USER GUIDE

SimplySNAP

Version 4.0

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Table of Contents

Introduction

SimplySNAP is a site-based solution for monitoring and controlling LED lights via an encrypted, self-forming, self-healing, 802.15.4 SNAP mesh network.

The network doesn't require internet access, and allows for system setup and configuration through a mobile-friendly Wi-Fi or LAN-accessible interface.

The system stores power data, alarms, and critical events locally for maintenance and troubleshooting, and provides California Title 24 compliant daily schedules for multiple dimming levels.

With programmable schedules and easy setup, SimplySNAP is the perfect solution for remote sites where internet access is difficult; you just configure it and it runs. Easy access from a laptop or tablet means your system can be reconfigured whenever needed.

The SimplySNAP Lighting Solution

A SimplySNAP installation is typically a solution for a single facility that may or may not have access to the outside world via an internet connection. It usually runs autonomously on a calendar-based schedule that may be modified by routine sensor events.

The installation consists of a number of lights that are controlled by Lighting Controllers such as the Synapse Wireless DIM10-250-11. A Lighting Controller can switch a light off or on, or dim it to a specified level. When sensors are added to the system, lights is triggered by a variety events including motion, a lack of motion, light levels, and user activated switches.

Key Benefits

- No Internet Required – All control is site based
- Android HTML5 mobile application-based commissioning and control
- Each controller's location can be stored and displayed on a map
- Multiple zones, scenes, sensors, events, and weekly schedule
- Data and events are stored on the local site controller
- Multiple user login levels for specialized control scenarios

System Requirements

- Laptop computer, tablet, or smart phone with Google Chrome Browser version 42 or later.

New in this Release

SimplySNAP Version 4.0 adds the following new features:

- **Multi-gateway support** - connect up to 5 SimplySNAP gateways into a single lighting control system for coordinated control from a single interface
- **User interface now organized by zones** - based on user feedback, browsing lights and sensors is now organized by zones
- **7-day schedule has been replaced with a full calendar** - schedule single or recurring events 5+ years in the future
- **Scene transitions can now be scheduled on the calendar** - calendar events can now use scenes to change the behaviors on multiple zones all at once
- **Audit Log** - track which users, which scheduled events, or which switches and sensors have affected the lighting control
- **Support for TL7's external sensor** - the TL7 controller's external sensor can now be commissioned to control a behavior
- **Support for the DIM10-104**
- **Support for the DIM10-110**
- **Support for second sensor on DIM10-250-11** - the DIM10-250-11 will now support a second low-voltage sensor; please contact Synapse Wireless Support for the proper wiring diagram
- **Lights can now be in up to 20 zones, plus zone All**
- **New default value for initial light level** - based on user feedback, each light's initial level defaults to 100% rather than 80% as before
- **Live sensor data in UI** - the devices and zones page will now show the status of each sensor in the system (for example, to see if a motion sensor is sensing motion or not)
- **LEDs now blink during upgrade** - LEDs on the Site Controller will blink continuously until the upgrade has fully completed
- **Configuration enhancements:**
    - Static IP address configuration for the LAN port
    - Ethernet settings validation
    - NTP configuration (NTP is now enabled by default)
    - Users are now required to change their passwords after the first login
    - Enable or disable remote support access
    - Restore default mesh network settings
- **New Help Menu** - includes online help, offline help, release notes, and End User License Agreement

- **Security updates** - please contact Synapse Wireless for more information about the security content of this release
- Other desktop and mobile usability improvements throughout the system

Supported Lighting Controllers

SimplySNAP works with the following lighting controllers:

Table 1.1: Lighting Controllers

Number	Description	Features	Best For
AIM-121	120/277V Wireless Controller, 0-10V Integrated Sensor Input and Output	2 Sensor Inputs	Adding sensors in locations that don't need a corresponding light.
DIM10-087-00	5-24V DC Powered Wireless 0-10V Module	Driver Powered Quick Connect Header Small Size (2.5" X 2")	Compact size for easy fixture integration
DIM10-100-00	120/277V Wireless Controller	2 Amp Relay Terminal Blocks Slim Construction Metal Case	Ideal for Indoor Linear Applications
DIM10-104	120/277V Wireless Controller	2 Amp Relay Terminal Blocks Slim Construction Metal Case	Optimized for Outdoor Applications
DIM10-110	120/277V Wireless Controller	2 Amp Relay Smallest Form Factor	Perfect for indoor applications where space is limited
LP150-00	120/277V Wireless Controller, 0-10V	3 Amp Relay Flying Leads IP65 Case -40 to +60	Optimal for both Indoor Industrial and Outdoor
DIM10-250-11	120/277V Wireless Controller, 2, 0-10V Integrated Sensor Inputs and Outputs	5 Amp Relay Terminal Blocks Rugged Metal Case Utility Grade PM	Power monitoring and integrated sensor applications

Number	Description	Features	Best For
DIM10-281-21	120/277V Wireless Controller, 2, 0-10V Integrated Sensor Inputs and Outputs	5 Amp Relay Utility Grade PM	Power monitoring and integrated sensor applications
DIM10-283-20	120/277V Wireless Controller, 0-10V	External Relay Control Power Monitoring 2 Sensor Inputs Flying Leads Adaptable to 480V Board Only	Board solution for integration by fixture manufacturers
TL5-B1	120/277V Wireless Twistlock Controller, 0-10V	5 Amp Internal Relay Power Monitoring Twistlock NEMA socket compatible Internal Photocell IP66 -40C to +70C	Twistlock solution for street and parking lot lighting
TL7-B1	120/277V Wireless Twistlock Controller, 0-10V	5 Amp Internal Relay Power Monitoring Twistlock NEMA socket compatible Internal Photocell IP66 -40C to +70C	Twistlock solution for street and parking lot lighting with external digital sensor input for motion sensing.

I want to...

Install

Activate a cell modem	See **The SimplySNAP Site Controller on page 11**
Install a light	See **Adding Lights on page 32**
Install a sensor	See **Adding Sensors on page 33**
Know more about the Lighting Installer app	See **Using the Android Lighting Installer App on page 66**
Commission a site using the Census function	See **Using Census for Site Commissioning on page 72**
Commission a site using a .CSV file	See **Site Configuration Using a CSV File on page 73**

Operate

Access the site controller	See **Establishing a Connection to the Site Controller on page 13**
Control lights with a scene	See **Operations on page 39**
Control lights with a sensor	See **Adding Sensors on page 33**
Control lights with a switch	See **Adding Sensors on page 33**
Control all lights in a zone	See **Devices & Zones Page on page 20**
Dim a light	See **Operations on page 39**
Turn a light off/on	See **Operations on page 39**
Use a scene to change all lights in a zone	See **Operations on page 39**
View my installation on a map	See **Viewing a SimplySNAP Installation in Map View on page 40**

Administer and Maintain

Add, edit, or delete a user account	See **Administration on page 51**
Add a light	See **Configuring Lights and Sensors on page 30**
Add a sensor	See **Configuring Lights and Sensors on page 30**
Add a scene	See **Configuring Zones and Scenes on page 28**
Add a scheduled event	See **Optimizing Control on page 43**
Add a zone	See **Configuring Zones and Scenes on page 28**

Back up installed lights	See **Importing and Exporting Light Configurations using a .CSV File on page 61**
Back up system settings	See **Backing up and restoring a system configuration on page 58**
Change a user account password	See **Administration on page 51**
Clear an alarm	See **Alarms on page 45**
Configure a Five Button Switch	See **Configuring a Five Button Switch on page 37**
Delete a Light, Sensor or zone	See **Working with Lights, Sensors, Zones, and Scenes on page 54**
Edit or Delete an event	See **Optimizing Control on page 43**
Edit a light or sensor setting	See **Working with Lights, Sensors, Zones, and Scenes on page 54**
Edit a zone's properties	See **Devices & Zones Page on page 20**
Encrypt lighting communications	See **Basic Site Configuration on page 23**
Factory default a site controller	See **Basic Site Configuration on page 23**
Group lights into a zone	See **Adding Zones on page 28**
Install a signed security certificate	See **HTTPS and Installing a Signed Security Certificate on page 37**
Look for unconfigured devices	See **Discovering Unconfigured Devices on page 36**
Limit user ability to change scenes	See **Working with Lights, Sensors, Zones, and Scenes on page 54**
Make a lot of configuration changes quickly	See **Importing and Exporting Light Configurations using a .CSV File on page 61**
Optimize system communications	See **Optimizing Communications with a Site Census on page 54**
Reboot a site controller	See **Rebooting the Site Controller on page 57**
Update the SimplySNAP software	See **Keeping your SimplySNAP system up to date**
Update a site controller	See **Updating the SimplySNAP Site Controller on page 56**

Improve Lighting Efficiency

Reduce power consumption	See **Making the Most of Lighting Controls on page 64**
See how much power a fixture consumes	See **Viewing Power Consumption of a Light on page 40**

Turn off all lights through the weekend	See **Use Schedules and Sensors to Dim or Deactivate Lights When They're Not in Use on page 64**

Installation and Initial Setup

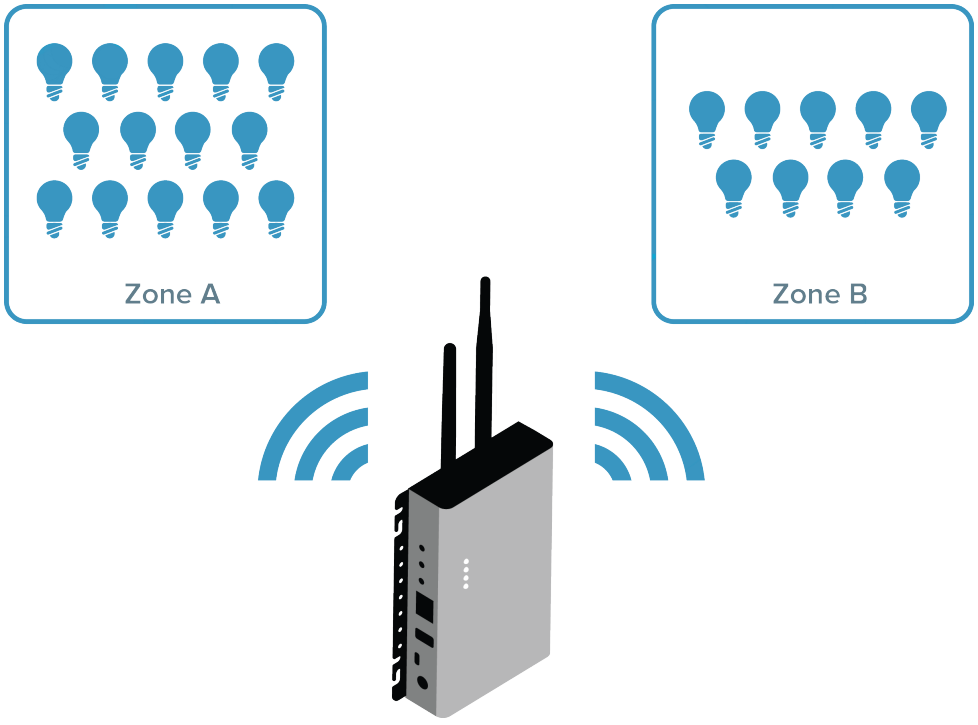
The instructions within this section will help you set up and configure a **SimplySNAP** lighting solution. For information on using SimplySNAP to control lights, check out **Operations on page 39** . For information on optimizing your SimplySNAP installation, and editing components within the installation, consult the **Administration on page 51** .

System Requirements

- Synapse Wireless **SimplySNAP Site Controller**
- Synapse Wireless light controllers
- Laptop or tablet running Chrome browser
- (Optional) Sensors and switches

Lighting System Configuration Overview

A **SimplySNAP** lighting solution consists of a **SimplySNAP Site Controller**, some number of lights equipped with Synapse Wireless light controllers, and potentially sensors and/or switches.



The **SimplySNAP Site Controller** serves as the communications and control hub for managing the lights that make up the lighting solution. Any actions that you perform within the SimplySNAP user interface are distributed through the site controller.

NOTE: In most of this document an SS420 site controller is used for illustration. The SS450 has an extra antenna for cellular service, but is otherwise identical.

To install your lighting solution, we'll take the following steps:

- Physically install lighting controllers and sensors

  NOTE: This step can also be completed after setup of the site controller, but we recommend you physically install the lights first and use the Synapse Wireless Lighting Installer app while you do it. For more information on the app, see **Using the Android Lighting Installer App on page 66** .

- Setup and configure the **SimplySNAP Site Controller**
- Add/Configure Zones
- Add/Configure Lights
- Add/Configure Sensors
- Add/Configure Scenes
- Set Schedules

Methods for New Installations

There are four primary ways to set up a **SimplySNAP** installation. We'll briefly outline each process below, and there are detailed steps included as an appendix to ensure the different processes don't run together.

NOTE: Physical installation of lights is performed before or after commissioning, but these instructions assume that the lights are already installed and powered up. In cases where a scan of the 2D barcode or reading of a MAC address will be difficult post-installation, be sure to record the Controller Type, MAC address, and location of each **SimplySNAP** device before it's placed in a permanent home. It's also possible, and easiest, to use the **Synapse Wireless Lighting Installer** app to scan these devices as they're being physically installed.

Use the Synapse Wireless Lighting Installer app

The easiest and fastest way to get a **SimplySNAP** installation commissioned is through the **Synapse Wireless Lighting Installer app**. Built for the Android platform, the **Lighting Installer app** walks you through the commissioning process and then exports everything to the **SimplySNAP Site Controller** to ensure that you're up and running as soon as possible. To learn more about the lighting installer app, see **Using the Android Lighting Installer App on page 66**

Install hardware, then use the Census button to discover unconfigured devices

As soon as a lighting controller receives power, it can be discovered by the Census function. This means that an installation is performed by discovering devices and then adding them into your installation. Each time the census runs, it will only contact lights that are in communication with a configured light controller. As controllers are added

and configured, you'll need to run the census again to collect lights that are progressively further away. To learn more about using the Census button for site configuration, see **Using Census for Site Commissioning on page 72**

Create and Import a .CSV file

While not as easy as the **Lighting Installer app** or **Census** button, a comma-separated value (CSV) file is still easier than doing everything manually. **SimplySNAP** supports easy import of .CSV files that are created in any spreadsheet or text editor program. You'll enter data on each of the lights, and the bulk of the configuration will be completed with one import. To learn more about creating and importing a .CSV file for site configuration, see **Site Configuration Using a CSV File on page 73**

Enter everything manually

If your installation is small, or you're REALLY into lighting configuration, everything can be entered manually. This works great if you're adding new equipment to an existing installation, but we'll go ahead and caution you not to do this if you're just starting out.

The SimplySNAP Site Controller

The site controller serves as the heart of your lighting solution, allowing local control with or without the internet. The site controller can work alone or with other site controllers to unify the lighting controllers into a SimplySNAP lighting solution.

Buttons on the SimplySNAP Site Controller

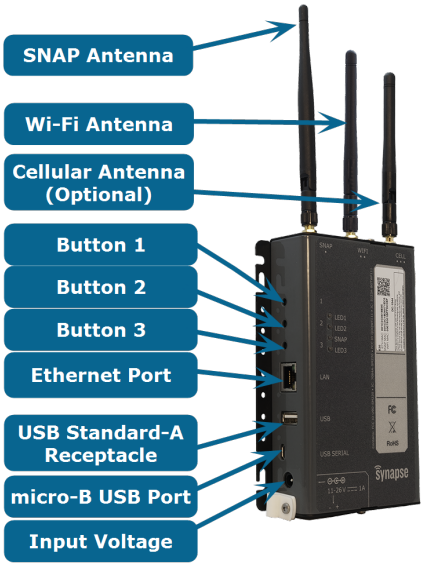
There are three buttons on the site controller. The button closest to the antennas, button one, clears the **SimplySNAP** database. Button two resets the username and password to the default settings, and the third button is inactive and not used. (Buttons must be held down until the front panel LEDs change color before a reset will take effect. More information on using the site controller buttons is provided in **Administration on page 51** .)

Setting up the SimplySNAP Site Controller

The first step in installing a SimplySNAP lighting solution is to physically install the light fixtures, lighting controllers and sensors, which can then be configured by accessing the user interface of the SimplySNAP site controller. These instructions assume that you have already installed the lights and lighting controllers that will make up your SimplySNAP lighting solution and you are now ready to set up the site controller.

To install the SimplySNAP site controller:

1. Unpack the **SimplySNAP Site Controller**.
2. Attach the included antennas to the site controller as shown. When looking at the top of the site controller (with the mounting bracket on the back side), the longest antenna (SNAP antenna) attaches to the left-most antenna connector, and the shorter Wi-Fi antenna attaches to the middle connector. If the site controller that you're installing has cellular capability, the optional cell antenna is attached to the remaining connector.
   Synapse Wireless-provided antennas will have white dots at the base of the antenna that denote the type. One dot is a SNAP antenna, two is for a Wi-Fi antenna, and three is for a cellular antenna. This notation is also reflected on the front unit label of the site controller.



3. Plug the provided power supply into the barrel connector and then into an 110VAC outlet. When the **SimplySNAP Site Controller** powers up, orange LEDs will light up for approximately 30 seconds while the site controller software starts up. Once this is complete, the orange LEDs will turn off and the site controller will be ready to use.

Activating a Cellular Modem

If you plan to access an SS450 using a cellular plan, you will need to configure the cell modem for use.

Install the **SS450 Site Controller** at the location where it will reside during normal operation, then power it to ensure your cellular provider will be able to communicate with it during the activation process.

You will need to have the following information available to set up service.

Product Model Number	Synapse Wireless SS450
Product Manufacturer	Synapse Wireless
The modem MEID#	(Unique number located on the SS450 label. Highlighted in yellow below.)
Type of Modem	M2M (Note: This isn't a normal cell phone.)

You will also need to know:

- Your data plan usage requirements.
- The location (Zip Code/City/ State) where the site controller will reside
- A contact name for device issues.
- A unique device name for each SS450 being activated.

  An example would be SS450-071EC5. This uses the unique SNAP address on the unit label, (shown below highlighted in red). Using the last 6 hex numbers will ensure each unit is unique and visually traceable.

Contact a Verizon agent at 1-800-837-4966 and set up a contract, or contact your corporate Verizon representative if an account already exists.

NOTE: The agent will ask specific questions about the type of plan that will be used. This will depend on how often you plan to access the site controller, so be sure to have all information listed above available. The agent will assign a phone number, inform you when activation will be complete, and finalize integration between the site controller and your system.

Email confirmations will be required by the designated account owner. If installation is performed away from the designated account owner, arrangements need to be considered for email confirmation and completion of the activation process.

Establishing a Connection to the Site Controller

The **SimplySNAP Site Controller** comes preconfigured with the **SimplySNAP** software so there is no user installation of software required.

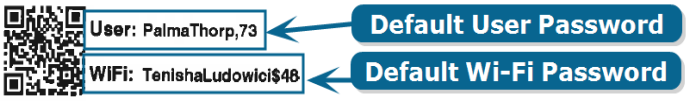
The current version of the **SimplySNAP** software supports the Google Chrome browser. Other browsers will be supported in future releases. If you don't have the Google Chrome browser installed on your device, please download and install it from http://www.google.com/chrome

Accessing the Site Controller

The **SimplySNAP Site Controller** supports connections via LAN (Ethernet), Wi-Fi, and optionally, cellular. The **SimplySNAP Site Controller** serves as the access point and broadcasts a Wi-Fi SSID over the air. During installation the Wi-Fi connection is used to establish communications between the controller and a browser based device such as a computer or tablet. After that, it can be accessed via Ethernet, Wi-Fi, or cellular.

SimplySNAP 4.0 introduced stronger out-of-the-box security measures, and a change in default user names and passwords. Depending on your site controller version, there are two ways to wirelessly connect.

For site controllers running SimplySNAP 4.0



Each site controller broadcasts a Wi-Fi SSID that will be visible from the network connections panel of your computer or tablet. It will appear in your device's network connections list as SimplySNAP_XXXXXX where XXXXXX is the specific address of the site controller. This address is unique to each site controller and matches the last 6 alphanumeric characters of the Ethernet MAC address. The site controller has randomized passwords for Wi-Fi and the default user, and both are available on a sticker on the side of the site controller. The SSID will be visible from the network connections panel of your computer or tablet, and can be selected like any wireless network.

When you select the SSID and your computer attempts to connect to the site controller, it will prompt you for a password to complete the connection.

Enter the default Wi-Fi password provided on the sticker to establish the connection.

When this password is entered a connection is established and will appear in your network settings. This may also appear as an "Unidentified network" with no internet access.

For site controllers running a SimplySNAP version prior to 4.0

The SSID broadcast from the site controller should be visible from the network connections panel of your computer or tablet. It will appear in your device's network connections list as SimplySNAP_XXXXXX where XXXXXX is the specific address of the site controller. This address is unique to each site controller and matches the last 6 alphanumeric characters of the Ethernet MAC address.

When you select the SSID and your computer attempts to connect to the site controller, it will prompt you for a password to complete the connection.

Enter the password **synapse!wireless** to establish the connection.

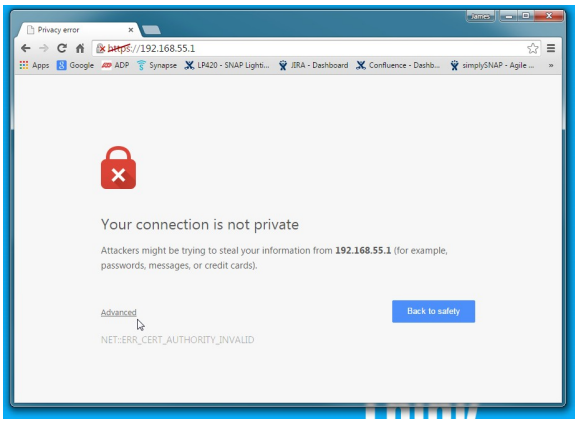
When this password is entered a connection is established and will appear in your network settings similar to what is shown. This may also appear as an "Unidentified network" with no internet access.

Logging In

Launch the Chrome browser and enter HTTPS://192.168.55.1 in the address bar.

Make sure it is entered exactly as shown. (This is a secure connection to a specific IP address that is the factory default within the site controller). This connection mimics a connection to an internet access point.

You will receive a warning as shown at right. Click the **Advanced** link at the bottom, then click the "Proceed to 192.168.55.1 (unsafe)" link. (This warning is displayed because the site controller is using an unsigned security certificate.)



The **SimplySNAP** login page should now appear in your browser and present you with the login screen for the **SimplySNAP** site controller.

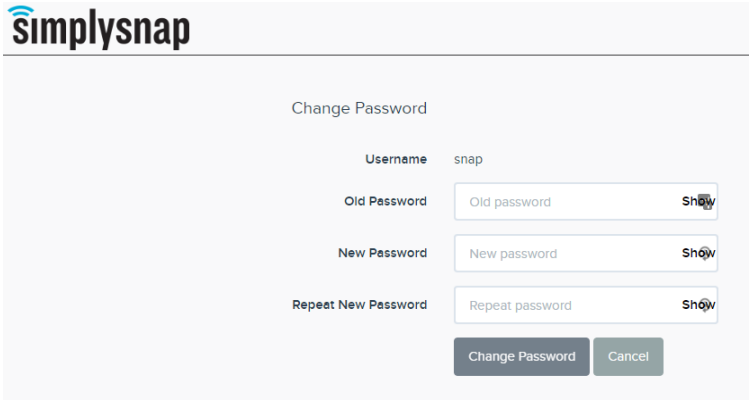
Enter the following username:

Username: snap

For site controllers manufactured prior to SimplySNAP 4.0, the password will be **qwerty**. This password is common to all site controllers prior to version 4.0, and after upgrading to 4.0 you will be required to change the password on first login.

For site controllers made after version 4.0, the default user password is on a sticker on the case of the unit. This password is random and unique to your site controller, so a password change after first login is not required.

After your first login, if you are prompted to change your password from the default, follow the on-screen instructions.

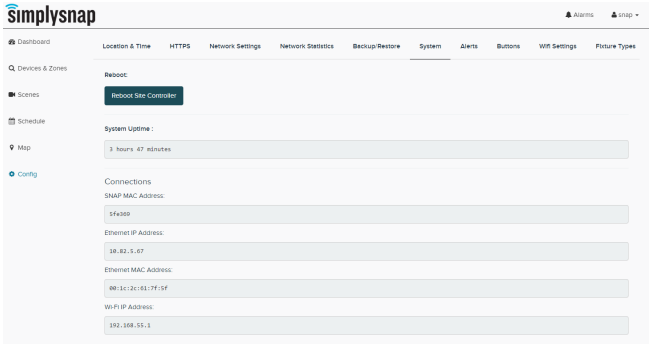


After you've established this first connection to the site controller, you'll establish later connections using the instructions outlined in **Navigating the User Interface on page 16** .

The **SimplySNAP Site Controller** may also be connected to a wired LAN network and accessed via the LAN. The LAN must be configured with a DHCP server to provide an IP address to the site controller when it is connected. To use this method of connection, you must identify the IP address the DHCP server provided to the site controller.

To identify a DHCP assigned IP address:

1. Connect to the site controller via Wi-Fi as described above and log in.
2. Click the **Config** menu item in the left menu bar, then click the **System** tab near the top of the screen.
3. The site controller IP address is shown in the field labeled **Ethernet IP Address**. This address may be entered into a web browser's address bar and used to connect to the site controller across a wired LAN.



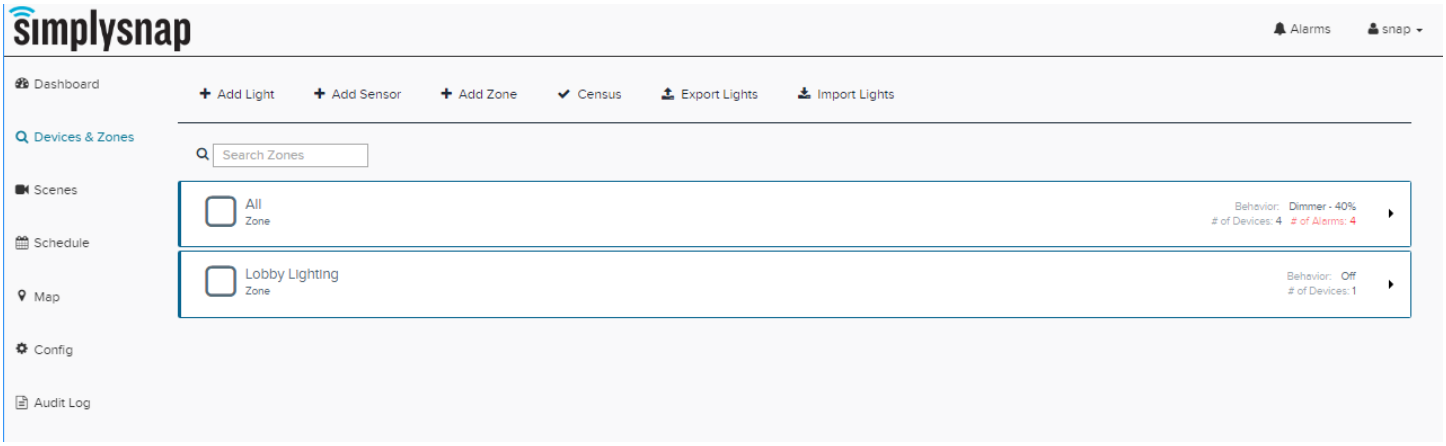
NOTE: A network administrator can configure the local network DHCP server to always provide the same IP address to the site controller and ensure connectivity can always be established via the LAN.

Navigating the User Interface

To access the SimplySNAP User Interface, enter the IP address for your SimplySNAP site controller into the address bar of a web browser. You will be prompted to enter a username and password for access.

The Dashboard

The dashboard provides an overview of the components that make up your SimplySNAP system.



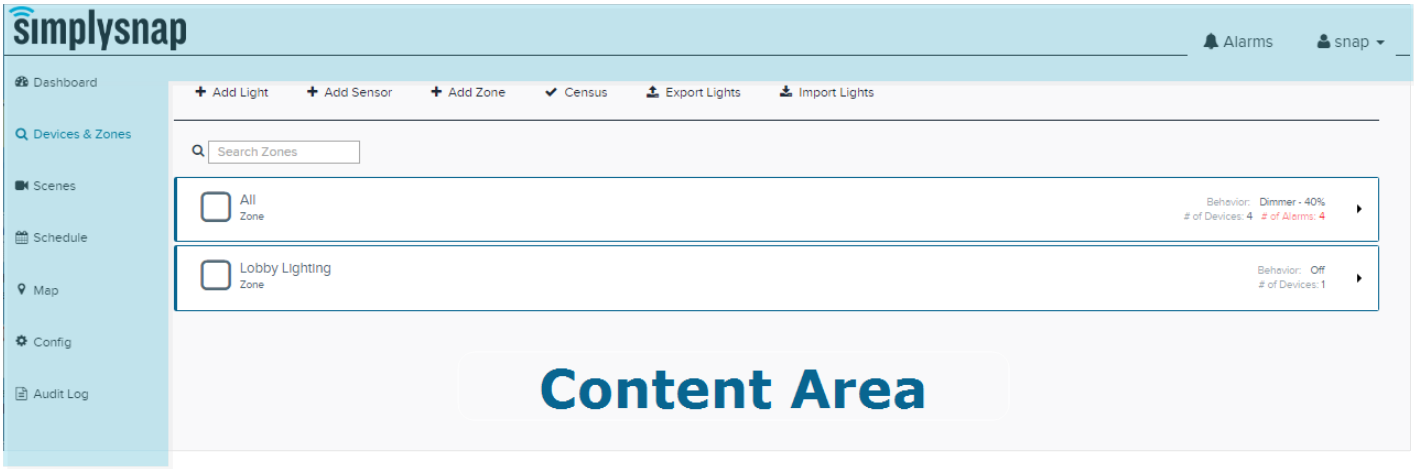
NOTE: All screen shots within this documentation display administrator level access. Users with Scene access will not have as many menu choices available.

The dashboard consists of three distinct areas:

- Content Area
- Title Bar
- Left Menu Bar

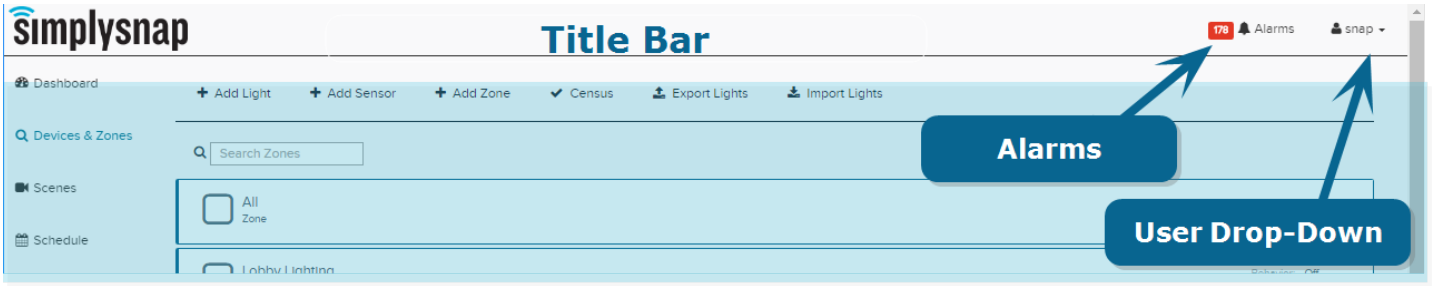
Content Area

The Content Area contains the active interface screen. The Content area changes depending on what you select in the other control areas.



Title Bar

The Title Bar is always present at the top of the screen, and displays active alarms and user information in the upper right corner.



The SimplySNAP Logo

Clicking the SimplySNAP Logo will always return you to the main Dashboard screen.

The Alarms Button

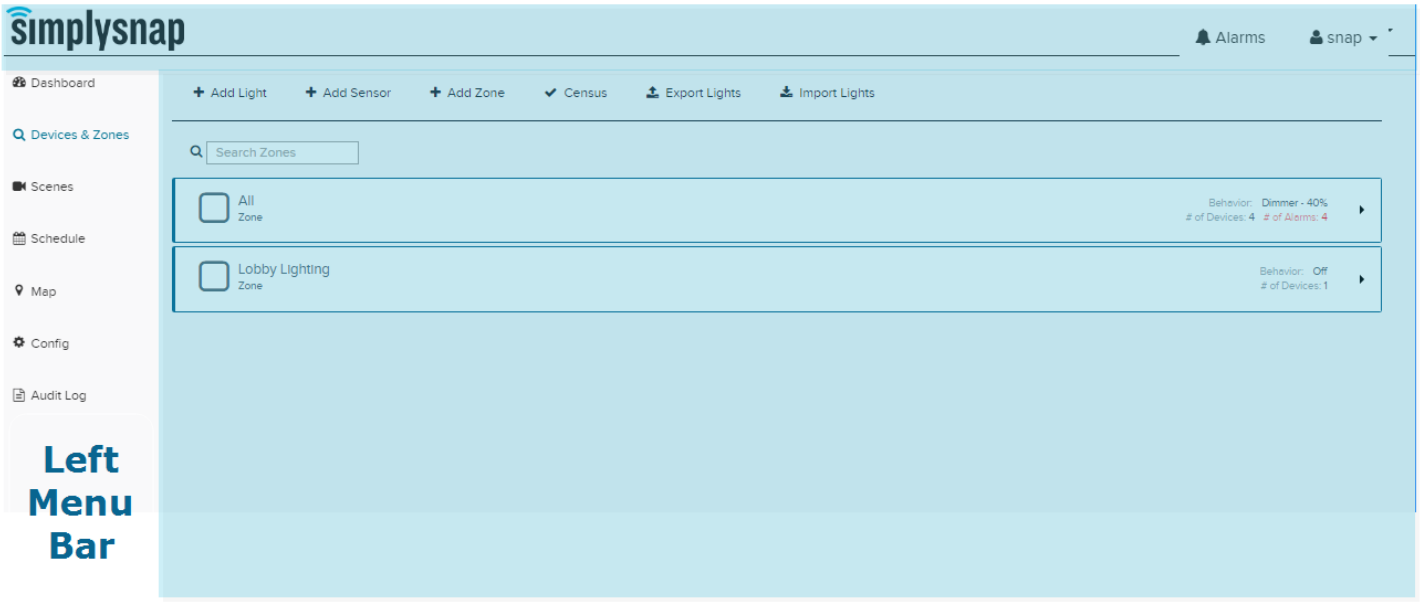
Clicking the Alarms button will load the Alarms page.

The User Drop-down

The User drop-down provides access to the Accounts Management, Help and Log Out menu choices. The Accounts Management menu choice will load the Accounts screen, where all user account related functions are performed. The Help menu choice will provide buttons for SimplySNAP release notes, the SimplySNAP License Agreement, Offline Help, and Online Help. Finally, the Log Out button will log you out of the SimplySNAP user interface.

Left Menu Bar

The Left Menu Bar is the main interaction point within the SimplySNAP user interface, and it consists of seven menu choices:



Dashboard

Clicking the **Dashboard** menu choice displays a brief summary of your lighting system.

Devices & Zones

Clicking the **Devices & Zones** menu choice loads a list of currently configured lights, sensors, switches, and zones into the Content Area. Any operations pertaining to lights and zones are performed from this menu choice, including adding, operating, and deleting lights, zones, and sensors.

Scenes

Clicking the Scenes menu choice loads a list of currently configured scenes, and provides a mechanism for creating new scenes.

Schedule

Clicking the **Schedule** menu choice loads a calendar display of currently scheduled events into the Content Area. Any operations pertaining to schedules are performed from this menu choice.

Map

Clicking the **Map** menu choice loads a map of the SimplySNAP installation showing the configured lights and site controller. If an internet connection is available, a background map based on the latitude and longitude of the site controller will also be shown.

Config

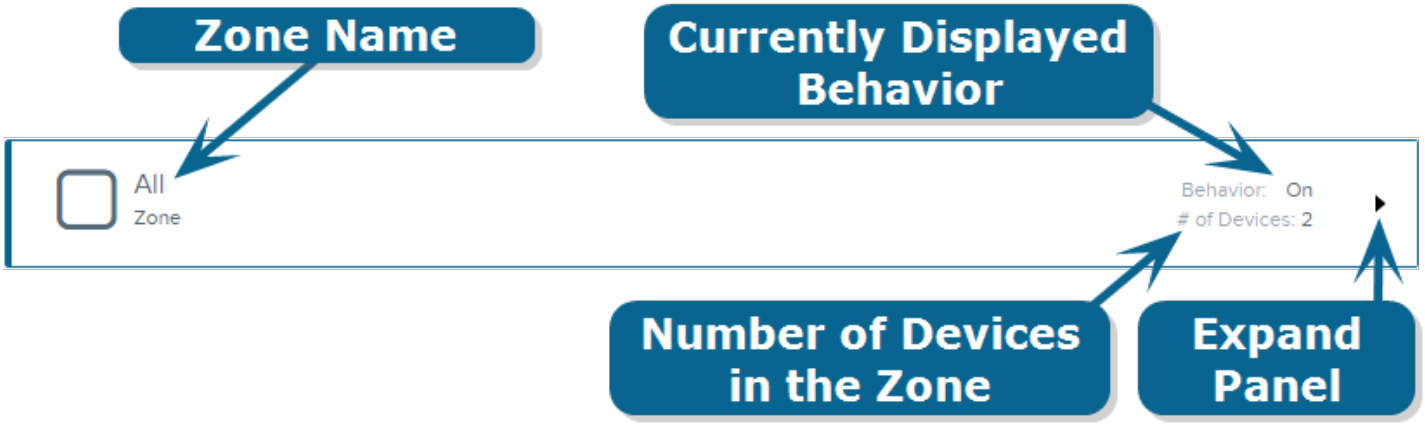
Clicking the **Config** menu choice displays general system information and allows configuration of all system settings.

Audit Log

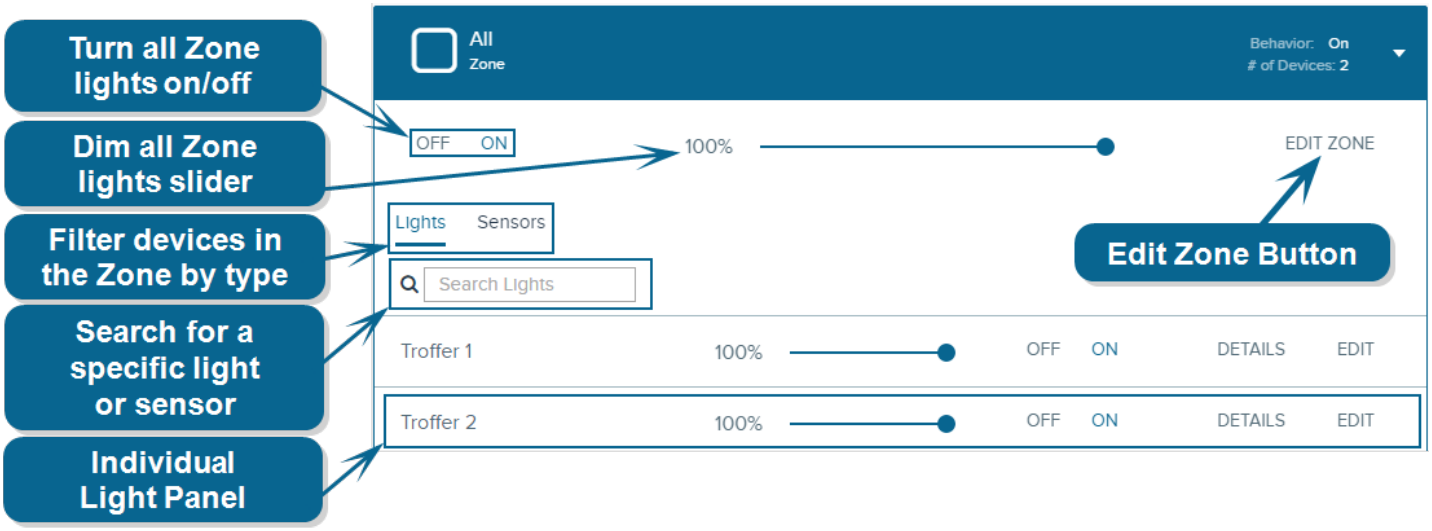
Clicking the **Audit Log** menu choice will activate the audit log screen, which provides a listing of all events and errors that have occurred in the SimplySNAP system. The log is searched and filtered via the **Filter Audit Log** menu choice at the top of the screen.

Devices & Zones Page

Your main interaction point with SimplySNAP will be the Devices & Zones page, which is accessed by clicking the **Devices & Zones** link in the left menu bar. Each zone in your installation appears as a horizontal panel on the page that lists the zone name, the current behavior of the zone, and the number of devices that make up the zone.



Clicking the expand panel arrow at the far right of the zone panel will expand it to display more information about the selected zone.



The Zone Panel

The expanded zone box provides detailed information about the zone, and the lights and sensors that make up the zone. A number of tasks is accomplished from the zone panel.

Controlling all Lights within a Zone

Grouping lights into a zone gives you the option of turning the lights on and off, or changing their brightness levels, directly from the zone panel. Commands issued in this way occur immediately and will override currently scheduled behaviors. When this occurs, lights will remain in the new state until a scheduled behavior or a sensor event causes new instructions to be issued. If you wish to use scheduled events in your installation, they take effect at the zone level, so lights that will be scheduled must be grouped into zones.

For example, imagine an installation where you have all lights programmed to switch on at 6:00PM and then switch off at 5:00AM. If you use the zone panel to directly issue a command to switch them off at 3:00AM, they will remain off until the schedule tells them to switch on at 6:00PM the next day, or a new direct command switches them back on. Likewise, if you issued a command to switch the lights on at 6:30AM, they would stay on until 5:00AM the next day when the next off command is issued.

Filtering the list of devices within the zone

Each zone can support several lights, which can make it difficult to quickly find a particular light or sensor. You can quickly narrow the list to only lights or only sensors by clicking the corresponding device filter.

Searching for a specific light or sensor

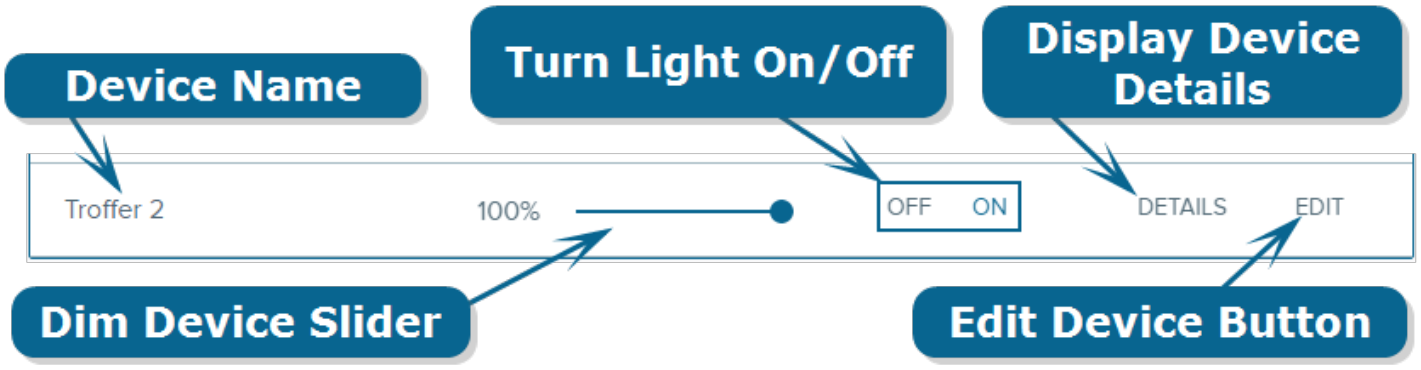
The zone panel provides a search feature for quickly narrowing the list of devices. Just type in the first few characters of the light or sensor name and names matching the characters will be moved to the top of the list.

Editing the zone's properties

The Edit Zone button will activate the Edit Zone panel, where you can change the zone name and description, add or remove lights from the zone, set the behavior of the zone, or delete it altogether. For more information on the Edit Zone panel, see **Working with Lights, Sensors, Zones, and Scenes on page 54**

The Device Panel

Each light and sensor within a zone is represented by a device panel.



Understanding Zones, Behaviors, and Scenes

A SimplySNAP lighting installation controls lights through the use of Zones, Behaviors, and Scenes. Each serves a different function, and it's important to understand how they combine to provide users with maximum configuration and control.

What is a Zone?

A zone is a user-defined logical grouping of lights that can all be controlled with a single command from the GUI or a sensor. Lights can belong to multiple zones, and you're free to create and group lights in zones in any way you choose. There is one default, non-removable zone "All", which applies to every light in the system.

A zone is often named after the function of the grouping, such as "Emergency Lights", "Parking Lot", or "First Floor".

For example, imagine a lighting system within a theater. The overhead lights could all be grouped into one zone. Aisle lights could be another zone, and above door lights could be a third zone. Each of these groups of lights has a role, and that role is defined through the use of Behaviors and then applied to each of the Zones.

NOTE: Switching the zone "All" to off will turn off every light, but will not set all zones to the off setting. This is by design, and is used when you want to switch off all lights, but also want to keep sensors active in case lighting is needed.

What is a Behavior?

When a Zone is activated, the Zone's associated Behavior is activated. A Behavior is an instruction for how the system reacts to a sensor event or a combination of factors.

The power of a SimplySNAP lighting system is centered in automation. Rather than always having a user control lighting, you can use sensors to let your lighting system respond to changes within its environment.

For example, you might use a motion sensor to control the lights in a seldom used warehouse. As someone opened the door, the sensor would notify the SimplySNAP lighting system of movement and the system would respond by invoking a behavior to turn the lights on. When the occupant leaves, the system could gradually dim the lights to off over a specified time to ensure that no one is left in the dark.

Likewise, a SimplySNAP lighting system can respond to a lack of movement. When the motion sensors within the warehouse have not sensed movement for a user defined amount of time, the system can change the light level to something lower.

Behaviors is triggered by manual switches, motion detectors, and photocells. For more information on Behaviors, see **Adding Sensors on page 33**

What is a Scene?

A Scene is a grouping of Zones, with specified behaviors for each of those Zones. This allows you to issue commands to a number of lights where each light is at a different brightness or activation method. Depending on the

needs of your installation, you might have a scene for a normal business day, an energy saver scene for evenings, or an emergency scene for disaster drills.

Within our theater example, we could have a number of Scenes available to create different atmospheres. Two Scenes within a theater might be "Pre-Movie," and "Movie."

The "Pre-Movie" scene might set the overhead lights zone to 60% brightness so patrons can find their seats, while the aisle lights and the above door lights zones are set to 80% brightness to provide extra definition. When the "Movie" scene is invoked, the overhead lights zone is reduced to off, while the aisle lights are dimmed to 10% brightness, and the above door lights are reduced to 20% brightness.

Basic Site Configuration

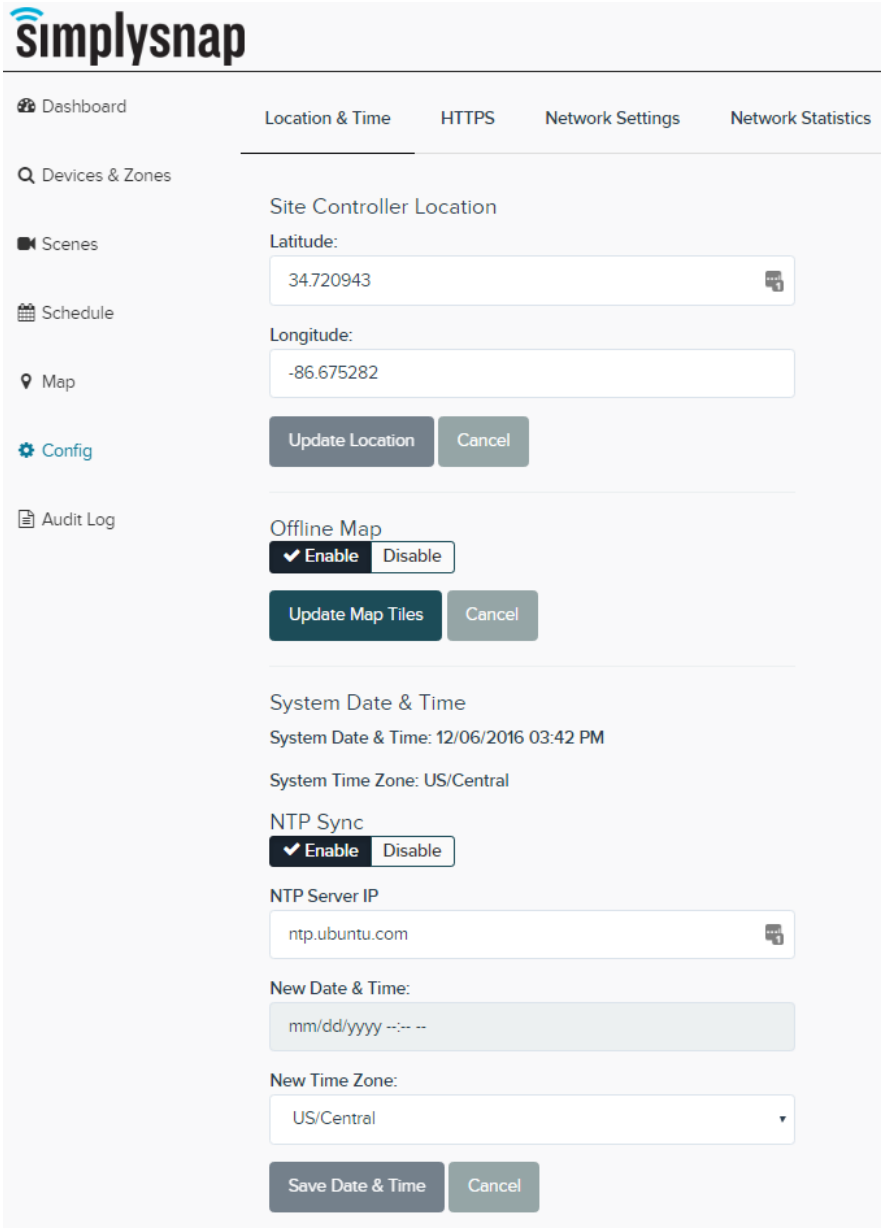
After establishing connectivity to the site controller, the following steps should be taken to initially configure the system for lighting control.

Configuring the Site Controller's Location

The location of your SimplySNAP installation determines the proper sunrise and sunset times for automated systems, determines if and when daylight savings time is applied to the system, and helps provide accurate positioning on map views.

The location of the site controller is entered by navigating to the **Config** page and clicking the **Location & Time** tab. Entering the longitude and latitude for your installation using the fields provided under the Site Controller Location heading, and then click the **Update Location** button.

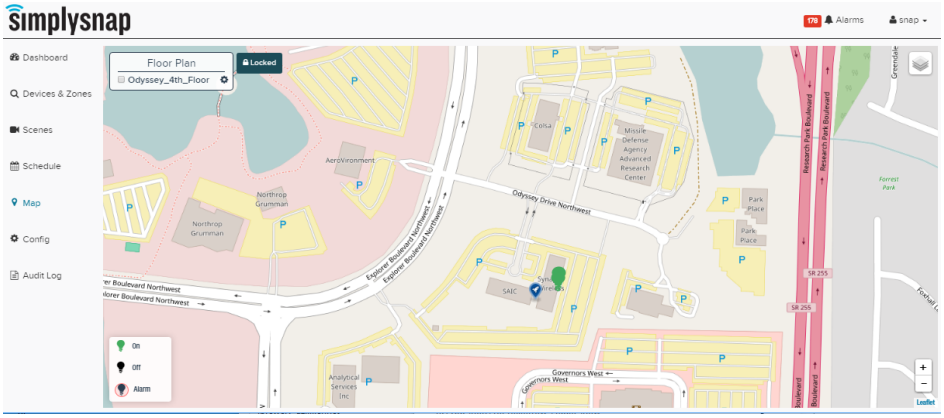
The **Location & Time** tab is also where you'll configure Offline Maps and Time settings, so let's take care of that while we're here.



Enabling or Disabling Offline Maps

If your site controller is connected to the internet via a LAN connection, entering the location will prompt the **Map** page to display the site controller's location on a map overlay.

If the site controller will not have continuous internet access, you should enable the offline map by clicking the **Enable** toggle under the **Offline Map** heading, and then clicking the **Enable Offline Maps** button. This will download the map of your installation for use when internet access is not available.



Configuring the System Date and Time

A site controller can maintain an internal clock, but for maximum accuracy you should use an NTP server.

To configure System Date and Time using an NTP server:

1. Navigate to the Location & Time tab by clicking **Config** - **Location & Time**.
2. Scroll down to the System Date & Time heading and click the **Enable** toggle under the NTP Sync heading.
3. Enter the address of the NTP Server you want your site controller to use for the time. A list of publicly available NTP servers is accessed at **http://www.pool.ntp.org/en/**.
4. Click the **Save Date & Time** button to save the new settings, or the **Cancel** button to exit without saving.

To manually enter System Date and Time:

1. Navigate to the Location & Time tab by clicking **Config** - **Location & Time**.
2. Scroll down to the System Date & Time heading and ensure that the **Disable** toggle under the NTP Sync heading is selected.
3. Enter the current date and time in the New Date & Time field.
4. Select your time zone using the New Time Zone drop-down menu.
5. Click the **Save Date & Time** button to save the new settings, or the **Cancel** button to exit without saving.

Set and Encrypt the SNAP Communications Channel

Synapse Wireless recommends you enable encryption within your SimplySNAP installation. Encryption is enabled by clicking the **Encryption** toggle to shift it to **Enable**. This will encrypt all data transmitted over the air and significantly reduce the possibility of outside interference.

Particularly large lighting installations can generate a lot of network traffic, and in some rare occasions this can have a negative impact on system response times. If you encounter a situation where lights aren't responding to commands, enabling **Enhanced CRC** may help. It is enabled via the **Enhanced CRC** toggle switch

NOTE: By default, encryption and enhanced crc are disabled.

NOTE: If any configured light within your installation is not in communications with the site controller the system will not change channels or encrypt. This is to ensure that all lights are reconfigured, or none of them. If you've entered a "fake light" or sensor, you'll need to delete it before initiating a change.

SimplySNAP uses a SNAP RF network for lighting control, and proper precautions will help ensure reliable service. For maximum reliability and security, Synapse Wireless recommends you change and encrypt the default SNAP channel and network ID.

To change the SNAP channel:

1. Log-in to the SimplySNAP user interface and click **Config** - **Network Settings**.
2. Enter a new SNAP channel in the provided **Channel** field. Valid channels range from 1-13.

   NOTE: For SimplySNAP installations near a strong Wi-Fi installation, Synapse Wireless recommends that you use SNAP channel 4 or 9 to minimize interference on the lighting network.
3. Enter a new Network ID in the **Network ID** field. Network IDs is any combination of numbers and the letters a - f. (Excluding 0000 and ffff.)
4. Click the **Enable** toggle under **Encryption**.
5. Click the **Enable** toggle under **Enhanced CRC**.
6. Click the **Save Changes** button to save your changes and exit.

When the **Save Changes** button is clicked, all components in your installation will be updated to the new information over the next several minutes.

NOTE: The factory default channel (1) and Net ID (d110) should not be used for installations. Valid channels range from 1 - 13, and Network IDs is any 4 digit combination of numbers and the letters a - f. (Excluding 0000 and ffff.)

Changing Wi-Fi Settings

A SimplySNAP site controller is assigned an SSID at the factory, but this is confusing in installations that have multiple site controllers. For safety and ease of use, Synapse Wireless recommends that you change the SSID and Key for your site controller as soon as is reasonable.

If you don't plan to use Wi-Fi access within your SimplySNAP system, you can also disable Wi-Fi access.

To edit or disable Wi-Fi settings:

1. Access the Wi-Fi Settings tab by clicking **Config** - **Wi-Fi Settings**.
2. Enable or disable Wi-Fi using the **Wi-Fi** toggle.
3. Enter your desired SSID and Key in the fields provided.
4. Click **Save Changes** to save your new Wi-Fi settings, or **Cancel** to exit without saving.

Factory Defaulting Network Settings

You can reset your network settings to the factory defaults at any time by using the **Network Settings to Default** button.

To reset the network settings to their factory defaults:

1. Log-in to the SimplySNAP user interface and click **Config** - **Network Settings**.
2. Click the **Network Settings to Default** button.
3. Click **Save Changes** to complete the change, or **Cancel** to exit without saving.

Configuring Zones and Scenes

A Zone is a grouping of lights and sensors that provides an easy way to control multiple fixtures at once. If you plan to use sensors to control light behavior, the sensors will issue commands to specified zones. For example, you may want to group all security lights into a separate zone from the parking lot lights. These groupings allow behaviors to be applied across multiple lights at once.

A scene is a grouping of zones, with specified behaviors for each of those zones. This allows you to issue commands to a number of lights where each light is at a different brightness or activation method. For scenes to be useful, you must first group lights into zones, and the scene will issue instructions via those zones.

When you're first configuring your lighting solution, you'll need to decide how you want lights to behave over the course of a day, and then create Zones to group those lights accordingly. It's helpful to create the Zones that you'll use before you configure the lights and sensors that will be in the zone, so you can easily add the lights and sensors as they're configured.

A light can be a member of multiple zones, but sensors can only be in a single zone.

Adding Zones

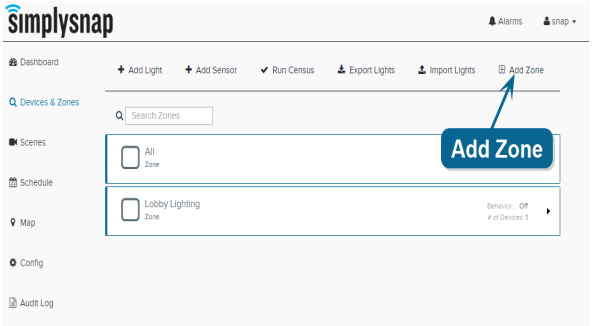
Each zone is defined by four fields:

Table 3.1: SimplySNAP Zone Fields

Name	Description
Zone Name	A descriptive name for the zone being configured.
Zone Description	A description for the zone.
Lights	The lights that are a part of the zone.
Behavior	The behavior the zone will invoke when it is activated.

To add a new zone:

1. Click the **Devices & Zones** menu choice in the left menu panel, then click the **Add Zone** button near the top of the page.



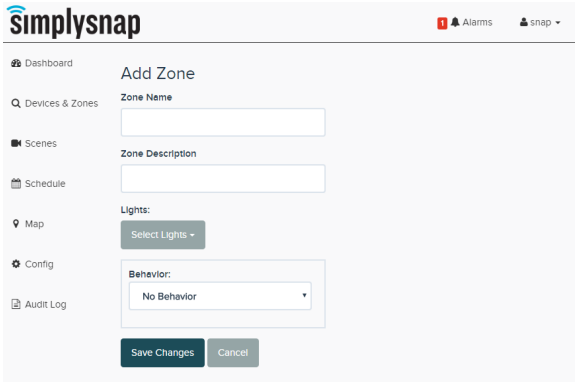
2. Enter the desired **Zone Name** and **Zone Description** in the provided fields.

3. Click the **Select Lights** drop-down and select the lights that will be a part of this zone.

4. The **behavior** field represents the state for the zone when it is invoked, and is set to **Off**, **On**, or **Dimmer**, or to a sensor related behavior. Zones are reconfigured once they're created, so if you're planning to use a sensor for control, just select **On** for now.

   (For specific information on behaviors, see **Adding Sensors on page 33**)

   Select the desired state, and if that state is **Dimmer**, enter the light level in the **Level** field as a percentage from 0 to 100%.



5. Click the **Save Changes** button to save, or the **Cancel** button to exit without saving changes. On a successful save, a blue zone panel for the newly added zone will appear in the content area of the **Devices & Zones** page.

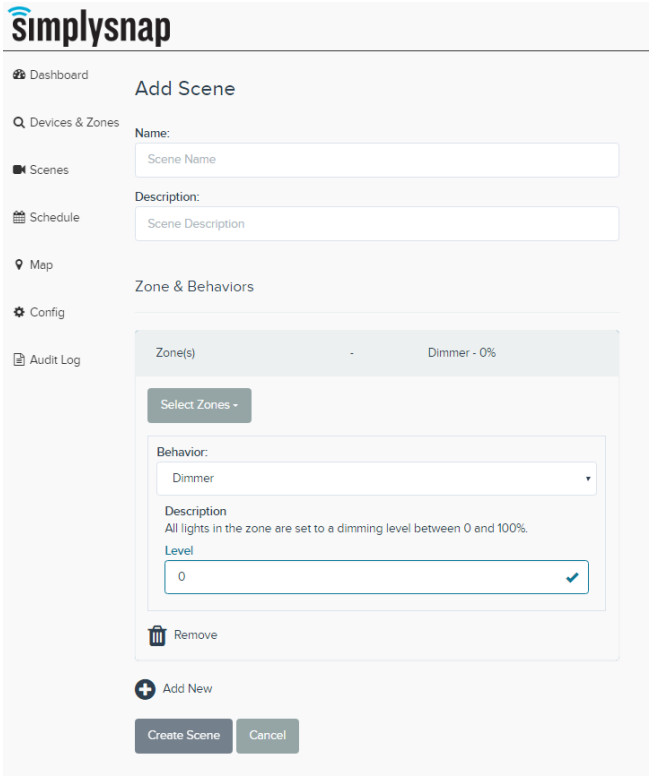
Adding Scenes

To add a scene access the **SimplySNAP** dashboard and then click the **Scenes** menu choice in the Left Menu Bar.

NOTE: A scene can control up to eight zones.

To add a Scene:

1. Click the **Add Scene** button at the top left of the screen.
2. Enter a **Name** and **Description** for the Scene in the fields provided.
3. Click the **Add New** button underneath the **Zone & Behaviors** heading.
4. Click the **Select Zones** button, then click the check box for the zone you wish to assign a behavior to.
5. Click the **Behavior** drop-down and select the behavior that will be activated on the selected zones with the scene is invoked. This behavior is configured the same way as the individual light behaviors outlined in the Behaviors Table. (For more information on behaviors, see **Adding Sensors on page 33**)
6. If you wish to have the scene affect other zones, click the **Add New** button again, and repeat steps 4 and 5 until you've defined behaviors for each of the zones



you wish to affect.

7. Click the **Create Scene** button to create the scene, or the **Cancel** button to exit without creating the scene.

Configuring Lights and Sensors

Now that you have some zones and scenes, you can add lights and sensors and group them into the zones and scenes.

Lights and Sensors each have configurable characteristics that define their operability within the **SimplySNAP** lighting system. Fields marked with an * are mandatory. All other information is optional.

Information Fields for Lights and Sensors

Each light and sensor has a number of descriptive fields that define it and make it unique from other lights or sensors.

Table 3.2: SimplySNAP Light Fields

Name	Description
Name*	The user defined name of the light.
SNAP Address*	The 6 digit SNAP Address for the light, in hex format. (For example, 1CD2E3.)
Controller Type*	The type of light controller being configured.
Light Slot*	Index indicating which light on the controller this object applies to.
Light Description	A general description of the light.
Zones	The groups this light is included in. All lights are always included in the "All" group. Up to twenty additional zones may be configured.
Location Submenu	
Latitude	The geographic latitude for the light.
Longitude	The geographic longitude for the light.
Location ID	A user defined location id, such as pole number, office number, etc.
Street Address	The street address where this light is located.
Advanced	
Initial Level	The brightness level for the light when power is cycled, provided the light supports dimming.
Jitter	A delay, in seconds, before this light applies a behavior. This is used in situations where you do not want the sudden electrical current draw that is associated with turning on all lights at one time, or for aesthetics (staggered on/off sequence).

Name	Description
Antenna Compensation	Determines the power of communication signals transmitted from the Lighting Controller. (Use 'North America' if you do not know what to use.)
Fixture Type	Type of fixture attached to the controller. Used for sensor thresholds.

Sensor Fields are much the same as Lighting fields, with only a few minor exceptions.

Table 3.3: SimplySNAP Sensor Fields

Name	Description
Name*	The user defined name of the sensor.
Sensor Type*	The function of the sensor. Acceptable types are Motion, Photocell, Switch (Pushbutton), and Switch (Toggle). A pushbutton switch provides a one-time change where the state of the device is not persistent, while a toggle switch maintains a persistent state. For example, a light that is controlled by a pushbutton switch will return to a default state after a power outage, while a toggle switch will return to how it was set before the interruption.
SNAP Address*	The 6 digit SNAP Address for the controller the sensor is attached to, in hex format. (For example, 1CD2E3.)
Controller Type*	The type of controller the sensor is paired with.
Sensor Slot*	Index indicating which sensor on the controller this object applies to.
Sensor Description	A general description of the sensor.
Threshold High*	The signal level that, when exceeded, will trigger an "above threshold event," such as a photocell triggering a light to turn off.
Threshold Low*	A signal level below this point will trigger a "below threshold event," such as a photocell triggering a light to turn on.
Zone	The grouping of lights this sensor will control. All lights are always included in the "All" group, and up to twenty additional zones may be configured. While a light may be part of multiple zones, a sensor can only be in and control one zone.
Location Submenu	
Latitude	The geographic latitude for the sensor.
Longitude	The geographic longitude for the sensor.
Location ID	A user defined location id, such as pole number, office number, etc.
Street Address	The street address where this sensor is located.

Name	Description
Advanced	
Jitter	A delay, in seconds, before this sensor applies a behavior. This is used in situations where you do not want the sudden electrical current draw that is associated with turning on all lights at one time, or for aesthetics (staggered on/off sequence).
Antenna Compensation	Determines the power of communication signals transmitted from the Lighting Controller. (Use 'North America' if you do not know what to use.)

Adding Lights

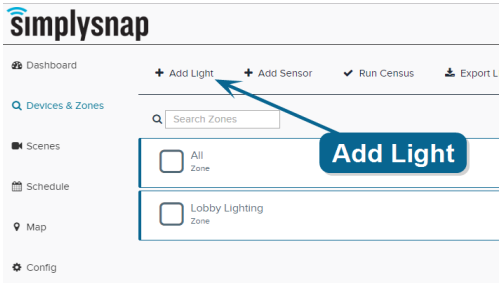
To manually add a light, access the **SimplySNAP** dashboard and then click the **Devices & Zones** menu choice in the Left Menu Bar.

NOTE: If you are using the Lighting Installer app, this information will be provided by the app.

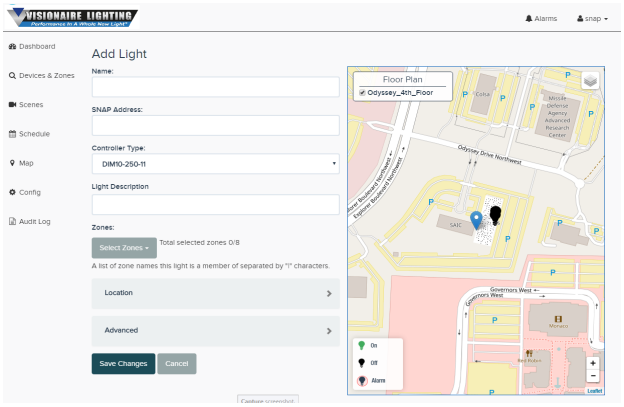
NOTE: If you are adding a new light or sensor to an existing **SimplySNAP** installation, you'll first need to change the installation's channel, network ID, and encryption settings back to their default values. This is accomplished by clicking **Config** in the left menu bar, and then selecting the **Network Settings** tab. The default settings are Channel:1, Network ID: d110, and encryption and storm supression disabled. Once the new light is added, you'll want to change the settings back to your chosen settings and off of the default. You can quickly achieve this using the Network Settings to Default button. For more information, see **Factory Defaulting Network Settings on page 27**

To add a new light:

1. Click the **Add Light** button near the top of the page.
2. Enter the desired name for the light, the **SNAP** Address for the light controller and the controller type into the provided fields. This information is required as a minimum. Other information may be entered as desired including a description, the zones the light will be included in, light location, etc. You can also position a light using the map view by clicking and dragging the light bulb icon to reposition the light. (Fields are summarized in **Information Fields for Lights and Sensors on page 30** .)



3. Click the **Save Changes** button to save, or the **Cancel** button to exit without saving changes. On a successful save, a green light panel for the newly added light will appear in the content area of the display.



Each light is added individually by invoking this dialog. When all lights are entered, **SimplySNAP** will verify your lighting controller(s) software is up-to-date, and update the controller(s) if necessary. **SimplySNAP** will then be ready to control your lighting system.

After a light is entered it is controlled from the **Lights and Zones** page. All lights can be controlled by clicking the **On/Off** switch on the blue "All" zone panel or dragging the slider to a specific illumination level.

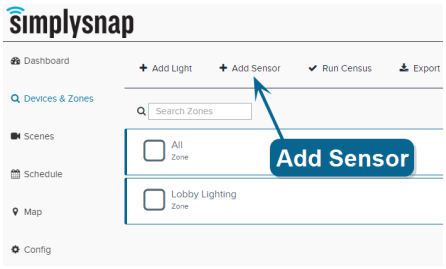
Each individual light may be controlled similarly by clicking the **On/Off** switch on the light panel for each individual light or dragging the slider to create a specific brightness level for a light.

Adding Sensors

Sensors contribute to the "intelligence" of your lighting system. With sensors in place your system will be able to respond to events such as a person entering or leaving the area. Switches are a type of sensor that provides a manual way to activate lights without needing to log in to the **SimplySNAP** interface.

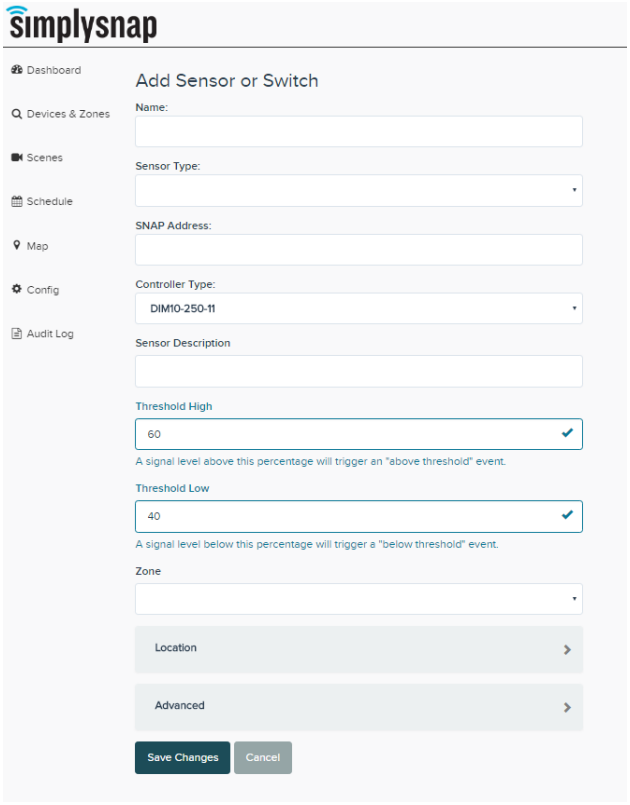
To add a new sensor:

1. Click the **Devices & Zones** menu choice in the Left Menu Bar.
2. Click the **Add Sensor** button near the top of the page.
3. Using the provided fields, enter the desired name for the sensor or switch, the SNAP Address for the controller the sensor is attached to, and the controller type. You'll also need to select a sensor type from the **Sensor Type** drop-down list.
4. In the **Zone** field, enter the Zone the sensor will affect.



NOTE: A zone can only have one photocell sensor.

5. Steps 2 - 4 are required as a minimum. Other information may be entered as desired including a description and location. The Threshold High and Threshold Low fields are used to fine tune the sensitivity of attached sensors, but only for cases of weak sensor response. Most sensors work fine with default settings.
6. Click the **Save Changes** button to save, or the **Cancel** button to exit without saving changes.



At this point you'll need to configure how the sensor will control your lighting. A sensor can control lights at the zone or scene level.

To use a sensor for control via zones:

1. Click the **Edit Zone** button within the zone panel where you placed your sensor.
2. Click the Behavior drop-down and select the Behavior that corresponds to your desired control mode, then click the **Save Changes** button to save, or the **Cancel** button to exit without saving changes.

To use a sensor for control via Scenes:

1. Click the **Scenes** button in the left menu bar.
2. Create a new scene, or edit an existing scene.
3. Click the **Add New** button under the Zone & Behaviors heading.
4. Click the **Select Zones** button and select the zones you want to respond to the scene.
5. Click the **Behavior** drop-down and configure the criteria for your sensor.
6. Click the **Save Changes** button to save, or the **Cancel** button to exit without saving changes.

The specified behaviors are:

Table 3.4: Behaviors

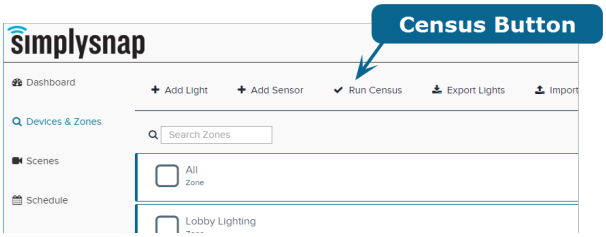
Name	Activity
No Behavior	No sensor or switch based changes will be made to the zone.
On	When the On behavior is triggered, the zone is switched on with all lights at 100% brightness.
Off	When the Off behavior is triggered, all lights within the zone are turned off.
Dimmer	When the dimmer behavior is set, the lights are always on at a specified brightness level.
Occupancy-only	In an occupancy only scenario, the lights within a defined zone are brought up to a defined brightness when an occupancy sensor detects motion. When motion is no longer detected after a user defined time, the zone is transitioned to a second brightness level and a new vacancy count is started. If no motion is detected after a second user defined time, the zone is transitioned to a 3rd state. For example, a zone might be set to bring the lights up to 80% brightness when motion is detected. They stay illuminated as long as motion is detected. When motion hasn't been detected for five minutes, the lights will dim to 40% brightness. If another five minutes passes without motion, the lights are dimmed to off.
Photocell-only	When the photocell-only behavior is selected, the lights will be transitioned to a preset brightness when darkness is detected by the corresponding photocell. When daylight is detected, the lights will turn off.
Switch-only	Just like the light switches you grew up with, the lights are turned on when the **On** button is pushed, and they're turned off when the **Off** button is pushed.
Switch and Occupancy	This behavior is like the preceding switch, photocell and occupancy behavior, but both the switch and occupancy sensor can control the lights. This is useful in areas that receive some natural light, but more light is needed.
Switch and Vacancy	Lights are activated via switch only. When motion is no longer detected in the area a countdown will start. When the countdown reaches zero, the lights will turn off. Further movement in the area will not trigger the lights nor reset the timer.
Switch Control with Blink Warning	This is essentially a light with a timer. When a switch is pressed, the zone will be brought up to a specified level for a user configured amount of time. When the timer expires, the lights will blink to alert occupants and then begin a user defined countdown. When the timer reaches zero without a new button push, the lights will be turned off.
Photocell and Occupancy	Lights within the Zone are switched off during the day. At night, the lights will be switched on when motion is detected. When motion is no longer detected, the lights will be transitioned as described under "Occupancy-only" control.
Photocell and Switch	This behavior is much like the switch-only behavior, but the lights can only be switched on at night.

Name	Activity
Switch, Photocell and Occupancy	This is one of the most energy efficient settings. Lights will be switched off during the day. During the night, the lights will switch on when motion is detected, and step down like the occupancy-only scenario above when motion is no longer detected. Additionally, the lights can be manually brought up to a specified brightness level through the use of a **SimplySNAP** enabled switch.
Switch, Photocell, and Vacancy	Lights are activated via a switch. When motion is no longer detected in the area, a countdown will start. When the countdown reaches zero, the lights will turn off. Further movement in the area will not trigger the lights nor reset the timer. Lights will not activate if daylight conditions are in effect.

Discovering Unconfigured Devices

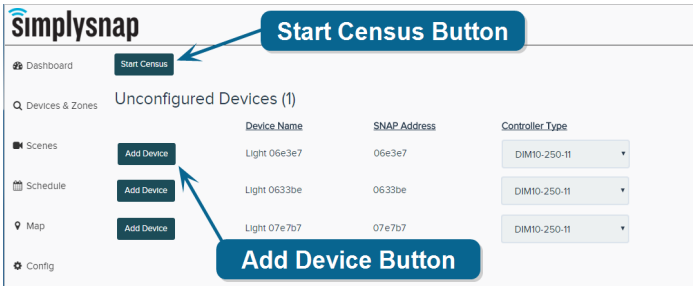
NOTE: Before proceeding, make sure all of your lighting controllers are properly installed and power is applied.

You can click the **Census** button on the **Devices & Zones** page to perform a "census" of the unconfigured **SimplySNAP** devices with your network settings. (Channel, Network ID, Encryption Settings, Enhanced CRC Settings) These devices will appear in a list to provide you with an easy way to configure them.



If you are adding several devices in this manner, we recommend you perform the census two or three times to ensure all devices are discovered.

To perform a census of unconfigured devices:



1. Click the **Devices & Zones** menu choice in the left menu panel, then click the **Census** button.
2. Click the **Start Census** button at the top of the screen. SimplySNAP will begin to search for unconfigured devices in your network.
3. If unconfigured devices are discovered, you will be presented with a list of the devices. To add a device to your network, click the **Add Device** button to the left of the device you wish to add. The new device will appear in a pane on the **Devices & Zones** page.

   NOTE: If the lighting controller does not automatically identify its type as part of the census, you can manually select the proper type using the drop-down menu.

4. Once the device is loaded, you can edit it as you would any other device. For more information on editing devices, see **Working with Lights, Sensors, Zones, and Scenes on page 54**

Configuring a Five Button Switch

SimplySNAP site controllers support an optional five button switch that is connected to the USB port on the site controller. The five button switch supports easy lighting changes, and is configured to activate one or more Scenes whenever a button is pushed. By default, the five button switch is configured for button 1 to set Zone All to 100% brightness, with buttons 2 through 4 decreasing brightness levels at 25% increments until button 5 which sets Zone All to 0% brightness.

The buttons can also be configured to trigger a sequential list of up to five scenes depending on how often the button is pushed.

To configure a five button switch to trigger a list of scenes:

1. Open the **External Button Controller** tab by clicking **Config** - **Buttons**.
2. Click the **Trigger a List of Scenes** radio button.
3. Click the **Button 1** accordion button to expand the list of associated button one scenes.
4. Click the top **- Please Choose -** field and select a scene that you would like invoked when **Button 1** is pushed.
5. Continue to select scenes that you would like invoked by **Button 1** until all desired scenes are configured, (you can invoke up to five scenes with a single button.) The scenes will activate in the order they're listed in the fields under the button name.
6. Continue to configure buttons 2 - 5 in the same fashion.
7. Click the **Save Changes** button to finish assigning scenes to buttons, or the **Cancel** button to exit without assigning scenes.

HTTPS and Installing a Signed Security Certificate

SimplySNAP is accessed through a secure web browser session, which means the browser expects to receive a digital certificate that ensures the connection is with the correct service. If this certificate is not present, the browser will issue a warning that your session with the SimplySNAP site controller is not private, and attackers might be attempting to steal your information.

Generating and assigning a trusted certificate will remove this message and help ensure your connection is what you expect it to be. These certificates are issued by certificate authorities such as Comodo and Symantec, and are typically issued for internet facing applications. If your SimplySNAP installation is behind your firewall, the certificate is not necessary except to remove the browser warning. If you obtain a certificate from a certificate authority, you can upload it to the SimplySNAP site controller via the HTTPS tab.

To assign a trusted certificate to your SimplySNAP installation:

1. Access the **HTTPS** screen by clicking **Config** in the left menu bar, and then clicking the **HTTPS** tab.
2. Click the **Cert file** button and browse to and select the cert file you received from the certificate authority, then click the **Open** button.

3. Click the **Key file** button and browse to and select the key file you received from the certificate authority, then click the **Open** button.
4. Click the **Submit** button to complete the submission.
5. Click the **Generate New Certificate** button to generate your new security certificate.

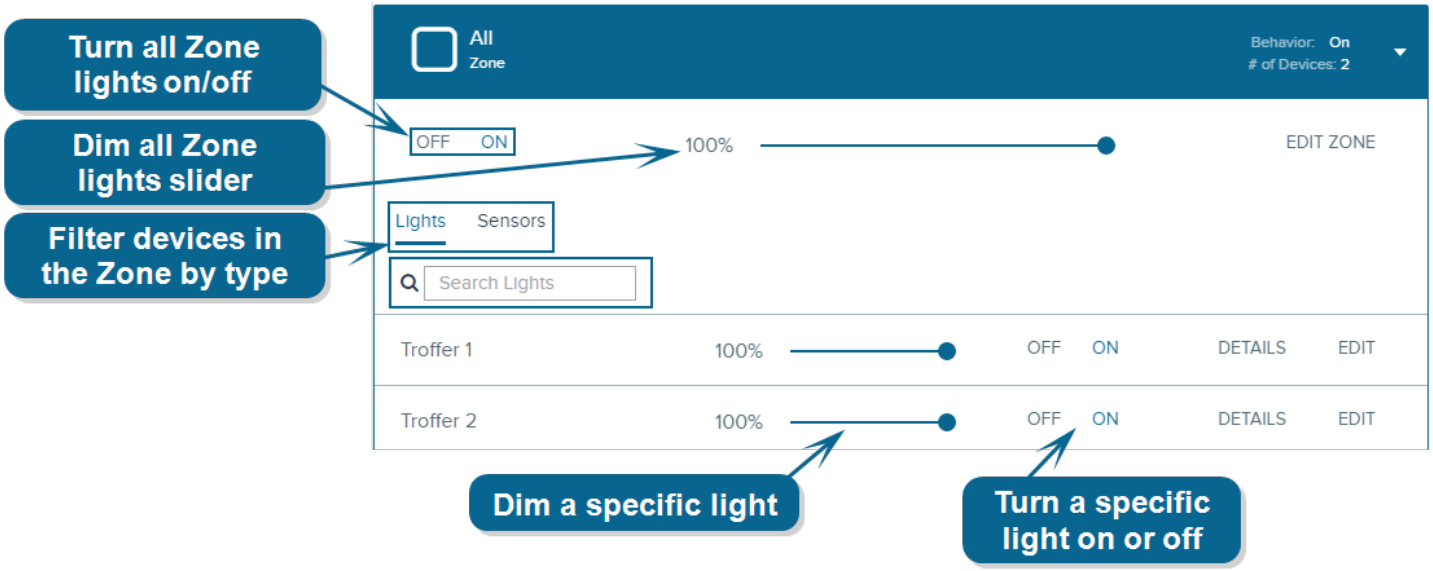
Operations

SimplySNAP is typically installed in environments where it is programmed once and set to run autonomously with very little interaction. However, it does allow active control of lighting via the user interface.

Activating, Deactivating and Dimming Lights

From time to time you may have a need to manually activate or deactivate a light or zone of lights. To do this, access the SimplySNAP user interface, click the **Devices & Zones** button in the left menu panel, and click the arrow on the right side of the light panel or zone panel you wish to control.

Lights may be switched on and off using the **Off** and **On** buttons , while dimming is controlled using the corresponding slider switch.



Invoking a Scene on a Preconfigured Set of Zones

Scenes allow you to manually change the behavior of a number of zones with a single click. To activate a scene, click the **Scenes** menu choice in the left menu bar, then click the **Apply Scene** button next to the scene you wish to activate.

Viewing the Status of a Light or Site Controller

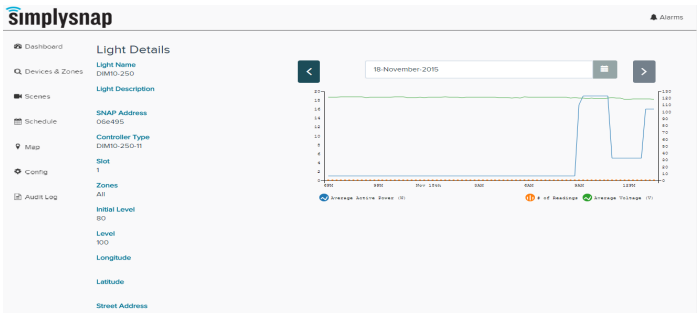
You can determine if a given light is on or off using the SimplySNAP map. To do this, access the Map content area by clicking the **Map** button in the left menu bar. This will display a map of your SimplySNAP location along with icons for the configured lights and site controllers. Clicking the icon for a light or site controller will provide a status update for that item, including whether it is on or off.

Viewing Details of a Light or Zone

You can view configuration information for a light or zone by finding its corresponding panel and clicking the **Details** button.

Viewing Power Consumption of a Light

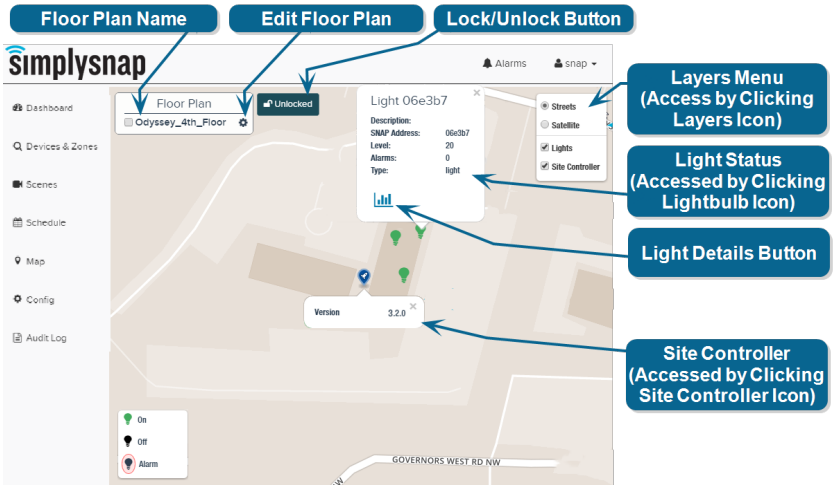
Lights equipped with power monitoring enabled controllers maintain an active record of the power consumed by lights attached to the controller. This information is presented in the **Light Details** page which is accessed by finding the light's corresponding panel and clicking the **Details** button.



Viewing a SimplySNAP Installation in Map View

For sites with an active internet connection, SimplySNAP provides a background map based on the latitude and longitude of the site controller. The Map view may be configured for a street map style view, or a satellite image of your SimplySNAP location. You may also choose to show lights and the primary site controller on the map, or eliminate one or both device types as you desire.

For installations where an active internet connection won't be available, you can still



download a map and store it on the controller and get the same effect. For more information on how to do this, see **Basic Site Configuration on page 23**

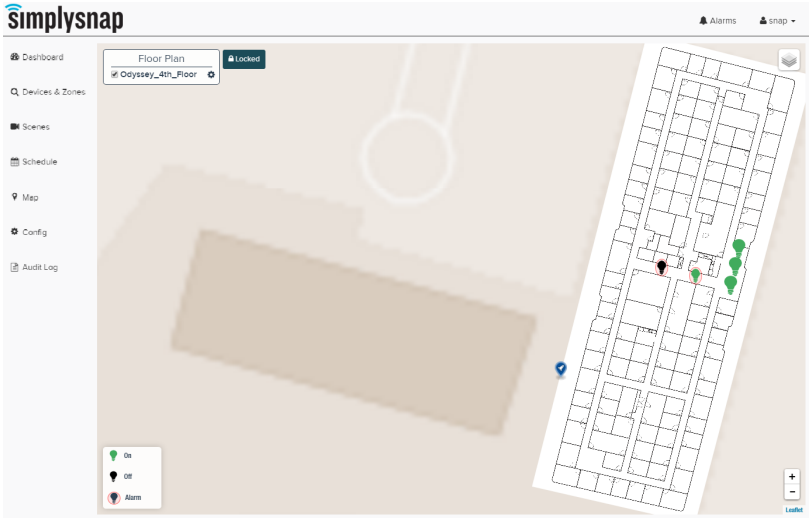
The Map view is locked and unlocked using the **Lock/Unlock** button at the top of the screen. Setting the button to the Lock state prevents users from accidentally repositioning lights during normal use. When set to the Unlock state, you can reposition any light configured with a latitude and longitude by dragging and dropping it on the Map view.

Lights that have been added to the Map view using the **Edit Light** function are repositioned by dragging and dropping provided the page is unlocked.

View options are configured by clicking the **Layers** button in the upper right corner of the Map and selecting your desired level of detail. Lighting icons indicate the status of each of the lights, including which ones are on, off, or in an alarm state. You can also get details of a specific light by clicking the bar chart icon in the lower left of the light status display.

Adding a Custom Floor Plan to the Map

If you'd like more specific detail for your maps page, you can upload a custom floor plan image in .PNG, .GIF, or.JPG format. This image is placed on top of the maps image to allow you to take maximum advantage of the feature.



To upload a custom floor plan:

1. Click the **Map** button in the left menu bar to display the currently configured map. This will be based on your latitude and longitude settings from the Site Controller Location area at Config - Location & Time.
2. Click the **Add Floor Plan** button and select the image you want to upload, then click **Open**. The image will appear superimposed on the current map image.
3. Use the red circles at the corner of your image to rotate and size it appropriately to where you want it to appear on the map, then click **Save Floor Plan**.

Editing or Deleting a Custom Floor Plan

You can turn the custom floor plan image on and off using the check box to the left of the floor plan name. If you'd like to reposition the image within the maps view, you can accomplish it using the instructions below.

To edit or delete a custom floor plan:

1. Click the **Map** button in the left menu bar to display the currently configured map.
2. Click the **Gear** icon to the right of the custom floor plan image name.
3. Reposition the image as necessary, then click the **Save Floor Plan** button. You can also delete the image using the **Delete Floor Plan** button in the top right of the screen.

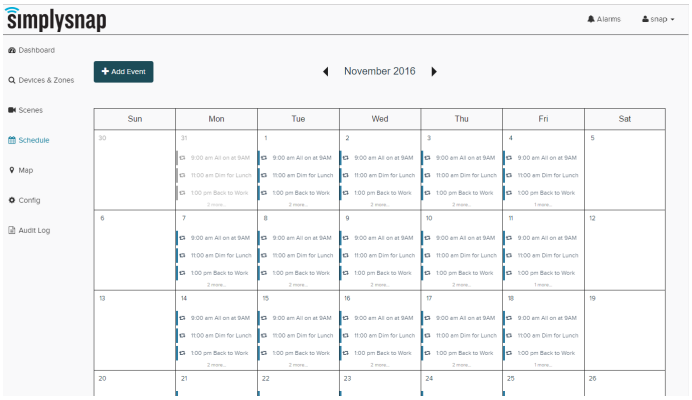
Logging out of the SimplySNAP User Interface

When you've completed your desired lighting operations, you can log out of the SimplySNAP user interface by clicking the **User** button in the upper-right corner and selecting **Log Out** from the drop-down menu.

Optimizing Control

The real power of a lighting control system is achieved through events and alarms. Events provide detailed control of your lighting system to ensure that lights are on and properly bright when they're needed, and off when they're not. Alarms give you detailed insight into how your system is running and if anything has gone wrong.

Events



An event is a lighting change that's triggered by a schedule or sensor.

An example of a scheduled event might be, "During the Monday through Friday work week, turn off all building lights at 7:00PM," or "Dim all parking lot lights to 40% power after midnight."

A sensor event is triggered by physical changes within your installation, such as someone entering or leaving a room. For example, "Set the hallway lights to 80% brightness when motion is detected," or "Turn off hallway lights when no motion has been detected for the past 15 minutes."

Events provide a great deal of flexibility to your lighting operations and can contribute to significant power savings. The schedule is defined through events and they can be configured for any time of the day on any day of the week.

Scheduled events are performed from the **Schedule** content area which is accessed by clicking the **Schedule** button in the left menu bar.

Adding a Scheduled Event

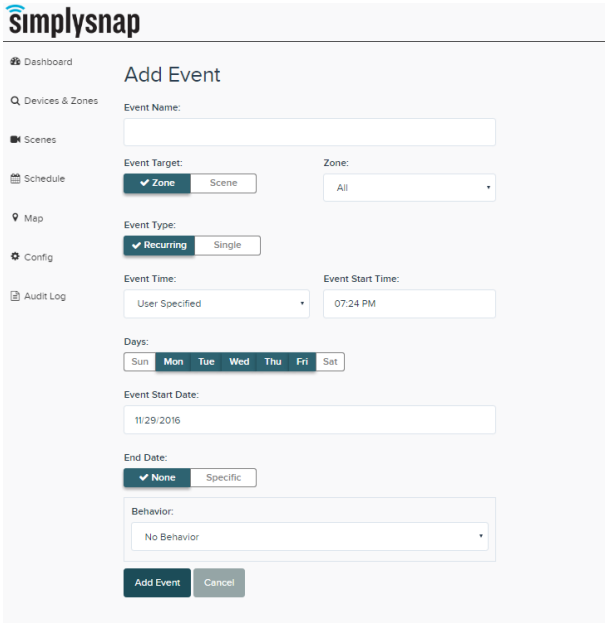
Events are scheduled times for lights or zones to be switched on, off, or dimmed. Events are entered up to five years in advance, and up to one year of prior events can be viewed.

NOTE: Events over five years in the future can be entered, but the functionality has only been tested to the five year mark.

To add an Event:

1. Click the **Schedule** button in the left menu bar. This will present a calendar showing currently scheduled events.

2. Click the **Add Event** button to load the **Add Event** window.
3. Enter a name for the event in the provided field.
4. Use the **Event Target** toggle to select whether the event will affect a single zone, or if it will apply a scene across multiple zones, and then use the provided drop-down to select the zone or scene.
5. Use the **Event Type** toggle to select whether the event will be a single event or if it will periodically reoccur. The remaining fields will change depending on which event type you select.



6. Use the provided fields to enter the time you want the event to trigger. This is a specific time that is entered using the **Event Start Time** clock, or a less specific time such as dawn, noon, or dusk, entered using the **Event Time** drop-down. Note that if you're using a less specific time you'll be given the option to input a positive or negative offset in minutes. This will allow you to schedule events for times like "Five minutes before sunset" or "Eight minutes after noon."
   If you are scheduling an offset, events happening before the selected event time are entered as a negative number, while times after the selected event are entered as a positive number. For example, five minutes before sunrise would be entered as -5 while 10 minutes after sunrise would be entered as 10.

> **NOTE:** We recommend that you schedule time sensitive events to occur at least 3 minutes before the desired time to allow adequate time for changes to propagate through the SimplySNAP system.

7. If applicable, use the day of the week buttons to select the days on which this event will trigger.
8. If applicable, use the Event Start Date field and the End Date toggle to enter the start and end dates for the event.
9. Click the **Add Event** button to create the event, or click the **Cancel** button to close the **Add Event** window without saving.

Editing an Event

You can edit any event in the Schedule view by clicking the event you wish to edit, selecting the **Edit Series** or **Edit Occurrence** buttons depending on the nature of the change, making the desired changes, and clicking the **Update** button to confirm the changes or **Cancel** to exit without making a change.

Deleting an Event

To delete a scheduled event, access the Schedule view using the **Schedule** button in the left menu panel, and click the scheduled event you wish to delete. If you wish to delete an entire series of events, click the **Edit Series** button,

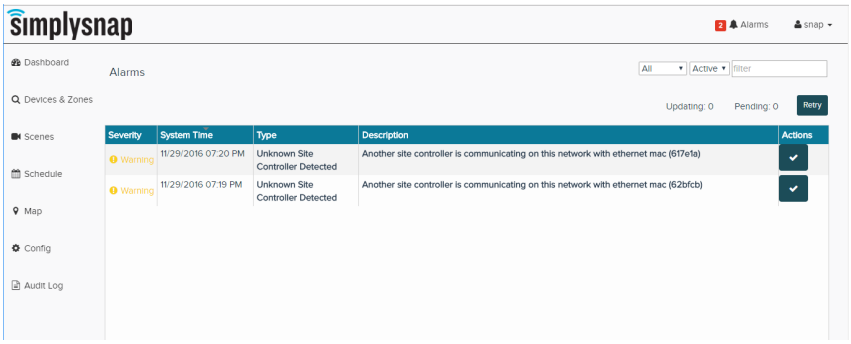
or if you just want to delete a single occurrence of a series of events, click the **Edit Occurrence** button. When the Edit Event window appears, click the **Delete** button in the upper right corner of the screen. You will then be prompted if you wish to **Delete** the event or **Cancel** the delete action.

Event Overrides

If you're adding or changing an event, and the new event occurs simultaneously with a previously scheduled event, the new event will appear greyed out in the calendar with an (Overridden) label next to the time of the event. This will persist until edits are made to get the two events out of conflict.

Alarms

An alarm is a system generated warning that something unexpected has occurred.



The SimplySNAP site controller initiates a polling cycle of all lighting in the system once every 15 minutes. This polling cycle verifies that all light controllers are responding to wireless communications. Any anomalies found are reported as alarms.

Alarms consist of four types:

Table 4.1: Alarm Types

Name	Description
Info	Messages that provide general information not affecting performance.
Warning	Information about anomalies detected within the system.
Error	Information that may affect performance of individual lights or zones.
Critical	Information that will affect performance of the lighting solution.

A list of Alarms is accessed by clicking the **Alarms** button in the Title Bar at the top right of the user interface. Alarms are filtered using the fields provided in the top right of the **Alarms** content area.

The alarms list can also be accessed by clicking the alarm warning that appears immediately to the right of the device name on a device currently in alarm.

Possible Warning Alarms

When a Warning is generated, it will list a type for the warning type and a description. Possible warnings are divided into two categories:

General Alarms

Warning	Description	Triggered by
Authentication Failure	A server login attempt has failed.	A user attempted to login with an invalid password.
Communication Failure	Contacting the lighting controller was unsuccessful.	The site controller attempted to contact a light controller but did not receive the expected response.
Configuration Failure	The lighting configuration push was unsuccessful	The site controller attempted to push configuration to a controller but did not receive the expected response
Sensor Threshold Failure	A reported sensor value is outside of the configured thresholds.	A status poll retrieved sensor data from a device that was outside of configured thresholds.

Administrator-specific Alarms

Warning	Description	Triggered by
Bridge Change Failure	Changing the network settings was unsuccessful.	The bridge did not acknowledge the new network settings.
Bridge Node Timeout	The site controller is unable to communicate to the bridge controller.	The bridge controller does not respond to the site controller at startup.
Encryption Disabled	Mesh network encryption is not enabled	By default, encryption is not enabled. For information on how to enable encryption, see **Basic Site Configuration on page 23**
I2C Write Fault Failure	An error occurred writing I2C data.	The data written was not read back correctly.
Install Outdated	The SimplySNAP version installed is out of date with the running code.	The current version of SimplySNAP has not had the install process run against the site controller.
Invalid Controller Type	One of the controllers or unmanaged devices has an invalid controller type.	The controller type was removed from the system after a device had already been added.
Link Quality Failure	The link quality to a light is insufficient for normal operation.	A network census found a light that cannot communicate well enough to guarantee good operation.

Warning	Description	Triggered by
Network Change Failure	Changing the network settings was unsuccessful	A controller did not acknowledge the new network settings.
Poll Exception Failure	An exception occurred reading wireless RPC data.	Unexpected or corrupt information was received over the air.
Script Failure	A light type's script could not be loaded into the gateway.	A site controller attempted to read light scripts and found a problem.
Time Change Failure	Changing the system time was unsuccessful.	The system time could not be updated.
Unknown Site Controller Detected	Another site controller is communicating on this network with ethernet mac (*xxxxxx*)	The presence of a second site controller on the network. The actual alarm will list the Ethernet MAC address of the unknown site controller. For example, "Another site controller is communicating on this network with Ethernet mac (62bfcb)

Clearing Alarms

User clearable alarms will have a check box in the actions column. Clicking the check box will clear the alarm.

Retry Communication

If an alarm is generated during the polling cycle due to an inability to configure a light controller, a **Retry** button is provided to immediately initiate a "retry" of communication to the light controller that is in an alarmed state. This provides a means to immediately retry the communication instead of waiting 15 minutes for the next polling cycle.

Defining Fixture Types and Assigning Thresholds

A SimplySNAP system can provide a lot of insight into the performance of a lighting installation, as well as the environment surrounding the lights. This insight is enhanced through the use of fixture types and thresholds.

Fixture types represent a driver controller/driver/light combination. When you create a fixture type, you can assign SimplySNAP to monitor for a specified range of conditions and generate alarms when conditions deviate above or below those conditions.

Thresholds are established on a number of parameters that are outlined in the table below. Note that available measurements are dependent on the accessed lighting controller. All lighting controllers may not be able to provide all measurements.

Table 4.2: Fixture Parameters

Parameter	Description
Active Power (W)	Measures the power currently drawn from the lighting controller.
Barometric Pressure (kPa)	Measures the barometric pressure at the lighting controller.
Environment Degrees (degrees C)	Measures the temperature at the lighting controller.
IC Temperature (degrees C)	Measures the temperature at the lighting controller.
Lifetime Load (Wh)	Measures all current drawn through the lighting controller during its active life.
MCU Supply Voltage (V)	Measures the power draw at the microcontroller
MCU Temperature (degrees C)	Measures teamperature at the microcontroller
Peak IC Temperature (degrees C)	Records the highest temperature the IC has reached.
Peak RMS Current (A)	Records the highest RMS current reached
Power Factor	Measures the power factor
RMS Current (A)	Measures the root mean square current for the lighting controller
RMS Voltage (V)	Measures the root mean square voltage for the lighting controller
Relative Humidity (%)	Measures the relative humidity at the lighting controller.
Sensor A Input Voltage (V)	Measures voltage received on the A sensor input
Sensor B Input Voltage (V)	Measures voltage received on the B sensor input

WARNING: At dimming levels below 10% thresholds and tolerances become unreliable. Because of this, alarms are not generated for light levels below 10%.

To define a fixture type:

1. Access the Fixture Types screen by clicking **Config** - **Fixture Types**.
2. Click the **Add New Fixture Type** button.
3. Enter a name for the new fixture in the field provided.
4. (Optional) Assign thresholds as described below.
5. Click **Save Changes** to save the new fixture type, or **Cancel** to exit without saving.

To assign a threshold to a defined fixture type:

1. Access the Fixture Types screen by clicking **Config** - **Fixture Types**.
2. Scroll to the fixture type you wish to add a threshold to, and click the **Add New Threshold** button.
3. Click the **Parameter - Enabled** drop-down field, and ensure the new threshold is enabled.
4. Click the **Parameter** drop-down and select the measured value you wish to set a threshold on.
5. Click the **Threshold Type** drop-down and select how you'd wish to define the monitored threshold.
6. Use the remaining fields to define the upper and lower limits for monitoring. If these limits are exceeded, a SimplySNAP alarm will be generated.
7. Scroll to the bottom of the page and click **Save Changes** to save the new thresholds, or **Cancel** to exit without saving.

NOTE: Multiple thresholds can be defined for a single fixture type.

Email Alerts

The SimplySNAP site controller is configured to send email notifications when alarms are generated within the system. This can help responsible persons know immediately whenever something has occurred that might need their attention.

This service must be enabled and a list of persons who will receive the alerts must be configured before Email alerts can be used.

To enable email alerts:

1. Open the **Alerts** tab by clicking **Config** - **Alerts**.
2. Enter a descriptive name for the site controller in the **Gateway Name** field. This name will help identify which site controller is generating the alert if you have more than one site controller.
3. Click the **Enable** toggle under **Enable Alerts**.
4. Click the **Save Changes** button to finish enabling Alerts, or the **Cancel** button to exit without enabling Alerts.

NOTE: To use the email alerts function, the site controller must have internet access and email functionality. If you get an error when attempting to enable email alerts, contact **Synapse Wireless customer support**.

To enter email addresses for persons who will receive alerts:

1. Open the **Alerts** tab by clicking **Config** - **Alerts**.
2. In the field under Email Addresses, enter the email address for the person you wish to add.
3. If you're adding more than one email address, click the Add New button to generate a new email address field, then enter the next email address you wish to add. Continue to repeat these steps until all addresses are entered.
4. When all email addresses are entered, click the **Save Changes** button.

Administration

SimplySNAP is designed to require very little maintenance, but from time to time you may need to reconfigure the system as your needs evolve.

SimplySNAP User Accounts

The SimplySNAP software supports multiple user accounts to provide you greater security and flexibility within your SimplySNAP installation.

The Accounts Management Page

All user account management is performed from the Accounts Management page. The accounts management pane is visible only to users with Admin level access, and is accessed via the User Name drop-down in the upper-right corner of the Title Bar.

The Accounts Management page is visible to users with the Manager and All Control user roles, and provides the ability to change the password of their user account.

The Accounts Management page lists all configured user accounts and their corresponding user role. Users with the Admin user role can add and delete users, and edit the password and user role of any configured user.

User Roles

SimplySNAP supports four user roles that define how much access and control an individual user has over the system. These roles are defined per user account, and are changed by an administrator via the **Edit User** button.

User Role	Add/Delete/Edit Users Config Tab Control	Add/Delete/Edit Lights, Sensors, Scenes, Zones, and Scheduled Events View Config Tab	Change Account Password	Control Individual Lights	View Alarms	Apply Scenes
Admin						
Manager						
All Control						
Scene Control						

Admin

Users with the Admin user role have full control of the SimplySNAP installation. They can make changes to any account, including other accounts with the Admin user role.

Manager

Users with the Manager user role have full access and control within the SimplySNAP system, except for the ability to create, edit, or delete user accounts. Users with the Manager user role can change the password for their account, but cannot affect other accounts.

All Control

Users with the All Control user role have the same privileges as users with the Manager user role, except for the ability to create, edit, or delete Lights, Sensors, Scenes, Zones, and Scheduled Events.

Scene Control

Users with the Scene Control user role can only view and activate configured Scenes.

Changing a User Account Password

Any user with a user role above Scene Control can change their own password, and users with the Admin user role can change the password for any user account. This is all accomplished via the Accounts Management page which is accessed by clicking the user name in the upper right corner of the Title Bar, and then clicking the Accounts Management drop-down menu selection.

NOTE: Passwords must be at least six characters in length.

To change a user account password using the Admin user role:

1. Click the account user name in the upper right corner of the Title Bar, then click the **Accounts Management** drop-down menu selection.
2. Select the **Edit User** button to the right of the user account you wish to change the password for.
3. Enter and confirm the new password in the **Password** and **Repeat Password** fields.
4. Click the **Save Account** button to confirm the new password, or the **Cancel** button to exit without saving.

To change your user account password:

1. Click the account user name in the upper right corner of the Title Bar, then click the **My Account** drop-down menu selection.
2. Enter and confirm the new password in the **Password** and **Repeat Password** fields.
3. Click the **Save Account** button to confirm the new password.

Adding a User Account

User accounts can only be added by a user with the Admin user role, and are added from the Accounts Management page.

To add a user account:

1. Click the account user name in the upper right corner of the Title Bar, then click the **Accounts Management** drop-down menu selection.
2. Click the **Add Account** button.
3. Enter the user name for the new account in the provided field.
4. Enter and confirm the new account password in the **Password** and **Repeat Password** fields.
5. Click the **User Role** drop-down and select the user role for the new account.
6. Click **Save Account** to save the new account, or **Cancel** to exit without saving.

NOTE: The User Name field can be up to 25 characters, and only allows the characters a-z, 0-9, -, ', and _. Spaces are not allowed.

Deleting a User Account

User accounts can only be deleted by a user with the Admin user role, and are deleted from the Accounts Management page.

To delete a user account:

1. Click the account user name in the upper right corner of the Title Bar, then click the **Accounts Management** drop-down menu selection.
2. Click the **Edit User** button to the right of the account you wish to delete.
3. Click the red **Delete Account** button.
4. Click **Confirm** to delete the account, or **Cancel** to exit without deleting the account.

Editing a User Account

User accounts can only be edited by a user with the Admin user role, and are edited from the Accounts Management page.

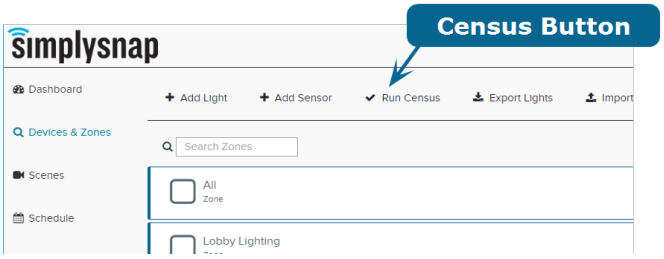
To edit a user account:

1. Click the account user name in the upper right corner of the Title Bar, then click the **Accounts Management** drop-down menu selection.
2. Click the **Edit User** button to the right of the account you wish to edit.
3. Use the provided fields to edit the user account as desired.
4. Click **Save Account** to save the edits, or **Cancel** to exit without saving.

NOTE: The User Name field only allows the characters a-z, 0-9, -, ', and _. Spaces are not allowed.

Optimizing Communications with a Site Census

The **Census** button located on the **Devices & Zones** page detects unconfigured devices that share your channel and net ID, and optimizes communication within the network, all with a single click.



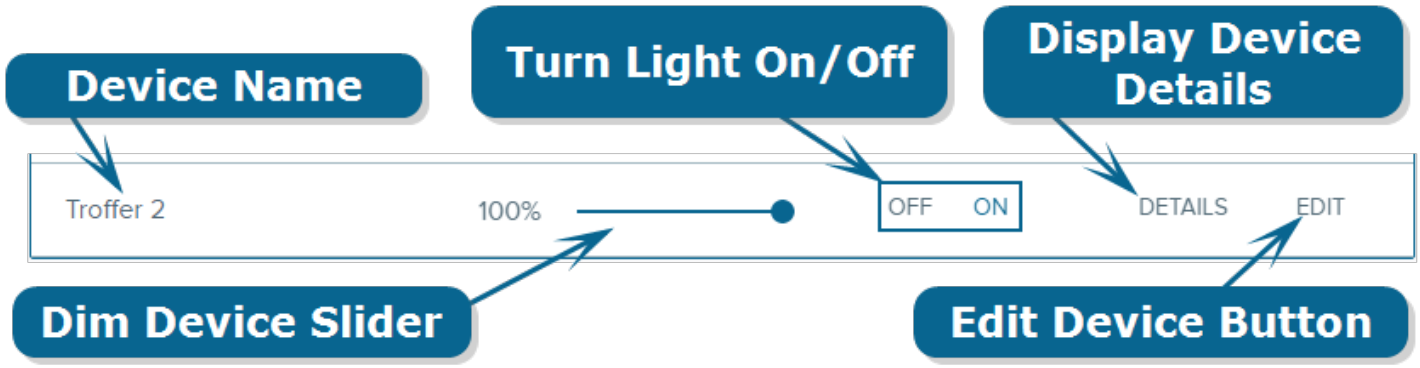
As a general practice, we recommend clicking the **Census** button at least once before logging out of SimplySNAP to help ensure everything is running at peak efficiency.

To perform a census of devices, click the **Census** button on the **Devices & Zones** page. This will take you to the **Census** page, where you'll need to click the **Start Census** button.

Working with Lights, Sensors, Zones, and Scenes

Editing a Light or Sensor Setting

To edit a light or sensor, find it within its corresponding zone panel, and click the **Edit** button on the right side of the panel.



NOTE: Using the search field provides an efficient way of finding the specific light or zone of interest. Simply start typing any unique identifiers for the light or zone and the display will immediately update with the relevant results.

NOTE: When editing a light, it is positioned or repositioned on the Map view by dragging and dropping it on the map view on the right of the **Edit Light** page.

Deleting a Light or Sensor

To delete a light or sensor, click the **Edit** button on the light or zone you wish to delete to load the Edit screen. Within the Edit screen, click the **Delete Light** button in the upper right of the content area.

NOTE: An unconfigured or deleted light will still respond to **Zone - All** commands if its network settings match the network settings of the site controller.

Editing Zone Settings

To edit a Zone's settings, click the **Edit Zone** button on the right side of the panel for the zone you wish to edit.

Adding Lights to Zones

A light can belong to multiple zones and will be affected by each command issued to any zone the light is a member of. Adding a single light to a zone is accomplished from the panel of the corresponding light or zone.

To add a light to a zone using the Light Panel:

1. Click the **Devices & Zones** icon in the left menu bar.
2. Locate the panel for the light you wish to add to a zone, and click the **Edit** button in the right of the light's panel.
3. Click the **Select Zones** button and select the zone(s) that you'd like to add the light to.

   NOTE: A light may belong to up to 20 zones.

4. Click the **Save Changes** button at the bottom of the screen to complete the changes, or the **Cancel** button to exit without saving.

Deleting a Zone

You can delete a zone by clicking the **Devices & Zones** menu choice in the left menu panel, and then clicking the **Edit** button for the zone you wish to delete. When the **Edit Zone** window appears, click the **Delete Zone** button in the upper right of the screen and then click the **Delete Zone** confirmation button.

Editing a Scene

To edit a scene, click the **Scenes** menu choice in the left menu bar, then click **Edit Scene** next to the scene you wish to edit.

Deleting a Scene

To delete a scene, click the **Scenes** menu choice in the left menu bar, click the **Edit button** next to the scene you wish to delete, then click the **Delete Scene** button.

NOTE: Making changes to several lights at once can cause certain lights to be unresponsive during the update. This is a short term situation that doesn't last long. An animated icon will be displayed on the **Devices & Zones** page during the update process.

Configuring Ethernet Settings

If the SimplySNAP site controller is using the Ethernet port for connectivity, you can configure it to use a static IP address, or a DHCP-assigned address, test Ethernet connectivity, and view Ethernet network information via the **Ethernet Settings** tab within the **Config** menu.

To view IP address related information:

Access the Ethernet Settings screen by clicking **Config** - **Ethernet Settings**. All Ethernet-related information is displayed on the landing screen

To use DCHP-assigned IP addressing for site controller connectivity:

1. Access the Ethernet Settings screen by clicking **Config** - **Ethernet Settings**.
2. Under the Ethernet heading, click **DHCP**.
3. Click the **Save Changes** button to use DHCP addressing, or **Cancel** to exit without changing settings.

To use a static IP address for site controller connectivity:

1. Access the Ethernet Settings screen by clicking **Config** - **Ethernet Settings**.
2. Under the Ethernet heading, click **Static**.
3. Enter the Static IP addressing for your network in the provided fields.
4. Click the **Save Changes** button to use static IP addressing, or **Cancel** to exit without changing settings.

To test the site controller's IP connectivity:

1. Access the Ethernet Settings screen by clicking **Config** - **Ethernet Settings**.
2. Click the IP Connectivity Test button at the bottom of the screen.

Updating the SimplySNAP Site Controller

The SimplySNAP hardware and application are continually evolving. From time to time Synapse Wireless will make new versions available. When this occurs, you'll want to update your site controller to take advantage of the newest functionality. This is accomplished using a SimplySNAP update drive available from Synapse Wireless, or via a downloaded file and the **System Upgrade** button within the **Backup/Restore** tab.

NOTE: While it is possible to upgrade cellular equipped site controllers remotely, Synapse Wireless recommends that these units be upgraded using USB to avoid the data charges that may be associated with cellular service.

WARNING: Do not power cycle the site controller or any lighting controller within your installation during an update. This could corrupt the file system in a way that could require complete replacement. During an update the lights on the site controller will continue to blink throughout the update process. You should wait at least five minutes after an update before power cycling a site controller or lighting controller.

To update the SimplySNAP site controller using the System Upgrade button:

1. Log in to the site controller you wish to update, then click **Config** - **Backup/Restore** to open the **Backup/Restore** tab.
2. Verify you have a current backup of your system. For more information on backing up the system, see **Backing up and restoring a system configuration on page 58**
3. Obtain the new SimplySNAP update file from Synapse Wireless.
4. Click the **System Upgrade** button. When the pop up menu appears, click **System Upgrade** again to confirm your intention to upgrade.
5. Browse to and select the update file, then click **Open** to start the update process. The lights on the site controller will blink continuously during the update. If the lights flash red, contact Synapse Wireless Customer Support for possible solutions.
6. After the lights have stopped flashing green for at least five minutes, unplug the USB drive and power cycle the controller.

NOTE: During an update, the lighting controllers will blink their corresponding lights when each individual update is completed.

To update the SimplySNAP site controller using an update drive:

1. Verify you have a current backup of your system. For more information on backing up the system, see **Backing up and restoring a system configuration on page 58**
2. Obtain the new SimplySNAP USB update drive from Synapse Wireless.
3. Plug the USB drive into the USB port on the site controller. This will begin the update process, which may take several minutes.
4. If the lights on the site controller flash green, the update was successful. If the lights flash red, contact Synapse Wireless Customer Support for possible solutions.
5. After the lights stop flashing green, unplug the USB drive and power cycle the controller.

NOTE: During an update, the lighting controllers will blink their corresponding lights when each individual update is completed.

Rebooting the Site Controller

If you ever need to reboot a site controller, this is accomplished through the SimplySNAP interface without the need to be present at the site controller.

To reboot the site controller:

1. Log in to the site controller you wish to reboot, then click **Config** - **System** to open the **System** tab.
2. Click the **Reboot Site Controller** button to open the reboot site controller pop up window, then click **Reboot** to reboot the site controller, or **Cancel** to exit without rebooting.

Backing up and restoring a system configuration

Once you've configured your SimplySNAP installation to your liking, Synapse Wireless recommends you backup the configuration as soon as possible to allow for later restoration should the need arise. It's also advisable you perform a backup before performing a System Upgrade or Factory Reset, all of which is accomplished from the **Backup/Restore** tab in the **Config** screen

The system configuration backup is a backup of site controller specific information, and is not the same as backing up configured lights. That is accomplished via .CSV file as described in **Importing and Exporting Light Configurations using a .CSV File on page 61**

To backup a SimplySNAP installation:

1. Access the **Backup/Restore** screen by clicking **Config** in the left menu bar, and then clicking the **Backup/Restore** tab.
2. Click the **Save Backup** button near the top of the screen. This will write all system settings to an sqlite file and transfer the file to your downloads directory of the device running your web browser.

To restore a SimplySNAP installation:

1. Access the **Backup/Restore screen** by clicking **Config** in the left menu bar, and then clicking the **Backup/Restore** tab.
2. Click the **Restore from Backup** button near the center of the screen. A warning message will appear and give you the option of continuing with the restoration, or canceling the operation. Select **Restore** if you wish to continue with the restoration.
3. Browse to and select the SimplySNAP backup file you wish to restore, then click the **Open** button. This will restore your system settings from the backup.

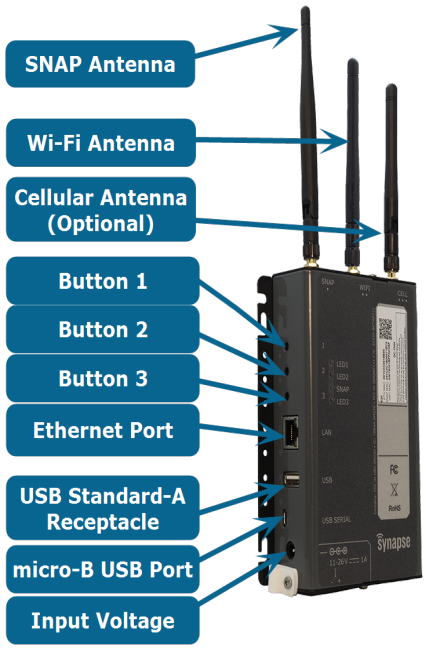
Factory Resetting a Site Controller

While unlikely, there may be a time when circumstance leaves a site controller in an unknown, unreachable, or otherwise unrecoverable state where a factory reset is necessary. A full factory reset of your SimplySNAP lighting controller is accomplished via the **Backup/Restore** tab within the **Config** screen, or manually using buttons on the site controller.

WARNING: A factory reset will interrupt lighting service and remove all configured Lights, Sensors, Zones, and Scenes, and return your site controller to its factory default state. Do not perform a factory reset unless it is your intention to delete all of this information.

To factory reset a SimplySNAP site controller using the user interface:

1. Log in to the site controller you wish to reset, then click **Config** - **Backup/Restore** to open the **Backup/Restore** tab.
2. Verify you have a current backup of your system. For more information on backing up the system, see **Backing up and restoring a system configuration on page 58**
3. Click the **Factory Reset** button to open the factory reset site controller pop-up window.
4. Click the **Factory Reset** button to reset the site controller, or the **Cancel** button to return to the **Backup/Restore** menu without resetting.



To factory reset a SimplySNAP site controller using the side buttons:

1. Push and hold button 1 on the side of the SimplySNAP site controller.
2. The bottom LED (LED 3) will glow amber for 2 seconds, during which the unit will return to factory defaults.
3. When the bottom LED turns off, release the button.

Viewing System Information

The System Info tab provides the network and version details for your SimplySNAP installation including connection addresses, device type, and software version.

The System Info tab is accessed by clicking the **Config** menu item in the left menu bar, then clicking the **System Info** tab at the top of the screen.

To check your SimplySNAP version information:

1. Click **Config** in the left menu bar.
2. Click the **System** tab near the top of the screen.

3. A number of details about your SimplySNAP installation will appear. Your SimplySNAP version information will be displayed under **Versions** on the lower portion of the screen.

Network Statistics

The Network Statistics tab provides an interface for viewing performance information for the Ethernet, Wi-Fi, and optionally cellular, performance of your SimplySNAP site controller. This information can be viewed in an hourly, daily, or monthly format, and provides valuable information on how your lighting system is performing.

Remote Support Connections

SimplySNAP site controllers support remote connections for maintenance and troubleshooting by remote technicians. This functionality is optional, and is enabled or disabled as you desire.

To enable or disable remote support connections:

1. Log in to the SimplySNAP user interface and click **Config** - **System**.
2. Scroll to the Remote Support Connections heading at the bottom of the screen.
3. Click **ENABLED** or **DISABLED** to change to your desired setting.

Displaying Multiple Installations in One User Interface

If you have multiple SimplySNAP installations that are geographically disbursed, you can link your site controllers to present them all in one user interface.

This process designates one site controller as a support site controller, and another as the primary site controller. The primary site controller is continuously updated by the support site controllers and provides you with access and control options for all zones, lights, and sensors across all site controllers.

There are a few things you should consider before you unite multiple site controllers in this fashion:

- Each site controller must have the same firmware version installed.
- Connections are performed from the site controller that will be designated as support.
- The primary site controller should be configured with a static IP address to ensure reliable connectivity.
- The map view on the primary site controller will show the lights connected to all connected site controllers. The support site controllers will not have a map view available.
- When a site controller is designated as a support controller, all configured lights and sensors will be deleted from that device's database.
- When a support site controller is connected to a primary site controller, all lighting additions and configurations must be performed from the primary site controller.

Up to four site controllers can be attached to a primary site controller.

To connect a support site controller to a primary site controller:

1. Ensure you know the IP address for the site controller that will be the primary, then log in to a site controller that will be a support site controller.
2. Open the System tab by clicking **Config** - **System**.
3. Enter the Support Site Controller name in the first field. This is name that the support site controller will be identified as on the primary site controller.
4. Enter the remaining site controller information into the provided fields, and click the **Connect to Site Controller** button to complete the connection.

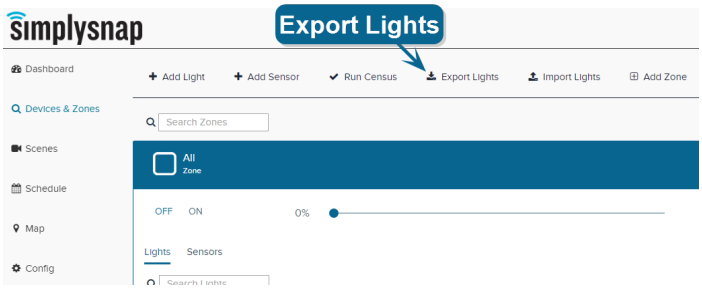
In the event the primary site controller fails or otherwise goes offline, the support site controllers will continue to function, but in a reduced capacity.

Importing and Exporting Light Configurations using a .CSV File

When you've configured all of your lighting equipment, you should immediately back up the light configurations to a .CSV file should you ever need to restore them. The ability to import and export .CSV files can also be helpful when you need to make a large number of changes to the lighting configuration.

To export a lighting configuration to a .CSV file:

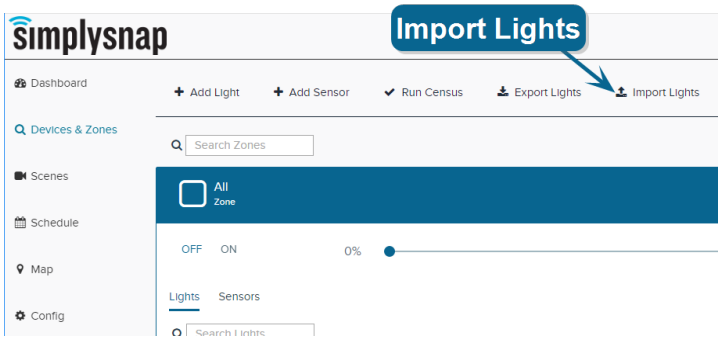
1. Log in to the SimplySNAP web interface, and click the **Devices & Zones** menu choice in the left menu panel.
2. Click the **Export Lights** button at the top of the screen, then click the **Export CSV** button. A .CSV file of your lighting configuration will be saved to your downloads folder.



In the event you need to make a large number of changes to your lighting configuration, it may be easier to export the configuration, alter the .CSV file in a text editor or spreadsheet, and then import the altered .CSV file to record the changes.

To import a lighting configuration .CSV file:

1. Log in to the SimplySNAP web interface, and click the **Devices & Zones** menu choice in the left menu panel.
2. Click the **Import Lights** button at the top of the screen, then click the **Import CSV** button.
3. Browse to and select the altered .CSV file, then click **Open**.



Appendix 1: SimplySNAP Remote Access

SimplySNAP Remote Access (SSRA) allows users to access, configure, and control their lighting installation from internet connected devices. SSRA requires an active and persistent internet connection and a service plan purchased through Synapse.

SSRA is used to access multiple SimplySNAP installations, all from a single login. Once you've logged in to SSRA, you can choose among multiple sites as well as individual controllers within each site.

Logging in to SimplySNAP Remote Access

The SSRA login screen is accessed via web browser at: **https://simplysnap.snaplighting.com/**.

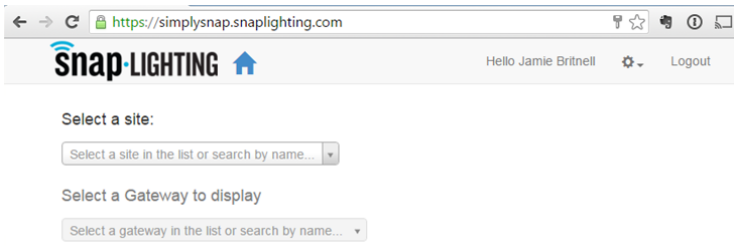
When you browse to the site, you'll need to enter your Synapse Wireless supplied email address and password.

Using the SimplySNAP Remote Access Interface

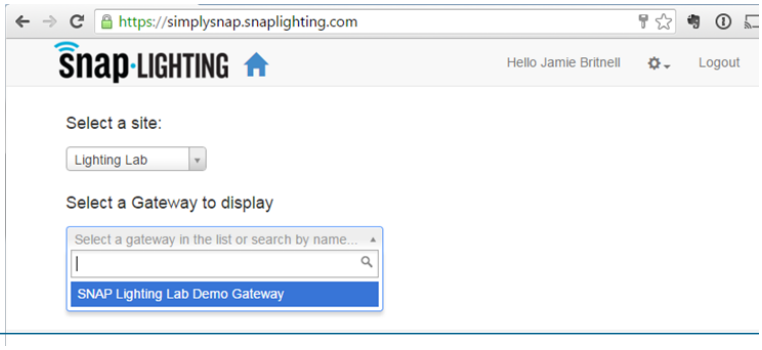
SSRA divides installations into sites and gateways. A site is a grouping of one or more site controllers that typically encompass a single geographic location, such as a parking garage with a site controller on each floor. (This grouping is configured by a Synapse Wireless Admin during setup.)

For example, a site might be a parking garage (a single geographic location) that has a gateway on each floor.

After logging in to SSRA, a user can use a drop-down list of sites to select the site they wish to manage. Once a site is selected, a drop-down list of site controllers will be displayed. Users can then use the drop-down list to select which site controller to manage. Users can also begin typing the name of a known site controlled to quickly select a site controller by name.



Once a site controller is selected, users will be able to access the SimplySNAP interface for that site controller as if they had browsed directly to it. To access another site or site controller, just click the **Home** icon at the top of the screen.

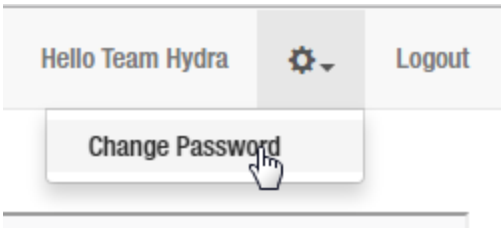


Changing Your SSRA Password

The password used to log in to SSRA is different from the passwords used in SimplySNAP, and password changes from SSRA must be conducted from the SSRA interface.

To change your SSRA password:

1. Log in to SSRA.
2. Click the **Gear** drop-down in the upper right corner of the page., and select the **Change Password** drop-down.
3. Enter your current and new passwords in the fields provided.
4. Click **Save Changes** to save your new password, or **Cancel** to exit without saving.



Appendix 2: Making the Most of Lighting Controls

The savings that are realized by a switch from traditional lighting sources to LEDs are so impressive that it's easy to be satisfied with just that. However, the most energy efficient lighting solutions are the ones that are only on when they're needed.

SimplySNAP provides a number of efficiency options that aren't possible with traditional photocell and motion switches that only provide on and off settings. The next portion of this document is dedicated to optimizations and "best practices" that will help you take full advantage of your lighting control system.

Dim Lights below 80% brightness

Modern LEDs are very bright and efficient, and it's easy to accidentally have more light than an area actually needs. In SimplySNAP you can set the initial level for a light to be less than 100% power. Dimming lights to 80% power can provide impressive savings with no little to no loss of available lighting. Moving the default setting below 80% can save even more power.

For more on setting initial levels, see **Editing a Light or Sensor Setting on page 54** The initial level setting is in the Advanced section near the bottom of the page.

Use Jitter to Eliminate Power Surges

When a traditional lighting system is switched on, every light on the circuit gets power at the same time. Each time this happens there is a surge in power usage that can affect your power bill.

The Jitter setting provides a means for phasing in lights over a number of seconds to help eliminate these expensive surges. Jitter is a delay setting, expressed in seconds, that powers lights in a random pattern over a number of seconds to limit the effects of power surges.

To implement Jitter in your SimplySNAP installation, see **Editing a Light or Sensor Setting on page 54**

If you want to implement Jitter in a large number of lights it may be easiest to make the changes using a .CSV file. For an easy way to change a lot of lights at the same time, see **Importing and Exporting Light Configurations using a .CSV File on page 61**

Use Schedules and Sensors to Dim or Deactivate Lights When They're Not in Use

The scheduling function in SimplySNAP allows you to set schedules that dim or deactivate lights during a building's off hours. This is really helpful until circumstance dictates that someone be in that area during a non-standard time.

Sensors can support a lighting solution by temporarily activating lights when motion is detected, and then dimming them back to off when motion is no longer detected.

To learn more about schedules, see **Events on page 43**

To learn more about adding sensors, see **Adding Sensors on page 33**

Appendix 3: Using the Android Lighting Installer App

The easiest way to get a **SimplySNAP** installation off to a good start is through the use of the **Synapse Wireless Lighting Installer app**. The lighting installer runs on the Android platform, simplifies the configuration of a **SimplySNAP** system by easily capturing essential light controller information along with the geographic location of the light. The information is collected using QR codes provided on Synapse Wireless lighting controllers. Geographic location is determined using the Android device GPS (if available) and this information is used to locate the light on a map of your installation.

NOTE: The GPS function is primarily intended for outdoor use. While it can still be used indoors, the mapping functionality will likely be limited due to lack of a GPS signal. The mapping feature requires an internet connection during setup.

The Lighting Installer app is used in two distinct stages.

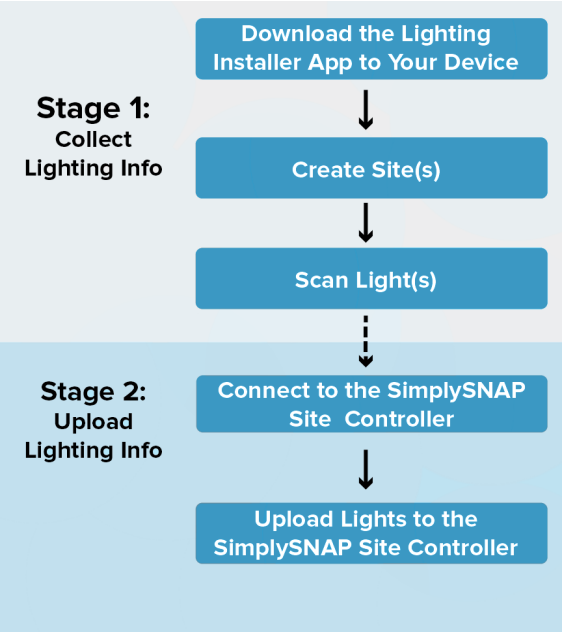
Collecting Light Information

In the first stage, sites are created, then lights are scanned and associated to a site. Once this is complete you upload the collected information to the **SimplySNAP Site Controller**.

You don't have to upload information immediately. One of the benefits of the app is ability to capture the light information before the **SimplySNAP** system is setup.

Uploading Light Information

The second stage begins after initial setup of the **SimplySNAP Site Controller**. In this stage you upload all the light information you captured in Stage 1 and the **SimplySNAP** system will do the rest!



Collecting Light Information Using the Lighting Installer App

When you're ready to get started, download and install the **Synapse Wireless Lighting Installer** App from the Google Play store. After you first launch the Lighting Installer app, you will need to activate it with the code provided by Synapse Wireless. When the app first launches, enter the code and continue.

The Lighting Installer app consists of three main areas, the site list, the individual site pages, and light details pages.

Site List

The site list is the first thing you see when you open the app, and it contains a list of all of your currently active sites. From here you can rename or delete sites, and export all lights from each site.

Individual Site Page

Each site is detailed on a page containing a list of all lights scanned into that site, as well as a map view of the site with light locations displayed. Lights that are represented with orange icons are eligible for modification and export, while lights with gray icons have already been exported and cannot be further modified.

Light Details Page

Each light has a page that includes all vital stats, export errors, and the map location for that light. From this page you can modify light location, MAC address, and controller type. You can also choose to rename, delete or export the light.

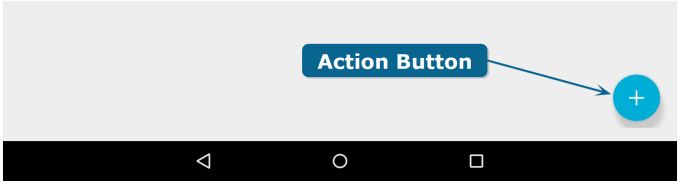
Adding Sites

The Lighting Installer app allows you to store multiple lighting sites at once. This lets you scan and store light information at any of your project sites and then upload it at your convenience.

NOTE: Site information is not uploaded to the site controller. Sites are configured within their individual interfaces, and site information within the app is for local informational purposes only.

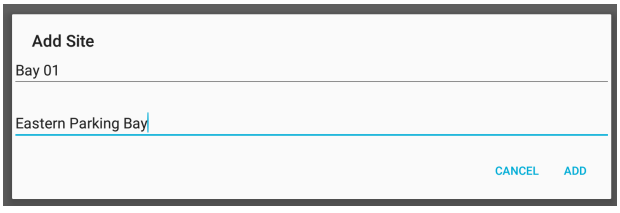
To add a site:

1. Click the action button on the bottom right of the screen. A dialog box will appear prompting you to name and describe the site.



NOTE: When you open the app for the first time you will be prompted to create a new site.

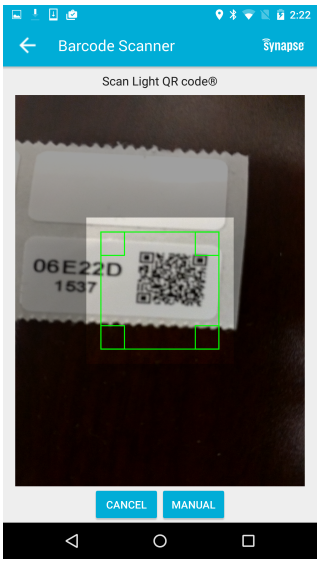
2. Start by entering a name for your site. We encourage creativity, but you can name it “Site 1” or whatever, if you like.
3. While not required, you can enter a site description to help you remember the details of the site.



4. Click **Add** and your new site will be created. Once you’ve created a site, you can start scanning lights!

Adding Lights to a Site

Once the site is created, you can start scanning in the lights that will make up that site. This is accomplished using the camera on the Android device, and the QR codes conveniently located on each Synapse Wireless lighting controller. (If don't have a code to scan, you should skip to the Manual Add section.)



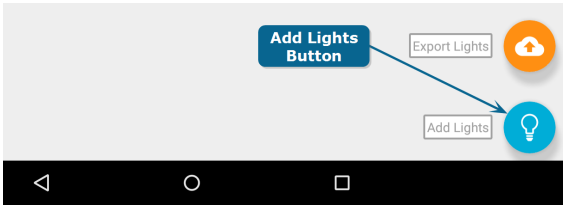
Using the QR Code Scanner

When you tap the action button the screen will change to a QR code scanner. Once the scanner is loaded, simply scan the QR code associated with the first light. You can do this by roughly aligning the white square with the QR code you wish to scan. The scanner will automatically lock on to the code and scan it, so don't worry about pushing any buttons.

NOTE: The speed of scanning is dependent on the quality of your mobile device's camera and the ambient lighting. If your device doesn't have auto focus, you may need to use the CSV import or manual methods for entry. For more details, see **Importing and Exporting Light Configurations using a .CSV File on page 61**

To add a light:

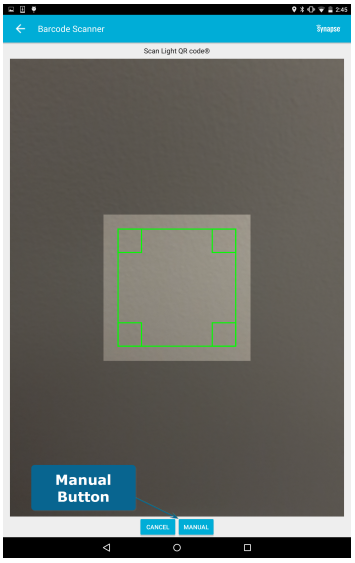
1. Tap the site name for the site where the light is being added and the site page will open.
2. Click the action button on the bottom right of the screen.
3. Click the **Add Lights** button and the QR Code Scanner will launch.
4. Scan the QR code for the light you're installing.



Click **Scan Next** if you need to add more lights or **Done** if you are finished.

Manually Adding a Light Within The App

If you don't have a QR code for your lighting controller or device is having trouble scanning, you can add the light manually.



1. If you don't have a QR code, you can manually add the light by clicking the **Manual** button.
2. Select the **Controller Type**.
3. Enter the **MAC Address**.
4. Enter the **Latitude** and **Longitude** (optional).
5. Click **Scan Next** if you need to add more lights or **Done** if you are finished.

Once finished, you will be returned to the site page where you will see a new light has been placed in your light list. You can always add more lights using the trusty action button as before.

Uploading Scanned Lights to SimplySNAP

Now you need to connect to **SimplySNAP**. First, connect the **SimplySNAP Site Controller** to power using the instructions outlined in **Setting up the SimplySNAP Site Controller on page 11** .

Next you'll need to access the site controller via your mobile device using the instructions outlined in **Establishing a Connection to the Site Controller on page 13** . When you've logged in, you'll be ready to upload the scanned lights.

There are two ways to export lights:

Option 1

Use the action button on the bottom right of the light list.

1. Tap the **Action** button to see options for exporting lights.
2. A dialog box will appear asking you to confirm. If you are confident in your decision, click **EXPORT** and the light information will be transferred to the site controller.

After the export, you will see a dialog confirming export success or detailing any export failures. Successfully exported lights will turn gray to indicate that they have been exported. You can no longer modify that light because it's now configured from within the SimplySNAP system.

NOTE: In the event of an export failure, the lights that failed to export will be displayed in red on the map, and will be marked with an error icon in the light list. You can learn more about the errors by tapping on the light in the list to activate the light details page. The error message will be contained in a field at the bottom of the page and will be marked with a red error icon.

Option 2

The second way to export lights is from the site list page. Sites with lights available for export will have an orange light bulb icon next to the name. To export lights in this fashion:

1. Tap the triple dot icon at on the far right of the site name to activate a list of actions at the bottom of the screen.
2. The first action on the list is **Export Lights**. Select that option to send your lights on their way.

Exporting a Single Light

Sometimes you may need to export only one light at a time. Don't worry, this is pretty simple to do.

All you need to do is select the light from the light list or tap on it from the map to open the details page for that light.

To export a single light:

1. Below the light name tap the export option to send the light to the site controller.
2. Once this happens you will see a dialog confirming the export process is happening, followed by a confirmation of export or notification of an error.

Renaming a Site

If you aren't happy with the name of a site, (maybe you named it "Site 1" or something non-descriptive,) it's easy enough to change it.

To rename a site:

1. Tap the triple dot icon next to the site name.
2. Select the **Rename** option from the list of actions at the bottom of the screen.
3. Enter the new site name and description in this fields provided, and click the **OK** button to confirm the name change, or click the **Cancel** button to exit without renaming the site.

After confirming the new name you will see the change reflected in the site list.

Deleting a Site

Sometimes things just don't work out, and it's time to say good-bye to a site.

To delete a site:

1. Tap the triple dot icon on the right of the site name.
2. Select the **Delete Site** option from the list of actions that appear at the bottom of the screen.
3. Confirm that you really want to say goodbye to that site, just in case you change your mind. Once you say yes, the site will be gone from your life forever.

Moving a Light

When you a scan a light into the system, the app uses the built in GPS in your mobile device to automatically place the light wherever you are standing. Sometimes this might not be where the light actually needs to be located, but

don’t stress, we’ve got you covered.

To move a light:

1. Select the light from the light list or tap on it from the map to open the details page for that light.
2. Tap the light's icon on the map. The icon will change to a movement arrow.
3. Drag the light to its new location and drop it where it needs to be and the light’s location will be automatically updated.

Renaming a Light

If you need to change a light name, select the light from the light list or tap on it from the map. This will open the details page for that light.

1. Select the **Rename** option from the list of actions at the bottom of the screen.
2. Enter the new light name and description in the fields provided, and click the **OK** button to confirm the name change, or click the **Cancel** button to exit without renaming the light.

Appendix 4: Using Census for Site Commissioning

If you're commissioning a site and you have a number of installed lighting controllers but you're unsure of their addressing, the **Census** button is a great way to get them added to your SimplySNAP installation.

NOTE: The site controller's network settings must be set to their defaults. For more information, see **Factory Defaulting Network Settings on page 27**

To use the Census button for site commissioning:

1. Establish a connection with your primary site controller using the instructions in **Establishing a Connection to the Site Controller on page 13**
2. Click the **Census** button in the top menu of the **Devices & Zones** page.
3. Click the **Start Census** button at the top of the page.

The site controller will contact every lighting controller with RF range. If the controller isn't configured, the census feature will list it and give you the option of adding it to your installation.

The census feature can only add lighting controllers that are in range of the site controller or a *configured* lighting controller. This means as you add lighting controllers, you bring more lighting controllers into range. You'll want to run the census several times to ensure you've found ever lighting controller in your installation.

Appendix 5: Site Configuration Using a CSV File

If the Lighting Installer app isn't an option for you, the next most efficient means of site configuration is a comma separated value (CSV) file. SimplySNAP can export an existing lighting setup to .CSV, which you then edit in a spreadsheet or text editor. Once new lights are added in, you can import the .CSV file with the new lights added.

For information on creating the initial .CSV file, see **Importing and Exporting Light Configurations using a .CSV File on page 61**

To configure a site using a .CSV file:

1. Click the **Export Lights** button to generate the initial .CSV file.
2. Open the .CSV file. You'll notice 12 column headings corresponding to the configuration information for lighting controllers.

Table 5.1: .CSV File Fields

Field Name	Description	Acceptable Input Values
* name	The user defined name of the light.	A string of characters
* snapaddr	The 6 or 16 digit SNAP Address for the light, in hex format. (For example, 1cd2e3 or 001c2c1b2606e458.)	Six hex characters

Field Name	Description	Acceptable Input Values
* type	The type of light controller that is being configured.	Acceptable values are: AIM-121 ALSI-CL5 ALSI-HB2 ALSI-HB5 ALSI-SL5 DIM10-087-00 DIM10-087-04 DIM10-100-00 DIM10-104-00 DIM10-110-00 DIM10-250-11 DIM10-281-21 DIM10-283-20 LP001-001 LP002-001 LP150-00 OCF01-10T OCF01-1RT TL5-B1 TL7-B1
description	A general description of the light.	A string of characters.
zones	The groups this light is included in. All lights are always included in the "All" group. Up to eight additional zones may be configured.	List Zone names separated by the | character. For example: Zone 1|Zone 2
* power_on_ level	The brightness level for the light when power is cycled, provided the light supports dimming.	A number, 1 - 100 (Default is 100)
* slot	Reserved for future use.	0

Field Name	Description	Acceptable Input Values
y	The geographic latitude for the light.	A single longitude entry
x	The geographic longitude for the light.	A single latitude entry
location_id	A user defined location id, such as pole number, office number, etc.	A string of characters
street_ address	The street address where this light is located.	A string of characters
* antenna_ compensation	Determines the power of communication signals transmitted from the Lighting Controller. (Use 'North America' if you do not know what to use.)	North America CE
fixture_type_ name	Fixture types represent a driver controller/driver/light combination. When you create a fixture type, you can assign SimplySNAP to monitor for a specified range of conditions and generate alarms when conditions deviate above or below those conditions.	A string of characters

*** Indicates a Required Field**

NOTE: Field names don't necessarily correspond to what you'll see in the user interface.

3. Enter each new light as a separate row in the .CSV file. When all lights are entered, save the file, click the **Import Lights** button, and follow the on-screen instructions to upload the new lights.

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