T670 Omni Access Point Quick Setup Guide

This Quick Setup Guide provides step-by-step instructions on how to field-install the RUCKUS T670 Omni with USB support access point (AP). For detailed information on planning the installation, performing a site survey, and operating the T670 Omni with USB support, refer to the *RUCKUS Access Point Getting Started Guide*, available at https://support.ruckuswireless.com.

NOTE: The minimum software version for the T670 Omni AP with USB support is SmartZone (SZ) 7.1 or later with new AP model patch and SmartZone (SZ) 7.1.1 and later with native support, Unleashed (UN) 200.18 or later, and RUCKUS One (R1) 7.1.0.512 or later.

WARNING! Installation of this equipment must comply with local and national electrical codes.

DANGER: *Only trained and qualified personnel should install, replace, or service this equipment. This equipment should be installed in restricted-access areas only.*

WARNING! RUCKUS strongly recommends that you wear eye protection before mounting the T670 Omni with USB support.

CAUTION! Make sure that you form a 80mm - 130mm (3 in.- 5 in.) drip loop in any cable that is attached to the AP or the building. This will prevent water from running along the cable and entering the AP or the building where the cable terminates.

CAUTION! Be sure that grounding is available and that it meets local and national electrical codes. For additional lightning protection, use lightning rods and lightning arrestors.

CAUTION! Make sure that proper lightning surge protection precautions are taken according to local electrical code.

This Guide in Other Languages

- 请从以下网站获得该指南的简体中文版 http://docs.commscope.com/?docs-box.
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Before You Begin

Before deploying RUCKUS products, please check for the latest software and the release documentation.

- Release Notes and other user documentation are available at http://support.ruckuswireless.com/documents.
- Software upgrades are available at http://support.ruckuswireless.com/software.
- Software license and limited warranty information are available at https://support.ruckuswireless.com/programs-warranty_registration.

Before deploying your RUCKUS Access Point and stadium mounting enclosure, verify that all items listed in **Package Contents** are included in the package. If any item is damaged or missing, notify your authorized RUCKUS sales representative. Also, make sure that you have the required hardware and tools.

Required Hardware and Tools

- ½-in. (13 mm) flat-blade screwdriver or equivalent
- Wide flat-blade screwdriver
- No. 2 Phillips screwdriver
- Torque wrench or torque screwdriver with sockets
- Long-nose pliers
- Electrical wire stripping and terminal crimping pliers
- Pipe, pole, or a sturdy flat mounting surface
- Electric drill with drill bits and customer-supplied wall anchors, flat washers, and hex nuts for flat-surface mount

Package Contents

A complete T670 field installation package includes all of the items listed below:

- T670 Omni Access Point with USB support
- M25 data cable glands
- Outdoor AP Mounting Bracket kit
- One ground wire with lug
- Cloud Management Statement
- Four ½-in. (12.7-mm) wide, 2.5-in. (63.5-mm) diameter, adjustable clamps for securing the mounting bracket on poles
- Safety cable kit
- Declaration of Conformity

LED Signals

The LED on the AP has several colors that indicate the various states of the AP. The following table provides a high-level description of each color that may appear on the AP.

TABLE 1 AP LED Signals

Color	Light Pattern	Description
Red	Solid Red	AP is determining power mode
	Slow Blinking Red	AP is in 802.3af power mode
	Blinking between Red and Green	AP is undergoing factory reset
	Blinking between Red and Amber	AP is proceeding with a Factory Reset to Recovery Mode
Amber	Solid Amber	AP has sufficient power and is now booting up
	Blinking Amber	System network gateway is lost
	Slow Blinking Amber	AP system controller interface is lost
	Fast Blinking Amber	AP is being loaded with a firmware or configuration update
Green	Solid Green	AP WLANs, services, and controller management are operational
	Solid Green without Advanced Mode or Slow Blinking Green with Advanced mode	AP WLAN has at least one client connected
	Solid Green without Advanced Mode or Slow Blinking - Green with Advanced Mode	AP WLAN has at least one client connected and mesh networking is enabled
No Color	OFF	• No power • Controller connectivity is lost • The LED has been disabled via the controller

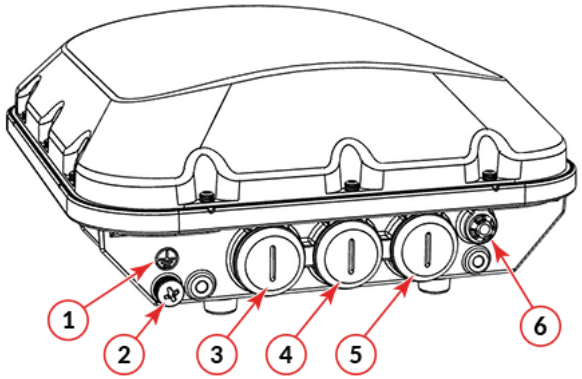
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Mounting Instructions

Connecting and Sealing the RJ-45 Cables

The T670 may use zero, or one or two RJ-45 cables: one for Ethernet when configured as a Root AP (RAP), and another when the T670 is connecting to a peripheral device, such as a small cell or micro cell radio. When the T670 uses RJ-45 cables, connect and seal the cables using the M25 data cable glands as shown in Figure 4.

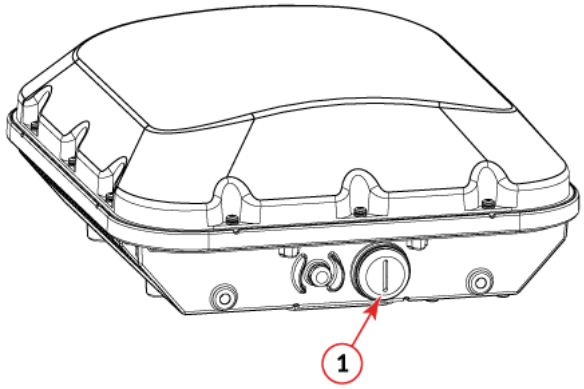
FIGURE 1 T670 AP Bottom View



1. Ground symbol
2. Ground screw
3. PoE IN
4. Ethernet
5. DC
6. LED indicators

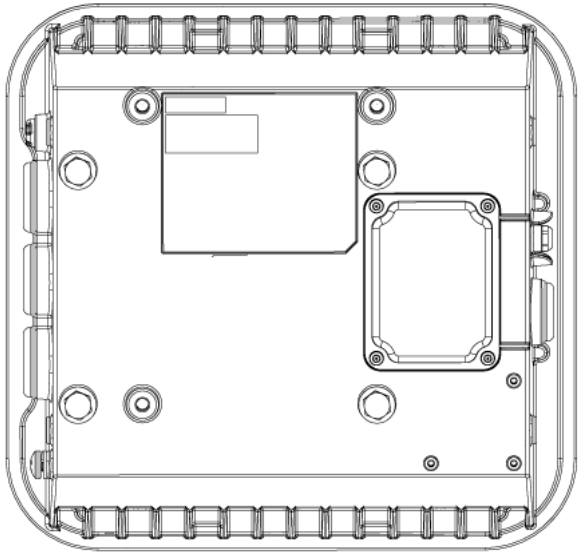
WARNING! Do not use any PoE injector not tested and approved by RUCKUS to power the T670 Access Point.

FIGURE 2 T670 AP Top View



1. USB port

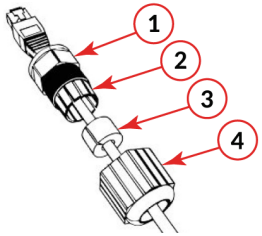
FIGURE 3 T670 AP Rear View



1. Feed the end of the cable through the gland dome, rubber grommet, clamping ring assembly, and cable gland base, as shown in Figure 4.

NOTE: Do not seat the clamping ring and rubber grommet into the cable gland base until the cable gland base has been torqued to specifications.

FIGURE 4 RJ-45 Cable and Cable Gland Assembly



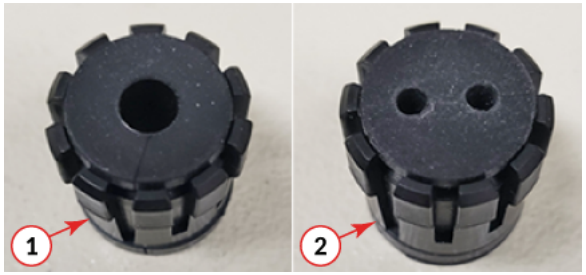
1. Cable gland base
2. Clamping ring
3. Rubber grommet
4. Gland dome

2. Use a wide flat-blade screwdriver to remove the PoE IN or second Ethernet blanking cap from the T670 as shown in Figure 1.
3. Connect the cable to the Ethernet port in the AP.
4. Tighten the cable gland base to 7 N.m (62 in-lb).
5. Wrap the clamping ring assembly around the rubber grommet. Make sure that the clamping ring assembly fully encloses the rubber grommet.
6. Seat the clamping ring assembly and rubber grommet in the cable gland base.
7. Hand-tighten the gland dome.

Cable Assembly for DC Power Installation

For DC installation, switch out the single hole grommet insert used for PoE or Ethernet installation with the zipcord (dual hole) grommet insert of the cable gland.

FIGURE 5 Single Hole Grommet Insert and Zipcord (Dual Hole) Grommet Insert



1. Single Hole Grommet Insert
2. Zipcord (Dual Hole) Grommet Insert

DANGER: *Ensure the DC power cords are not connected to the DC power source during installation of the DC power cable assembly.*

Assemble the cable gland for DC.

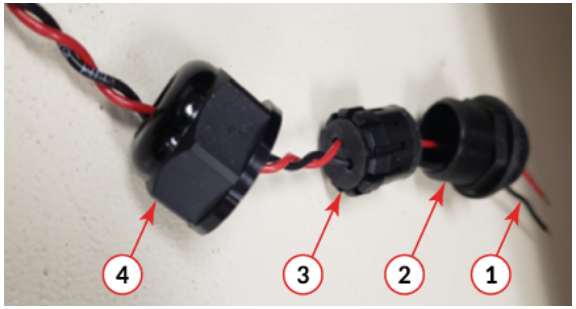
1. Use a wide flat-blade screwdriver to remove the DC cap.
2. Using a wire stripper, cut and strip the DC source wires.

NOTE: Ensure there is 8-mm (+/- 1-mm) of exposed pigtail wire on the DC power wires.

3. Insert the DC wires through the gland dome, rubber grommet, and cable body, as shown in Figure 6.

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FIGURE 6 DC Power Cable and Zipcord Cable Gland Assembly



1. DC source wire
2. Cable body
3. Zipcord (dual hole) grommet
4. Gland dome

4. Insert the + (red) / - (black) DC wires into the correct DC terminal block as labeled on the DC port housing with the help of a small flat-blade screwdriver. See Figure 7.

FIGURE 7 Connecting DC Wires To Terminal Block



5. Tighten the terminal block screws to secure the wires.
6. Insert the cable body into the AP housing and tighten the cable body to 7 N.m (62 in-lb) as shown in Figure 8.

FIGURE 8 Inserting the Cable Body



7. Insert the zipcord grommet into the cable body as shown in Figure 9.

FIGURE 9 Inserting the Zipcord Grommet



8. Hand-tighten the cable gland dome until the grommet squeezes against the DC wires as shown in Figure 10.

CAUTION! RUCKUS strongly recommends that you form a drip loop on any cable that is connected to devices that are installed outdoors, to prevent water from running along the cable and entering electrical components.

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FIGURE 10 Tightening the Cable Gland Dome



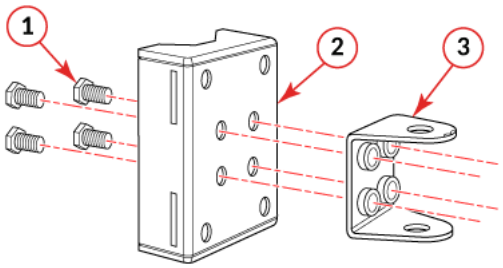
9. Continue with Attaching the U-Joint Bracket to the Mounting Bracket on page 4. DC power-up will be performed later.

Attaching the U-Joint Bracket to the Mounting Bracket

1. Position the U-joint bracket on the mounting bracket.

> **NOTE:** Mount the U-joint bracket in any direction on the mounting bracket, preferably to allow AP azimuth adjustments. Then the AP bracket allows AP elevation adjustments.

FIGURE 11 U-Joint Bracket Attached Horizontally to the Mounting Bracket



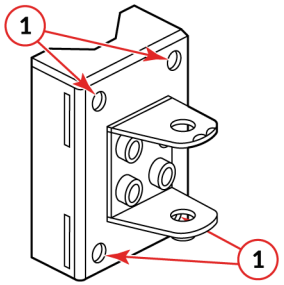
1. Bolts
2. Mounting bracket
3. U-joint bracket

2. Use four 1/4 - 28 bolt and washer sets (1) to mount the U-joint bracket (3) to the mounting bracket (2). Tighten the bolts to 9.5 N.m (84 in-lb).
3. Continue with either Attaching the Mounting Bracket to a Flat Surface on page 4 or Attaching the Mounting Bracket to a Pole on page 4, as per your installation requirements.

Attaching the Mounting Bracket to a Flat Surface

1. Place the mounting bracket at the location on the flat surface where you want to mount the AP. Use the surface holes (1 in Figure 12) on the mounting bracket as a template to mark the locations of the mounting holes.

FIGURE 12 Mounting Bracket Flat Surface Holes



1. Surface holes

2. Remove the mounting bracket from the flat surface.
3. Drill holes required for the mounting hardware.

> **NOTE:** The hardware required for mounting to a wall are not included in the mounting kit.

4. Attach the mounting bracket to the flat surface using the customer-supplied wall anchors, flat washers, and hex nuts.
5. Using the mounting hardware instructions, tighten the hardware to secure the mounting bracket.
6. Continue with Mounting the Linkage Bracket to the U-Joint Bracket on page 4.

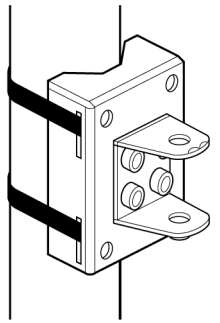
Attaching the Mounting Bracket to a Pole

1. Insert the open end of one steel clamp through the upper two slots on the mounting bracket.
2. Take the other steel clamp and insert it through the lower two slots on the mounting bracket.

> **NOTE:** Multiple clamps can be daisy-chained together to accommodate larger poles.

3. Use the clamps to attach the mounting bracket to the pole. Tighten the clamps to 3 N.m (27 in-lb) or per manufacturer's specifications.

FIGURE 13 Attaching the Mounting Bracket to a Vertical Pole



4. Continue with Mounting the Linkage Bracket to the U-Joint Bracket on page 4.

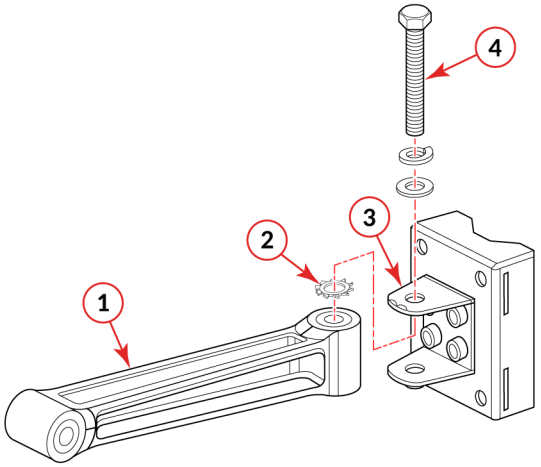
Mounting the Linkage Bracket to the U-Joint Bracket

1. The linkage bracket attaches to the U-joint bracket using an M8 bolt, washer, and nut set. The linkage bracket is symmetrical, and either end can be attached to the U-joint bracket.

> **NOTE:** Make sure that linkage bracket is installed with its serrated external-tooth lock washer on the inside of the U-joint bracket flanges. This ensures that the azimuth adjustment does not change.

2. Loosely assemble the linkage bracket (1), the U-joint bracket (3), one serrated external-tooth lock washer (2), and one M8 bolt and washer set (4) as shown in Figure 14.

FIGURE 14 Attaching the Linkage Bracket to the U-Joint Bracket



1. Linkage bracket
2. External-tooth lock washer
3. U-joint bracket
4. M8 bolt and washer set

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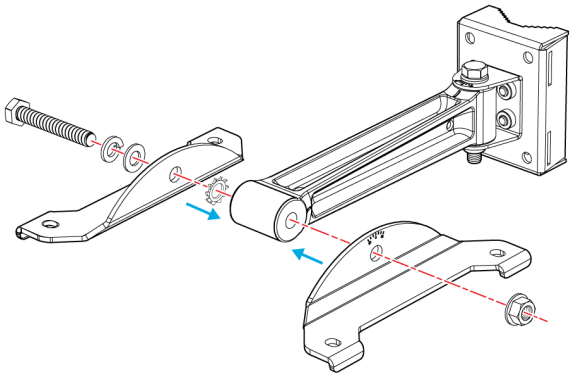
3. Set the azimuth required by the AP.
4. Tighten the M8 bolt to 13.6 N.m (120 in-lb).
5. Continue with Attaching the AP Bracket to the Linkage Bracket on page 5.

Attaching the AP Bracket to the Linkage Bracket

1. Attach the AP bracket to the linkage bracket using the included bolt, lock washer, flat washer, serrated external-tooth washer, and nut shown in Figure 15.

   The linkage bracket is symmetrical, and either end can be attached to the AP bracket.
2. Loosely assemble the AP bracket to the linkage bracket using the M8 bolt, washer, and nut set.

FIGURE 15 Attaching the Linkage Bracket to the AP Bracket



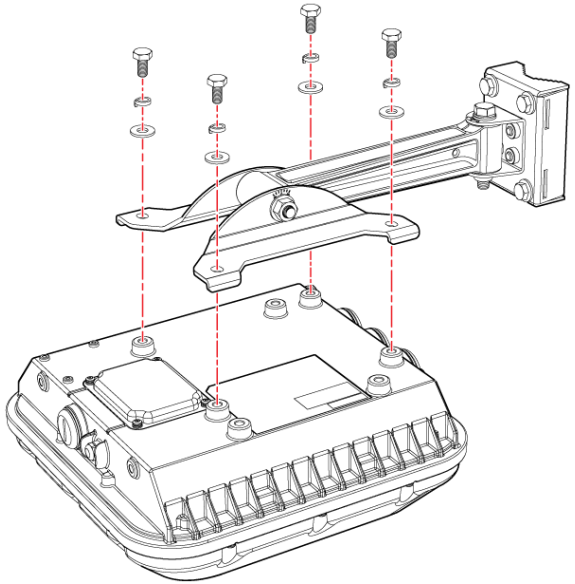
NOTE: Make sure that the linkage bracket is installed with its serrated external-tooth lock washer on the *inside* of the AP bracket flanges. This ensures that the elevation adjustment does not change.

3. Continue with Attaching the AP Bracket to the Access Point on page 5.

Attaching the AP Bracket to the Access Point

1. Place the AP bracket onto the back side of the AP so that the four larger screw holes on the bracket align with the four screw holes on the AP.

FIGURE 16 Attaching the AP Bracket to the AP



2. Use four 0.5-inch x 0.250-28 hex bolts with split lock and flat washer sets to mount the AP bracket to the AP. Tighten the bolts to 2.5-3.0 N.m (22-27 in-lbs).

CAUTION! Make sure that the screws are no longer than 0.5 inch. If a screw is longer than 0.5 inch, it can damage the AP chassis.

NOTE: This kit may include extra screws, nuts, and washers. You may use the extras where required.

3. Continue with Set the Elevation and Tighten the Elevation Bolt on page 5.

Set the Elevation and Tighten the Elevation Bolt

1. Set the elevation required by the AP.
2. Tighten the M8 bolt to 13.6 N.m (120 in-lb).
3. Continue with Earth Grounding the AP on page 5.

Earth Grounding the AP

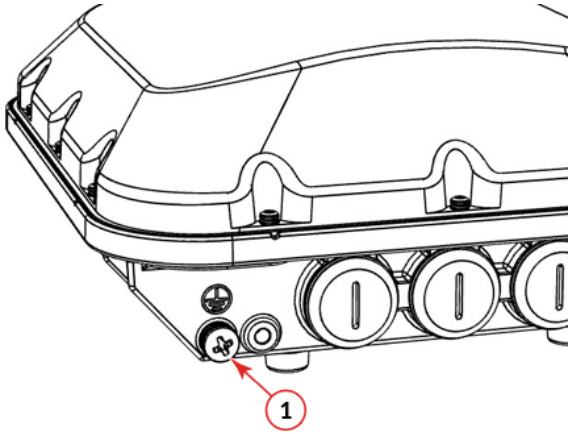
CAUTION! Make sure that earth grounding is available and that it meets local and national electrical codes. For additional lightning protection, use lightning rods and lightning arrestors.

NOTE: The color coding of ground wires varies by region. Before completing this step, check your local wiring standards for guidance.

1. Using the factory-supplied ground wire and ground screw/washer set, connect a good earth ground to the AP chassis ground point.

CAUTION! The T670 AP includes one 9 mm stainless steel M6 x1 earth ground screw with split lock and flat washers. Make sure that any replacement screw is no longer than 9 mm. If a screw is longer than 9 mm, it can damage the AP chassis.

FIGURE 17 Connecting Good Earth Ground to AP



1. Earth ground screw

2. Continue with Powering the AP with DC Power on page 6.

Installing a USB Dongle

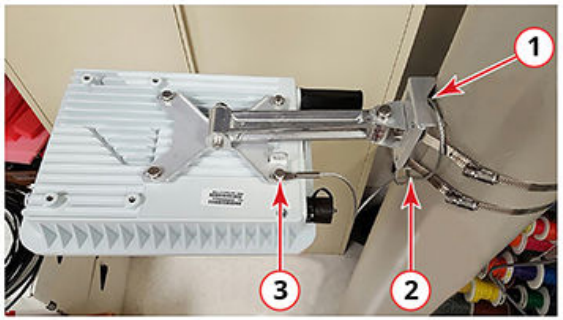
To install a USB dongle (such as an IoT radio device), use a wide flat-blade screwdriver to remove the blanking cap from the AP, then insert the dongle into the USB port.

Installing the Security Cable

1. Thread the security cable through the mounting bracket (1 in Figure 18) and through the eye on the cable itself (2 in Figure 18).
2. Attach the safety cable to the AP by inserting the eyelet end of the safety cable between the AP bracket and the mounting hardware (flat washer, split washer and 0.5-inch x 0.250-28 hex bolt). Refer to 3 in Figure 18.
3. Tighten the bolts to 2.5-3.0 N.m (22-27 in-lb).

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FIGURE 18 Attaching the Security Cable



Powering the AP with DC Power

The AP can accommodate two sources of power: PoE (48V) power and 48VDC.

The AP can draw power from the Ethernet input as a Class 5 device, providing a maximum of 35 W to the system. Alternatively, power can be supplied through a customer-provided 48V DC power supply that will connect to a two-pin terminal block. The terminal block is accessible through a water-tight gland on one end of the unit. The terminal block connection has surge and polarity protection to protect against inserting the wrong polarity leads into the terminal block.

NOTE: If both the PoE and DC ports are used, separate cable glands must be used for each port. An additional cable gland (Part Number: 902-0183-0000) can be be purchased.

NOTE: When both the 48V DC and the 48V PoE power are active, the AP will prioritize the 48V DC power.

CAUTION! Ensure that the DC power source does not exceed 48V DC.

1. Ensure the DC cable assembly is securely installed, as described in Cable Assembly for DC Power Installation on page 2.
2. Connect the power cord to a DC power source.
3. Verify that the LED on the AP is blinking amber (may also be in a green state if a WLAN has been configured).

Troubleshooting

CAUTION! If required, you can reset the AP to its factory default settings by pressing the reset button located inside the PoE IN port. Use the tip of a pen or a 3-mm flat-blade screwdriver to press the reset button.

- Soft reset: Press less than 4 seconds.
- Factory reset: Press more than 5 seconds and less than 15 seconds. The LED will alternate red and green.
- Recovery mode with factory defaults: Press more than 15 seconds. The LED will alternate between red and amber once before the AP reboots.

DO NOT RESET THE AP TO FACTORY DEFAULT SETTINGS UNLESS SO INSTRUCTED. (Doing this resets the AP IP address to 192.168.0.1.)

NOTE: After a reset, you can access the internal AP web interface using https://192.168.0.1. Your device must use any other address from 192.168.0.2 through 192.168.0.254, with subnet mask 255.255.255.0. The username is **super**, and the password is **sp-admin**.

NOTE: The 6GHz radio option is not allowed for use in China.

For More Information

For more information on how to configure and manage the AP, refer to the User Guide for the RUCKUS network management platform being used to configure and manage your network.

For the product data sheet, refer to https://www.ruckusnetworks.com/products/wireless-access-points/.

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