Openpath Access Control System Installation Guide

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Openpath Access Control System Installation Guide

GETTING STARTED

This Installation Guide explains how to install and configure Openpath Smart Hubs (ACUs) and Openpath Smart Readers as part of an Openpath Access Control system. This guide includes information about Core Series Smart Hubs and first generation Smart Hubs. For information on the Single Door Controller, refer to the Openpath SDC Install Guide.

ADDITIONAL RESOURCES

- Access Control Core Data Sheet
- 4-Port Board Data Sheet
- 8-Port Board Data Sheet
- 16 I/O Elevator Board Data Sheet
- 24V 4-Door Controller Data Sheet
- 12/24V 4-Door Controller Data Sheet
- 12/24V 8-Door Controller Data Sheet
- 24V Elevator Controller Data Sheet
- Smart Reader Data Sheet
- First Gen Smart Hub Data Sheet
- Openpath User Guide
- Life Safety Power FPV Installation Guide
- Life Safety Power B100 Installation Guide

PRIOR TO INSTALLATION

Prior to installing Openpath hardware, perform a customer site survey to determine the following:

- How many entries need to be configured (e.g. doors, gates, and/or elevator floors)
- Whether you’re using legacy wiring or new wiring
- What kind of electronic entry mechanisms, Request to Exit (REX) mechanisms, and door contact sensors will be used and their power requirements. If your locking hardware requires 24V, either use a Smart Hub with an included 24V power supply (Core Series Smart Hub or OP-4ESH-24V) or use a separate 24V supply.
  - Note: The 12V Smart Hub (OP-4ESH-12V) supports up to 2A for 12V locking hardware.
- Whether you’re providing backup batteries for the ACUs. See SELECTING A BACKUP BATTERY.
- Whether you’re supporting a legacy access control panel. See WIRING TO LEGACY PANELS.
Installation

NETWORK REQUIREMENTS

An Ethernet connection with DHCP must be used to connect the ACU to the Local Area Network (LAN). You also need to configure firewall settings to communicate with the Openpath system. Openpath uses the following outbound ports:

- TCP port 443
- UDP port 123

**Note:** If using an external DNS server, outbound UDP port 53 must also be open.

To support Wi-Fi unlocking from the mobile app, the ACU’s inbound TCP port 443 must be available from within the LAN. Inbound port forwarding on the router, firewall, or NAT device is not required.

SELECTING A BACKUP BATTERY

While not required, Openpath recommends having a backup battery in case of power outages. The size of battery depends on your setup and how long you want to power the system.

**Table 1:** Power requirements for legacy Smart Hubs (12V)

<table>
<thead>
<tr>
<th>Component</th>
<th>Current (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller board</td>
<td>1A</td>
</tr>
<tr>
<td>Smart Reader</td>
<td>0.25A</td>
</tr>
<tr>
<td>Locking hardware (while engaged)</td>
<td>0.25A–0.5A</td>
</tr>
</tbody>
</table>

Assuming a 12V power supply, a Smart Hub configured with four Openpath Readers and locking hardware uses 4 Amps. To keep the system running for 3 hours with all entries engaged, you need 4A x 3 hours = 12AH, so a 12V 12AH sealed lead acid (SLA) or gel cell battery.
Table 2: Power requirements for Core Series Smart Hubs (24V)

<table>
<thead>
<tr>
<th>Component</th>
<th>Current (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Control Core</td>
<td>0.4</td>
</tr>
<tr>
<td>4-Port Board</td>
<td>0.3</td>
</tr>
<tr>
<td>Smart Reader</td>
<td>0.14</td>
</tr>
<tr>
<td>Locking hardware (while engaged)</td>
<td>0.12–0.25</td>
</tr>
</tbody>
</table>

Assuming a 24V power supply, a Core Series Smart Hub configured with four Openpath Readers and locking hardware uses about 2 Amps. To keep the system running for 3 hours with all entries engaged, you need 2A x 3 hours = 6AH, so two 12V 6AH sealed lead acid (SLA) or gel cell batteries wired in series.

MOUNTING INSTRUCTIONS

Openpath Smart Hubs use LifeSafety Power E1 and E2 enclosures. Core Series Smart Hubs are shipped with power supplies pre-installed, but Openpath boards must be installed separately.

To mount the enclosure to the wall:

1. (Optional) Remove the enclosure’s cover
2. Locate the top keyhole mounting holes in the back of the enclosure
3. Mark and pre-drill the locations for the keyholes in the mounting surface
4. Partially install two fasteners appropriate for the surface on which the enclosure is being installed. Leave the heads of the fasteners approximately ¼” out from the surface. Minimum fastener size should be #10 or larger.
5. Hang the enclosure on the two fasteners and mark the locations of the remaining mounting holes
6. Remove the enclosure and pre-drill the locations for the remaining mounting holes
7. Re-hang the enclosure on the top mounting fasteners, install the remaining fasteners and tighten all fasteners
8. Reinstall the enclosure’s cover, if removed in step 1
**INSTALLING CORE SERIES BOARDS IN E1 ENCLOSURE**

1. Mount 4-Port in upper corner of enclosure by snapping board standoffs into holes in back of enclosure
2. Mount Core Board below 4-Port, perpendicular to back of enclosure, by hooking tabs into holes in back of enclosure
3. Mount Elevator/IO Board (if included) below the Core Board using 6–32 screws (insert screws from back of enclosure) with USB port on the left
4. Connect Core Board to 4-Port Board with included USB cable. Connect Core Board to Elevator/IO Board with additional USB cable.
   a. **Maximum recommended USB cable length:** 6 feet (2 meters) or 10 feet (3 meters) if high quality, shielded cable

*Figure 1: E1 Board Placement*
1. Mount 8-Port in upper right corner of enclosure by snapping board standoffs into holes in back of enclosure
2. Mount Core Board with the USB and Ethernet ports facing up as shown in the diagram, and hook the tabs on into the holes in the enclosure and slide to the left to lock in place
3. Connect Core Board to 8-Port with included USB cable
   a. Maximum recommended USB cable length: 6 feet (2 meters) or 10 feet (3 meters) if high quality, shielded cable

Figure 2: E2 Board Placement
INSTALLING CONTROLLER BOARD WITH 24V LOCKING HARDWARE

For a UL Listed System, the standalone Controller Board must be mounted in a LifeSafety Power E1 enclosure with an FPV4 power supply.

**WARNING:** Only connect the Controller Board to 12V. Over voltage can damage the board.

If you purchased the Controller Board separately and are using 24V locking hardware, we recommend using the LifeSafety Power E1 enclosure, FPV4 power supply, B100 secondary power supply, and C4 power control module.

1. Follow all LifeSafety Power instructions for installing the FPV4, B100, and C4 in the enclosure
2. Mount the Controller Board using the provided back plate
3. Connect the B100 secondary supply to the Controller Board
   **IMPORTANT:** Verify that the jumper on the B100 is set to 12V
4. Mount the enclosure according to [mounting instructions](#) above

![Figure 3: First gen 12/24V Smart Hub configuration](image-url)
INSTALLING CONTROLLER BOARD WITH 12V LOCKING HARDWARE

If you purchased the Controller Board separately and are using 12V locking hardware, we recommend using the FPV4-E1 power supply/enclosure.

1. Follow all LifeSafety Power instructions for installing the power supply in the enclosure
2. Mount the Controller Board using the provided back plate
3. Connect the power supply to the Controller Board
   **IMPORTANT:** Verify that the jumper on the FPV4 is set to 12V
4. Mount the enclosure according to mounting instructions above

**Figure 4:** First gen 12V Smart Hub ACU configuration
WIRING OPENPATH READERS

Openpath Readers and ACUs communicate via RS-485. The following wire types are compatible, listed in the order of preference which impacts distance.

- Shielded CAT6A (recommended, additional two pairs can be used for sensors)
- Shielded CAT6
- Shielded RS485 w/22–24AWG (lower gauge, thicker wire is better)
- Shielded CAT5
- Unshielded CAT6
- Unshielded CAT5
- Shielded 22/6
- Unshielded 22/6

Ideally, use one twisted pair for GND and VIN (power) and one twisted pair for +B and -A (data).

**Recommended maximum cable length:** 300 ft (91 m) with CAT6 or 500 ft (152 m) if two wire pairs are used for GND and VIN (power).

**For shielded wiring:** Connect one side of the drain wire (the shield around the wires) to the GND terminal on the ACU. Both the shield and the GND wire can share the same GND terminal. Do not connect the other side of the shield to anything.

**For standard reader installation:** We recommend that you install a 1-Gang 20 CU box in order to flush-mount the reader. Alternatively, the reader may also be surface mounted with the included back plate.

**Note:** For elevators, all relays and readers must be connected to the same ACU. If you need more than four access controlled floors or readers, add the Openpath Elevator Expansion Module. See [WIRING THE OPENPATH ELEVATOR BOARD](#).

**WARNING:** Always remove power from the Smart Hub and locking hardware when wiring readers and other devices. Failure to do so can damage the ACU.
The Core Series 24V 4-Door Smart Hub (4ENT-SYS-24V) uses an FPV4 to power the Core and 4-Port Board.

**Figure 5: 4ENT-SYS-24V Wiring Diagram**
The Core Series 12/24V 4-Door Smart Hub (4ENT-SYS-1224V) uses an FPV4 to power the Core and 4-Port Board, a B100 secondary power supply, and a C4 Control Module to power 12-24V locking hardware.
The Core Series 24V Elevator Smart Hub (20ENT-SYS-24V) uses an FPV4 to power the Core, 4-Port Board, and 16 I/O Elevator Board.

Figure 7: 20ENT-SYS-24V Wiring Diagram
**ELEVATOR BUTTON WIRING**

Interrupt one of the signal wires from each button and run through the C and NC contacts for the corresponding relay on the 16 I/O Elevator Board.

**GENERAL PURPOSE INPUTS**

The general purpose inputs respond to voltages between 3V and 24V. The inputs will not respond directly to a switch or relay connection to ground. To use these inputs with a switch or relay, connect one side of the switch to the input and the other side of the switch to a supply voltage between 3V and 24V. If desired, you can add a 1k ohm resistor in series with the switch.

![Elevator Board Wiring Diagram](Image)

**Figure 8:** Elevator Board Wiring Diagram
The Core Series 12/24V 8-Door Smart Hub (8ENT-SYS-1224V) uses an FPV6 to power the Core and 8-Port Board, a B100 secondary power supply, and a C8 Control Module to power 12–24V locking hardware.

Figure 9: 8ENT-SYS-1224V Wiring Diagram
WIRING WITH THE 12/24V POWER SUPPLY

The 12/24V Smart Hub ACU (OP-4ESH-24V) uses an FPV4 to power 24V locking hardware, a B100 secondary power supply to power the ACU Board, and a C4 Control Module to power 12V locking hardware.

This example contains:

- An Openpath Reader on READER 1 port (also connected to a Wiegand reader, optional)
- A door contact sensor on CONTACT 1 port
- A REX on REX 1 port
- A 24V fail secure door strike on RELAY 3
- A 12V fail safe electromagnetic lock on RELAY 1

Figure 10: OP-4ESH-24V Wiring Diagram
All of this is configured as one Entry in the Openpath Control Center. We recommend matching port numbers (READER 1 with CONTACT 1, for example). When setting up Sites in the Control Center using Quick Start, Entries will default to matching READER 1 with CONTACT 1, RELAY 1, and so on. For more complex Entry setups, you'll need to manually add Controls to the Entry. For the example above, you'd need to add an additional Entry/Exit Hardware Control to the Entry. For more information, refer to the Openpath User Guide.

WIRING THE REX WITH THE DOOR STRIKE

Except where required by fire or safety codes, for convenience you can wire the REX in parallel with the Door Strike on the same Relay output. You can wire additional REXs to the REX inputs on the ACU, as shown in figure 10.

**Figure 11:** Wiring the REX with the Door Strike
WIRING THE REX WITH THE ELECTROMAGNETIC LOCK

For safety-related applications, you must wire the REX directly to the electromagnetic lock. You can wire additional REX switches and sensors to the REX inputs on the ACU, as shown in figure 10.

**Figure 12**: Wiring the REX with the Mag Lock

**UP TO 2A FOR LOCKING HARDWARE**
If any locking hardware requires 24V, use a separate 24V supply.

The Main Output can be switched by the Fire Alarm Interface (FAI). If FAI control of both door strikes and electromagnetic locks is required, an additional output board is required.
WIRING FAIL SAFE AND FAIL SECURE LOCKING HARDWARE

Fail safe and fail secure are ways of configuring locking hardware:

- **Fail safe** hardware *unlocks* when power is interrupted
- **Fail secure** hardware *locks* when power is interrupted

*Figure 13: Wiring Fail Safe and Fail Secure Locking Hardware*

**Note:** Some door strikes can be wired as fail safe and some electromagnetic locks can be fail secure; always check your third-party locking hardware wiring instructions and ensure you’re using the right configuration for your requirements.
Figure 14: Wiring the Openpath Elevator Board to a Standalone Controller
ADVANCED CONFIGURATIONS

CHANGING I/O TYPES

While I/Os on the ACU are labeled REX and CONTACT by default, you can use these I/Os interchangeably or as generic inputs, by modifying their type in the Control Center. You can also change them to Wiegand inputs, which requires a few extra steps. See WIRING TO WIEGAND DEVICES ON CORE SERIES SMART HUBS.

To change input types in the Control Center:

1. Go to control.openpath.com and log in
2. Go to Hardware > ACU Management, then click on the ACU to edit it
3. Click on the Ports tab
4. Click Port next to the input you’d like to repurpose
5. Select a different type from the Input Type dropdown, then click Save

WIRING TO LEGACY PANELS AND MOBILE GATEWAY

To add mobile credential features to a legacy access control system:

1. Install the Openpath ACU between the Openpath Readers and the legacy panel, with the ACU’s Wiegand port (or AUX I/O configured as Wiegand) configured as output to the legacy panel (see Configuring Wiegand Devices in the Control Center).
2. Replace low frequency (LF) Wiegand readers with LF Openpath Readers and high frequency (HF) Wiegand readers with HF Openpath Readers.

In this configuration, the legacy panel controls all locking hardware and entry mechanisms while the Openpath system lets you use the Openpath mobile app, Smart Reader, and Touch/Wave to Unlock functionality. Refer to the Openpath User Guide for more information on configuring Mobile Gateway settings.
WARNING: Do not connect 12V out on the Wiegand port to the legacy panel; doing this will cause voltage backfeeding, potentially damaging one of the supplies.
WIRING TO WIEGAND DEVICES ON CORE SERIES SMART HUBS

The extra Auxiliary I/Os on the 4-Port and 8-Port Boards are helpful for wiring Wiegand Devices, however any I/O pair may be used (including Contact and REX inputs).

![Diagram of OP-EX-4E board showing wiring connections]

**Figure 16**: Wiring a Wiegand Device to a Core Series Smart Hub

To configure Wiegand Devices in the Control Center:

1. Go to control.openpath.com and log in
2. Go to Hardware > ACU Management, then click on the ACU to edit it
3. Click on the Ports tab
4. Click **Port** next to the first input of the I/O pair with a Wiegand device configured (in example 1, **Contact2**; in example 2, **AUX1**)

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5. Select Wiegand Device from the Input Type dropdown, then click **Save**

This will label the subsequent input as Wiegand Device (Extended) and disable it from editing. Inputs cannot be changed if they are already assigned to an entry.

![Table showing input settings in the Control Center]

**Figure 17**: Input settings in the Control Center

Once the Wiegand Device is configured on the ACU, it can be assigned to an entry.

![Image of Wiegand Device configuration in the Control Center]

**Figure 18**: Assigning a Wiegand Device to an Entry

For more information on creating Entries, refer to the Openpath User Guide.

**END-OF-LINE SUPERVISION**

4-Port and 8-Port Board inputs have support for user-installed single or double 1k ohm termination. This lets you monitor cut or shorted lines and create alerts and rules in the Control Center. The input settings in the Control Center must match the physical wiring configurations.

![Diagram showing different EOL configurations and their corresponding Control Center settings]

For more information, refer to the Openpath User Guide.
To configure EOL in the Control Center:

1. Go to control.openpath.com and log in
2. Go to Hardware > ACU Management, then click on the ACU to edit it
3. Click on the Ports tab
4. Click **Cable** next to the port with EOL configured
5. Select the appropriate End of Line Supervision setting from the dropdown, then click **Save**

Troubleshooting

- ACU LEDS
- READER LEDS
- LEGACY WIRING
- RESETTING THE ACU
- PROVISIONING THE ACU

**Figure 19**: EOL configurations and settings
ACU LEDs

Openpath ACUs (Controller Boards/Cores and Expansion Boards) have several LEDs that indicate the following:

- **POWER LEDs** indicate that the board is connected to power
- **RELAY LEDs** indicate when the relays are activated
- **STATUS LEDs** indicate that the ACU has been configured with firmware. It will flash green when **Identify** is pressed in the Control Center.
  - On the 4-Port and 8-Port Boards, the STATUS LED is solid green when it is connected and communicating with the Core, and solid red when there is a connection error
  - If the STATUS LED is solid red, try the following:
    - Power cycle 4-Port/8-Port
    - Unplug and replug USB cable
    - Restart Hardware Communicator in Control Center
The STATUS LED on the Core Board has several states, see **CORE STATUS LED**

- **READER POWER LED**s indicate that the ACU has output power enabled per reader
- **BOARD ID LED**s match the **Expansion Board Number** in the Control Center

**CORE STATUS LED**

The Core’s STATUS LED indicates the following:

- **Solid Green** indicates the Core is provisioned and functioning normally
- **Blinking Red** indicates there is a problem with the Internet connection
- **Solid Cyan** appears when the Core is booting
- **Solid Yellow** indicates that the Core is restoring software; appears when you power on the Core for the first time
- **Blinking Yellow** indicates that the Core is updating software; appears when the Core has been online for less than 24 hours
- **Solid Blue** indicates that the Core has finished booting and is ready for provisioning
- **Solid Purple** indicates that the Core is connected to the Open Admin app
- **Blinking Purple** indicates the Core is ready to connect to the Open Admin app
- **Solid Red** indicates the Core is in an error state—go to the Hardware Dashboard in the Control Center for more information

![Figure 21: Core Status LED Definitions](image-url)

**READER LEDS**

The Openpath Smart Reader’s LEDS indicate the following:
<table>
<thead>
<tr>
<th>Light Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center dot is solid white</td>
<td>Door is locked</td>
</tr>
<tr>
<td>Outer ring is solid white</td>
<td>Door is unlocked</td>
</tr>
<tr>
<td>Center dot quickly switches between multiple colors and outer ring quickly spins once</td>
<td>Reader has just received power</td>
</tr>
<tr>
<td>All lights are off</td>
<td>Reader is not connected to power (check to see if power wires are swapped)</td>
</tr>
<tr>
<td>Center dot is flashing red</td>
<td>Reader is connected to power but cannot communicate with the ACU (check to see if the +B [blue] and -A [violet] lines are swapped)</td>
</tr>
<tr>
<td>Center dot is solid blue</td>
<td>Reader is connected to power and can communicate with the ACU, but has not been configured as an entry in the Control Center</td>
</tr>
<tr>
<td>Center dot is solid green and the outer ring is solid</td>
<td>Reader has been identified via the Control Center</td>
</tr>
<tr>
<td>Center dot is solid purple and the outer ring is solid white</td>
<td>Reader is possibly not receiving enough voltage or current, potentially due to a break in wiring – try connecting the reader directly to the ACU, bypassing any wire runs</td>
</tr>
<tr>
<td>Center dot is solid pink and the outer ring is solid white</td>
<td>Check that +12V IN (orange) hasn’t been swapped with +B (blue) or -A (violet)</td>
</tr>
</tbody>
</table>
LEGACY WIRING

Sometimes legacy wiring (unshielded and straight through, rather than shielded twisted pair, often 22-6) results in slower connections and dropped packets between the Openpath Reader and ACU. To remedy this, you can switch GND and VIN with +B and -A connections on the ACU and readers to ensure the data pair (+B and -A) are using the alternate pair of legacy wires.

RESETTING THE ACU

SOFT RESET

To soft reset the ACU, disconnect power from the ACU, wait 10 seconds, then reconnect the power.

HARD RESET

**WARNING:** Only hard reset the ACU if absolutely necessary and if instructed by Openpath. This will clear all of the data off of the ACU and will require reprovisioning.

**To hard reset the ACU:**

1. Disconnect power from the ACU
2. Hold down the ADMIN BUTTON for 15 seconds
3. While still holding down the ADMIN button, reconnect the power, and continue to hold the button for another 15 seconds. If resetting a Controller Board, you should see two POWER LEDs light up in the top left corner.
4. Wait 15 minutes before [PROVISIONING THE ACU](#)
PROVISIONING THE ACU

Provisioning the ACU means registering it in the Control Center and getting it up and running with the latest firmware. You will need to re-provision in the case of RESETTING THE ACU.

Note: If you’re provisioning ACUs for a customer account, the customer org will need to be created by Openpath first.

REQUIREMENTS

- Meet all NETWORK REQUIREMENTS
- Connect the ACU to the Internet via Ethernet
- Install the Open Admin app
  - iOS App Store
  - Google Play Store
- If using a laptop instead of the app, the laptop must be on the same network as the ACU. If you have a VLAN, make sure the laptop is on the same VLAN as the ACU.
- If using a laptop running Windows or Linux, you must download iTunes. The provisioning process uses Bonjour software that comes with iTunes. Optionally, you can download iTunes and use an archive utility to extract and install only the Bonjour MSI.
CREATE ACU IN CONTROL CENTER

Before you can provision an ACU using the Open Admin app, you must first create an ACU in the Control Center.

To add multiple ACUs with Quick Start:

1. Go to https://control.openpath.com/login and log in
2. Go to Administration > Quick Start
3. Enter a Site Name and any other relevant site information (optional), then click Next
4. Enter how many controllers are located at your Site:
   a. Enter names for the controllers
   b. From the Controller Type dropdowns, select the appropriate types:
      i. **4 Door Controller (OP-AS-01)** — for first gen Smart Hubs
      ii. **Single Door Controller (SDC)**
      iii. **Core Series ACU** — for Core Series Smart Hubs
   c. Enter the number of expansion boards connected to the controllers, then select the types used (Core Series Smart Hubs typically require at least one expansion board):
      i. **Openpath 4-Port Expansion**
      ii. **Openpath 8-Port Expansion**
      iii. **Openpath 16-Port Elevator**
   d. Click Next
5. Enter how many Readers are connected to the controllers and enter names, then click Next
6. Review your Site Details, then click **Confirm & Submit**. It may take a few minutes for setup to complete.

To add one ACU manually:

1. Go to https://control.openpath.com/login and log in
2. Go to Hardware > ACU Management
3. To add a new ACU, click the blue Create ACU button on the top right corner
4. Enter a name for the controller
5. From the Controller Type dropdown, select the appropriate type:
   a. **4 Door Controller (OP-AS-01)** (for first gen Smart Hubs)
   b. **Single Door Controller (SDC)**
   c. **Core Series ACU** (for Core Series Smart Hubs)
6. If your ACU also connects to an expansion board (this is most common with Core Series Smart Hubs), then from the Add Expansion Board dropdown, select and add the appropriate type(s):
   a. **Openpath 4-Port Expansion**
b. **Openpath 8-Port Expansion**
c. **Openpath 16-Port Elevator**

7. A description will appear in green. Click **Save**.
8. At this point, you can create Readers, Entries, and Zones prior to provisioning

**PROVISIONING STEPS**

**To provision the ACU with the Open Admin app (recommended):**

1. Log into the Open Admin app with your Control Center credentials
2. Locate the org to which you’re provisioning hardware, either on the list or using search, then tap on the org name
3. Press the Admin button on the Controller Board or Core
4. In the Open Admin app, tap on the last four digits of the serial number for the ACU
5. Tap **Test Internet Connection** and wait for a green YES to appear before proceeding with the next step
   a. **Note:** This checks if the ACU/SDC can ping [https://api.openpath.com/health](https://api.openpath.com/health)
6. Tap **Provision Device**
7. Tap on the ACU Name that you want to provision to (this is the name of the ACU you created in the Control Center), then tap **Yes** to proceed
8. The app will send notifications when ACU provision state changes from **Unprovisioned** to **Provisioning in progress** to **Provisioning complete**
   a. **Note:** ACU will disconnect from the Open Admin app 5 minutes after first pressing the Admin button

**To provision the ACU with a laptop:**

1. Using a computer that is on the same network as the ACU, go to [https://control.openpath.com](https://control.openpath.com) and log in
2. Go to Hardware > ACU Management
3. Locate your ACU on the list
4. If you don’t see your ACU listed, create a new one:
   a. Click **Add ACU** and enter a name
   b. Click on the **Controller Type** dropdown, select the appropriate type, and add any expansion boards if necessary
   c. Click **Save**
5. On the ACU, press the ADMIN button
6. In the Control Center, click the **Register** button (lightning icon) next to the name of your ACU
7. Click **Yes** to proceed
8. A new window will open, click **Provision**
9. If you see a "This Site Cannot be Reached" error, you need to ping the ACU using the command line:
   a. Open a command prompt and run:
      i. On Windows: `ping oppi.local`
      ii. On Mac or Linux: `ping -c4 oppi.local`
      ● If nothing returns, check your network requirements. See NETWORK REQUIREMENTS.
   b. You should see the ACU’s IP address (either in IPv4 or IPv6 format). Copy the address and return to the error page.
   c. In the URL, delete everything before :8080
      i. If using an IPv4 address, paste before :8080. For example: `192.0.2.0:8080`
      ii. If using an IPv6 address, delete the last two digits and the percentage sign, put square brackets outside the address, and paste before :8080.
      ● Correct: `[a123::b456:5a18:eb8f:7fd6]:8080`
      ● Incorrect: `a123::b456:5a18:eb8f:7fd6%29:8080`
      iii. Hit **Enter**, then click the **Provision** button
      iv. If the Provision button still doesn’t appear, contact Openpath Support at (844) 673-6728 Ext 2 or support@openpath.com.

**NETWORK SETTINGS**

In the Open Admin app, you can configure network settings for the ACU.

**To change network settings:**

1. Connect to the ACU by pressing the Admin button again if needed
2. Tap on **Network Settings**
3. Select **Configure network manually**
4. Configure the network settings as needed — set a static IP address or set a preferred DNS server
5. Tap **Save** on the top right of the screen

**Regulatory**

All national and local electrical codes apply.
UL 294

The following performance levels are defined for the 4-Door Controller and Core Series hardware as per UL 294:

- **Attack:** Level I
- **Endurance:** Level I
- **Line Security:** Level I
- **Standby:** Level I

CAN/ULC 60839-11-1-16 GRADE 1

For C-UL Listed applications, the unit shall be installed in accordance with Part 1 of the Canadian Electrical Code.

FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm should be maintained between the antenna of Openpath Smart Reader(s) and persons during operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- OP-RLF-STD/MULB: FCC ID: 2APJVOPRLF
- OP-RHF-STD/MULB: FCC ID: 2APJVOPRHF
- OP-R2LHF-STD: FCC ID: 2APJVOPR2LHF
- OP-R2LHF-MUL: FCC ID: 2APJVOPR2LHF

IEC 62368-1

- This equipment is intended only for use in a restricted access area.

● PROTECTIVE EARTHING: For safety, the Smart Hub must only be plugged into a grounded 3-prong outlet, wired with a minimum of 16 gauge wire to ground.

RF Radiation Hazard Warning

To ensure compliance with FCC and Industry Canada RF exposure requirements, this device must be installed in a location where the antennas of the device will have a minimum distance of at least 20 cm from all persons. Using higher gain antennas and types of antennas not certified for use with this product is not allowed. The device shall not be co-located with another transmitter.

Installez l’appareil en veillant à conserver une distance d’au moins 20 cm entre les éléments rayonnants et les personnes. Cet avertissement de sécurité est conforme aux limites d’exposition définies par la norme CNR-102 at relative aux fréquences radio.

Industry Canada Notice and Marking

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d’Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d’un type et d’un gain maximal (ou inférieur) approuvé pour l’émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l’intention des autres utilisateurs, il faut choisir le type d’antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l’intensité nécessaire à l’établissement d’une communication satisfaisante.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d’Industrie Canada applicables aux appareils radio exempts de licence. L’exploitation est autorisée aux deux conditions suivantes : (1) l’appareil ne doit pas produire de brouillage, et (2) l’utilisateur de
l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Warnings

- Disconnect power before servicing
- Do not plug into an outlet controlled by an on/off switch
- Powering power supply with 230V requires jumper modification, see power supply data sheet for more information
## Table 3: Technical specifications of Openpath hardware

<table>
<thead>
<tr>
<th>Device</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart Hub with 12/24V Supply</td>
<td>120V, 0.7A or 230V, 0.3A, 50/60 Hz</td>
</tr>
<tr>
<td>Smart Readers (OP-RLF-STD, OP-RHF-STD, OP-RLF-MUL, OP-RHF-MULB, OP-R2LHF-STD, OP-R2LHF-MUL)</td>
<td>12VDC, 0.25A, FCC ID: 2APJVOPRLF, 2APJVOPRHF, 2APJVOPR2LHF</td>
</tr>
<tr>
<td>Standalone Controller Board</td>
<td>10–14VDC, 1A</td>
</tr>
<tr>
<td>16 I/O Elevator Board (OP-16EM)</td>
<td>12–24VDC, 0.35A @ 12V, 0.2 @ 24V</td>
</tr>
<tr>
<td>4-Port Board (OP-EX-4E)</td>
<td>12–24VDC, 0.4A @ 24V</td>
</tr>
<tr>
<td>8-Port Board (OP-EX-8E)</td>
<td>12–24VDC, 0.6A @ 24V</td>
</tr>
<tr>
<td>Access Control Core (OP-ACC)</td>
<td>12–24VDC, 0.4A @ 12V, 0.2A @ 24V</td>
</tr>
</tbody>
</table>