

Altoway

AltoReach User Guide

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Revision history

Revision	Date
Initial release of the AltoReach User Guide.	8/18/2025

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AltoReach User Guide Overview

Thank you for choosing the Altowav AltoReach series for your fixed-point networking solution. This user guide describes installation, configuration and operations of AltoReach devices.

This guide is intended for network and system administrators who will install, configure, and manage Altowav networks using AltoReach devices.

It is assumed readers are familiar with:

- Basic networking concepts.
- Routing and switching in networks.
- Specific network practices, operations and settings at the installation.
- The topology and organization of the network they are managing.

Related documentation

- [AltoReach Quick Start Guide](#)
- Further information about installing Altowav's 60 GHz network devices can be found at <https://support.altowav.com/>.

Additional help

Altowav is committed to providing our customers with high quality technical support.

Web	support.altowav.com
E-mail	support@altowav.com

Installation and configuration

Connect to the AltoReach device

By default, AltoReach devices are configured to have a static IP address of 192.168.0.1.

Note: We recommend that you change the default IP address prior to installing AltoReach radios to guarantee that you are connecting to the expected radio when configuring or monitoring the radio after installation. See [Configure the IP address](#) for information about changing the default IP address.

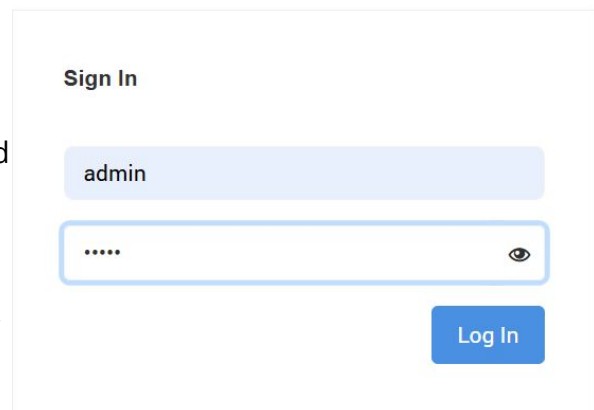
1. Use the supplied PoE injector to power the device:
 - A. Plug an Ethernet cable into the PoE port on the injector.
 - B. Plug the other end of the cable into the ETH0 port on the AltoReach radio.
 - C. Plug the injector's power chord into a electrical outlet.
2. Configure your computer's networking to be a member of the 192.168.0.x subnet and connect the computer to the LAN port of the PoE injector.
3. Access the WebUI by typing 192.168.0.1 in your browser's address bar. The default username and password are:

Username: **admin**

Password: **admin**

4. If you are logging into the radio for the first time, you are prompted to change the password of the radio and select your country.

Note: If you forget the admin user password and no other users with admin privileges are configured, a hardware-based factory reset will be required. See [Factory reset](#) for information about performing a factory reset.



The screenshot shows a 'Sign In' form with two input fields. The first field contains the text 'admin'. The second field contains six dots and a toggle icon (an eye) on the right side. Below the fields is a blue 'Log In' button.

After changing the password, you are prompted to log into the device again.

The WebUI will open to the [Dashboard](#).

Set the Device name, location, and hostname

By default, all AltoReach devices have the same device name (AltoReach) and hostname (aw-altoreach). The device name is used to identify the radio with the [Device discovery tool](#), and the hostname is used for DHCP requests when the device is set to [DHCP client mode](#).

Prior to configuring AltoReach devices, you should change the device name and hostname to unique values.

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Configuration**.
3. Click **System**.
4. For **Device name**, enter a unique device name.
5. Set the **Device location**.

Device name and Device location can be used to describe the physical location and other information about the device. For example:

Device name: Pole1

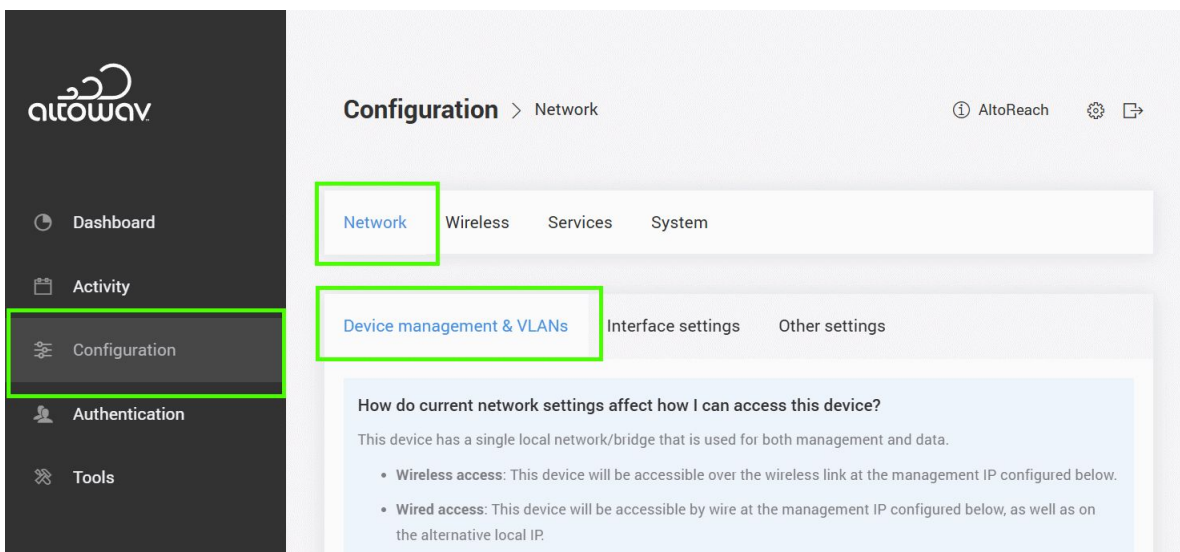
Device location: Parking lot 2, southwest light pole

6. For **Hostname**, set a unique hostname.
7. Click **Save Now**.

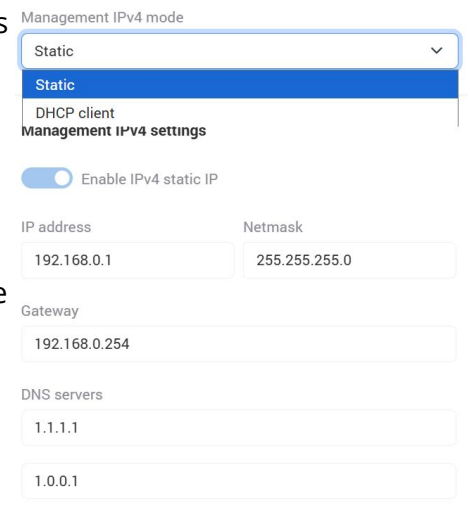
Configure the IP address

All AltoReach devices default to a static IP of 192.168.0.1. You should change the IP address before establishing a link, to ensure that you access the correct radio during maintenance activities. Radios can be configured to use an alternative static IP address, or configured to be DHCP clients and have their IP address assigned by an upstream DHCP server.

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Configuration**.
3. Click **Network**.
4. Click **Device management & VLANs**.



5. Do one of the following:
 - Change the static IP address of the radio:
 1. For **IP address**, type the new static IP address for the radio.
 2. For **Netmask**, change the netmask if necessary.
 3. For **Gateway**, type the IP address of the default gateway.
 4. For **DNS servers**, type the IP addresses of the primary and secondary DNS servers.
 5. Click **Save Now**.
 - Configure the radio as a DHCP client:
 1. For **Management IPv4 mode**, select DHCP client.
 2. Click **Save Now**.



Configure Wireless mode

Wireless mode determines the role that the AltoReach device performs in the network. Device can be have one of four roles:

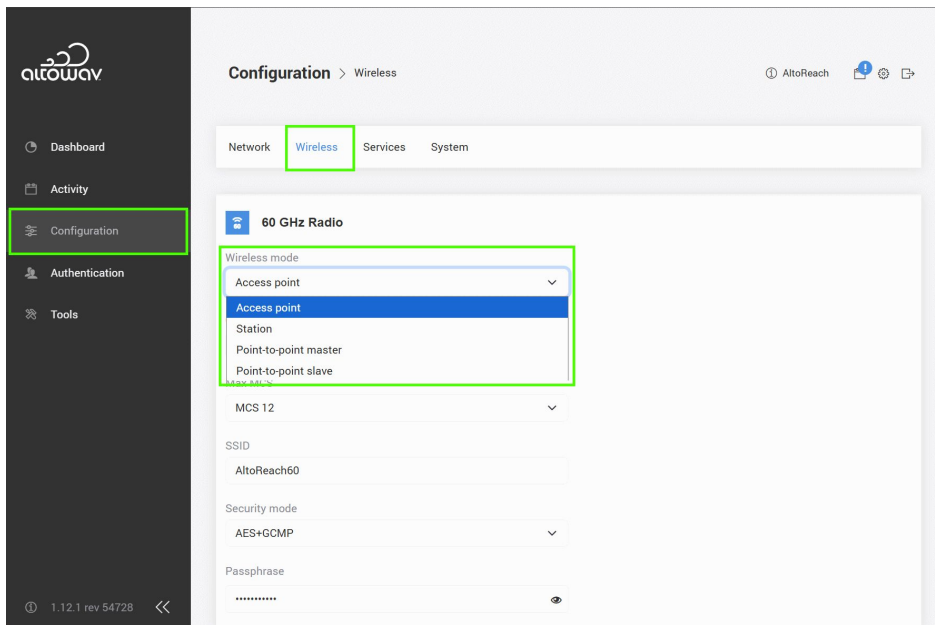
- Point-to-multipoint:
 - **Access point** — The hub of the PtMP network.
 - **Station** — A remote or client node connected to the access point.
- Point-to-point:
 - **Point-to-point master** — The local node connected to the backhaul network.
 - **Point-to-point slave** — The remote node connected to the PtP master.

By default, the AltoReach AP90 is configured in the access point role, and the AltoReach S150 is configured in the station role.

- For point-to-multipoint links using one AP90 and multiple S150s, the radios should be left at their default settings.
 - Any remote AP90s should be set to **Station** mode.
- For point-to-point links, set each device in the pair to **Point-to-point master** or **Point-to-point slave**.

To configure **Wireless mode**:

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Configuration**.
3. Click **Wireless**.
4. For **Wireless mode**, select the appropriate option.
5. Click **Save & Reboot**.



The screenshot displays the AltoReach configuration interface. On the left is a dark sidebar with the AltoWay logo and navigation options: Dashboard, Activity, Configuration (highlighted with a green box), Authentication, and Tools. At the bottom of the sidebar, it shows the version '1.12.1 rev 54728' and a back arrow. The main content area is titled 'Configuration > Wireless' and includes a breadcrumb trail: Network > Wireless (highlighted with a green box) > Services > System. The '60 GHz Radio' configuration page is shown with several settings: 'Wireless mode' is a dropdown menu with 'Access point' selected (highlighted with a blue bar and a green box); 'MCS 12' is a dropdown menu; 'SSID' is a text field containing 'AltoReach60'; 'Security mode' is a dropdown menu set to 'AES+GCMP'; and 'Passphrase' is a text field with masked characters and a visibility toggle. The top right of the interface shows 'AltoReach' and several utility icons.

Create a link

By default, the AltoReach AP90 is set to **Access point** mode, and the AltoReach S150 is set to **Station** mode. As a result, when using an AP90 with one or more S150s, the radios will link automatically. When using different combinations of AltoReach devices, you will need to configure the radios' [Wireless mode](#).

In order for AltoReach devices to form a link, they must have the same **Channel width**, **SSID**, **Security mode**, and **Passphrase**. By default, all AltoReach devices have the same settings for these options. If they are changed on one side of the link, they must be changed on the other side of the link as well. See [Configure the channel](#) and [Configure the 60GHz SSID, Security mode, and Passphrase](#) for further information.

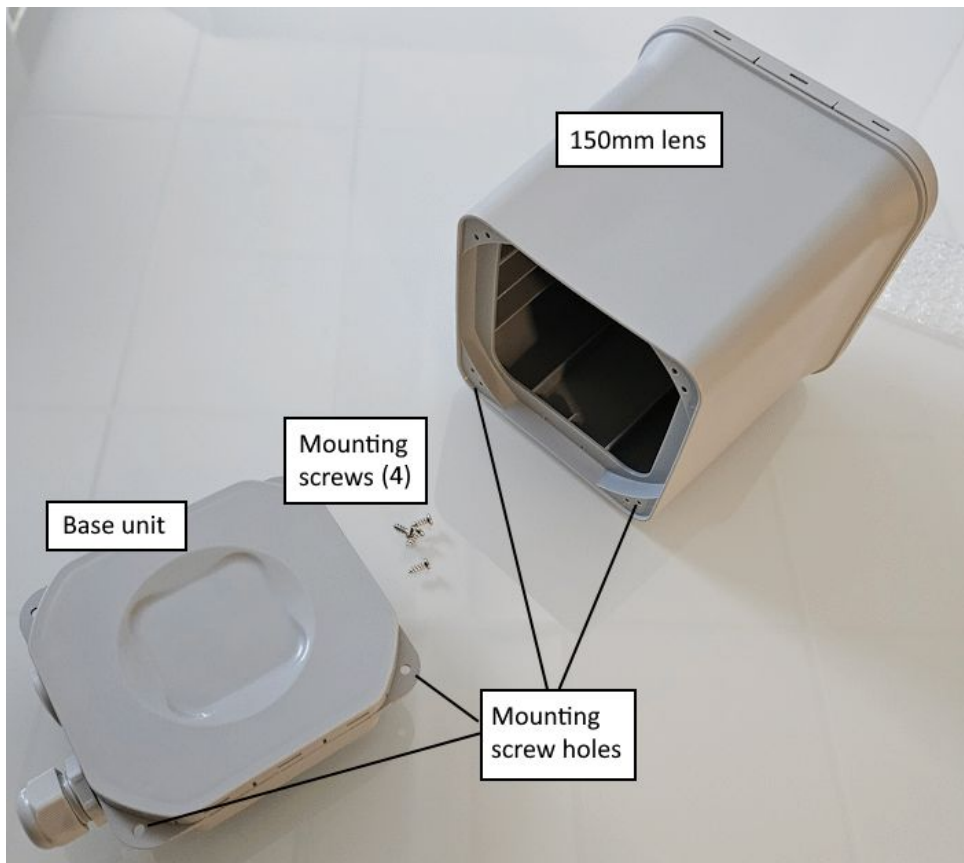
- The status of the link is displayed on the Web UI [Dashboard](#). You can also perform a [speedtest](#) from the dashboard for a station or a point-to-point slave to further test the status of the link.
- [Use the aiming tool](#) to optimize the signal once a station is connected.

Installation

S150 only — Mount the 150 mm antenna to the base unit

The S150 comes with:

- The base unit.
- A 155 mm antenna.
- Four mounting screws.



To mount the 150 mm antenna to the base unit:

1. Place the top of the base unit into the bottom opening of the antenna.
Mounting holes in the base unit should align with mounting holes in the antenna.
2. Use a Philips head screwdriver to attach the base unit to the antenna with the four provided mounting screws.

Install the device

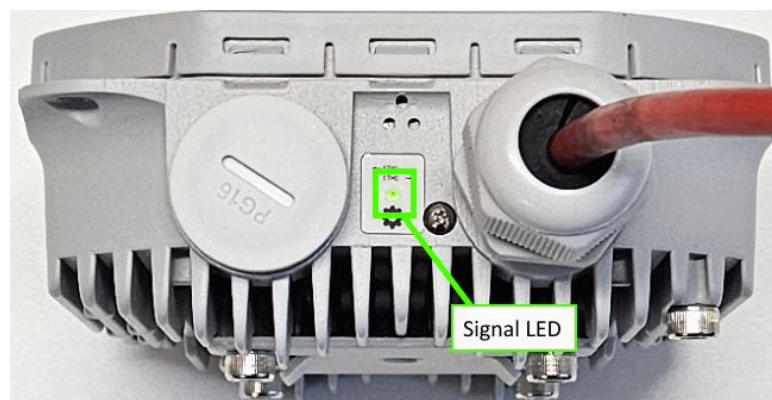
- Install the AltoReach device on a pole or wall with clear line of sight (LoS) between linked devices
- The scan range of the device indicates how close to boresight devices must be installed in order for a link to form.
 - The AP90 has a scan range of 90° azimuth and 50° elevation.
 - The S150 has a scan range of 4° azimuth and 4° elevation.
 - [Use the aiming tool](#) to optimize the signal once a station is connected.
- **Power source:** For outdoor use, the 4 Port 2.5G PoE switch (AltoWav Model AX-PSW-OD-4AT-4C25) is recommended. The outdoor PoE switch can provide power for up to four connected devices. If weatherproof enclosure is available on site and power for only one device is required, the provided 24 W indoor PoE injector can be used.

If a customer-supplied switch is used: Make sure the switch supports LLDP and that it is enabled.

To install the AltoReach device:

1. Attach a ground wire to the ground screw. The ground screw on AltoReach devices is a size M5 8mm screw with a 4mm hex drive.
2. Local codes determine whether grounding is required or optional.
3. Securely mount the device on a pole or wall with clear line of sight (LOS) to other AltoReach radios. Install the devices as close to boresight as possible.
 - Use the mounting bracket (Model number AX-AR-PREC-MT) for a secure mount.
4. Connect to PoE:
 - A. Using the provided IP67 cable gland, install Cat6 cable into the ETH0 Ethernet port of the AltoReach device and the other end into a PoE injector/switch.
 - B. Power up the PoE injector/switch.
5. Verify power.

The Signal LED flashes with a fast blink speed while the AltoReach device is powering up.

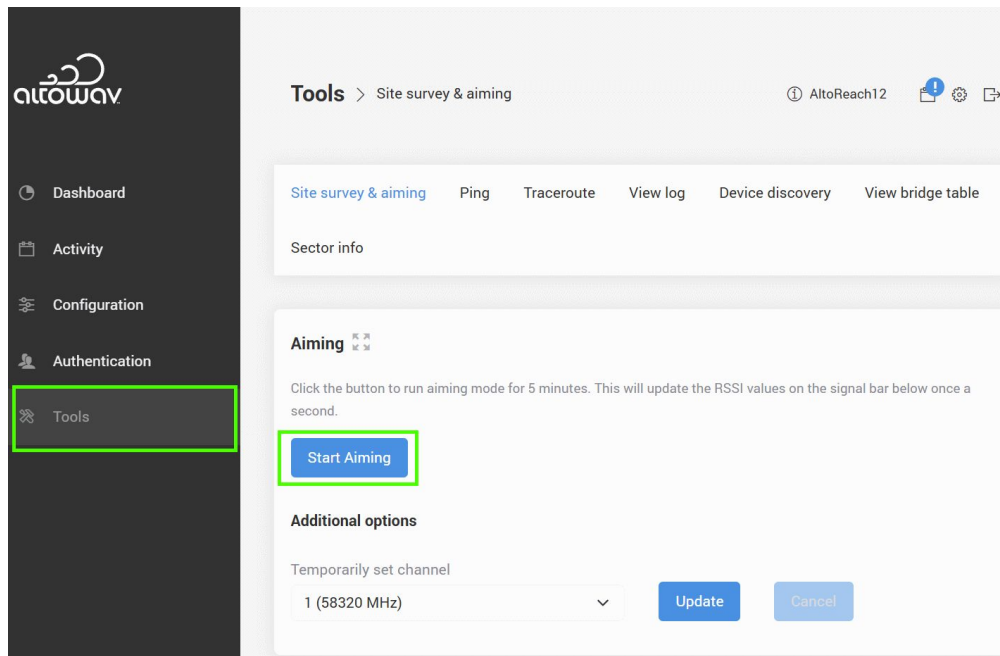


Use the aiming tool to improve device alignment

The aiming tool allows you to receive information about the RSSI signal strength at a faster rate than you will see on the device's dashboard, which helps to align devices in the field for high-quality links.

Note: The aiming tool is only available for devices operating in station or point-to-point mode.

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Tools**.
3. In the **Aiming** section of the **Site survey & aiming** page, click **Start Aiming**.



The device will be in aiming mode for 5 minutes. During this time the RSSI values will be updated once per second. As you aim the device, observe the values displayed here to optimize the link.

4. (Optional) You can also temporarily set the station's channel to a static value. This reduces scanning time when the channel of the access point is already known.
 - A. For **Temporarily set channel**, select the appropriate channel.
 - B. Click **Update**.
5. Click **Cancel** to reset to using automatic channel mode. The device will reset automatically after 20 minutes.

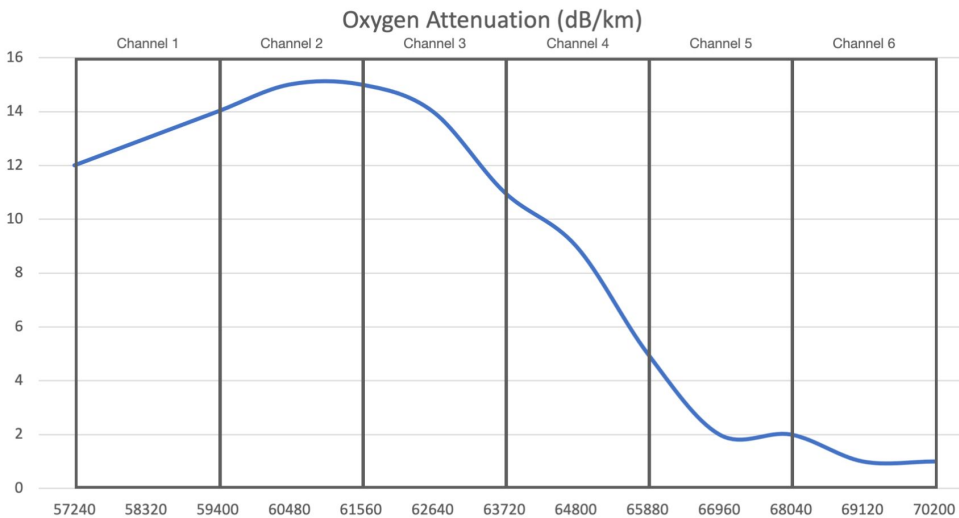
Channels

Channels are a mechanism used by AltoReach devices to avoid interference within the 60GHz spectrum. AltoReach devices use six channels:

Channel	Frequency (mid-point)
1	58320 MHz
2	60480 MHz
3	62640 MHz
4	64800 MHz
5	66960 MHz
6	69120 MHz

Impact of oxygen absorption on channel selection

Oxygen absorption has a significant impact on signal levels in the 60GHz band, and is most significant for channels 2 and 3. Channel 1 is less impacted by oxygen absorption channels 5 and 6 are minimally impacted by oxygen absorption:



This information is useful when planning deployments:

- In high density deployments with shorter links, channels with high oxygen absorption (for example, channel 2) will result in less co-channel interference and will allow for more channel reuse, since the oxygen is reducing the signal quickly past the usable range.
- For deployments with longer links, lower oxygen absorption in the upper channels (particularly channels 5 and 6) allows for longer connections.

Configure the channel

Note: Channel configuration is only performed on devices functioning in access point or point-to-point master mode. Devices functioning in station mode or point-to-point slave mode inherit the channel setting from the access point or point-to-point master they are linked to.

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Configuration**.
3. Click **Wireless**.
4. For **Channel**, select the appropriate channel.
5. Click **Save Now**.

Configure the 60GHz SSID, Security mode, and Passphrase

AltoReach devices use the **SSID** and **Passphrase** to establish connections to other AltoReach devices. The **Security mode** enables encryption over the link.

By default, AltoReach devices have the following settings:

Parameter	Default setting
SSID	AltoReach60
Security mode	AES+GCMP
Passphrase	AltoReach60

In order to establish wireless communication, the access point/point-to-point master and remote devices must have the same settings for each of these options.

For the purpose of establishing an initial link, leave these at the default settings until links are established. Change these values after links are established.

To change the SSID, Security mode, and Passphrase:

Note: To ensure connectivity, change these settings for any connected remote devices prior to changing them on the access point or master.

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Configuration**.
3. Click **Wireless**.
4. For **SSID**, type the new SSID.
5. For **Security mode**, select either **AES+GCMP** or **Open**.
6. For **Passphrase**, type the new passphrase.

Using the WebUI

Log into the WebUI as described in [Connect to the AltoReach device](#). The WebUI opens to the Dashboard. You can also view:

- [Activity](#)
- [Configuration](#)
- [Authentication](#)
- [Tools](#)

Dashboard

The device dashboard shows the overall status of your device:

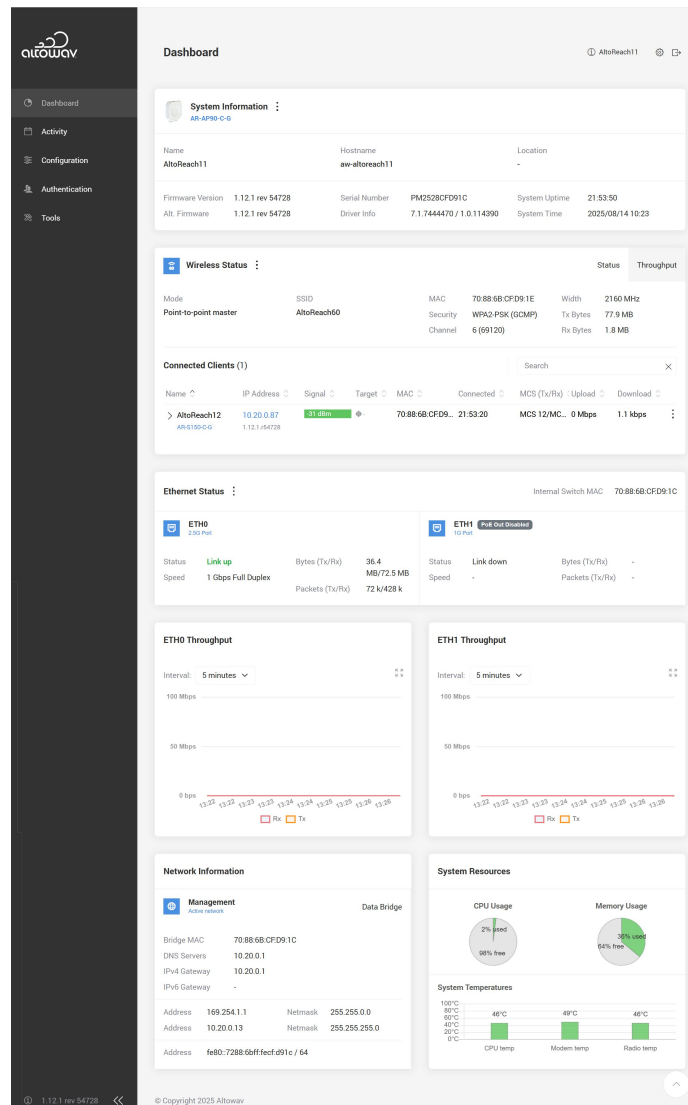
- [System information](#)
- [60GHz Wireless status](#)
- [Ethernet status](#)
- [ETH0 throughput](#)
- [Network information](#)
- [System resources](#)

For each widget that has configuration activities associated with it, users with admin permissions can click the menu icon (☰) next to the widget name and select **Configure** to change to the applicable configuration page.

System information

This section will show you information about your device, including:

- Device name, hostname, and location.
- The firmware version running on the active bootbank, and the firmware version stored in the alternate backup bootbank.
- The device's serial number.
- 60GHz driver and antenna config versions. These fields are mainly used for debug purposes.



- Device uptime since last reboot.
- Current system time: this is the device's current date and time. Timezone (where applicable) and other time settings are configurable from the [System settings page](#).

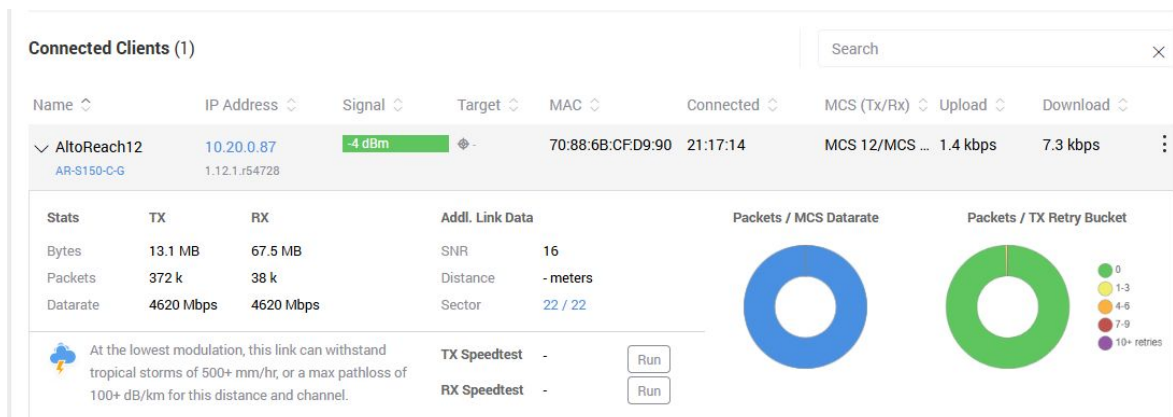
60GHz Wireless status

Different information is displayed on the **Wireless status** widget, depending on whether the device is in access point/point-to-point master mode, or station/point-to-point slave mode.

Access point/master

The **Wireless status** widget for an access point or point-to-point master displays the following:



- **Mode** — The [wireless mode](#) of the device.
- **SSID** — The [60GHz SSID](#) used by the 60GHz wireless connection.
- **MAC** — The MAC address of the wireless interface.
- **Security** — The [Security mode](#) being used by the 60GHz wireless connection.
- **Channel** — The [frequency channel](#) being used by the 60GHz wireless connection.
- **Width** — The channel width.
- **Tx Bytes** and **RX Bytes** — The total transmitted and received bytes.
- **Connected clients** — Information about any stations or the point-to-point slave connected to the device.
 - You can connect to the WebUI of the station or slave by clicking the listed IP address.
 - Click the menu icon (☰) to the right of the client and select **Kick client** to remove an active link to a connected station or slave. This can be useful when using station connection profiles to force your station to connect to a different AP.
 - Click the arrow (➤) to the left of the client to expand information about the client.



Connected Clients (1)

Name	IP Address	Signal	Target	MAC	Connected	MCS (Tx/Rx)	Upload	Download
AltoReach12 AR-S150-C-G	10.20.0.87 1.12.1.1:54728	-4 dBm		70:88:6B:CFD9:90	21:17:14	MCS 12/MCS ...	1.4 kbps	7.3 kbps

Expanded Client View:

Stats	TX	RX	Addl. Link Data		Packets / MCS Datarate	Packets / TX Retry Bucket
Bytes	13.1 MB	67.5 MB	SNR	16		
Packets	372 k	38 k	Distance	- meters		
Datarate	4620 Mbps	4620 Mbps	Sector	22 / 22		

At the lowest modulation, this link can withstand tropical storms of 500+ mm/hr, or a max pathloss of 100+ dB/km for this distance and channel.

TX Speedtest:

RX Speedtest:

In the expanded client display, you can:

- Click the **Sector** link to open the [sector map](#).

- Click **Run** next to **TX Speedtest** or **RX Speedtest** to perform speedtests for the link.
- See [Station/slave](#) for information about other fields in the expanded client display.



Station/slave

The **Wireless status** widget for an station or point-to-point slave displays the following:

- Connection status:
 - Signal strength
 - SSID
 - Connection time
 - Distance
 - MCS datarate
 - The system observes the link's traffic during the 5 minute interval, and determines how many packets were sent for each MCS rate.
 - Lower MCS rates have a lighter yellow color, and turn darker blue the higher the rate.
 - Packet retries
 - The system observes the link's traffic during the 5 minute interval, and determines how many packets were retried.
 - Retried packets are categorized into buckets based on the number of retries. If a large number of packets are reported as requiring multiple retries, check the link for obstructions. If there are no obstructions, it's possible that there are problems with reflections. See [Troubleshooting your link](#) for more information.
- Speedtest
 - Click **Run** next to **TX Speedtest** or **RX Speedtest** to perform a transmit or receive speedtest on the link.
 - Note:** The speedtest tool pushes small burst of packets across a link, so running it will not have any noticeable effect on customer traffic, nor on the wireless throughput graph.
- Link availability — Describes the predicted allowed rain that the link and channel can withstand at MCS1.
- Information about the access point or point-to-point master that this station or slave is connected to.
 - You can connect to the WebUI of the access point or master by clicking the listed IP address.

Throughput

Click **Throughput** to display the link throughput in chart format. You can change the interval that the chart uses to display the data; intervals greater than five minutes can be minimum, maximum or average received or transmitted bytes.



Click the **Maximize** icon () to display the chart in full screen mode. Click the **Minimize** icon () to return to regular view.

Ethernet status

Provides status of the Ethernet port: Link status, speed, transmitted amounts and speed.

ETH0 throughput

Provides throughput of the Ethernet port. You can change the interval that the chart uses to display the data; intervals greater than five minutes can be minimum, maximum or average received or transmitted bytes.

Click the **Maximize** icon () to display the chart in full screen mode. Click the **Minimize** icon () to return to regular view.

Network information

Provides information related to the Network configuration of the data bridge:

- Bridge MAC address
- IPv4 addresses of DNS servers
- IPv4 and IPv6 address of the network gateway
- Bridge IPv4 and IPv6 addresses
- Netmask settings

System resources

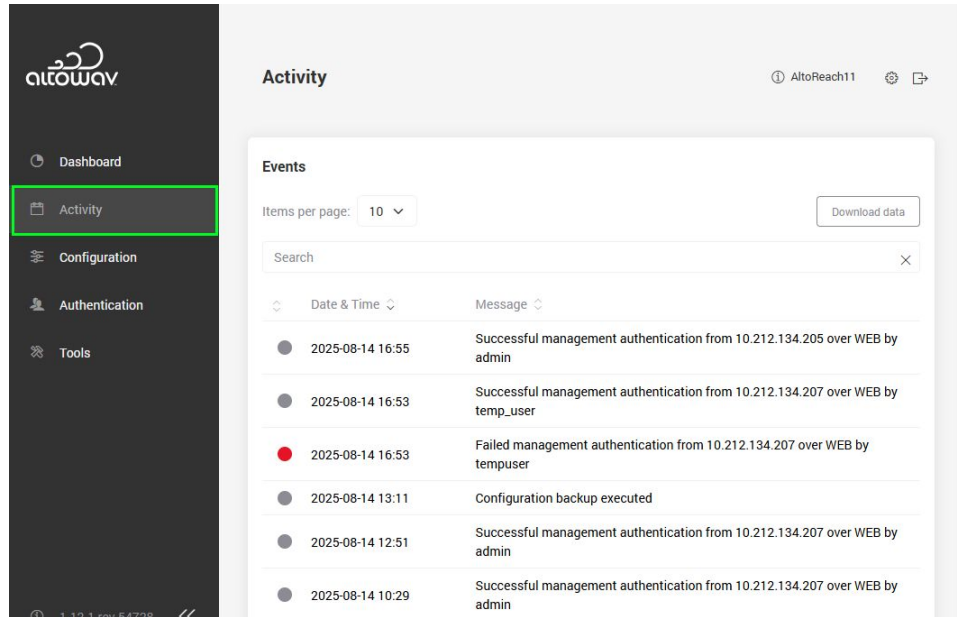
Displays CPU and memory usage, and system temperature.

Activity log

The **Activity** page displays the event log.

Click **Download** data to download a text version of the activity log.

The search field allows you to type a search string to search the activity log.



The screenshot shows the AltoReach user interface. On the left is a dark sidebar with the AltoWay logo and navigation menu items: Dashboard, Activity (highlighted with a green box), Configuration, Authentication, and Tools. The main content area is titled 'Activity' and features a search bar, a 'Download data' button, and a table of events. The table has two columns: 'Date & Time' and 'Message'. The events listed are:

Date & Time	Message
2025-08-14 16:55	Successful management authentication from 10.212.134.205 over WEB by admin
2025-08-14 16:53	Successful management authentication from 10.212.134.207 over WEB by temp_user
2025-08-14 16:53	Failed management authentication from 10.212.134.207 over WEB by tempuser
2025-08-14 13:11	Configuration backup executed
2025-08-14 12:51	Successful management authentication from 10.212.134.207 over WEB by admin
2025-08-14 10:29	Successful management authentication from 10.212.134.207 over WEB by admin

Configuration

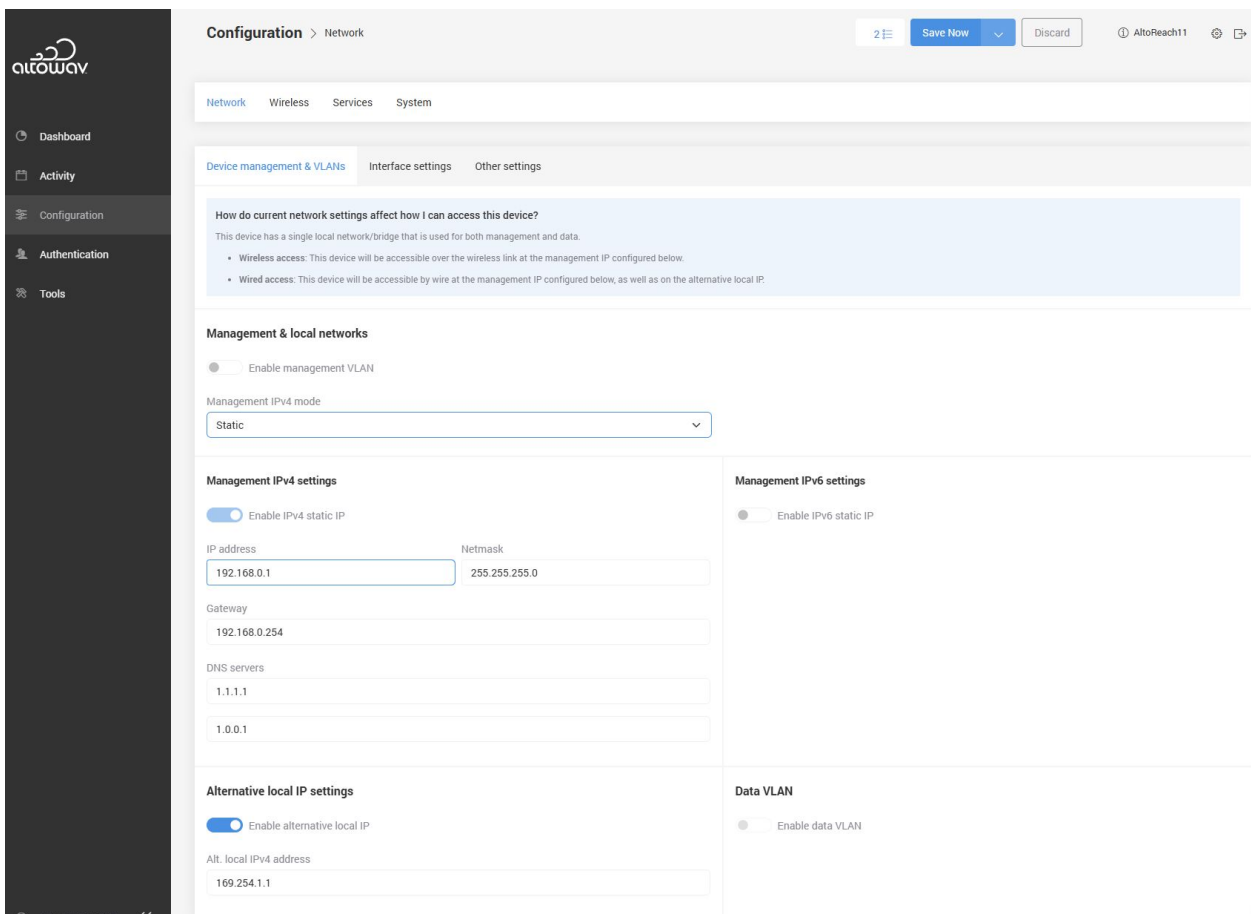
This section contains the following information:

- [Network](#)
- [Wireless](#)
- [Services](#)
- [System](#)

Network

To configure network settings for the AltoReach device:

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Configuration**.



3. To use a management VLAN for the device, toggle on **Management IPv4 mode**. The default is off.
 - A. For **Management VLAN ID**, type the VLAN ID of the management VLAN . The default is **100**.

4. For Management IPv4 mode, select either **Static** or **DHCP client**.
 - If **Static** is selected:
 1. Toggle on **Enable IPv4** and/or **IPv6 static IP**.
 2. Type the **IP address**.
 3. Type the **Netmask** (IPv4) or **Prefix** (IPv6).
 4. Type the IP address of the **Gateway**.
 5. Type the IP addresses of the primary and secondary **DNS servers**.
 - If **DHCP client** is selected:
 1. Type the **Fallback IPv4 address**. This is the IP address that will be used by the device if it does not receive an IP address from an upstream DHCP server.
 2. Type the **Management IPv4 netmask**. This is the subnet mask that will be used by the device if it does not receive a subnet mask from an upstream DHCP server.
 3. Toggle on **DHCP broadcast** to request replies from the DHCP server to DHCP broadcast requests.
 4. Toggle on **Custom DNS** to enter the domain name servers the device will use. Type the IP addresses of the primary and secondary **DNS servers**.
5. If management VLANs were enabled in step 3:
 - A. in **Management VLAN data bridge settings**, click to **Enable static IP on data bridge**.

This will allow you to have access to the Web UI over the data bridge as well as the management VLAN network. This can be helpful during installation, when the installer is not using the management VLAN. Once the installation is complete, this can be turned off.
 - B. Type the **Data bridge IPv4 address**.
 - C. Type the **Data bridge IPv4 netmask**.
6. For **Alternative local IP settings**, Click to **Enable alternative local IP**.

This allows an additional IPv4 alias on the device's local management network (169.254.x.x). When the management VLAN is enabled at the same time as local IP, the local IP address will be set on the non-VLAN bridge, to ensure that the WebUI is locally accessible from a device that is not on the VLAN.

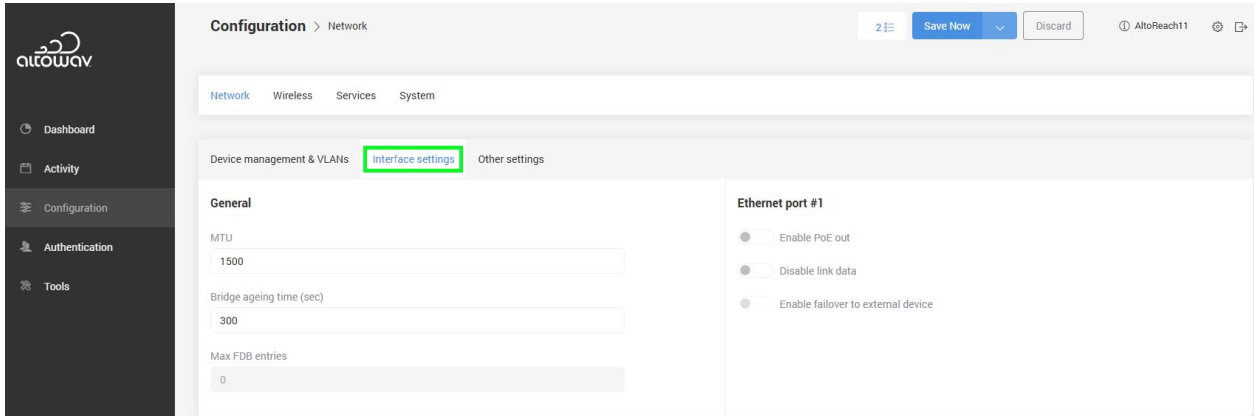
 - A. Type the **Alternative local IPv4 address**.
7. Stations and point-to-point slaves only: In **Data VLAN**, toggle to **Enable data VLAN**.
 - A. For **Data VLAN ID**, type the VLAN ID.
 - B. For **Data VLAN Protocol**, select the appropriate VLAN protocol.

When this option is enabled:

- Packets from the wireless link that have the specified VLAN ID will have the VLAN tag removed when they are transmitted to the Ethernet port.

- Packets from the Ethernet ports will have the specified VLAN ID added to them when they are transmitted over the wireless link.

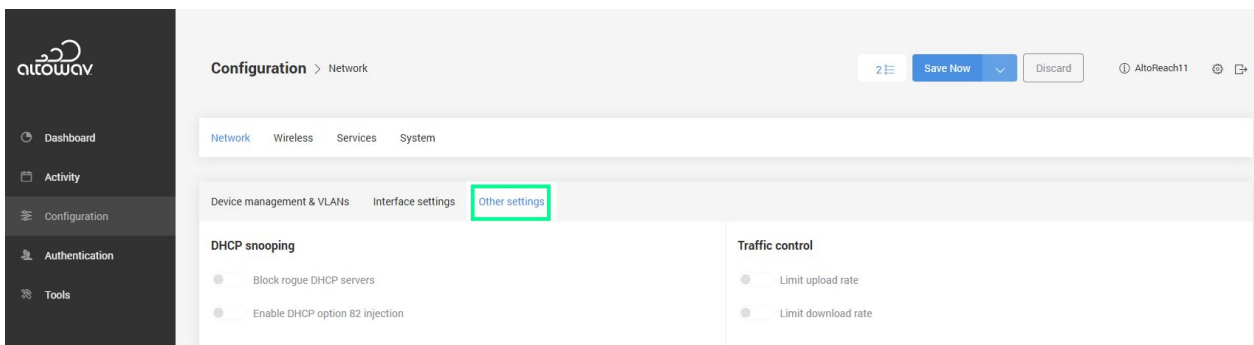
8. Click **Interface Settings**.



9. For **MTU**, type the maximum transmission unit setting.

10. For **Bridge ageing time (secs)**, type the number of seconds that a MAC address will stay in the bridge forwarding table. Set to **0** to disable aging.

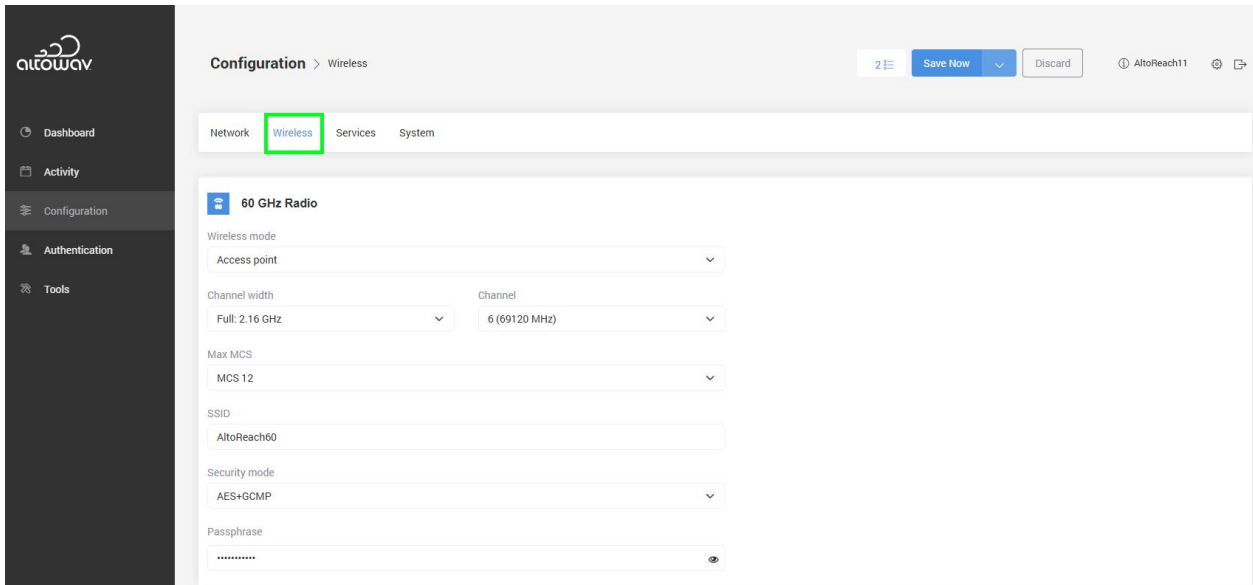
11. Click **Other settings** to configure settings for **DHCP snooping** and **Traffic control**.



Wireless

To configure wireless settings for the AltoReach device:

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Configuration > Wireless**.



3. Select the **Wireless mode**.

Wireless mode determines the role that the AltoReach device performs in the network. Device can be have one of four roles:

- Point-to-multipoint:
 - **Access point** — The hub of the PtMP network.
 - **Station** — A remote or client node connected to the access point.
- Point-to-point:
 - **Point-to-point master** — The local node connected to the backhaul network.
 - **Point-to-point slave** — The remote node connected to the PtP master.

By default, the AltoReach AP90 is configured in the access point role, and the AltoReach S150 is configured in the station role.

- For point-to-multipoint links using one AP90 and multiple S150s, the radios should be left at their default settings.
 - Any remote AP90s should be set to **Station** mode.
- For point-to-point links, set each device in the pair to **Point-to-point master** or **Point-to-point slave**.

4. For **Channel width**, leave at **Full: 2.16 GHz**.
5. For **Channel**, select the channel. See [Configure the channel](#) for more information.

6. For **Max MCS**, select the maximum allowed MCS.

When aiming devices, it may be useful to set this to MCS 9, to have a more stable signal.

7. For **SSID**, **Security mode**, and **Passphrase**, see [Configure the 60GHz SSID, Security mode, and Passphrase](#) for details.
8. (Stations only) **Station Profiles** are disabled by default.

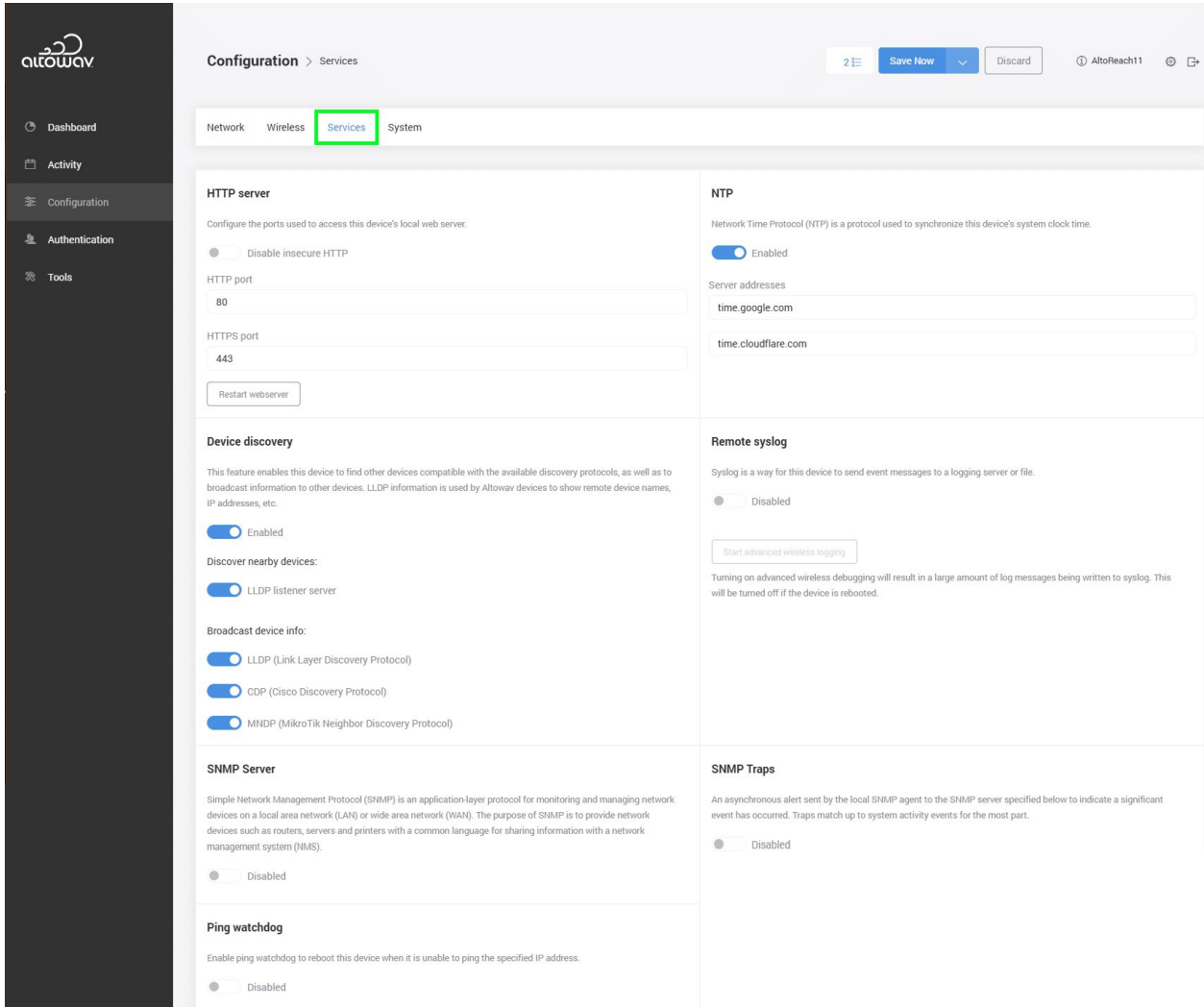
When enabled, station profiles disable the device's SSID and security settings and use the settings from the station profiles instead. This allows the station to be configured to connect to multiple access points (that is, multiple SSIDs) based on availability of the SSID.

- A. Toggle on to enable.
- B. Click **+ Add** to create a new station profile.
- C. **Priority** can be set to 1 through 10. Multiple profiles can have the same priority.
- D. For **SSID**, type the SSID of the access point for this profile.
- E. For **Security Mode**, select the security mode used by the access point.
- F. For **Security Passphrase**, type the passphrase used by the access point.
- G. To delete a profile, click **X**.

Services

To configure services for the AltoReach device:

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Configuration > Services**.



3. By default, the WebUI for AltoReach devices allows unencrypted HTTP access. In the **HTTP server** section:
 - A. To configure the device's web server to require encrypted traffic, toggle to enable **Disable insecure HTTP**.
 - B. (Optional) Type a new port number for the unencrypted **HTTP port** (only available if **Disable insecure HTTP** is not enabled).
 - C. (Optional) Type a new port number for the encrypted **HTTPS port**.
 - D. Any changes to the HTTP server section require a restart of the device's web server. Click **Restart webservice**.

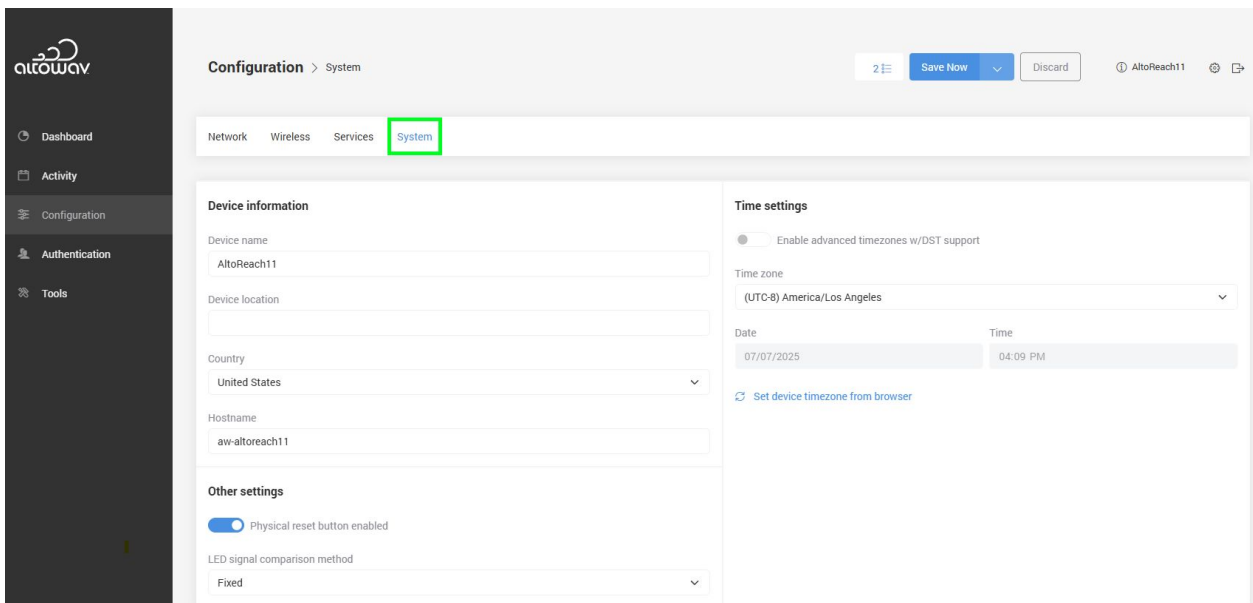
4. **Network Time Protocol (NTP)** is enabled by default.
 - A. Toggle off to disable.
 - B. For **Server addresses**, type the hostname or IP address of the primary and secondary NTP servers to use. The defaults are time.google.com and time.cloudflare.com.
5. When **Device discovery** is enabled, the AltoReach device uses Link Layer Discovery Protocol (LLDP) to discover other LLDP-enabled devices on its local network, and will also broadcast its own information to be discovered by other LLDP-enabled devices. See [Device discovery](#) for further information.
 - A. Device discovery is enabled by default. Toggle off **Enabled** to disable.
 - B. Discovery of nearby devices is enabled by default. Toggle off **LLDP listener service** to disable.
 - C. Various protocols are used to broadcast device information. To disable, toggle off **LLDP (Link Layer Discovery Protocol)**, **CDP (Cisco Discovery Protocol)**, or **MNDP (MikroTik Neighbor Discovery Protocol)**.
6. **Remote syslog** can be used to send log messages to a remote logging server.
 - A. Toggle on to enable.
 - B. Select either **TCP** or **UDP** for the **Protocol**.
 - C. For **Server address**, type the hostname or IP address of the server.
 - D. For **Port**, type the port that the logging server listens on.
 - E. Click **Start advanced wireless logging** to begin verbose logging to the remote server. This option is only available when **Remote syslog** is enabled and running, and will be disabled when the AltoReach device is rebooted.
7. The Simple Network Management Protocol (SNMP) server is disabled by default. Toggle on to enable.
 - A. By default, the value for the sysUpTime object is the amount of time that the SNMP server has been up. **Use Hardware update value** will use the device uptime, rather than the SNMP server uptime, for sysUpTime.
 - B. For **Protocol**, select the SNMP protocol to use.
 - C. For **Community**, type the name of the SNMP community to use.
8. **SNMP Traps** are used to send alerts to a remote SNMP server that an event has occurred.
 - A. Toggle on to enable.
 - B. For **Server address**, type the hostname or IP address of the SNMP server.
 - C. For **User**, type the username required to send the trap. This field must have a value, so if no username is required, type any value in this field.
 - D. For **Protocol**, select the SNMP protocol.
9. **Ping watchdog** allows you to send a ping requests to a specified IP address. If the ping request fails the configured number of times, the AltoReach device will reboot.
 - A. Toggle on enable.

- B. For **Ping interval (s)**, type the number of seconds that the AltoReach device should wait between sending ping requests.
- C. For **Startup delay (s)**, type the number of seconds that the AltoReach device should wait before sending the first ping request.
- D. For **Failure count**, type the number of consecutive ping request failures that will trigger the AltoReach device to reboot.
- E. For **IP address(es) to ping**, type up to two IP addresses.

System

To configure system settings for the AltoReach device:

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Configuration > System**.



The screenshot shows the 'Configuration > System' page in the AltoReach WebUI. The 'System' tab is selected and highlighted with a green box. The page is divided into several sections:

- Device information:**
 - Device name: AltoReach11
 - Device location: (empty field)
 - Country: United States
 - Hostname: aw-altoreach11
- Other settings:**
 - Physical reset button enabled: (checked)
 - LED signal comparison method: Fixed
- Time settings:**
 - Enable advanced timezones w/DST support: (unchecked)
 - Time zone: (UTC-8) America/Los Angeles
 - Date: 07/07/2025
 - Time: 04:09 PM
 - Link: Set device timezone from browser

3. For **Device name**, type a name for the device. This is used for [Device discovery](#).
4. For **Device location**, type the location of the device. The location is shown on the device's [Dashboard](#).
5. For **Country**, select the country that the device will be operating in.
6. For **Hostname**, type a hostname for the device. This will be used for DHCP requests when the device is operating in [DHCP client mode](#).
7. The **Physical reset button** is enabled by default. Toggle off to disable. See [Factory reset](#) for further details.
8. The **LED signal comparison method** defaults to **Fixed**. With this setting, the device's signal LED determines connectivity by comparing a connected station's RSSI with fixed thresholds. To use target RSSI instead of fixed thresholds, click **Target RSSI**.
9. Under **Time settings**:

- A. Advanced timezones uses an extended list of timezones that includes daylight savings time. Toggle on **Enable advanced timezones w/DST support** to enable.
- B. For **Time zone**, select the appropriate timezone.
- C. If [NTP server](#) is disabled, enter the **Date** and **Time**.
- D. **Set device timezone from browser** allows you to configure the device's time settings based on your browser setting.
 - If [NTP server](#) is enabled, the NTP server will be used to set the date and time, and the timezone will be set based on your browser's setting.
 - If [NTP server](#) is disabled, the device's date, time, and timezone will be set based on your browser's settings.

User authentication

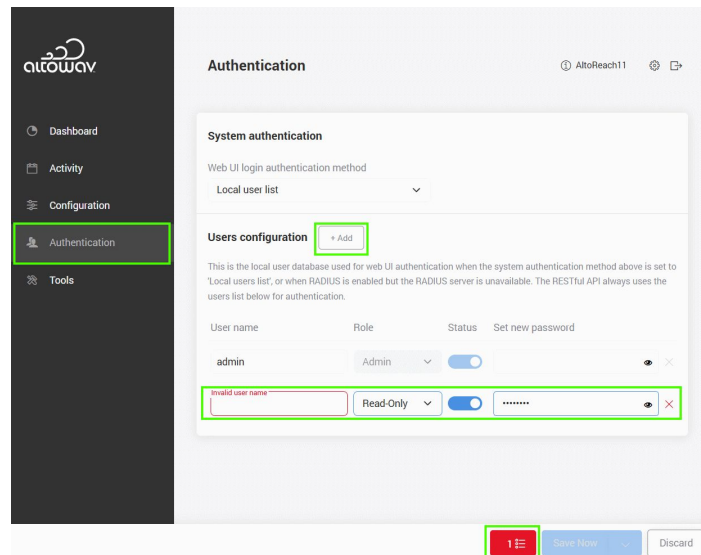
AltoReach devices can be configured to either use either local users, or a RADIUS server for user authentication.

- Local users — There are two types of local users:
 - Admin users, who have read-write access to the WebUI.
 - Read-only users, who have read access to the Dashboard.
- RADIUS authentication — Users are authenticated by using an external RADIUS server.
 - All RADIUS users have the admin role.
 - If the RADIUS server is unavailable, authentication will fallback to the local users.

Add users

Users can have either Admin role, which gives them full rights to configure the AltoReach device, or read-only rights, which allows them to view the [Dashboard](#).

1. In the WebUI, click **Authentication**.
2. Click **+ Add**.
3. Type the **User name**.
4. Select a **Role** for the user.
 - **Admin** — Admin users have read-write access to the WebUI.
 - **Read-Only** — Read-only users have read access to the Dashboard.
5. Users are enabled by default. Toggle **Status** off to disable the user.
6. For **Set new password**, type the password.
 - Passwords must be between 5 and 32 characters long.
 - The following special characters are allowed: !@#\$%^&*()?.><,~+_-/
7. Click **Save Now**.

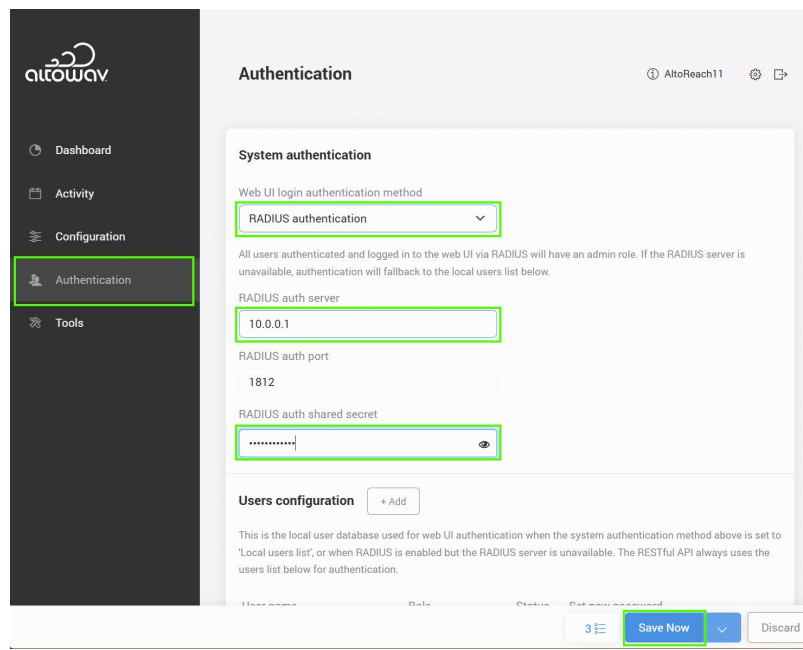


To delete a user, click the **X** next to the user entry.

RADIUS authentication

To configure the AltoReach device to use RADIUS authentication:

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Authentication**.
3. For **Web UI login authentication method**, select **RADIUS authentication**.
4. For **RADIUS auth server**, type the IP address or fully qualified domain name of the RADIUS server.
5. For **RADIUS auth port**, type the port that the RADIUS server listens on. The default is 1812.
6. For **RADIUS auth shared secret**, type the shared secret used to authenticate to the RADIUS server.
7. Click **Save Now**.



Tools

The following tools are available from the **Tools** page:

- [Site survey & aiming](#)
- [Ping](#)
- [View log](#)
- [Traceroute](#)
- [Device discovery](#)
- [View bridge table](#)
- [Sector info](#)

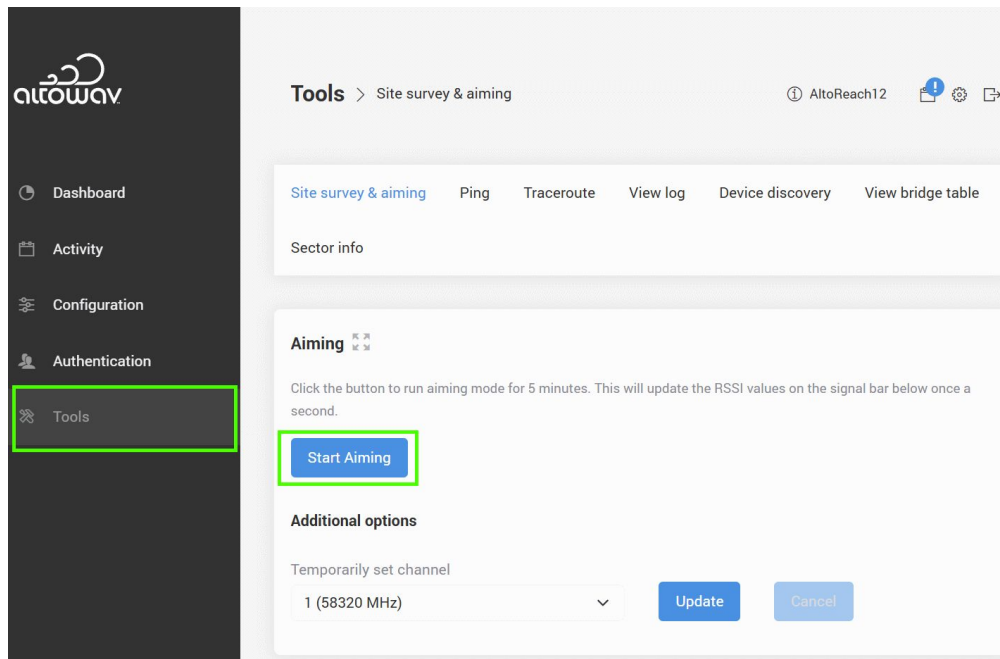
Site survey & aiming

Aiming

The aiming tool allows you to receive information about the RSSI signal strength at a faster rate than you will see on the device's dashboard, which helps to align devices in the field for high-quality links.

Note: The aiming tool is only available for devices operating in station or point-to-point mode.

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Tools**.
3. In the **Aiming** section of the **Site survey & aiming** page, click **Start Aiming**.



The device will be in aiming mode for 5 minutes. During this time the RSSI values will be updated once per second. As you aim the device, observe the values displayed here to optimize the link.

4. (Optional) You can also temporarily set the station's channel to a static value. This reduces scanning time when the channel of the access point is already known.
 - A. For **Temporarily set channel**, select the appropriate channel.
 - B. Click **Update**.
5. Click **Cancel** to reset to using automatic channel mode. The device will reset automatically after 20 minutes.

Site survey scan

The site survey scan allows you to view a list of other AltoReach devices broadcasting in the nearby area. This tool is only available when operating in station or point-to-point slave modes.

Note: The site survey scan will temporarily cause your radio to become unreachable. It will come back automatically when scanning is complete.

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Tools**.
3. In the **Set survey scan** section of the **Site survey & aiming** page:
 - A. Select the radio.
 - B. Click **Scan**.

By default, the results display ten radios per page.

Site survey scan

Warning: This radio will go offline temporarily once scanning has started.

Select radio:

60 GHz Radio (wlan0) ▼

Scan

Scan results last updated: a few seconds ago

Items per page: 10 ▼

×

SSID	BSSID	Channel	Signal	Security
AltoReach60	70:88:6b:cf:d9:1e	6 (69120 MHz)	-33 dBm	WPA2-PSK-GCMP

Total entries: 1 << < 1 > >>

Ping

To perform a basic ping from the device:

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Tools**.
3. Click **Ping**.
4. (Optional) Select whether to use an IPv4 or IPv6 IP address for the ping.
5. For **IP address or host name**, enter the IP address or hostname of the network resource to ping.
6. (Optional) For **Ping iterations count**, type or use the slider bar to define the number of times that the network resource will be pinged.
7. Click **Ping**.

Traceroute

To perform a traceroute from the device:

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Tools**.
3. Click **Traceroute**.
4. (Optional) Select whether to use an IPv4 or IPv6 IP address for the traceroute.
5. For **IP address or host name**, enter the IP address or hostname of the network resource to route to during the traceroute operation.
6. Click **Traceroute**.

Device discovery

Use the device discovery tool to discovery other devices on your network. You must have device discovery enabled. See [Services](#) for information about how to enable or disable device discovery.

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Device discovery**.
3. Click **Refresh** to refresh the list.

View bridge table

Use the bridge forwarding table to view the MAC addresses and associated interfaces in the device uses to forward traffic.

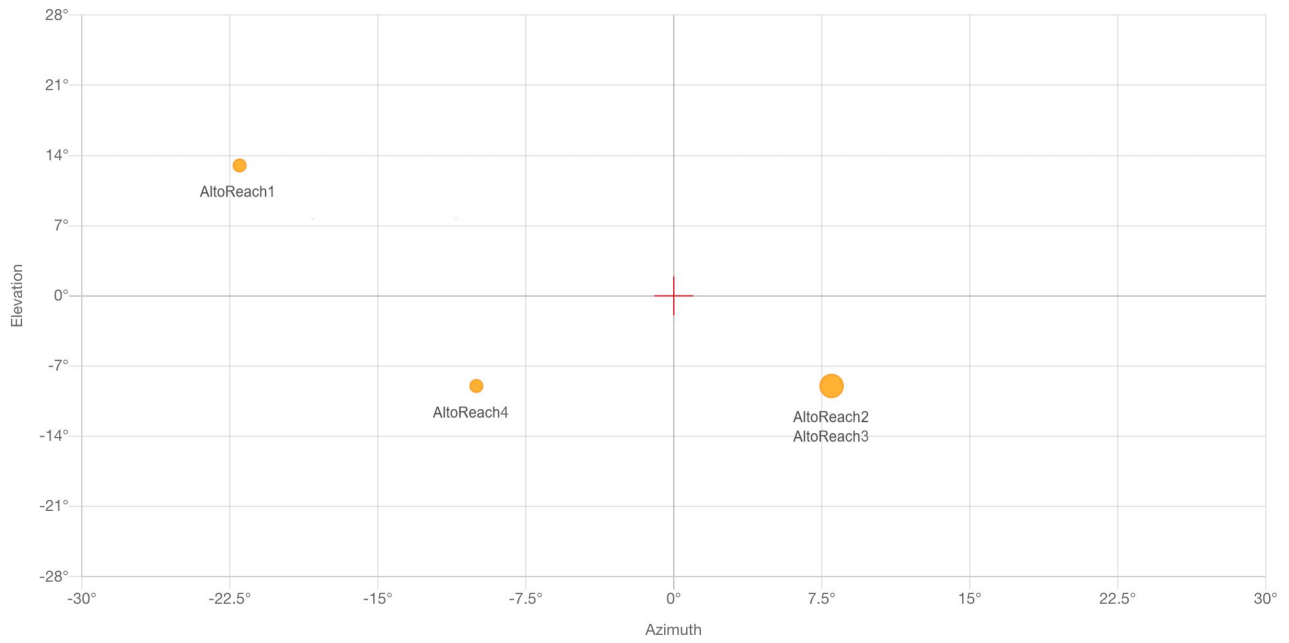
1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **View bridge table**.
3. Click **Refresh** to refresh the list.

Sector info

The sector tool provides a visual indicator of how each peer is connected to the current device, which can help you determine how close connected peers are to boresight.

- The red crosshairs indicator represents boresight for the device.
- When you click on a connected peer's sector ID in the [Dashboard](#), you will only see that individual sector on the sector tool. You can click the "View all" button to view all connected peers.
- When multiple peers are connected on the same sector, the point will grow larger, a list of up to the first 3 devices connected on that sector will be shown.
- It's possible for a peer to be connected on different sectors for RX and TX. When this happens, a peer will be represented by two dots, each with an "(RX)" or "(TX)" label following the peer's name.

Wireless Peer Sector Locations



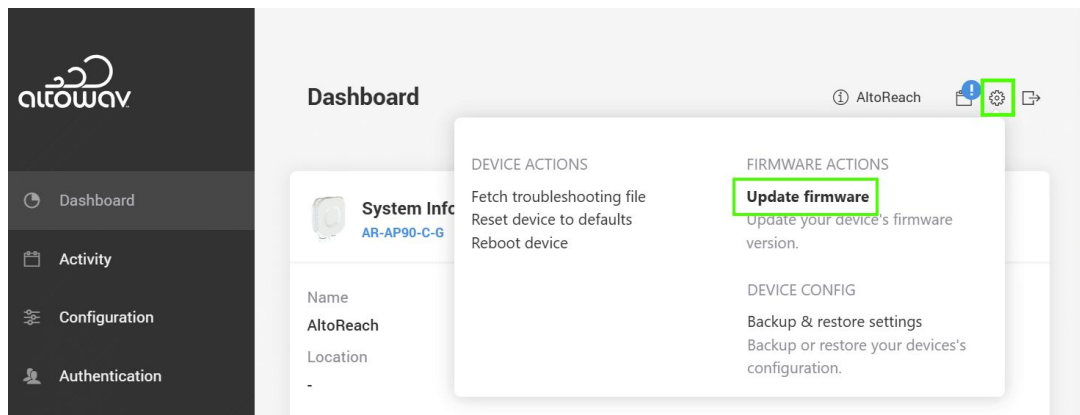
Maintenance and Security

Change the password of the admin user

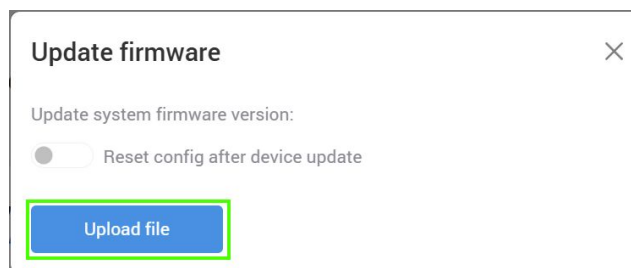
1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click **Authentication**.
3. In the row the **admin** user, for **Set new password**, type the new password.
 - Passwords must be between 5 and 32 characters long.
 - The following special characters are allowed: !@#\$\$%^&*()?.><,~+_ -/
4. Click **Save Now**.

Upgrade firmware

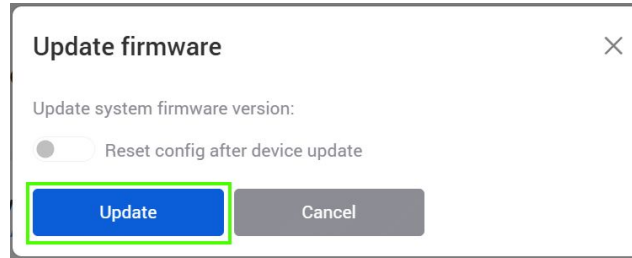
1. Download the firmware file from support.altowav.com.
2. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
3. In the WebUI, click the **Tool** icon (⚙️).
4. From the menu, select **Update firmware**.



5. Click Upload file and browse to the file you downloaded in Step 1.



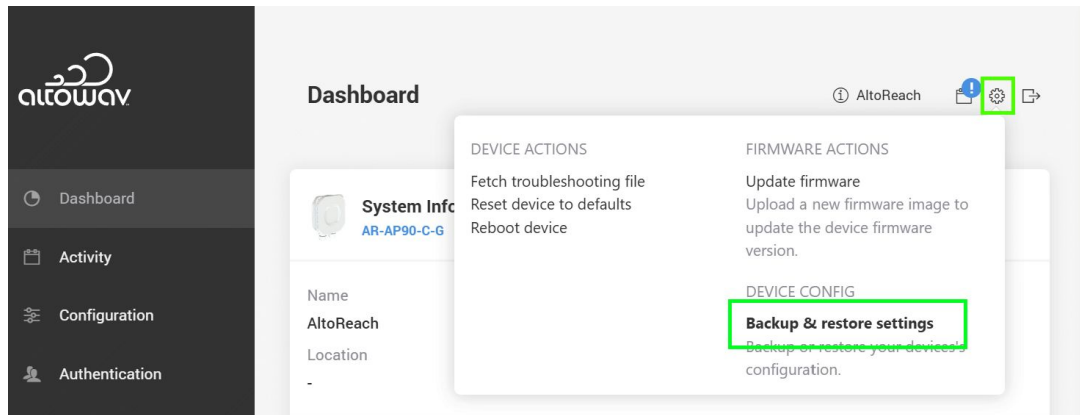
- When the file has completed uploading to the device, click **Update**.



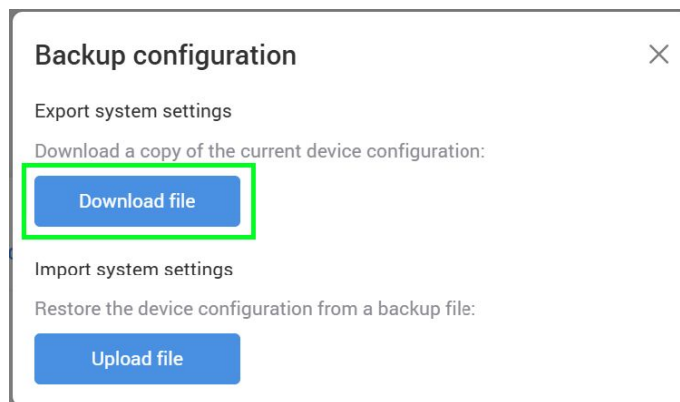
Backup and restore device configuration

To backup the AltoReach device configuration:

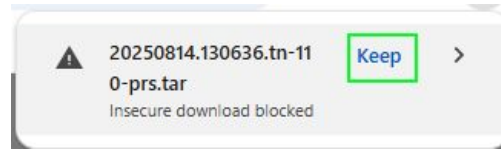
- Log into the AltoReach device as described in [Connect to the AltoReach device](#).
- In the WebUI, click the **Tool** icon (⚙️).
- From the menu, select **Backup & restore settings**.



- Click **Download file**.



- The configuration is downloaded as a tar file. Because many browsers view tar files as suspicious, your browser may block the download. Browser behavior will vary, but most browsers provide a mechanism to instruct the browser to download the file even though the download has been blocked. For example, in Chrome, click **Keep**:

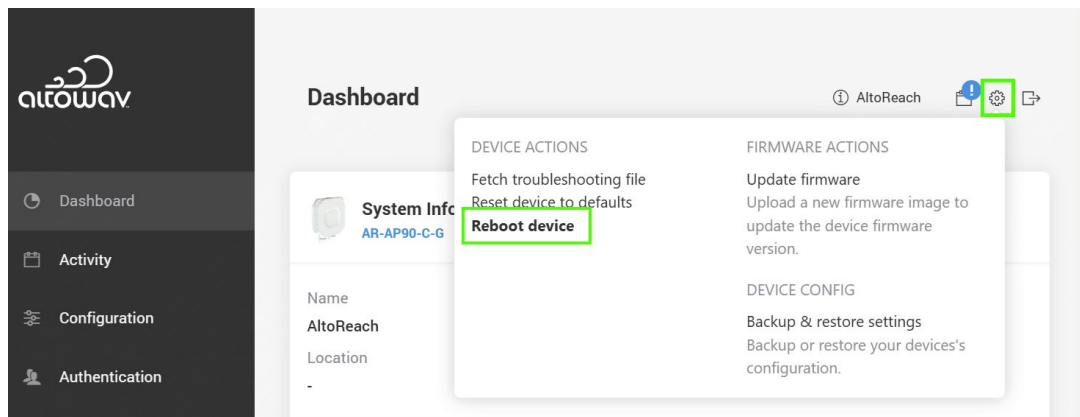


To restore the AltoReach device configuration:

- Log into the AltoReach device as described in [Connect to the AltoReach device](#).
- In the WebUI, click the **Tool** icon (⚙️).
- From the menu, select **Backup & restore settings**.
- Click **Upload file**.
- Select the backup file from your local filesystem.
- Click **Apply**.

Reboot

- Log into the AltoReach device as described in [Connect to the AltoReach device](#).
- In the WebUI, click the **Tool** icon (⚙️).
- From the menu, select **Reboot**.



- Click **Yes** to confirm.

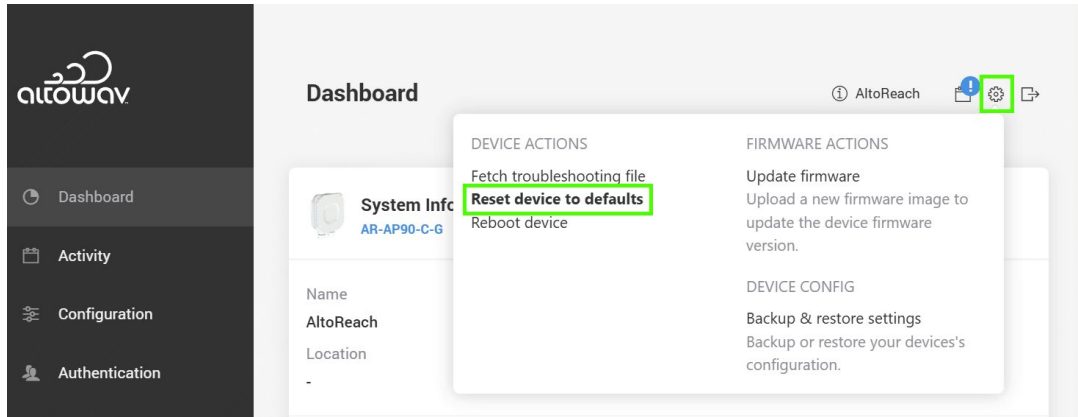
Factory reset

There are two methods to factory reset the AltoReach radio:

- Software-based factory reset using the WebUI.
- Hardware-based factory reset using the reset button on the device.

Factory reset using the WebUI

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click the **Tool** icon (⚙️).
3. From the menu, select **Reset device to defaults**.



Factory reset using the reset button

Only perform a factory reset with the reset button after the device has fully booted up (has been operational for approximately five minutes). This procedure will not work if factory reset with the reset button has been disabled in the WebUI.

1. After the radio has fully booted, at the bottom of the radio, remove the screw covering the reset button.

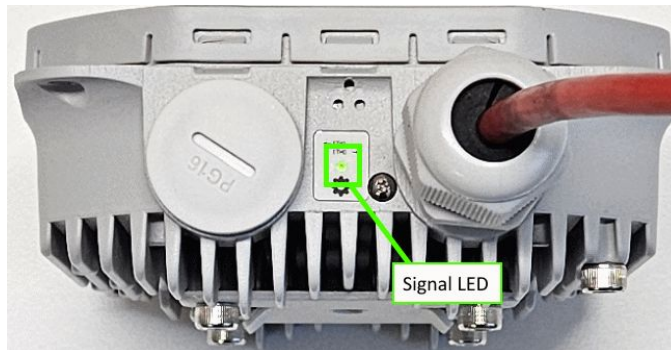


2. Insert a wood or plastic pin into the factory reset button. Push down and hold for at least 20 seconds.

Troubleshooting

LEDs

AltoReach devices have one LED indicator, called the Signal LED, that provides link information. There are also LEDs for the Ethernet port.

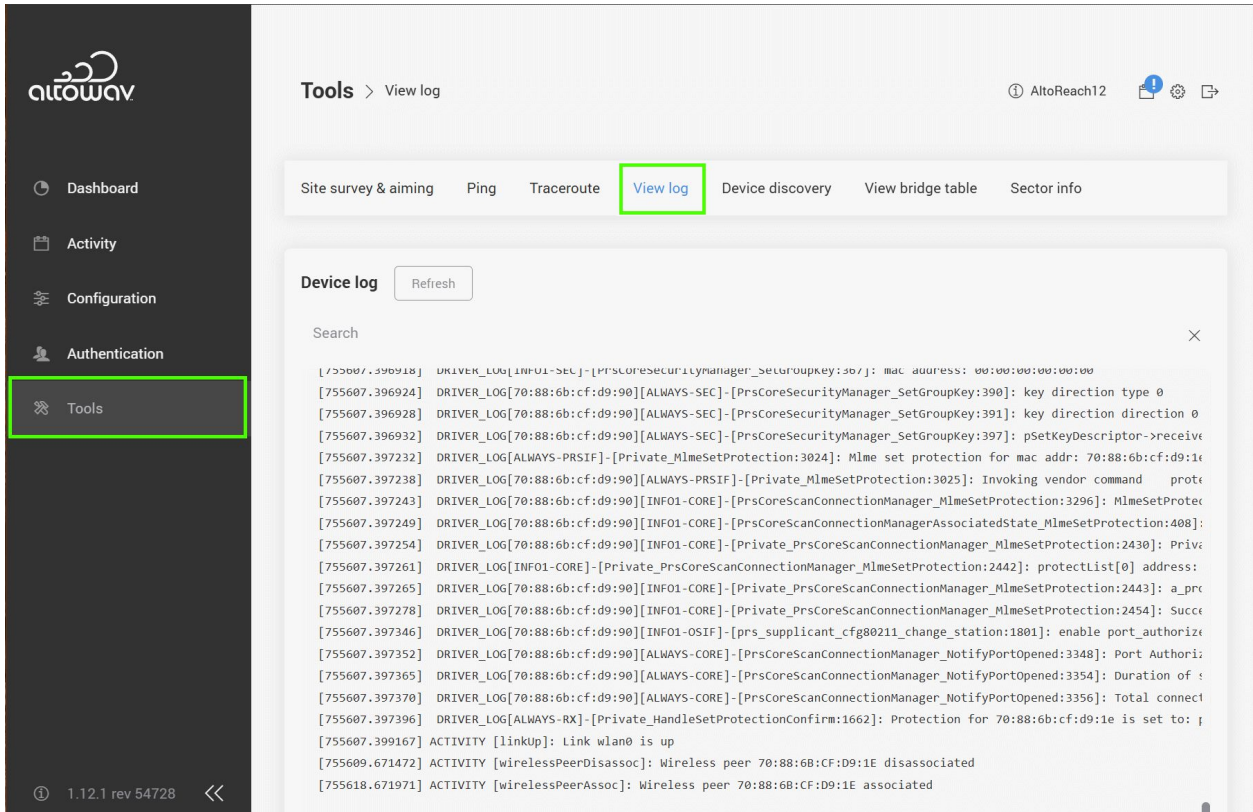


LED	Description
Signal LED	<ul style="list-style-type: none"> • Off — Indicates one of the following: <ul style="list-style-type: none"> ○ The device is currently operating in AP mode. ○ The device is powered off ○ The radio modem is not detected. • Blinking slowly — The device is in station or point-to-point mode and is currently scanning. • Blinking with a medium speed — The device is in station or point-to-point mode and is connected with a low signal. • Blinking fast: <ul style="list-style-type: none"> ○ Case 1 — If the unit is just booting up, the device is flashing the internal modem firmware. ○ Case 2 — If the unit is fully booted, then the device is in station or point-to-point mode and connected to an AP with a medium signal strength. • Solid — The device is in station or point-to-point mode and connected with an excellent signal strength.
ETH0 Ethernet port LEDs	The link light will turn on when a link is established, and the power light will turn on once the device is supplied with power.

View the device log

To view the device log:

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. Click Tools > View log.



Click **Refresh** to refresh the log.

The search field allows you to type a search string to search the activity log.

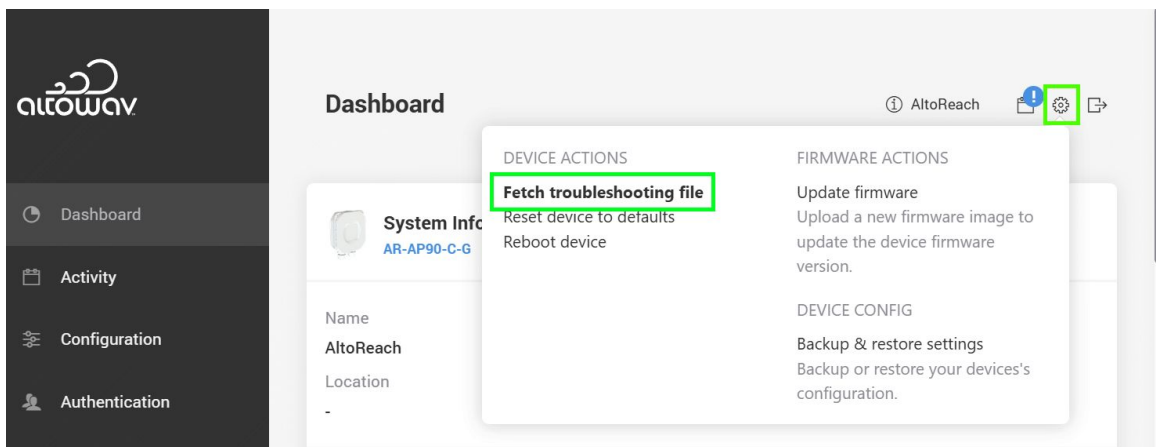
You can also view the device's event log. See [Activity](#) for more information.

Download a support report

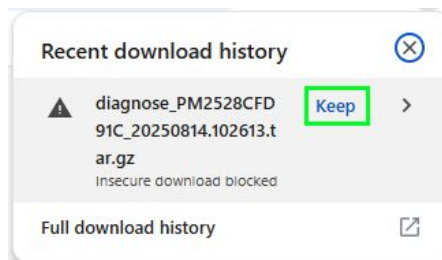
When contacting AltoReach support regarding an issue with an AltoReach device, you may be asked to provide a support report.

Note: A diagnostic log file captures historical information about a device's operation. To facilitate troubleshooting, it is important to download the diagnostic file before rebooting or power-cycling a device. Rebooting or power-cycling will clear the log file history.

1. Log into the AltoReach device as described in [Connect to the AltoReach device](#).
2. In the WebUI, click the **Tool** icon (⚙️).
3. From the menu, select **Fetch troubleshooting file**.



4. The downloaded file is a compressed tar file using gzip for compression. Because many browsers view compressed files as suspicious, your browser may block the download. Browser behavior will vary, but most browsers provide a mechanism to instruct the browser to download the file even though the download has been blocked. For example, in Chrome, click **Keep**:



5. To view the contents of the file, unzip and untar the file. Instructions vary based on your operating system.

Troubleshooting your link

If a wireless link is not forming or has sub-optimal performance:

1. Confirm that the devices have line of sight with each other, and that there are no obstacles within the Fresnel zone.
2. Check the devices' Wireless configuration parameters to make sure that they are configured correctly. Devices must be using the same channel, SSID, security mode, and passphrase.
3. Confirm that the devices are within the correct coverage distance from each other.
4. If possible, try to use a different channel for the link. Changing the channel may reduce co-channel interference, and may also improve link quality, because different frequencies have different characteristics.
5. If the devices are connected but the connection quality is poor, it could be due to a destructive reflection. AltoReach devices use Single-carrier Physical Layer (PHY) for transmission, which is susceptible to destructive reflections. To solve this, move the AltoReach device up and down, or left to right, in small increments. Up and down

movements are generally more helpful, assuming the destructive reflection is being caused by the ground or a nearby roof.

6. If the device's MCS is lower than you expect given a solid RSSI, keep in mind that the link needs to have traffic to modulate to higher values.

