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1 – About This Document

This document describes how to monitor the health of connected devices with the Lighting Xpert Insight Web application.

The material in this document assumes you are familiar with the WaveLinx Mobile Application User Manual and the WaveLinx Planning and Installation Guide.

Please refer to the Lighting Xpert Configuration Manual for system configuration procedures.

1.1 – Key Terms

The terms listed below are used in this document.

**Alarm** – An error notification that requires an action.

**Application Programming Interface (API)** – A set of clearly defined methods of communication between various software components.

**BACnet** – A communications protocol for Building Automation and Control (BAC) networks

**Event** – A notification, such as a cleared alarm or system event, that does not require any action.

**Insight Manager** – A gateway that aggregates Wireless Access Controller device data.

**Lighting Control System (LCS)** – A computer-based control system installed in a building to control and monitor lighting equipment such as controllers, ballasts, drivers, keypads, and sensors. An LCS consists of hardware and software.

**Wireless Area Controller (WAC)** – An application that coordinates the WaveLinx Mobile App with various WaveLinx devices to provide area, lighting zone configuration, monitoring, and control.

1.2 – Related Documentation

<table>
<thead>
<tr>
<th>Document</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting Xpert Insight Configuration Manual</td>
<td>This manual covers the configuration of Lighting Xpert Insight system, device and user details.</td>
</tr>
<tr>
<td>WaveLinx Planning and Installation Guide</td>
<td>This guide covers the planning, design, set up, and configuration of a WaveLinx System.</td>
</tr>
<tr>
<td>WaveLinx Mobile Application User Manual</td>
<td>This manual covers the use of the WaveLinx Mobile Application to configure the WaveLinx area controllers.</td>
</tr>
</tbody>
</table>
2 – Lighting Xpert Insight Overview

Lighting Xpert Insight (referred to simply as “Lighting Xpert” from this point on) is an enterprise lighting management application. It aggregates data from networked wireless area controllers; exposes the collected data—such as light level, occupancy status—to third-party systems via BACnet/IP and Published API; and enables better facility management by displaying systems alarms and events.

Lighting Xpert is accessed with a Web browser on a desktop that is connected to the LCS network. A desktop view of the Lighting Xpert Operate tab is shown below.

2.1 – Key Features

The key facility management features available in Lighting Xpert include the following:

- **Alarms with Smart Tips** – Allows facility manager to monitor the health of their WaveLinx system and quickly address issues using troubleshooting tips aggregated from Eaton’s insight of its lighting systems. Alarms can also be emailed to facility managers.
- **Published API** – Allows a system integrator to easily integrate networked WaveLinx area controllers with other enterprise systems using the Eaton REST API. Please refer to the Lighting Xpert Insight Published API Datasheet for details.
- **Events** – Allows a facility manager to view all system notifications, including past alarms, and perform sequence of events analysis to better understand system behavior.
- **BACnet/IP Interface** – Allows a system integrator to easily combine networked WaveLinx area controllers with a Building Automation System. The BAS can read and write to the WaveLinx areas/zones via the BACnet interface. Please refer to the Lighting Xpert Insight BACnet Protocol Implementation Conformance Statement (PICS) for details.
- **Demand Response** – Allows facility managers to participate in a Demand Response market by enabling Lighting Xpert Insight to receive a demand response signal via its BACnet interface or Published API, and then broadcast it to WaveLinx Area Controllers.
2.2 – Requirements

Lighting Xpert has been tested with Safari 11+ for iOS devices, Chrome 53+ for Android devices, and Chrome 53+ or Edge for Windows laptops/tablets.

3 – Lighting Xpert Authentication

You must be logged in as Facman or Admin to view, acknowledge, and comment on alarms, and to review events.

2.3 – Roles and Default Accounts

Lighting Xpert has Administrator, Facility Manager and Public roles defined. You can log in as an Administrator ("Admin") or a Facility Manager ("Facman"). The Facility Manager role can perform most, but not all, Lighting Xpert alarm and event management functions. Where Administrator access is required, it is noted at the beginning of the procedure. The following user accounts are provided by default:

- The Facility Manager user name is Facman, with password BXLinx!3
- The Administrator user name is Admin, with password BXLinx!5

2.3.1 – Changing Default Account Passwords

Changing the passwords provided by Eaton for all default accounts is critical for the security of your system. See “Managing Users” on page 20 for instructions on how to do this.

NOTE
You will need the Lighting Xpert IP address, and a login account with the appropriate role and password, to follow these procedures. Lighting Xpert will be hosted on the Insight Manager (Pro, Enterprise or Virtual).

2.4 – Logging in to Lighting Xpert

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Browse to https://&lt;ipaddress&gt;, where &lt;ipaddress&gt; is the IP address of the Lighting Xpert host. The default IP address is 192.168.2.100.</td>
</tr>
<tr>
<td></td>
<td><strong>RESULT</strong></td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Lighting Xpert Login Interface" /></td>
</tr>
<tr>
<td>2</td>
<td>Enter your <strong>User Name</strong> and <strong>Password</strong>, and then click <strong>Login</strong>.</td>
</tr>
</tbody>
</table>

**NOTES**
- After 6 failed attempts to log in, you will be locked out for 15 minutes
- If you cannot locate your username or password, contact your Facility Manager to reset the password
To log out, click **Log Out** in the main menu.
### 3 – Configuring Lighting Xpert

#### 3.1 – System Configuration

This section describes how each System Configuration task is performed.

#### 3.1.1 – Backing Up and Restoring

**NOTE**
You must be logged in as Admin to perform backup and restore tasks.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, then click the <strong>System</strong> tab, and then click <strong>Backup/Restore</strong>.</td>
</tr>
</tbody>
</table>

**RESULT**

<table>
<thead>
<tr>
<th>2</th>
<th><strong>IF you want to…</strong></th>
<th><strong>THEN…</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Back up the LXI configuration on the server</td>
<td>Click <strong>Backup Now</strong>.</td>
</tr>
</tbody>
</table>
|      | Restore from an existing backup on the LXI server | 1. Click the **Restore Backup** button beside the desired backup listed under **Restore From Backup Location**.  
2. Click **Yes** to confirm the operation (See “Discovering All” on page 15 to synchronize the Insight Manager with its controller data after restoring.) |
|      | Restore from a backup file on your local computer | 1. Click **Browse File**.  
2. Locate the backup file.  
3. Click **OK**.  
4. Click **Restore Backup**.  
5. Click **Yes** to confirm the operation (See “Discovering All” on page 15 to synchronize the Insight Manager with its controller data after restoring.) |
|      | **IF you want to…** | **THEN…** |
### 3.1.2 – Configuring BACnet

**NOTE**
You will need the IP address and port number of a BACnet gateway to complete this procedure.

The current version of LXI supports a maximum of 10,000 published areas, zones, input devices, and output devices. The Total Published Objects field will display the number of objects currently enabled after you have saved your configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, then click the <strong>System</strong> tab, and then click <strong>BACnet</strong>.</td>
</tr>
</tbody>
</table>

**RESULT**

![BACnet Configuration Interface](image-url)
2. Click Edit, and then set the BACnet/IP value to Enabled.

   **NOTE**
   Wait for 5 minutes after BACnet/IP is enabled. This allows time for the Epic file to be downloaded.

   **RESULT**

   ![BACnet Settings & Publish Options](image)

   Enter the BACnet port number from the Port list.

   **NOTE**
   The IPv4 address cannot be changed.

3. Has the BACnet configuration has been saved before?
   - If yes, click View Map to display the existing device mapping
   - If no, continue to the next step

4. To expose all BACnet areas for the configured gateway, set Areas to Enabled.

5. To expose all BACnet zones for the configured gateway, set Zones to Enabled.

6. To expose all BACnet input devices for the configured gateway, set Input Devices to Enabled.

7. To expose all BACnet output devices for the configured gateway, set Output Devices to Enabled.

8. Click Save to apply your configuration, or click Cancel to discard it.
### 3.1.3 – Configuring the Date & Time

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, then click the <strong>System</strong> tab, and then click <strong>Date &amp; Time</strong>.</td>
</tr>
</tbody>
</table>

**RESULT**

![Date & Time Configuration Screenshot](https://example.com/date-time-screenshot)

| 2    | Click **Edit**, then select a **Time Zone** from the list, and then select the **Daylight Savings check box** if you want to enable this feature. |

**RESULT**

![Time Zone Selection Screenshot](https://example.com/time-zone-screenshot)

| 3    | Select a format from the **Date Format** list to determine how the date will be displayed. |

| 4    | Select the **Date and Time** source that Lighting Xpert will use as a reference. |

**NOTE**
If you modify the date or time (using **Set Date and Time Manually** or **NTP Synchronization**) the system will restart to apply your changes.

<table>
<thead>
<tr>
<th>5</th>
<th><strong>IF you choose…</strong></th>
<th><strong>THEN…</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Server Time</td>
<td>The system hardware clock will be used and no further configuration is required.</td>
<td></td>
</tr>
</tbody>
</table>
### Step 1: Set Date and Time

Enter the current date and time using the selection lists.

**EXAMPLE**

- Set Date and Time Manually
  - 2017-11-22
  - 09:31

### Step 2: NTP Synchronization

Enter the IP address of an NTP time server.

**EXAMPLE**

- NTP Synchronization
  - NTP Server: 192.168.100.200

### 3.1.4 – Configuring the Email Server

**NOTE**

You will need the IP address and port number of an SMTP (Simple Mail Transfer Protocol) server to complete this procedure. Depending on your SMTP server, you may also need authentication account details.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, then click the <strong>System</strong> tab, and then click <strong>Email</strong>.</td>
</tr>
</tbody>
</table>

  **RESULT**

- **Email Server** tab

  - **Server**
  - **Port Number**
  - **Requires Authentication**

| 2    | Click **Edit**, and then enter the IP address of your SMTP server in the **Server** field. |
| 3    | Enter a valid port number (e.g., 25 or 587) in the **Port Number** field. |
3 – Configuring Lighting Xpert

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Enter the email address that will appear as the sender of the notification emails in the <strong>From Address</strong> box.</td>
</tr>
</tbody>
</table>

**EXAMPLE**

| Email Server | 192.168.1.202 |
| Server       |              |
| Port Number  | 465          |
| From Address | sender@example.com |

<table>
<thead>
<tr>
<th>Requires Authentication</th>
</tr>
</thead>
</table>

| 5    | If your SMTP server requires authentication, select the **Requires Authentication** check box. |

**EXAMPLE**

| Email Server | 192.168.1.202 |
| Server       |              |
| Port Number  | 465          |
| From Address | sender@example.com |

<table>
<thead>
<tr>
<th>Requires Authentication</th>
<th>On</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Username</th>
<th>sender</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Password</th>
</tr>
</thead>
</table>

| 6    | Enter the email account credentials in the **Username** and **Password** fields, and then click **Save**. |

---

www.eaton.com/lightingsystems
3.1.5 – Configuring Email Notification

**NOTE**
There is no limit to the number of email addresses you can add to the notification list.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, then click the <strong>System</strong> tab, and then click <strong>Email Notification</strong>.</td>
</tr>
</tbody>
</table>

**RESULT**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>To add someone to the <strong>Email Notification</strong> list, enter the recipient's email address (e.g., ”<a href="mailto:notify@example.com">notify@example.com</a>”) in the <strong>Email Address</strong> field, and then click <strong>Add</strong>.</td>
</tr>
</tbody>
</table>

**EXAMPLE CONFIGURATION**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>To remove a notification address, select the address in the <strong>Addresses Added</strong> list, and then click <strong>Delete</strong>.</td>
</tr>
</tbody>
</table>
3 – Configuring Lighting Xpert

3.1.6 – Resetting to Factory Configuration

**NOTE**
You must be logged in as Admin to perform a factory reset.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, then click the <strong>System</strong> tab, and then click <strong>Factory Reset</strong>.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Reset Now</strong>, and then click <strong>Yes, Reset Now</strong> to restore the original Lighting Xpert factory settings.</td>
</tr>
</tbody>
</table>
3.1.7 – Configuring the Published API

This procedure generates an Excel spreadsheet (“Public ID template”) with the following details for all configured devices:

- Device name, Building Location, Floor Location, Area, (Device unique) Identifier, Public ID

This can be used when integrating with another building system, by providing IDs that can be used to link an asset that is defined in two different systems.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, then click the <strong>System</strong> tab, and then click <strong>Published API</strong>.</td>
</tr>
</tbody>
</table>

![Image of Published API settings]

**RESULT**

2 | Set the **Published API** to **Enabled** to activate this feature. |

![Image of Published API settings enabled]

**RESULT**

3 | **IF you want to…** | **THEN…** |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Download an XLSX file containing details about the devices exposed through the Published API</td>
<td>Click <strong>Export</strong> to download a XLSX file containing the device details.</td>
</tr>
</tbody>
</table>
3 – Configuring Lighting Xpert

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Import an XLSX file containing the Published API device details</td>
</tr>
</tbody>
</table>

### 3.1.8 – Upgrading

*NOTE*

You must be logged in as Admin to perform a system software upgrade.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, then click the <strong>System</strong> tab, and then click <strong>Upgrade</strong>.</td>
</tr>
</tbody>
</table>

#### RESULT

![Software Upgrade](image)

2. Choose the target system to upgrade in the **Select** list, then click **Browse File** to locate and select a local file for the upgrade.

*NOTE*

The upgrade file must have a “*.tar.gz” file extension to be accepted.

#### RESULT

![Software Upgrade](image)

3. Click **Upgrade Now**, and then click **Yes** for confirm the upgrade operation.

*NOTE*

Everyone who is using Lighting Xpert at this time will be disconnected so the upgrade can be applied.
3.2 – Device Configuration

3.2.1 – Choose an Action Menu

The Choose an Action menu appears on the right side of the Devices page, and provides a range of commands, depending on the context and whether you are logged in as the Admin or Facman account. The list of these commands is described briefly below.

- **Discover Controllers** – Search the entire network for Wireless Area Controllers
- **Discover using IP address** – Search the network for a Wireless Area Controller at a specific IP address
- **Import Controller Database** – Synchronize the data for a selected controller
- **Sync to BACnet** – Repeat the synchronization of controller data to BACnet
- **Server Logs** – Download the IM server logs
- **System Reboot** – Restart the IM

3.2.2 – Discovering All Controllers

When Lighting Xpert is installed, it will automatically scan and import the configured LCS devices from the WaveLinx LMS.

**IMPORTANT**
You must manually synchronize the Lighting Xpert database each time a Wireless Area Controller configuration is modified (or after restoring from a backup). Configuration examples include: adding or removing devices; adding new areas; or moving devices from one zone or area to another.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, and then click the <strong>Device</strong> tab.</td>
</tr>
<tr>
<td>2</td>
<td>Select an Insight Manager from the list on the left.</td>
</tr>
</tbody>
</table>
3 – Configuring Lighting Xpert

3. Select Discover in the Choose an action list in the Details sidebar.

**IMPORTANT**
It will typically take from 5 to 20 minutes to complete the discovery, depending on the size of the database. Please remain on this page until a notification message appears. If you close the browser window or navigate to another LXI section, you will not know if the Discover operation succeeded.

**EXAMPLE SYNC MESSAGE**

![Sync Message Example]

*Tip*
See the “Troubleshooting” that begins on page 31 if you get an unexpected result.

### 3.2.3 – Discovering A Single Controller By IP Address

In some cases, such as when you add a new controller to the network, you may want to discover just that controller instead of the whole network to save time. You can do that using the device’s IP address by following the steps below.

1. Click Setup in the main menu, and then click the Device tab.

**RESULT**

![Controller List Example]

2. Select an Insight Manager from the list on the left.
3. Select **Discover using IP address** from the **Choose an action** menu.

**RESULT**

<table>
<thead>
<tr>
<th>Discover Using IP Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP address</td>
</tr>
<tr>
<td>Port</td>
</tr>
<tr>
<td>Protocol</td>
</tr>
</tbody>
</table>

**NOTE**

The **Port** and **Protocol** fields should not be changed.

**TIP**

See the "Troubleshooting" section that begins on page 31 if you get an unexpected result.

4. Enter the **IP address** of the new device, and then click **Discover**.

**NOTE**

The **Port** and **Protocol** fields should not be changed.

**TIP**

See the "Troubleshooting" section that begins on page 31 if you get an unexpected result.

### 3.2.4 – Importing A Controller Database

You will need to import a controller database when devices connected to that controller are added or removed. You can do that using the **Import Controller Database** command.

1. Click **Setup** in the main menu, then click the **Device** tab, and then expand the Insight Manager.

**EXAMPLE**

![Diagram of Insight Manager with Devices tab expanded]

2. Select a Controller, and then select **Import Controller Database** from the **Choose an action menu** to import all device data.

**TIP**

See the "Troubleshooting" section that begins on page 31 if you get an unexpected result.
3 – Configuring Lighting Xpert

3.2.5 – Editing the Insight Manager Configuration

**NOTE**
You must be logged in as an Administrator to perform out this procedure. That Facman account can use the **Choose an action** list but cannot edit the Insight Manager configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, and then click the <strong>Device</strong> tab.</td>
</tr>
<tr>
<td>2</td>
<td>Select the Insight Manager from the list on the left.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Edit</strong> in the Details sidebar.</td>
</tr>
<tr>
<td>4</td>
<td>Edit the <strong>IP Address</strong>, <strong>Subnet Mask</strong>, <strong>Default Gateway</strong>, and the optional <strong>DNS Server Address</strong> values.</td>
</tr>
</tbody>
</table>

**RESULT**

**NOTE**
A configured DNS Server enables users to use a hostname (e.g., lx1.example.com) or the IP address to access Lighting Xpert.
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>
3 – Configuring Lighting Xpert

3.3 – User Configuration

3.3.1 – Managing Users

NOTE
User configuration is limited to passwords in this release of LXI. Future versions will feature more user management options.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, then click the <strong>Users</strong> tab, and then click <strong>Manage Users</strong>.</td>
</tr>
</tbody>
</table>

RESULT

![Manage Users](image1)

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Username</th>
<th>Role</th>
<th>Expiration Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>Admin</td>
<td>System Administrator</td>
<td>Never</td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>DRUser</td>
<td>Demand Response</td>
<td>06-06-2018 00:00</td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>Facman</td>
<td>Facility Manager</td>
<td>31-05-2018 10:20</td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>Public</td>
<td>Third Party Integration</td>
<td>Never</td>
</tr>
</tbody>
</table>

| 2    | Click a user row to display the **User Details** sidebar. |

RESULT

![User Details](image2)

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Username</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>Admin</td>
<td>System Administrator</td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>DRUser</td>
<td>Demand Response</td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>Facman</td>
<td>Facility Manager</td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>Public</td>
<td>Third Party Integration</td>
</tr>
</tbody>
</table>
3 – Configuring Lighting Xpert

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Click <strong>Edit</strong>, and scroll down to bottom of the <strong>User Details</strong> sidebar.</td>
</tr>
</tbody>
</table>

**RESULT**

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Username</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>Admin</td>
<td>System Admin</td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>DRIUser</td>
<td>Demand Resp</td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>Facman</td>
<td>Facility Mgr</td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>Public</td>
<td>Third Party</td>
</tr>
</tbody>
</table>

**EXEMPLARY**

4 Click **Change Password** to display the password editing form, then edit and confirm the **Password**, and then click **Save**.

**EXAMPLE**

Password should have -
- Minimum 8 and maximum 16 characters.
- Minimum 1 number(s).
- Minimum 1 special character(s).
- Minimum 1 upper case(s).
- No spaces.

Password

Confirm Password

5 Click the appropriate **Password Expires** setting to determine whether or not this user’s password will automatically expire in 3 months.
3 – Configuring Lighting Xpert

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Click <strong>Save</strong> to apply your user configuration changes.</td>
</tr>
</tbody>
</table>

### 3.3.2 – Managing Roles

**NOTE**

The user roles in Lighting Xpert 6.1 are view-only in the current release. Future versions will feature more role management options.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Setup</strong> in the main menu, then click the <strong>Users</strong> tab, and then click <strong>Manage User Roles</strong>.</td>
</tr>
</tbody>
</table>

**RESULT**

<table>
<thead>
<tr>
<th>Role Name</th>
<th>Permissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewer</td>
<td>1 of 11 Permissions</td>
</tr>
<tr>
<td>Third Party Integration</td>
<td>1 of 11 Permissions</td>
</tr>
<tr>
<td>Tenant</td>
<td>2 of 11 Permissions</td>
</tr>
<tr>
<td>System Administrator</td>
<td>9 of 11 Permissions</td>
</tr>
<tr>
<td>IT Administrator</td>
<td>2 of 11 Permissions</td>
</tr>
<tr>
<td>Facility Manager</td>
<td>7 of 11 Permissions</td>
</tr>
<tr>
<td>Demand Response</td>
<td>1 of 11 Permissions</td>
</tr>
<tr>
<td>Third Party Integration</td>
<td>1 of 11 Permissions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Click a role row to display the <strong>Role Details</strong> sidebar.</td>
</tr>
</tbody>
</table>

**RESULT**

<table>
<thead>
<tr>
<th>Role Name</th>
<th>Permissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewer</td>
<td>1 of 11 Permissions</td>
</tr>
<tr>
<td>Tenant</td>
<td>2 of 11 Permissions</td>
</tr>
<tr>
<td>Facility Manager</td>
<td>7 of 11 Permissions</td>
</tr>
<tr>
<td>IT Administrator</td>
<td>2 of 11 Permissions</td>
</tr>
<tr>
<td>System Administrator</td>
<td>9 of 11 Permissions</td>
</tr>
<tr>
<td>Demand Response</td>
<td>1 of 11 Permissions</td>
</tr>
<tr>
<td>Third Party Integration</td>
<td>1 of 11 Permissions</td>
</tr>
</tbody>
</table>
4 – Using Lighting Xpert

This section describes how to view, manage and export WAC alarms and events with Lighting Xpert.

4.1 – The Lighting Xpert Interface
The layout of the Lighting Xpert interface, when logged in and viewing the Alarms list on the Operate tab, is shown below.

4.2 – Accessing Lighting Xpert
To access Lighting Xpert from a desktop computer or mobile device that is connected to the LCS network, browse to https://<ipaddress>:8081. Lighting Xpert will be hosted on the Insight Manager (Pro, Enterprise or Virtual), with a default IP address of 192.168.2.100:8081.

4.3 – Managing Alarms and Events
The following procedure describes how to view, filter, acknowledge, force clear, comment, and display details for alarms and events.

4.3.1 – Alarm States
In Lighting Xpert, an alarm can be in one of the following three states:

- **Unacknowledged Alarm** – An error notification that has not been acknowledged by the user
- **Acknowledged Alarm** – An error notification that has been acknowledged, but is still in the error state and has not yet been moved to the Events list
- **Pre-Cleared Alarm** – An error notification that has returned to normal before acknowledged by the user
4 – Using Lighting Xpert

If you want to… Then…

Display the Alarms page
- Click the **Operate** in the main menu, and then click **Alarms**, or
- Click in the uppermost menu.

Display the Events page
Click **Operate** in the main menu, and then click the **Event Log** tab.

Sort alarm or event data
1. Click the column header that you want to sort by.
2. To reverse the order, click the column header again.

**EXAMPLE – ASCENDING SORT BY SOURCE**

<table>
<thead>
<tr>
<th>Status</th>
<th>Date and Time</th>
<th>Source</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3/12/2017, 3:14 PM</td>
<td>FLT_120_LAMP-1</td>
<td>1003</td>
</tr>
<tr>
<td></td>
<td>3/12/2017, 3:14 PM</td>
<td>FLT_120_LAMP-2</td>
<td>2004</td>
</tr>
<tr>
<td></td>
<td>3/12/2017, 4:14 PM</td>
<td>High_Power_Field_Relay-1</td>
<td>2007</td>
</tr>
</tbody>
</table>

Filter alarm or event data
1. Click in the **Filter Alarms by** or **Filter Events by** field, and then click the specific filter (e.g., **Type**).

**EXAMPLE – PICK FILTER**

2. Click a value to limit the list to rows with that value (e.g., **Eaton DALI**).

**EXAMPLE – PICK TYPE VALUE**
If you want to... Then...

Filter alarm or event data (cont'd)

3. View the list of alarms or events that correspond to the selected filter.

**EXAMPLE — ALARMS FILTERED BY TYPE OF EATON DALI**

<table>
<thead>
<tr>
<th>Source</th>
<th>Address</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>High_Power_Field_Relay</td>
<td>1007</td>
<td>Eaton DALI High Power Field Relay</td>
</tr>
<tr>
<td>High_Power_Field_Relay 2</td>
<td>2008</td>
<td>Eaton DALI High Power Field Relay</td>
</tr>
</tbody>
</table>

Add another filter

Repeat Steps 1 to 3 in the preceding procedure.

Remove a filter

Click the X to the right of the filter value.

**EXAMPLE**

View alarm or event details

Click an alarm or event row to display a sidebar containing Device, Troubleshooting and Event details, along with any Comments that have been saved.

**EXAMPLE**
If you want to... Then...

**Acknowledge a single alarm**

1. Select the row of an unacknowledged alarm.
2. Click the **Acknowledge** button in the alarm details sidebar.

*EXAMPLE*

![Image of Acknowledge function]

**Force clear a single alarm**

1. Select the row of an acknowledged alarm.
2. Click the **Force Clear** button in the alarm details sidebar.

*NOTE*
You must be logged in as an Administrator for this action.

*EXAMPLE*

![Image of Force Clear function]
## If you want to...

<table>
<thead>
<tr>
<th>Action</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledge all alarms on the current page</td>
<td>Click the <strong>Acknowledge Page</strong> button below the alarm data rows.</td>
</tr>
<tr>
<td><strong>EXAMPLE</strong></td>
<td><img src="image" alt="Acknowledgment Page" /></td>
</tr>
</tbody>
</table>

### NOTE

If there is more than one page of alarms, only alarms on the page currently being viewed will be acknowledged.

### Add a comment to an alarm

1. Select the row of an unacknowledged alarm.
2. Scroll down in the sidebar to reveal the Comments section.
3. Click **Edit**.
4. Enter your text in the **Comments** box, and then click **Save**.

**EXAMPLE**

![Comment Box](image)  

### Hide alarm or event details

Click **i** in the upper right corner of the sidebar.

### Show or hide columns in the alarms or events list

1. Click **i** at the right end of the column headings.
2. Select the columns you want displayed, and then deselect the columns you want hidden.
3. Click **Apply**.

**EXAMPLE**

![Column Selection](image)
4 – Using Lighting Xpert

<table>
<thead>
<tr>
<th>If you want to…</th>
<th>Then…</th>
</tr>
</thead>
</table>
| Load new alarms | Click the **Reload** button when it appears at the top of the Alarms tab.  
**EXAMPLE**  
Be sure to use the **Reload** button provided in the message area. The Web browser’s refresh feature, by design, will send you back to the login screen.  
**EXAMPLE**  
[Image of alarm list]

| Check the Lighting Xpert software version | The version appears at the left end of the status bar.  
**RESULT** |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image" alt="Version 6.1.0" /></td>
</tr>
</tbody>
</table>
4.4 – Exporting Alarm and Event Data

The following procedure describes how to export alarm and event data to PDF or Excel files.

**NOTES**
- Comments are not included in the exported data.
- The display or download of a generated PDF or Excel file will depend on the Web browser you are using and how it is configured.

### 4.4.1 – Exporting

<table>
<thead>
<tr>
<th>If you want to...</th>
<th>Then...</th>
</tr>
</thead>
</table>
| Export all alarm data | 1. Browse to the **Alarms** tab.  
2. Remove any **Filters** that have been applied (as described in *Managing Alarms and Events* on page 23).  
3. Click the **Export** button, and the select the format (**PDF** or **Excel**). |

**EXAMPLE**

![Example of exporting all alarm data](image)

| Export a filtered set of alarm data | 1. Browse to the Alarms tab.  
2. Apply one or more **Filters** (as described in *Managing Alarms and Events* on page 23).  
3. Click the **Export** button, and the select the format (**PDF** or **Excel**). |

**EXAMPLE**

![Example of exporting a filtered set of alarm data](image)
4.4.2 – PDF and Excel Examples

The images below show examples of exported Lighting Xpert data in PDF and Excel format.

PDF

Excel
5 – Troubleshooting

This section describes error messages, status messages, and other situations you may encounter while using Lighting Xpert. There are suggested actions provided for each one.

NOTE
If an alarm is shown with a device name of “NA”, the WAC and IM databases are out of sync and should be synchronized.

5.1 – Invalid Password

![Invalid Password Image]

Description
When editing an account password, this error indicates that the password you provided does not meet a system requirement.

Suggested Action
- Confirm that the new password is not the same as any of the previous 10 passwords used for this account.

5.2 – Reset All Passwords to System Default

If you lose your Admin and Facman account passwords, it is possible to reset the system to the factory default passwords by accessing the NUC locally.

IMPORTANT
This will reset the passwords for Public API access, so before proceeding please consider what steps will be required to restore that access if it has been implemented on your system.

What You Will Need
- USB keyboard
- HDMI monitor

Follow the steps below to reset the system passwords.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Connect the keyboard to the USB port on the back of the NUC.</td>
</tr>
</tbody>
</table>
Step | Action
--- | ---
2 | Connect your monitor to a power source, and then connect it to the HDMI port on the back of the NUC. You should see the Console Menu selections shown below.

RESULT

```
Starting init & service: dinit
Process PID is NULL. Service is not running
Port 9001 is alive
Port 9002 is alive
Port 9003 is alive
Port 9004 is alive
Port 9005 is alive
Port 9006 is alive
Latest Build: 31
Service dinit started. PID 4347
Please press Enter to activate this console.

Console Menu:
1) Reset To Defaults
2) Network Configuration / Status
3) Shut Down / Reboot
4) Service Control
5) Console Menu
6) Linux command prompt

RESULT

```

3 | Type “1”, and then press Enter.

RESULT

```
Starting init & service: dinit
Process PID is NULL. Service is not running
Port 9001 is alive
Port 9002 is alive
Port 9003 is alive
Port 9004 is alive
Port 9005 is alive
Port 9006 is alive
Latest Build: 31
Service dinit started. PID 4347
Please press Enter to activate this console.

Console Menu:
1) Reset To Defaults
2) Network Configuration / Status
3) Shut Down / Reboot
4) Service Control
5) Console Menu
6) Linux command prompt

RESULT

```

4 | Type “1”, and then press Enter.

RESULT

```
Starting init & service: dinit
Process PID is NULL. Service is not running
Port 9001 is alive
Port 9002 is alive
Port 9003 is alive
Port 9004 is alive
Port 9005 is alive
Port 9006 is alive
Latest Build: 31
Service dinit started. PID 4347
Please press Enter to activate this console.

Console Menu:
1) Reset To Defaults
2) Network Configuration / Status
3) Shut Down / Reboot
4) Service Control
5) Console Menu
6) Linux command prompt

RESULT

```
Step | Action
--- | ---
5 | Type “Y”, and then press Enter.

RESULT

```
Resetting Default User Passwords
Resetting default Admin password...
Updating 1
Resetting default Faceman password...
Updating 1
Resetting default Public password...
Updating 1
Resetting default Demand Response password...
Updating 1

Done resetting passwords!
Password reset takes effect immediately, no reboot required.
```

6 | Confirm that you are able to login using the default Admin and Facman passwords (see “Roles and Default Accounts” on page 3 for details).

**NOTE**

If your system is providing data through Public API connections, you will have to synchronize the Public account password with any third-party systems that use it.

## 5.3 – No Controllers Found

**Description**

When attempting to discover devices, this message indicates that there were no connected devices found.

**Suggested Action**

- If you believe there is a controller connected, and you know its IP address, try the **Discover using IP Address** command in the **Choose an action** menu.
5 – Troubleshooting

5.4 – No New Controllers Found

Description
When discovering devices, this message indicates that all connected devices have already been discovered, so there are no new ones to add to the system.

Suggested Action
- If you expect to see a controller that does not appear on the Devices page, try the Discover using IP Address command in the Choose an action menu.

5.5 – Error While Discovering Controllers

Description
While attempting to discover controllers, this error indicates there was an issue with the IM system services that prevented the operation from completing.

Suggested Actions
- Try the discovery operation again
5.6 – Error While discovering The Controller Using The IP Address

Description
While attempting to discover a controller by specifying its IP address, this error indicates there was a problem connecting to a controller at that IP address.

Suggested Actions
- Check that the IP address you provided matches the controller you are trying to discover.

5.7 – The Area Controller With The IP Address Has Already Been Discovered

Description
While attempting to discover a controller by specifying its IP address, this error indicates that a controller with that IP address has already been added to the system.

Suggested Actions
- Check that the IP address you provided matches for the controller you are trying to discover.
5 – Troubleshooting

5.8 – No Devices Found

Description
While importing devices on a controller, this message indicates that no connected devices were found.

Suggested Actions
- Confirm that the network is properly connected and then repeat the import operation.

5.9 – No New Devices Found

Description
While importing devices on a controller, this message indicates that all connected devices that were found have already been imported.

Suggested Actions
- N/A
5.10 – Error Importing Devices

Description
While attempting to import devices on a controller, this error indicates there was an issue with the IM system services that prevented the operation from completing.

Suggested Actions
- Try the import operation again.

5.11 – Total BACnet Object Count Exceeds Maximum

Description
While saving BACnet configuration, this error indicates that the number of BACnet objects in the connected controllers exceeds the maximum number supported by Lighting Xpert at this time (10,000).

Suggested Actions
- Disable Areas, Zones, Input Devices, and/or Output Devices until the number of BACnet objects is less than 10,000.
5.12 – Error Syncing The Imported Devices With BACnet

Description
While importing device data, Lighting Xpert attempted to synchronize the data but BACnet was disabled.

Suggested Action
1. Enable BACnet as described in “Configuring BACnet” on page 6.
2. Return to Devices, select the Insight Manager, and then click Sync to BACnet in the Choose an action menu.

5.13 – Invalid File Format (During Backup)

Description
When restoring the system from a local backup file (i.e., a file from your computer), this error indicates that it does not appear to be a valid system backup file.

Suggested Action
- Confirm that the file extension is ".tar.gz" (e.g., "LXI-Backup-2018-03-07-092937.tar.gz")
5.14 – Invalid Update File Name (During Upgrade)

Description
While attempting to upgrade the Lighting Xpert software with a file on your local computer, this error indicates that it does not appear to be a valid upgrade file.

Suggested Action
- Check that the file extension is ".tar.gz" (e.g., "LXI-Backup-2018-03-07-092937.tar.gz")

5.15 – Error Loading The System Setup

Description
After logging in to Lighting Xpert, this error messages that one or more Insight Manager system services are not running.
5 – Troubleshooting

**Suggested Action**
- Wait for a few minutes and try again.
- Reboot the Insight Manager.