned on).
- ☑ Connect PC or tablet to the RJ45 jack mounted to the LOTO shield inside the cabinet.
- ☑ Check the IMS status on the login page to ensure bus communication is enabled and the correct number of Fixtures and Control Devices are on each network.
- ☑ Follow commissioning guide to setup system.

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