CREE SMARTCAST® PoE TECHNOLOGY

SMARTCAST MANAGER™ USER MANUAL

VERSION: 1.2.2
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CREE SMARTCAST® TECHNOLOGY
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SYSTEM OVERVIEW:
THE PoE-BASED SMARTCAST® TECHNOLOGY LIGHTING CONTROL SYSTEM

The PoE-based SmartCast® lighting control system has three main building blocks:

1. **SmartCast Manager™ software controlling the system**
2. A PoE-enabled Cisco Ethernet switch providing power and two-way data communication
3. Light fixtures and wall dimmer units powered through an Ethernet connection

The diagram above shows the system overview.

1. **SmartCast Manager™**: The SmartCast Manager is a Windows® lighting management application that allows you to commission and control Cree SmartCast® PoE lighting systems.

2. **Cisco UPoE Switch**: Cisco’s UPoE switch is the central component of the system. The switch enables network communication over IP between all system components and provides power to all endpoints (light fixtures and wall dimmers).

3. **SmartCast-enabled Light Fixtures**: Each light fixture runs distributed algorithms to provide intelligent group behavior using integrated occupancy sensors. Each light fixture also utilizes an integrated ambient light sensor and proprietary algorithms to provide power savings for our customers. The light fixture behavior can be controlled via SmartCast Manager.

4. **SmartCast-enabled Wall Dimmers**: The wall dimmer (WD) uses network communications to provide lighting controls of on, off and dimming to the light fixtures of its assigned Switch group. This assignment occurs automatically during OneButton™ Setup. Reassignment through Group Modification is available using SmartCast Manager.
5. **Configuration Tool**: The Configuration Tool is a handheld device that provides the user with the capability to select light fixtures for various management operations. It is an alternate method for fixture selection in addition to the Browse-and-Select method in SmartCast Manager.

![Figure 2. CR22™ light fixture with integrated occupancy and ambient light sensors](image)

### SMARTCAST MANAGER™ (SCM)

The SmartCast Manager is a Windows®-based application to control and manage Cree’s PoE lighting control system. It allows you to perform the following operations:

1. Commission the lights [OneButton™ Setup]
2. Light Group modifications
3. Individual fixture control and group level controls
4. Firmware update of the endpoints
5. Network protection

In addition to the above features, SCM also provides a user dashboard that displays a customizable power saving trend graph.

A single instance of SCM can be used to manage multiple Cree® PoE lighting networks. Each single network within PoE can be password protected. Please refer to the section on Network Protection for more details.

The SmartCast Manager supports lighting network grouping in terms of Switch Groups and Occupancy Groups. A Switch Group is a group of light fixtures and wall dimmers that are associated for control of the light fixtures within the group. An Occupancy Group is a group of endpoints composed of light fixtures and wall dimmers that share common occupancy behaviors.
System Requirements for SmartCast Manager™

Recommended PC Operating System:

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Hardware</th>
<th>Memory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows® 7 Professional</td>
<td>Intel Core i7</td>
<td>8 GB RAM</td>
</tr>
<tr>
<td>Windows® 7 Enterprise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows® 8.1 Professional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows® 10 Professional</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Supported Operating Systems (PCs)

Recommended Enterprise Operating Systems:

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Hardware</th>
<th>Memory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows® Server 2012 R2 SP1</td>
<td>Intel Xeon E5</td>
<td>8 GB RAM</td>
</tr>
</tbody>
</table>

Table 2. Supported Operating Systems (Servers)

Installation Procedure for SmartCast Manager™

A USB flash drive containing the installer for SmartCast Manager will ship to the end user.

- The installer should be copied to the hard drive of the host computer.
- To ensure connectivity between SmartCast Manager and the endpoints of the SmartCast lighting network, the following UDP ports must be open in the firewall settings:
  - 55004
  - 55005
  - 55006
  - 55007
  - 55008

To use LLDP and SNMP in the SmartCast Manager, SNMP service, SNMP Trap and Link Layer Topology Discovery Mapper need to be enabled on your host computer.
Here is the fresh installation procedure of SmartCast Manager:

1. SmartCast Manager currently ships on a USB drive. Insert the drive, open it and you will see a folder labeled with the current version of SmartCast Manager.

2. Navigate to the README.txt file for instructions.

3. Click through the SmartCast_Manager folder and unzip the LSW0002 folder.

4. Click the LSW0002.exe file to start the installation process.

5. Click ‘Next’ under InstallShield wizard.
6. Read through the End User License Agreement and select the ‘I accept’ radio button and click ‘Next’.

7. Select the Destination folder and click ‘Next’.

8. Check options to ‘Create Desktop’ and ‘Start menu’ shortcuts and click ‘Next’.

9. Select user for installation of SmartCast Manager.

10. Click ‘Cancel’ under WinPCap alert window, if WinPCap is already installed on the system.

11. Connect the computer to the Lighting Network provided by the Cisco switch.
12. Open the SmartCast Manager™.

Note: If WinPCap is not installed:

1. WinPCap alert window will not be opened
2. WinPCap Install window will be opened to take you to its installation
3. Click ‘Next’ to continue the installation
4. Accept agreements on EULA page
5. Click ‘Finish’ for WinPCap installation

**SmartCast Manager™ Introduction**

**Startup Screen**

When you open the SmartCast Manager, the Startup Screen displays the Cree SmartCast® Technology logo as it loads the network interfaces and initializes the application.

![Startup screen](image)

**Figure 3. Startup screen**

The SmartCast Manager will then detect all available network interfaces.

- If there is only one available network interface, the SmartCast Manager will automatically connect to it and display the ‘Main Window’ screen.
- If the SmartCast Manager finds multiple network interfaces, it will provide a menu of network interfaces as shown in the screen shot below.
Figure 4. Network interface selection screen

- Select the network interface that detects a PoE network.
- Click on the Continue button.

When you select the network interface, Device Auto Discovery occurs and OneButton™ Setup displays a count of unassigned devices.

**Note:** If the user has WiFi enabled during the start of SmartCast Manager and then connects his laptop to the PoE lighting network, SmartCast Manager will automatically select the WiFi network and discovery of PoE endpoints will not happen. The user must select the PoE LAN from the Network Interface Settings tab. See the Group Application Examples section for details.

![Image of Network Interface Selection Screen]

Navigate to Advanced -> Network Interface Settings screen; then select and save the PoE network to find the devices.

Figure 5. No device discovered since SCM is pointing to a network that contains no PoE devices

![Image of Network Interface Settings Screen]

Figure 6. Selecting PoE network interface via the Network Interface Settings tab
Main Window Screen

The Main Window screen has a Navigation Bar on top of the screen. The Navigation Bar has the following drop-down menu headings:

<table>
<thead>
<tr>
<th>1. Dashboard</th>
<th>4. Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Power Usage</td>
<td>• LED On</td>
</tr>
<tr>
<td>• Total Savings</td>
<td>• LED Off</td>
</tr>
<tr>
<td></td>
<td>• Dim Up</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Grouping</th>
<th>5. OneButton™ Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Create Switch Group</td>
<td>• All</td>
</tr>
<tr>
<td>• Create Occupancy Group</td>
<td>• Choose</td>
</tr>
<tr>
<td>• Add to Switch Group</td>
<td></td>
</tr>
<tr>
<td>• Add to Occupancy Group</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Settings</th>
<th>6. Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Factory Reset and Reboot</td>
<td>• Firmware Update</td>
</tr>
<tr>
<td>• Auto Calibration</td>
<td>• Firmware Versions</td>
</tr>
<tr>
<td>• Protect/Unprotect Network</td>
<td>• Network Interface Settings</td>
</tr>
<tr>
<td>• Occupancy Group Settings</td>
<td>• Port Control</td>
</tr>
<tr>
<td>• Switch Group Settings</td>
<td>• About SmartCast Manager™</td>
</tr>
</tbody>
</table>

Table 3. SmartCast Manager functions

The bottom ribbon of the screen is populated with available Lighting Networks. If no Lighting Networks are found in the physical network:

- The OneButton™ Setup screen option is selected by default.
- The total number of unassigned devices connected to the switch(es) is displayed.

Figure 8. Lighting Networks can be selected from the ribbon bar
**ONEBUTTON™ SETUP FEATURE**

OneButton™ Setup enables automatic commissioning of devices through network creation, group assignment and daylight harvesting calibration and consists of four phases:

1. **Find**: As SmartCast endpoints are discovered, fixtures dim and wall dimmers blink their status LED four times.

2. **Calibrate**: All fixtures that were found in Step #1 will toggle off and on once to learn about the available light within the space.

3. **Learn**: Devices perform specific learning sequences to identify one another and the space in which they are installed.

4. **Group**: Devices are intelligently grouped; energy-saving, code-compliant settings and operating modes are assigned.

The OneButton™ Setup screen displays your OneButton™ Setup options. This is the first screen you will see for a new lighting installation because it is a required step for initial setup.

After initial setup, you can also use OneButton™ Setup to reconfigure the network.

You will see two options for OneButton™ Setup: All and Choose.

**Figure 9. OneButton™ Setup start**

### All

1. Click on the All option to perform OneButton™ Setup for all the endpoints connected to the Cisco switch (the entire Lighting Network).

### Choose

2. Click on the Choose option to select only some endpoints for OneButton™ Setup.

   When you select Choose, you will see the Selective Setup screen.

   - This screen only displays unassigned devices available for OneButton™ Setup.
   - Assigned devices are filtered out.

3. The total number of unassigned devices is displayed at the bottom of the screen.
The Selective Startup screen allows you to choose individual endpoints for OneButton™ Setup.

To select individual endpoints:

1. Use your mouse to select from the displayed list of available endpoints.
2. The Back button will return you to the previous screen.
3. The Identify button places the selected endpoint(s) in Identify mode. The endpoint will start blinking with a duty cycle of 1 second. See the SmartCast Manager™ 'Identify' Feature section for more information on this feature.
4. The Start OneButton™ Setup button will initiate commissioning of the selected endpoints.

During OneButton™ Setup, a progress bar tracks each step of the process as shown below.

Click OK to exit Setup and start viewing the Dashboard results.

The Dashboard begins tracking power usage and energy savings in the background once OneButton™ Setup is complete.
After OneButton™ Setup, the created Switch Groups and Occupancy Groups are visible under the Network screen as seen above.

**Note:** After each OneButton™ Setup, a log file (e.g. Network 1 05122017 092218.csv) is generated which contains the AutoCalibration, Lightcast and Autogrouping data. This log file can be accessed via the following path: C:\Users\~\AppData\Roaming\Cree\Cree SmartCast® Manager\One Button Setup
DASHBOARD

The Dashboard allows the user to monitor all lighting networks from one location. It displays power usage and monetary savings based on that usage.

Figure 14. Dashboard displaying energy savings

This screen shows:

1. **Current Savings**: A bar graph displays live feedback that combines savings generated by the current Occupancy state, Task Tuning setting, Daylight harvesting, commanded Dimming level, and Fixture Savings due to LED replacement over standard fluorescent lighting.

2. **Power Usage**: Click on this block to view power usage over intervals of 30 minutes, 30 hours or 30 days. You can view the power usage of all the networks or of a single network.

3. **Total Savings**: Click on this block to view monetary savings over intervals of 30 minutes, 30 hours or 30 days. You can view the savings of all the networks or of a single network.

4. **Dashboard Settings**: Local Rate, Fixture Savings, Print/Export/Log

5. **Health**: Health provides live status updates of the endpoints.
**Power Usage**

Power Usage shows total power usage over intervals of 30 minutes, 30 hours or 30 days. The user can view the power usage of all the networks or of a single network.

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1. **Power Usage**
   - The dashboard screen detail shown above shows power usage in kilowatt-hours (kWh).
   - You can display total power usage for the last 30 minutes, 30 hours or 30 days.

2. **Total Savings**
   - The dashboard screen detail shown above displays total savings in US dollars.
   - You can display total energy savings for the last 30 minutes, 30 hours or 30 days.

3. **Network View**
   - You can view the power usage and total savings for all the networks or a single network.
   - In the dashboard screen shown above, All Networks is selected. Network 1 is grayed out.

4. **Usage Baseline**
   - The Usage Baseline is displayed as a red line. It shows you the maximum possible power consumption of all the devices available in the selected network.
   - This is a ceiling. Actual power consumption of the combined devices will not exceed the level indicated by the red line.
Dashboard Settings

The Dashboard Settings are accessed by clicking on the gear icon on the right of the Dashboard screen.

A pull-down menu will appear that provides you with the following options:

- **Local (Electricity Rate):** This value can be changed here by the user to reflect the actual local cost of electricity in $/kWh. The default value is $0.11/kWh.

- **Fixture Savings:** As an example, if you replaced 60-watt bulbs with PoE lighting fixtures with a maximum wattage of 30 watts, the applicable Fixture Savings over your previous fixtures would be 50%. Those savings over a period will be displayed in a ‘Current Savings’ bar chart.

- **Export:** Exports power usage and energy savings to a CSV file for the displayed time interval.

- **Print:** Use to capture current screen content to a JPEG file.

- **Log:** Allows the user to toggle the visualization page on and off and set the data recording period. The default log interval is 1 minute.

![Dashboard Settings](image)

Figure 16. Dashboard Settings
Health Monitoring Visualization on SmartCast Manager™

The Health Monitor function of Smartcast Manager will periodically query components of the network for their health status.

1. The health status of devices on the network can be seen on the top right section of SmartCast Manager as a light on the 'Health' indicator button.
   - If the Health indicator light is Green, the health status is good.
   - If the Health indicator light is yellow, at least one device has reported a warning value.
   - If you click on the 'Health' button, SmartCast Manager™ displays the MAC address of any devices that return a warning value to SmartCast Manager.

Figure 18. Warning for Health Status from the devices

Issues observed in the following endpoints:
• 001ec0c77342

Figure 17. Good Health status of devices

1. The health status of devices on the network can be seen on the top right section of SmartCast Manager as a light on the 'Health' indicator button.
   - If the Health indicator light is Green, the health status is good.
   - If the Health indicator light is yellow, at least one device has reported a warning value.
   - If you click on the 'Health' button, SmartCast Manager™ displays the MAC address of any devices that return a warning value to SmartCast Manager.

Figure 18. Warning for Health Status from the devices

Issues observed in the following endpoints:
• 001ec0c77342
Grouping

The **Grouping** menu lets you create new groups or add endpoints to existing groups within the same lighting network that you created during OneButton™ Setup.

![Grouping Menu](image)

**Figure 19. Grouping Menu selected to show sub-menu options**

You can create new groups and edit existing groups using the options shown in the image above:

1. **Create Switch Group**: Creates a new Switch Group from existing wall dimmers and light fixtures.
2. **Create Occupancy Group**: Creates a new occupancy group from existing light fixtures.
3. **Add to Switch Group**: Adds wall dimmers and light fixtures to an existing Switch Group.
4. **Add to Occupancy Group**: Adds light fixtures to an existing Occupancy Group.

You can perform each of these four actions in either of two ways:

1. **Point Select - Touch Select** uses the Configuration Tool and wall dimmers to select devices to form groups. The Configuration Tool will be described below.
2. **Browse Select** uses the SmartCast Manager™ to select devices to form groups.

**Modify Groups by 'Point Select - Touch Select' Using the Configuration Tool (CT)**

In its **Normal Mode**, the Configuration Tool provides complete functionality for operating a SmartCast® wireless network.

If the ON/OFF button is pressed, the Configuration Tool will enter Normal Mode and begin scanning for wireless networks. To reset from Normal Mode, allow the Configuration Tool to complete its scan. Then press the ON/OFF button to turn off the Configuration Tool.
The Configuration Tool uses **Flashlight Mode** to 'Point-Select' during Modify Grouping.

**To enter the CT’s Flashlight Mode:**
1. Hold the Select button while
2. Pressing the ON/OFF button

Once in **Flashlight Mode**, pressing the Select button will cause the LED on the top of the Configuration Tool to illuminate to select fixtures during Modify Grouping.

**NOTE:** The Configuration Tool conserves battery life by shutting down after 10 minutes of idle time. This timer begins when the screen dims.

**Create Switch Group by 'Point Select - Touch Select' Method**

This option allows you to create a new Switch Group by referring to the existing Switch Groups available in the network created by OneButton™ Setup.

This method requires the Configuration Tool and wall dimmer OFF button. The following steps create a new Switch Group:

1. Click on the **Grouping** menu icon.
2. Click on **Create Switch Group** from the sub-menu. This selection will remain highlighted during the operation.
3. Click on the **Point Select - Touch Select** icon displayed on the screen.

4. Follow the instructions displayed on the screen: On the actual wall dimmer, press and hold the button imprinted with the Cree logo for 3 seconds to select it.
5. The LED on the wall dimmer blinks twice and its icon is displayed under ‘Selected Switch’. A new group name for the Switch Group is assigned by the SmartCast Manager™ as displayed below. It should be the next available group number from existing Switch Groups. This group name can be edited by the user.

6. To add light fixtures to this group, point the beam of the CT at the fixture’s sensor. The identified light fixture blinks twice and then dims to indicate joining the new Switch Group.

7. The icon of the added fixture will be displayed on the screen as shown below.

8. After the required endpoints are added, click on the ‘Create’ button to create the new Switch Group.

Figure 25. Light fixture selections

Figure 26. Selected wall dimmer and light fixtures
The new Switch Group will be created and a success/error message from all endpoints will be displayed.

**NOTE**: If you want to undo a light fixture or wall dimmer selection, use the Undo button that appears on the icon of the selected wall dimmer or light fixture. Any endpoint can be unselected during this step.

### Create Occupancy Group by ‘Point Select - Touch Select’ Method

This option allows you to create a new Occupancy Group by referring to existing Occupancy Groups created by the OneButton™ Setup.

This method requires the Configuration Tool for selection. The following steps create a new Occupancy Group.

1. Click on the **Grouping** menu icon.
2. Select the option **Create Occupancy Group** from the sub-menu. This selection will remain highlighted during the operation.
3. Select **Point Select - Touch Select** option.

A new screen entitled ‘New Occupancy Group’ displays the instruction ‘Use CT to select fixture’.

4. Now point the beam of the Configuration Tool at the sensor of one of the light fixtures to create a new Occupancy Group from the network.

5. The identified light fixture blinks twice and dims to indicate joining the new Occupancy Group.
Figure 31. New Occupancy Group with added light fixture

6. The light fixture should be displayed on the SmartCast Manager™ with its device type and icon as shown above.

7. Once you add the light fixture into the group, the group name is assigned by the SmartCast Manager as displayed above. It should be the next available group number from existing Occupancy Groups. This group name can be edited by the user.

Repeat Step 4 to add more light fixtures from the same lighting network to complete selecting the members of the new Occupancy Group.

8. After all planned light fixtures are added, click the ‘Create’ button from the bottom of the screen to complete the creation of the new Occupancy Group. The newly created group should be displayed in the Network screen under the Occupancy Group menu with all the devices added to it.

Figure 32. Click Create to create new Occupancy Group

The new Occupancy Group will be created and a success/error message from all endpoints will be displayed.

Notes:
- Light fixtures from different lighting networks within the VLAN cannot be added:
  1. While creating a new Occupancy Group
  2. While editing any existing Occupancy Group
- Wall dimmers cannot be added manually while creating a new Occupancy Group

Figure 33. Create Occupancy Group command sent
Add to Switch Group by 'Point Select - Touch Select' Method

With this option, you can modify an existing Switch Group available in the lighting network created by the OneButton™ Setup process.

This method requires the Configuration Tool and wall dimmer OFF button.

To create a new Switch Group:

1. Click on the Grouping menu icon.

2. Click on Add to Switch Group from the sub-menu. This selection will remain highlighted during the operation.

3. Click on 'Point Select - Touch Select' icon displayed on screen.

A new screen entitled 'Add to Switch Group' will display with the instruction 'Press and hold Cree logo on wall switch to select'.

Figure 34. Grouping menu and Add to Switch Group selected

Figure 35. 'Point Select - Touch Select' option for Add to Switch Group
Figure 36. **Switch Group modification with instruction**

4. You need to press the Cree logo on the wall dimmer for 3 seconds to select the group to be modified.

5. The LED on the wall dimmer blinks twice. All light fixtures within the Switch Group will dim.

Figure 37. **Add to Switch Group with instruction**

6. The Switch Group which the user wants to modify will be selected. Its icon will be displayed.

7. You can add wall dimmers from other groups by pressing the Cree logo on the Wall Dimmer button.

8. You can add light fixture(s) from other groups with the Configuration Tool. Point the Configuration Tool at the fixtures’ light sensors. The identified light fixture blinks twice and then dims to confirm selection.
Figure 38. Adding more light fixtures

9. The selected fixture’s icon will be displayed on the screen of the SmartCast Manager™ as shown above.

10. Once all required endpoints are selected, click on the ‘Add’ button to add selected endpoints to the selected Switch Group.

**NOTE:** If you want to undo adding a light fixture or wall dimmer you have added, use the Undo button that appears on the icon of the selected wall dimmer or light fixture.

The endpoints will be added to the selected Switch Group and a message will be displayed in the response window.

Figure 39. Add to Switch Group success
Add to Occupancy Group by ‘Point Select - Touch Select’ Method

This option allows you to modify existing Occupancy Groups in a lighting network created by the OneButton™ Setup.

This method requires the Configuration Tool for selection.

The following steps will add devices to an existing Occupancy Group:

1. Click on the Grouping menu icon.

2. Select the option Add to Occupancy Group from the sub-menu. This selection will remain highlighted during the operation.

3. Select ‘Point Select - Touch Select’ option.
A new screen displays with the title ‘Add to Occupancy Group’ and the instruction ‘Use CT to select fixture from Occupancy Group’.

4. Now point the Configuration Tool beam at the light sensor of a light fixture to select the existing Occupancy Group to be edited. The selected light fixture will identify itself by blinking twice and then dimming. All members of its Occupancy Group will also dim.

5. The selected Occupancy Group will be displayed in SmartCast Manager™ as shown at below.

6. Now point the Configuration Tool at the sensor of other light fixtures from different groups in the lighting network to add into the selected group.

7. The selected light fixture(s) will be displayed on the left of the screen.
8. After selecting the light fixtures from different groups, click on the **Add** button on the bottom of the page.

The endpoints will be added to the selected Switch Group and a message will be displayed in the response window.

![Figure 44. Add to Occupancy Group with added light fixture](image)

![Figure 45. Success response of Occupancy Group modification](image)
Create Switch Group by ‘Browse Select’ Method

This option allows you to create a new Switch Group from the existing Switch Groups in the lighting network created by the OneButton™ Setup.

This method does not use the Configuration Tool and wall dimmer Cree® logo button. Instead, you can select the devices from within the SmartCast Manager™ application.

The following steps create a new Switch Group:

1. Click on the Grouping menu icon.
2. Click on Create Switch Group from the sub-menu. This selection will remain highlighted during the operation.
3. Click on the Browse Select icon displayed on screen.

The screen will now display the available lighting networks on the VLAN (only one in the example below).

4. Click on the Open tab on the network icon to select the lighting network.
5. The screen will now display available groups within the selected lighting network.

6. Click the Open tab on the group you want to work with to view the devices under the group.

The screen will now display the endpoints within the selected group.

7. Select the light fixture from the right section of the screen.

8. Click on the Add to New Group button. The selected device will move to the left section of the screen.

9. You can also identify any device under the group by selecting it and by clicking on the Identify button. See SmartCast Manager™ ‘Identify’ Feature section for more information on this feature.

NOTE: • The Add to New Group button will only be enabled after you select a light fixture or wall dimmer from the opened group.
  • The Identify button will also only be enabled after you select any device from the group.
10. Now select the wall dimmer from the group.

11. Click on Add to New Group.

**NOTE:** The Create button under the left section of the screen will not be enabled until you add a wall dimmer to the new group.

12. Now click on the Create button to complete the group formation process.
The new Switch Group will be created and a success/error message from all endpoints will be displayed.

Figure 53. Switch Group formation successes
Create Occupancy Group by ‘Browse Select’ Method

This option allows you to create a new Occupancy Group from existing Occupancy Groups in the lighting network created by OneButton™ Setup.

This method does not require the Configuration Tool for selection. Instead, you select the devices from within the SmartCast Manager™ application.

The following steps should create a new Occupancy Group:

1. Click on the **Grouping** menu icon.
2. Click on **Create Occupancy Group**. This selection will remain highlighted during the operation.
3. Click on the **Browse Select** icon.
The screen will now display the available networks on the VLAN (only one in the example below).

4. Click on the Open tab on the icon of the network you want to select.

5. Click the Open tab on a selected Group icon to view devices in that group.

OR:

6. Click the Add tab of the Group to add all the devices in the Group to the new Occupancy Group you are creating.
The following example shows the sequence if you click **Open** on a selected Group icon.

**Figure 58.** List of available light fixtures displayed by opening a Group


**Figure 59.** Selected light fixture for Occupancy Group creation

8. Select the light fixtures from the group.

9. Click on the **Add to New Group** button to include selected devices.

10. Click on the **Create** button to create the new Occupancy Group.

NOTE: The **Add to New Group** button and **Identify** button will be enabled only after you select at least one light fixture from the group.
You’ll see a message confirming the new Occupancy Group was created.

Figure 60. Occupancy Group creation success response
Add to Switch Group by ‘Browse Select’ Method

This option allows you to modify existing Switch Groups available in a network created by the OneButton™ Setup.

This method does not require the Configuration Tool or wall dimmer. Instead, you select the devices directly from within the SmartCast Manager™ application.

![Figure 61. Grouping menu and Add to Switch Group selected](image)

The following steps will add devices to a Switch Group:

1. Click on the **Grouping** menu icon.
2. Click on **Add to Switch Group** from the sub-menu. This selection will remain highlighted during the operation.

![Figure 62. Add to Switch Group - Browse Select](image)

3. Click on the **Browse Select** icon.
The screen will now display the available lighting networks on the VLAN (only one in the example below).

4. Click on the **Open** tab on the network icon to select the lighting network.

5. Click on the **Select** tab to select the Group.

**NOTE:** You will only see Groups that contain wall dimmers. In the above example, a wall dimmer is only available in Switch Group 3 of Lighting Network 1, so all other Groups are ignored. This means that endpoints from other Switch Groups can only be added to the Switch Group that contains at least one wall dimmer.
Figure 65. Selected Switch Group to be modified

The selected Group will be displayed on the left section of the screen.

6. You can identify the devices under the selected Group by selecting the Group and clicking on the Identify button. See SmartCast Manager™ ‘Identify’ Feature section for more information on this feature.

   NOTE: The Identify button will be enabled only after a Group is selected.

7. To add all the devices in a Group directly to the selected Switch Group, click on the Add tab on that Group’s icon.

8. To view and individually select devices in a Group, click the Open tab on that Group’s icon.

   You’ll now see the devices in the Group you opened.

Figure 66. Selected device from the group

9. Select the device you want to add from the opened Group.

10. Click the Add to New Group button.
11. Finally click the Add button to add devices to the selected Group.

You’ll see a message confirming that the devices were added to the Switch Group.
Add to Occupancy Group by ‘Browse Select’ Method

This function allows you to modify an existing Occupancy Group in the lighting network created by OneButton™ Setup.

This method does not require the Configuration Tool. Instead, you select the devices from within the SmartCast Manager™ application.

The following steps will add devices to the Occupancy Group:

1. Click on the Grouping menu icon.
2. Click on Add to Occupancy Group from the sub-menu. This selection will remain highlighted during the operation.
3. Click on the Browse Select icon.
The screen will now display the available lighting networks on the VLAN (only one in the example below).

4. Click on the **Open** tab on the Network icon to select the lighting network.

![Figure 71. List of available networks](image)

5. The SmartCast Manager will now display the ‘Select Group’ screen.

6. Click on the **Select** tab on a Group icon to select that Group.

![Figure 72. Available Occupancy Groups with light fixture presence](image)

NOTE: The SmartCast Manager will only display the Groups that contain light fixtures. Groups that have only wall dimmers will be ignored. This means that endpoints from other Occupancy Groups can only be added to an Occupancy Group that contains at least one light fixture.
The selected group will be displayed on the left section of the screen.

**Figure 73. Selected Occupancy Group to be modified**

7. To add all the devices in a Group to the selected Occupancy Group, click on the ‘Add’ button on that Group’s icon.

8. To view and individually select the devices in an Occupancy Group, click on the ‘Open’ button on that Group’s icon.

NOTE: You can identify the devices under the selected Group by selecting the Group and clicking on the **Identify** button. See the SmartCast Manager™ ‘Identify’ Feature section for more information on this feature.

The **Identify** button will be enabled only after Group selection is done.

The screen will now display the devices in the opened Group as shown below.

**Figure 74. Selected Device from the group**

Now select the device from the opened Group.

9. Click on the **Add to New Group** button.
10. Click on the **Add** button to add the devices to the selected Group.

You'll see a message confirming the devices were added to the Occupancy Group.

**Figure 75. Device added to the selected Occupancy Group**

**Figure 76. Add to Occupancy Group success response**
All available lighting networks can be seen under the Settings screen.

**Figure 77. Detail of Settings screen with All Devices selected**

To view details of lighting networks and their Switch and Occupancy Groups:

1. Click on the **Settings** menu icon.
2. Click on **All Devices** from the sub-menu.

**Figure 78. Settings screen**

This screen will display the lighting networks and their respective devices.

For each device, the screen displays the Device Icon, Device Type, MAC Address and the Port Number of the switch.
You can also display the available Switch Groups and Occupancy Groups on the lighting network with a device count for each Group.

Figure 79. Switch Group

1. To display the available Switch Groups and device count, click on **Switch Group** from the **Settings** sub-menu.

Figure 80. Occupancy Group

2. To display the available Occupancy Groups and device count, click on **Occupancy Group** from the **Settings** sub-menu.
Basic Information

You can display Basic Information for a device from the All Devices sub-menu on the Settings menu.

Figure 81. Detail of All Devices screen under Settings menu

1. To display the Basic Information of a device, click on the MAC Address text link of the device on the All Devices screen.

Figure 82. Basic Information

The Basic Information of the device includes:

- IP Address
- MAC Address
- Device Type
- Network ID
- Switch Group ID
- Occupancy Group ID
- Primary Firmware Version
- Network Name
- Switch Group Name
- Occupancy Group Name
- Secondary Firmware Version
Diagnostic Information

The Diagnostic Information includes details shown below.

Figure 83. Diagnostic Information

---

Figure 84. Detail of Diagnostic Information
SmartCast Manager™ ‘Identify’ Feature

The SmartCast Manager can be used to identify Lighting Networks, Groups and Devices.

The table below shows the steps for identifying various components in a SmartCast® lighting network. The numbered example shows the steps to identify a single device in the lighting network.

<table>
<thead>
<tr>
<th>To identify</th>
<th>First select from the Settings sub-menu</th>
<th>Next click on</th>
<th>Then click on</th>
</tr>
</thead>
<tbody>
<tr>
<td>All devices in a lighting network</td>
<td>All Devices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A single device in the lighting network</td>
<td>1 All Devices</td>
<td>2 The individual device in the list [shown above] Click Identify on the line</td>
<td>3 The Identify button</td>
</tr>
<tr>
<td>All devices in a Switch Group</td>
<td>Switch Group</td>
<td>One of the available Switch Groups</td>
<td></td>
</tr>
<tr>
<td>A single device in a Switch Group</td>
<td>Switch Group</td>
<td>One of the available Switch Groups, then an individual device</td>
<td></td>
</tr>
<tr>
<td>All devices in an Occupancy Group</td>
<td>Occupancy Group</td>
<td>One of the available Occupancy Groups</td>
<td></td>
</tr>
<tr>
<td>A single device in an Occupancy Group</td>
<td>Occupancy Group</td>
<td>One of the available Occupancy Groups, then an individual device</td>
<td></td>
</tr>
</tbody>
</table>

Once you click the Identify button to trigger the process, a 20-minute timer will start and the selected endpoints will start blinking with a duty cycle of 1 second.

A popup message will display on the screen with a Stop Identifying option.

The popup message will close automatically at the completion of the identification process.

Note: Identify mode will run for 20 minutes unless stopped by the user. If SmartCast Manager™ is turned off while the network is in Identify mode, the last action SmartCast Manager will take is to turn off Identify mode.
Move to Network

An unassigned device can be manually added to an existing lighting network. SmartCast Manager™ will assign the correct Network Name and ID to the device.

The Switch Group and Occupancy Group will remain unassigned until you manually add the device into a Switch Group and an Occupancy Group using the Modify Grouping method.

Figure 86. Available unassigned devices in the VLAN

The following steps will move an unassigned device into the lighting network:

1. Select Unassigned from the Network Setting screen.
2. Click the Move to Network button.

3. Select the new unassigned devices from the popup list. The total count of available devices and count of selected devices will be displayed under the ‘Select’ field.
4. Expand the **Move to Network** dropdown menu to see the list of available lighting networks.

5. Select a lighting network from the dropdown menu.

6. Click on the **Apply** button.

7. The Network will perform an Auto Calibration to integrate the new device and display a Success message.
Auto Calibration

You can use SmartCast Manager’s Auto Calibration feature to recalibrate light fixtures to optimize daylight harvesting.

SmartCast Manager™ first commands the light fixture to turn OFF and then commands the light fixture’s ambient light sensor to take the ‘OFF Calibration’ measurement.

SmartCast Manager then commands the light fixture to turn ON and to take the ‘ON Calibration’ measurement.

To initiate the Auto Calibration process:

1. Click on the Settings menu icon.
2. Click on All Devices from the sub-menu.
3. Select a lighting network from the bottom ribbon of the screen.
4. Click on the ‘Auto Calibration’ button available under the Network screen.
5. After the successful completion of the Auto Calibration command, SmartCast Manager displays a success message in the Response window.

Figure 91. Auto Calibration process
**Device Settings**

SmartCast Manager allows you to edit settings for Occupancy Groups and Switch Groups.

1. Click on the *Settings* menu icon.

2. Click on *Occupancy Group* from the sub-menu.

3. Select an available lighting network and Occupancy Group.

**Figure 92.** Select *Settings* and then select the network

**Figure 93.** Select "Occupancy Group" and then select an Occupancy Group (e.g. Group 1)
Figure 94. Select "Settings" in the Occupancy Group page

4. Select Settings.

SmartCast Manager will open the Device Settings page.
The Device Settings page allows you to configure settings for devices within an Occupancy Group.

The following fields can be edited.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Range of Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Tune Level</td>
<td>Sets the maximum light level for a space per group.</td>
<td>50% to 100%</td>
</tr>
<tr>
<td>Occupancy Timeout</td>
<td>Elapsed time after the last occupancy event before the fixtures transition to an unoccupied state.</td>
<td>1 – 30 minutes</td>
</tr>
<tr>
<td>Occupied Level</td>
<td>Light level during the occupied state.</td>
<td>5 – 100% of maximum fixture light</td>
</tr>
<tr>
<td>Unoccupied Level</td>
<td>Light level during the unoccupied state.</td>
<td>0 – 100% of maximum fixture light (0% = OFF)</td>
</tr>
<tr>
<td>Occupancy Sensitivity</td>
<td>Number of occupancy events required to trigger an occupancy event. The default value of occupancy sensitivity is ‘High’.</td>
<td>High (1 event) Medium (3 events) Low (5 events)</td>
</tr>
<tr>
<td>Daylight State</td>
<td>Enable/disable the functionality of Daylight Harvesting.</td>
<td>Toggles ON/OFF</td>
</tr>
<tr>
<td>Minimum Daylight Level</td>
<td>Lower limit on Daylighting ceiling.</td>
<td>5 – 35 %</td>
</tr>
<tr>
<td>Occupancy Test Mode</td>
<td>Tests the functionality of the sensors in each fixture in the Occupancy Group. Click the Start button to place the group into Occupancy Test Mode. Click the Stop button to end the test mode.</td>
<td>10 – 30 seconds</td>
</tr>
</tbody>
</table>

Table 5. Occupancy settings
Editing the Operating Modes of Switch Groups

Switch Groups have three editable operating modes as defined below. The values for the operating modes are adjusted through the occupancy group settings as described in Table 5.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
<th>When motion is detected in a vacant space</th>
<th>When no motion is detected during the Occupancy Timeout*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupancy Mode</td>
<td>This is the default mode when a wall dimmer is not present in a space.</td>
<td>Light fixtures will go to their Occupied Level (default: 100%).</td>
<td>Light fixtures will go to their Unoccupied Level (default: 0%).</td>
</tr>
<tr>
<td>Manual-ON Mode</td>
<td>Automatically selected when a wall dimmer is present in a space.</td>
<td>Illumination level of light fixtures will not change.</td>
<td>Light fixtures will go to their Unoccupied Level (default: 0%).</td>
</tr>
<tr>
<td>Auto-ON Mode</td>
<td>Optional selection when a wall dimmer is present in the space.</td>
<td>Light fixtures will go to their Occupied Level (default: 100%).</td>
<td>Light fixtures will go to their Unoccupied Level (default: 0%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The wall dimmer can manually turn the light fixtures on or off, and can control the illumination level of the light fixtures.</td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Switch Group Operating Modes  
*The default Occupancy Timeout is 20 minutes.

To edit the Operating Mode settings for a Switch Group:

1. Click on the Settings menu icon.
2. Select **Switch Group** from the sub-menu.

3. Select the Switch Group to be modified.

4. Use the **Mode** drop-down menu to choose an Operating Mode. Available operating modes are Manual-ON and Auto-ON.
The Control Center allows you to set the Light Level and Color Correlated Temperature (CCT) of light fixtures.

1. Navigate to the **Controls** menu to bring up the Control Center.
2. Click on the **Network** button displayed in the ribbon bar at the bottom of the screen. The screen will now display a list of Switch Groups within the lighting network, and the light fixtures within each Switch Group.

The screen auto refreshes every 5 seconds to reflect the current light level and CCT level of individual light fixtures.

**Switch Group**

All the Switch Groups within a lighting network are displayed on the Control Center along with the light fixtures in each Switch Group.

3. After clicking on a Switch Group, the list of light fixtures collapses/expands.

---

**Figure 99.** Control provides remote Dimming Level and Color Temperature adjustments
Switch Group Icons

The ON/OFF icon for the Switch Group has three states:

1. All light fixtures in the Switch Group are ON.
2. All light fixtures in the Switch Group are OFF.
3. At least one light fixture in the Switch Group is ON.

<table>
<thead>
<tr>
<th>Network 1</th>
<th>Dimming</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 100. Detail of Switch Group dimming and color temperature adjustment

Switch Group Sliders

1. Dimming Level Slider for the Group:
   - Displays the current dimming level of the Switch Group queried from the wall dimmer in the Switch Group.
   - After sliding the ‘Dimming’ level slider for the Switch Group, the dimming levels of all the light fixtures will change to match the dimming level of the Switch Group.
   - If the dimming level of the Switch Group is changed via a wall dimmer, the new dimming level will be reflected on this screen within 5 seconds.

2. Color Slider for the Group:
   - The range of this slider is from 3000 to 5000 Kelvin in 100 Kelvin increments.
   - Adjust the Switch Group ‘Color’ slider to change the CCT level of all light fixtures within the Switch Group.
   - The Switch Group ‘Color’ slider will return to the 3000K position after 5 seconds of inactivity.

Note: The Switch Group ‘Color’ slider does not provide a visual indicator of the CCT level of the Switch Group. The slider uses 3000K as a “Home” position since group CCT is not queried by SmartCast Manager™. Individual fixture CCT is queried by SmartCast Manager and is reflected in the expanded group view.
Figure 101. CCT Control shows that each fixture in Group 2 is at 4000K

Individual Light Fixtures

Light Fixture Icons

The individual light fixture icon has two states:

1. The light fixture is ON
2. The light fixture is OFF

Figure 102. Detail of Switch Group dimming and color adjust

Light Fixture Sliders

Light Level Slider

1. After sliding the Light Level slider of an individual light fixture, its light level will be changed, but the position of the Switch Group slider will remain unchanged.

CCT Adjust Slider

2. After sliding the CCT Level slider of an individual light fixture, its CCT level will be changed.
3. If the light fixture does not support CCT, the slider will be displayed in the disabled state.
ADVANCED

WARNING: This section is for advanced users only! Altering advance settings may render the lighting system inoperable. Please contact Cree technical support when interfacing with these tabs in SmartCast Manager™.

Firmware Update

This is the procedure for conducting a firmware update of the endpoints accessible to SmartCast Manager™. The path below on the computer that hosts SmartCast Manager stores the files used for the firmware update procedure.

'\C:\Users\~\AppData\Roaming\Cree\Cree SmartCast® Manager\Firmware Image'

- **Primary.cef**: For the firmware upgrade of the Runtime Engine of the light fixture and wall dimmer
- **Secondary.cef**: For the firmware upgrade of the SmartDriver of the light fixture
- **FirmwareUpgradeApplication.cef**: For the firmware upgrade of the Firmware Upgrade Application of the light fixture and wall dimmer

![Figure 103](image)

Figure 103. Endpoint Firmware are placed in this folder for use by SmartCast Manager

The ‘Firmware Update’ screen displays the list of available lighting networks. By selecting a lighting network and clicking on the Update button, the Firmware Update can be applied to all the available endpoints of that network.
Figure 104. *Firmware Update by network of Firmware Upgrade Application*

Figure 105. *Upgrade of Firmware Upgrade application in progress*
An interruption in the Firmware Update process may corrupt the firmware in endpoints.

Figure 106. Summary report for Firmware Upgrade
### 'Firmware Update' Procedure

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Close SmartCast Manager™.</td>
</tr>
<tr>
<td>2.</td>
<td>Place the following firmware files in the Encrypted Firmware folder to upgrade the endpoints: Primary.cef, Secondary.cef and FirmwareUpgradeApplication.cef.</td>
</tr>
<tr>
<td>3.</td>
<td>Launch SmartCast Manager.</td>
</tr>
<tr>
<td>4.</td>
<td>On the 'Firmware Update' screen, select Network from the list.</td>
</tr>
<tr>
<td>5.</td>
<td>Available Firmware versions for Primary, Secondary and Firmware Upgrade Application are displayed on the page.</td>
</tr>
</tbody>
</table>
| 6.   | The 'Force Upgrade' functionality on this page is required to ENABLE when:  
   a. The Firmware versions of the firmware files in the Encrypted Firmware folder are equal to the firmware in endpoints and endpoints must be overwritten with the firmware files from the Encrypted Firmware folder.  
   b. Firmware versions of firmware files on the Encrypted Firmware folder are lower than that of the firmware in endpoints and endpoints need to be downgraded with the firmware files from the Encrypted Firmware folder. |
| 7.   | 'Select Firmware Type to Upgrade' allows you to select the firmware type to update on the endpoints: Primary, Secondary and/or Firmware Upgrade Application. |
| 8.   | The endpoint firmware should be upgraded in the following order:  
   1. Firmware Upgrade Application  
   2. Primary Application  
   3. Secondary Application |
| 9.   | Click Update to upgrade the endpoints with the local copy of the Firmware files. |
| 10.  | You will get the current firmware upgrade status of the endpoint in the 'Response' section. |
| 11.  | The 'Response' field on this page shows the overall runtime status of the procedure. |
| 12.  | Close SmartCast Manager. |

**Table 7. Firmware Upgrade procedure**

**NOTE:**  
a. Before initiating the Firmware Upgrade process, you should ensure the proper connection of all endpoints to the Cisco switch.  
  b. Do not disturb the cable connection of endpoints and switches during firmware upgrade.  
  c. Do not power OFF the Cisco switch during firmware upgrade.
Firmware Versions

SmartCast Manager™ allows you to see the current firmware versions of the devices in your lighting networks.

To open the Firmware Versions page:

1. Click on the Advanced menu icon.
2. Click on Firmware Versions from the sub-menu.
   
   The Firmware Versions screen will open as shown above. This screen displays the list of available lighting networks.
3. Select a lighting network.
4. Click the Show Versions button.

Figure 107. Firmware Versions page displaying firmware versions of devices in Lighting Network 1
Network Interface Settings

The ‘Network Interface Setting’ screen enables you to switch to another Network Interface.

Follow the steps below to select another Network Interface:

1. Click on the Advanced menu icon.
2. Click on Network Interface Setting from the sub-menu.
3. Select a Network interface.
4. Click the Save button.
5. Click ‘Yes’ to confirm.

SmartCast Manager will then display a progress icon as it updates to the selected network interface.
The Built-In Self-Test (BIST) Report feature provides a quantitative snapshot of the health of the endpoints in the lighting network.

The BIST Report provides data on the following items:

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
<td>Assigned IP address of the endpoint</td>
</tr>
<tr>
<td>Ack</td>
<td>Acknowledgment that the endpoint responded to the query</td>
</tr>
<tr>
<td>Dynamic Erase</td>
<td>Flash erase counter for the Dynamic Settings</td>
</tr>
<tr>
<td>RW Erase</td>
<td>Flash erase counter of the Read / Write Settings</td>
</tr>
<tr>
<td>CDF Erase</td>
<td>Flash erase counter of the CDF configuration data</td>
</tr>
<tr>
<td>OTP Erase</td>
<td>Flash erase counter of one time write data</td>
</tr>
<tr>
<td>Key Pair Status</td>
<td>Checks that the key pair is properly configured</td>
</tr>
<tr>
<td>Key Pair Validation</td>
<td>Checks that the key pair is valid</td>
</tr>
</tbody>
</table>

Table 8. BIST Report components
**Port Control**

The Port Control feature allows you to enable or disable ports using the SmartCast Manager™ instead of physically connecting or disconnecting the endpoints from the ports at the switch.

You can 'shut' or 'no shut' each port to enable or disable the port.

---

![Port Control Screen](image.png)

**Figure 112.** *SNMP Discovery underway after selecting 'Port Control' option from 'Advanced' sub-menu*

To open the Port Control screen:

1. Click on the **Advanced** menu icon.
2. Click on **Port Control** from the sub-menu.

**NOTE:** SmartCast Manager will then initiate SNMP discovery to identify switches and endpoints on the network as shown above. This process will take a minimum of 2 minutes to complete.

The following instructions to enable and disable ports assume you have allowed the SNMP discovery process to complete and see the Port Control screen displayed on SmartCast Manager.
When SNMP discovery completes, SmartCast Manager will display the results on the Port Control screen.

![Port Control Screen](image)

**Figure 113. Detail of the Port Control screen after SNMP resolution**

This screen shows:

1. A list of all switches in the lighting network, with a drop-down menu for each switch to reveal the attached devices (only one switch is shown below with drop-down menu open)
   - the switch port name: the physical location on the switch of each device
2. The switch port number: the logical location on the switch of each device
3. The MAC address of each connected endpoint
4. A description of the type of device connected at a given switch port
5. The operational status of the port: Shut = Off; No Shut = On
**Shutting Switch Port**

The Port Control screen provides you the ability to shut a single port or multiple ports.

When you shut a port, the following actions take place:

- The endpoint connected to that port will go into a powered down state
- The device connected to the shut port will disappear from all the screens of the SmartCast Manager™ (Network Settings, Firmware Upgrade and Master Control Screen)
- SmartCast Manager will no longer display Dashboard savings data for that endpoint

---

**Figure 114. Shutting Switch Port 3**

To shut a port from the Port Control screen, allow SNMP discovery to complete, then follow these steps:

1. Click on the **Shut** button associated with the port you want to disable.
2. Click on **Yes** in order to confirm port shut.

---

**Figure 115. Shut Port success**
SmartCast Manager will display a successful response once the Port status changes to Shut.

3. Now click the Refresh button in order to refresh the Port Control screen.

4. After refreshing, the ‘MAC Address’ field for the shut port will be blank.

5. The ‘Cree Device’ field will display as ‘Unknown’.

Figure 116. Refreshing devices

Figure 117. No data of device connected to Shut Port 3
No Shutting Switch Port

You can also use the Port Control screen to ‘no shut’ a switch port. This will enable the switch port and provide power to the associated endpoint.

### Port Control

<table>
<thead>
<tr>
<th>Switch Port Name</th>
<th>Switch Port</th>
<th>Mac Address</th>
<th>Cree Device</th>
<th>PoE Device</th>
<th>Port Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>gi0/1</td>
<td>1</td>
<td>e00db9051244</td>
<td>PoE Device</td>
<td>Yes</td>
<td>No Shut</td>
</tr>
<tr>
<td>gi0/2</td>
<td>2</td>
<td>e00db9036620</td>
<td>PoE Device</td>
<td>Yes</td>
<td>No Shut</td>
</tr>
<tr>
<td>gi0/3</td>
<td>3</td>
<td>001ec0c773ac</td>
<td>PoE Device</td>
<td>Yes</td>
<td>No Shut</td>
</tr>
<tr>
<td>gi0/4</td>
<td>4</td>
<td>001ec0c77342</td>
<td>PoE Device</td>
<td>Yes</td>
<td>No Shut</td>
</tr>
<tr>
<td>gi0/5</td>
<td>5</td>
<td>001ec0c77351</td>
<td>PoE Device</td>
<td>Yes</td>
<td>No Shut</td>
</tr>
<tr>
<td>gi0/6</td>
<td>6</td>
<td>001ec0c77362</td>
<td>PoE Device</td>
<td>Yes</td>
<td>No Shut</td>
</tr>
<tr>
<td>gi0/7</td>
<td>7</td>
<td>001ec0c77373</td>
<td>PoE Device</td>
<td>Yes</td>
<td>No Shut</td>
</tr>
<tr>
<td>gi0/8</td>
<td>8</td>
<td>001ec0c77384</td>
<td>PoE Device</td>
<td>Yes</td>
<td>No Shut</td>
</tr>
<tr>
<td>gi0/9</td>
<td>9</td>
<td>001ec0c77395</td>
<td>PoE Device</td>
<td>Yes</td>
<td>No Shut</td>
</tr>
<tr>
<td>gi0/10</td>
<td>10</td>
<td>001ec0c773a0</td>
<td>PoE Device</td>
<td>Yes</td>
<td>No Shut</td>
</tr>
</tbody>
</table>

**Figure 118. No Shutting a Port**

Here are the steps to ‘no shut’ a port:

1. Click on the **No Shut** button associated with the shut port you want to enable.
2. Click on **Yes** to confirm port no shut.

**Figure 119. Successful response from no shut command**

3. A successful response will be displayed from SmartCast Manager after the port status has changed to no shut.
4. Click on the **Refresh** button on the right of the Port Control screen.

5. Details of the device on the enabled switch port will be displayed.
About SmartCast Manager™

The About SmartCast Manager screen displays the Product Name, Company Name and Product Version.

To reach the About SmartCast Manager screen:

1. Click on the Advanced menu icon.
2. Click on About SmartCast Manager from the sub-menu.

Figure 122. About SmartCast Manager screen and detail
Network Protection

Protected Features

The SmartCast Manager provides an option to protect network information from unauthorized users. A network can be protected by applying a Network Access Code (NAC) that will be required to gain access.

The following features are protected when the NAC is set:

<table>
<thead>
<tr>
<th>For the feature</th>
<th>You will be prompted to enter the NAC:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>To display Master Control Screen and adjust DIM level and CCT level of the light fixtures.</td>
</tr>
<tr>
<td>Dashboard</td>
<td>To access Power Savings and Health status of devices on a protected lighting network. If all the lighting networks are protected, you will need to enter the NAC for each lighting network.</td>
</tr>
<tr>
<td>Move to Network</td>
<td>To add an unassigned device to a protected lighting network.</td>
</tr>
<tr>
<td>Modify Grouping</td>
<td>To modify the grouping of a protected lighting network.</td>
</tr>
<tr>
<td>Firmware Versions</td>
<td>To see the firmware versions of the devices on a protected lighting network.</td>
</tr>
<tr>
<td>Firmware Update</td>
<td>To update the firmware of endpoints on a protected lighting network.</td>
</tr>
</tbody>
</table>

Table 9. Components of SmartCast Manager protected by NAC

Setting Network Access Code

Steps to protect a network:

1. Click on the Settings menu icon.

2. Select a lighting network from bottom of page

Figure 123. Selecting a lighting network for Network Access Code (NAC) protection
3. Click on **Protect** button available under the lighting network screen.

4. SmartCast Manager will open a dialogue box asking for the new NAC code.

5. Define your NAC and enter the identical code in both boxes.

6. Click on the ‘Set’ button.
Once the NAC is correctly verified, the SmartCast Manager displays a success response.

Figure 126. Protect Network enabled

NOTE: Once you enter the correct NAC for a protected lighting network, you can select the same network again without being prompted for the NAC if the time elapsed between the last entry of the NAC and the current selection is less than 75 minutes.
Resetting Network Access Code

You can reset the NAC by using the serial number of any endpoint connected to the lighting network. The Reset NAC option is only available for the protected lighting networks.

Steps to reset a protected network:

1. Navigate to the ‘Settings’ menu.
2. Select a protected network from the bottom of the page (not shown).
3. Click on the **Reset NAC** button available under the Network screen.
4. Enter the correct serial number of any endpoint connected to the network. This serial number can be found on the driver enclosure of a light fixture.
5. Enter the new NAC and enter it again in the confirmation box.
6. Click on the **Reset** button.

After successful validation, the SmartCast Manager sets the new NAC for the network.
Unprotect the Network

You can remove the NAC from a protected lighting network. The Unprotect option will only be available for the protected lighting networks.

![Network screen showing the Unprotect option for Network 1](image)

**Figure 128. Network 2 is currently protected by a NAC**

![Network screen showing the NAC access code entry](image)

**Figure 129. To access Network 2, enter the NAC**

Steps to unprotect a protected lighting network:

1. Select a protected lighting network from the bottom of the page.
2. Enter the correct NAC.

SmartCast® Manager will then display the Network screen.
3. Click on the 'Unprotect' button available on the Network screen.

4. Click on 'Yes' to confirm.

SmartCast Manager will display a success response confirming the network is unprotected.
**SmartCast Manager™ Mobility**

SmartCast Manager Mobility prevents more than one instance of SmartCast Manager™ from being connected to the same lighting network at the same time.

If an instance of SmartCast Manager is connected to the lighting network and a second SmartCast Manager attempts to connect to the same lighting network:

- A dialog box will appear on the screen of the first (connected) SmartCast Manager asking the user to accept or deny the request sent by the second SmartCast Manager.

- If accepted, control of the lighting network transfers to the second SmartCast Manager and the first instance of SmartCast Manager will close.

- If denied, the first SmartCast Manager retains control of the lighting network.

![Figure 132. Detail of SmartCast Manager Mobility access request](image)

If the first SmartCast Manager denies the request, the second SmartCast Manager receives a notification that access has been denied.

![Figure 133. Detail of SmartCast Manager Mobility notification of denial](image)

By clicking on the OK button, the second SmartCast Manager will be closed.
GROUP APPLICATION EXAMPLES

The following examples provide insights into how SmartCast® PoE lighting groups operate in normal mode.

The application example shown in the figure below contains the Switch and Occupancy Groups that are set identically, as they would be after OneButton™ Setup.

NOTE: Since fixtures 1-4 are in a Switch Group with a wall dimmer, they are in vacancy mode (manual on, auto off).

Application Example 1: In this scenario, assume all light fixtures are ON following OneButton™ Setup. If no one enters the space, the Occupancy Group timeout will determine when the light fixtures in the Occupancy Group turn off. The Group will turn off only after each light fixture has reached its occupancy timeout. Once the Occupancy Group turns off, a 30-second vacancy grace period begins where any occupancy event within the grace period would cause the group to turn back on automatically. However, at the expiration of the grace period, an occupancy event during a fixture OFF period will not automatically turn light fixtures ON. You are required to command the light fixtures to turn on using the wall dimmer.
Application Example 2: In the example shown in the figure above, two Switch Groups are defined within an overlapping Occupancy Group. Based on the Switch Group assignments, light fixtures 1 and 2 are in vacancy mode and light fixtures 3 and 4 are in occupancy mode.

Assuming all lights are on and no occupancy events are observed:

- All fixtures will turn off simultaneously once every light fixture’s occupancy timeout has expired. This initiates a 30-second vacancy grace period for light fixtures 1 and 2. If an occupancy event occurs within this window, all light fixtures in the Occupancy Group will automatically turn on.

- If the grace period expires prior to an occupancy event, the occupancy event will only turn on light fixtures 3 and 4 since they are in occupancy mode (auto on, auto off) and light fixtures 1 and 2 are in vacancy mode (manual on, auto off). To turn light fixtures 1 and 2 on, the wall dimmer must be used.
Application Example 3: A final example is shown above. Again, there are two Switch Groups within an overlapping Occupancy Group. Based on the Switch Group assignments, all light fixtures are in Vacancy mode (manual on, auto off).

Assuming all lights are on and no occupancy events are observed:

- All fixtures will turn off simultaneously once every light fixture’s occupancy timeout has expired. This initiates a 30-second vacancy grace period for all light fixtures. If an occupancy event occurs within this window, all light fixtures in the Occupancy Group will automatically turn on.

- However, at the expiration of the grace period, an occupancy event will not automatically turn light fixtures on since all light fixtures are in Vacancy mode (manual ON, auto OFF). The occupant must turn on the light fixtures using the wall dimmer. Wall dimmer 1 will only turn on light fixtures 1 and 2. Wall dimmer 2 will only turn on light fixtures 3 and 4.
### TROUBLESHOOTING

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Action Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light fixtures do not turn on at full power.</td>
<td>1. Verify that the fixtures are connected to the Cisco Switch.</td>
</tr>
<tr>
<td></td>
<td>2. Verify that the Ethernet cable is good.</td>
</tr>
<tr>
<td></td>
<td>3. Verify that the interfaces on the Cisco Switch are set to static power.</td>
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<td></td>
<td>4. Verify that LLDP run is enabled.</td>
</tr>
<tr>
<td>SmartCast Manager does not complete startup.</td>
<td>Two instances of SmartCast Manager are not permitted within the same VLAN. If a second instance is started, the first instance is notified but the second instance does not complete startup. The first instance must acknowledge the second and allow it into the VLAN before the second instance can complete startup.</td>
</tr>
<tr>
<td></td>
<td>1. Verify that a DHCP server is active and providing IP addresses to the PoE network.</td>
</tr>
<tr>
<td></td>
<td>2. Verify that the host computer is connected to the same VLAN with the fixtures.</td>
</tr>
<tr>
<td></td>
<td>3. Verify that the host computer has an IP address from the VLAN by checking the network interface.</td>
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<td></td>
<td>4. Verify that the UDP ports 55004 and 55007 are open in the Windows® Firewall.</td>
</tr>
<tr>
<td></td>
<td>5. Verify that the Network Sharing Center on the host computer is not set for Public access.</td>
</tr>
<tr>
<td>After OneButton™ Setup, light fixtures within a group do not appear to be at the same dimming level.</td>
<td>Daylight Harvesting is enabled by default to dim to 5%. Each fixture dims independently based on sensed ambient levels. This may cause the light levels of fixtures within a space to be different.</td>
</tr>
<tr>
<td>Light fixtures do not return to full power after a power outage.</td>
<td>This may occur when Fast PoE is configured on the host switch. Fast PoE is a Cisco feature that provides near immediate power to the fixtures when a Cisco switch is first powered up. Reseat the Ethernet cable for the fixture to restore full power.</td>
</tr>
</tbody>
</table>