



Cisco Wireless 9174E Series Wi-Fi 7 Access Point Hardware Installation Guide

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CHAPTER 1

About the Access Point

- [Overview of the Cisco Wireless 9174E Wi-Fi 7 access point, on page 1](#)
- [Cisco Wireless 9174E Wi-Fi 7 Access Point features, on page 1](#)
- [AP model numbers and regulatory domains, on page 4](#)
- [Antennas and radios, on page 4](#)

Overview of the Cisco Wireless 9174E Wi-Fi 7 access point

The Cisco Wireless 9174E Wi-Fi 7 Access Point (CW9174E) is an enterprise-class, tri-band (2.4 GHz, 5 GHz, 6 GHz) access point designed to support Wi-Fi 6 and Wi-Fi 7 transitions. It features an external antenna design and offers a tri-radio 10 spatial stream configuration with an option for a dual-radio 8 spatial stream setup.

The AP hardware is supported on the following platforms:

- Cisco Catalyst Center (formerly known as Cisco DNA Center) on-premises
- Cisco Wireless Controllers
- Meraki cloud-based stack

A full listing of the AP's features and specifications is provided in the [Cisco Wireless 9174E Wi-Fi 7 Access Point Data Sheet](#).



Note The 6-GHz band is not supported in Europe, Japan, and Taiwan.

Cisco Wireless 9174E Wi-Fi 7 Access Point features

The CW9174E AP is a tri-band Wi-Fi 7 enterprise indoor access point. It is designed for seamless integration with the Cisco Catalyst 9800 Series Wireless Controllers. This AP delivers superior connectivity, expanded coverage, and support for advanced IoT applications. The AP includes the following hardware and supporting features:

- **Radios and wireless capabilities**
 - Wi-Fi 7 radios supporting 2.4 GHz, 5 GHz, and 6 GHz frequencies with external DART8 antenna connector.

- The AP operates in tri-band mode with 10 spatial stream with 2.4 GHz (2x2:2), 5 GHz (4x4:4), 6 GHz (4x4:4), or in dual-band mode with 8 spatial stream as 2.4 GHz (4x4:4), and 5 GHz (4x4:4).
- Dedicated scanning/AUX radio for real-time network monitoring and optimization.
- Integrated Bluetooth Low Energy (BLE): Enables IoT applications, such as location tracking and wayfinding.
- USB 2.0 port with 9 watts power output for optional CW-ACC-GPS1= GPS module and other accessories
- Multiuser Multiple-Input, Multiple-Output (MU-MIMO) for simultaneous uplink and downlink connections.
- Orthogonal Frequency Division Multiple Access (OFDMA) for efficient traffic scheduling and resource utilization.
- Spatial Reuse (BSS Coloring), enabling differentiation between multiple basic service sets for increased transmission efficiency.
- Target Wake Time (TWT): An energy-saving mode that allows battery-powered devices to stay asleep and wake only at predefined intervals for data exchange, optimizing energy efficiency.
- Multi-Link Operation (MLO): Multi-Link Operation (MLO) allows Multi-Link Devices (MLDs) to maintain associations and simultaneously transmit data across multiple frequency bands, including 2.4-GHz, 5-GHz, and 6-GHz band.
- Preamble Puncturing: Preamble puncturing allows Extremely High Throughput (EHT) stations to transmit and receive Physical Layer Protocol Data Units (PPDUs) efficiently by omitting signals in unused 20-MHz subchannels, even with bandwidth interference like rogue APs.

• Power and connectivity

- Ethernet Port: Supports the following speeds: 100 Mbps, 1 Gbps, 2.5 Gbps, and 5 Gbps.
- Power over Ethernet (PoE): Fully compliant with 802.3at PoE, enabling all device features. 802.3bt class 5 is required to enable full USB power and 5Gbps uplink.
- Before deployment, verify that all PoE injectors and switches provide the necessary power budget to enable all access point features.

• Ethernet cable requirements

- CAT 5E or above required, CAT 6/6A: Recommended for distances up to 100m.
- Environmental Considerations: Avoid routing cables near high-interference sources such as electrical panels or motors. Ensure cable installations comply with local building and fire safety codes.

• Intelligent network capabilities

- CleanAir Pro Technology: Provides advanced spectrum intelligence for 2.4 GHz, 5 GHz, and 6 GHz bands. Supports high-speed spectrum analysis across channel widths from 20 MHz to 160 MHz. The technology identifies and mitigates interference sources, optimizing network performance in real-time.

• Operating modes

- **Local mode:** It is the default mode for client servicing, which utilizes CAPWAP tunnels for centralized management. This mode offers central switching capabilities, which handles management and data traffic.
- **FlexConnect mode:** FlexConnect mode allows local data switching and enables continued operation during controller disconnection.
- **Monitor mode:** The mode acts as a dedicated sensor for Intrusion Detection Systems (IDS), rogue AP detection, and Location-based services (LBS).
- **Sniffer mode:** Sniffer mode captures and forwards wireless packets for remote analysis using tools like Wireshark or AiroPeek NX. It also includes metadata like timestamps, signal strength, and packet size.



Note Requires the receiving server to be on the same VLAN as the controller management VLAN.

- **Site survey mode:** This mode enables RF parameter configuration for site survey investigations and simplifies network planning and installation.
 - **SDA/fabric mode:** The SDA mode supports Software-Defined Access (SD-Access) for advanced segmentation and policy enforcement.
- **External interfaces**
 - **USB Port:** USB ports support additional device connectivity for enhanced flexibility.
 - **Uplink Ethernet** (100 Mbps, 1 Gbps, 2.5 Gbps, 5 Gbps)
 - **Software features**
 - **Intelligent Capture:** It probes the network to provide deep diagnostic insights, enabling troubleshooting latency, interference, and other performance issues.
 - **Cisco Catalyst Center Support:** The support integrates with Cisco Catalyst Center to enable Cisco Spaces for location services.
 - **Apple FastLane** for optimized iOS device performance.
 - **Cisco Identity Services Engine (ISE) support:** Integration with ISE for advanced security and network access control.
 - **External antennas**

The Cisco Wireless 9174E (CW9174E) supports the following list of external antennas:

 - **Wi-Fi 7 antennas:**
 - **CW-ANT-T-O2-D8:** Tri-band omnidirectional ceiling-mount antenna
 - **CW-ANT-T-D2-D8:** Tri-band directional patch antenna with built-in accelerometer, designed to work with the included CW-MNT-ART2 articulating mount.
 - **CW-ANT-T-O4-R:** Tri-band omnidirectional dipole with RP-TNC

- **Other antennas**

- C-ANT9101 (dual band, 8 spatial stream only)
- C-ANT9102
- C-ANT9103
- MA-ANT-3-C6/D6/E6/F6 Series: Scanning Radio and IoT functionality supported (Requires AIR-CAB002-D8-R=)
- AIR-ANT2524V4C-R/RS, AIR-ANT2544V4M-5/RS, AIR-ANT2566P4W-R/RS, AIR-ANT2566D4M-R/RS Series: Scanning Radio functionality supported (Requires AIR-CAB002-D8-R= or CW-CAB-001-D8-R4 accessory)
- AIR-ANT2513P4M-N/NS: Requires AIR-CAB003-D8-N accessory

- **Accessories:**

- AIR-CAB002-D8-R (DART to RP-TNC accessory)
- AIR-CAB003-D8-N (DART to N-Type accessory)
- CW-CAB-001-D8-R4 (DART to 4-port RP-TNC cable)
- CW-ACC-ADPT1 (C-ANT9103 mount adapter)
- CW-MNT-9

AP model numbers and regulatory domains

AP Type	Product ID	Details
Access Point for indoor environments, with internal antennas	CW9174E	Wi-Fi 7 AP, tri-band, 802.11be with external antenna connector

With the new Wi-Fi 7 APs, Cisco now has one AP portfolio that can be used either with the Meraki cloud native network or Catalyst on-premise controller-based deployments. With the introduction of the one AP portfolio, it is essential to have a single product ID (PID) at manufacturing, to simplify logistics or operations. This AP model is designed for global use under a single PID. To verify approval and to identify the regulatory domain that corresponds to a particular country, see

<https://www.cisco.com/c/dam/assets/prod/wireless/wireless-compliance-tool/index.html>. Regulatory approvals are continually updated as they are obtained.

Antennas and radios

The following sections provide detailed information about the AP's antennas and radios.

Antenna

External antenna

The Cisco Wireless 9174E (CW9174E) has a single Octal DART (DART-8) connector.

Wi-Fi 7 antennas

- CW-ANT-T-O2-D8: Tri-band omnidirectional ceiling-mount antenna with accelerometer and DART8 connector.
- CW-ANT-T-D2-D8: Tri-band directional patch antenna with accelerometer and DART8 connector. Includes CW-MNT-ART2 mount.

Operating frequency and effective isotropic radiated power

Table 1: Cisco 9174E AP values for European Union (CE) region

Evaluation mode	Frequency range	Maximum transmit power
	(MHz)	(dBm)
2.4GHz WLAN	2400-2483.5	19.99 (2x2), 22.99 (4x4)
5GHz WLAN B1	5150-5250	22.98
5GHz WLAN B2	5250-5350	22.98
5GHz WLAN B3	5470-5725	29.98
5GHz WLAN B4	5725-5875	13.97
Bluetooth	2400-2483.5	9.96
IEEE 802.15.4	2400-2483.5	9.9
(Zigbee)		

Table 2: Cisco 9174E values for United Kingdom region

Evaluation mode	Frequency range	Maximum transmit power
	(MHz)	(dBm)
2.4GHz WLAN	2400-2483.5	19.99 (2x2), 22.99 (4x4)
5GHz WLAN B1	5150-5250	22.98
5GHz WLAN B2	5250-5350	22.98
5GHz WLAN B3	5470-5725	29.98
5GHz WLAN B4	5725-5850	22.98
(IR 2030)		
Bluetooth	2400-2483.5	9.96

Evaluation mode	Frequency range	Maximum transmit power
	(MHz)	(dBm)
IEEE 802.15.4	2400-2483.5	9.9
(Zigbee)		



CHAPTER 2

Hardware Features

This chapter describes the hardware features of Cisco Wireless 9174E Wi-Fi 7 Access Point and contains the following sections:

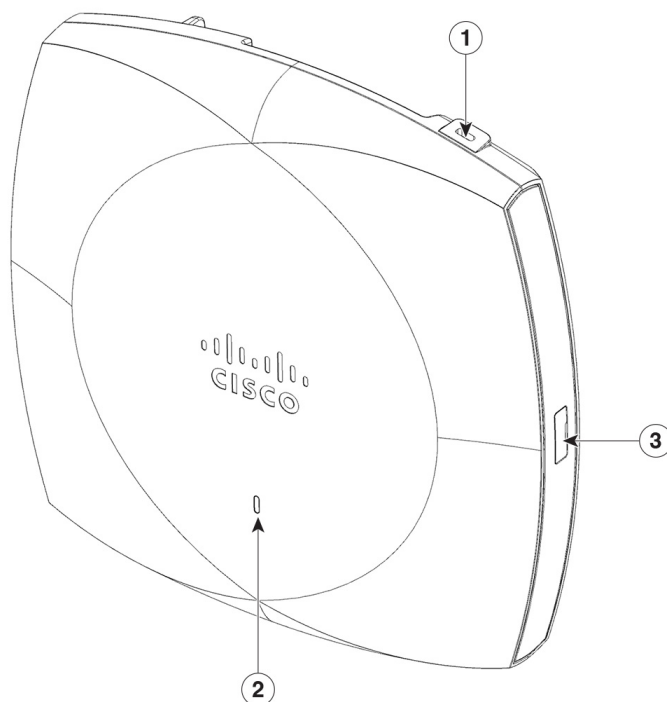
- [Access point views, ports, and connectors, on page 7](#)
- [Access point LED states, on page 10](#)

Access point views, ports, and connectors

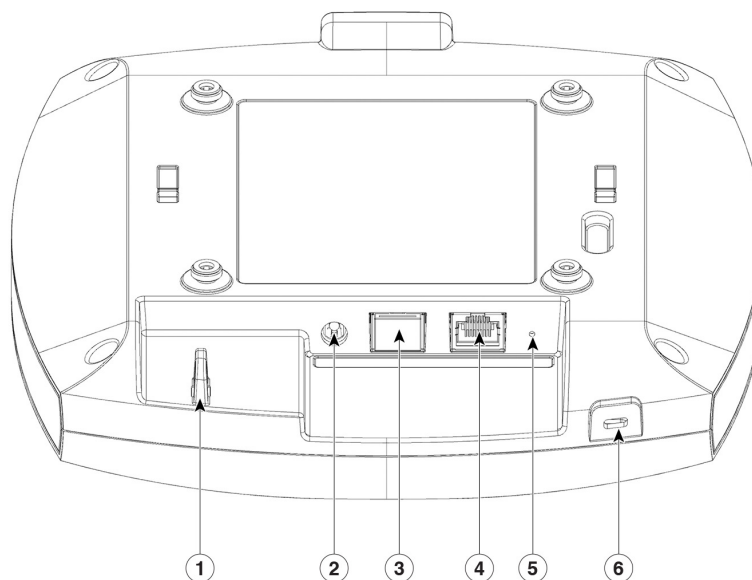
Cisco Wireless 9174E Wi-Fi 7 Access Point has multiple options that you can use to power the AP.

Connectors and ports on the AP

The following figures show the available ports on the AP:

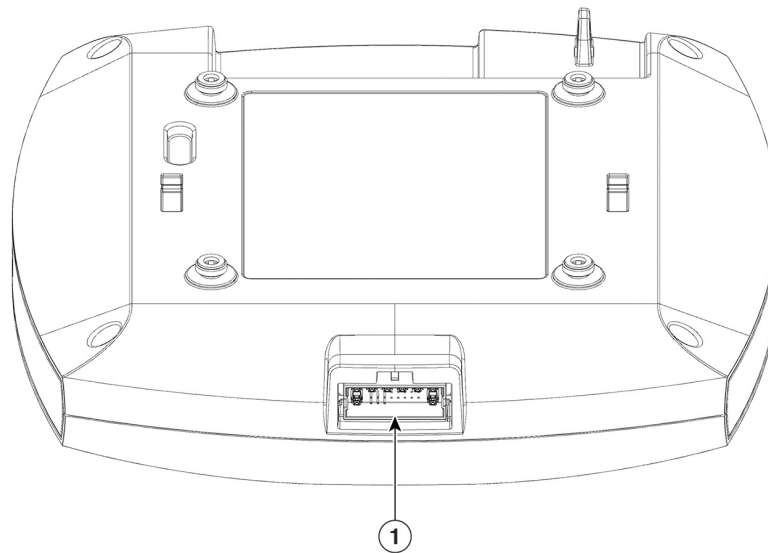
CW9174E face view*Figure 1: CW9174E face view*

1	Kensington lock slot
2	Status LED For information on the LED status, see LED Status Indications .
3	USB 2.0 port

CW9174E top view**Figure 2: CW9174E top view with connectors and ports**

1	Security hasp for padlocking AP to mounting bracket	4	Ethernet port 0
2	DC power jack	5	Reset button For information about how to use the Reset button, see the Using the Mode Button section
3	RJ-45 console port Default baud rate is 115200.	6	Kensington lock slot

Figure 3: CW9174E top view



1	8-port Smart Antenna (DART) connector port
---	--

Access point LED states

The location of the access point status LED is shown in [Connectors and ports on the AP, on page 7](#).



Note

- Regarding LED status colors, it is expected that there might be small variations in color intensity and hue from unit to unit. This is within the normal range of the LED manufacturer's specifications and is not a defect. However, the intensity of the LED can be changed through the controller.
- When the AP is in Meraki management mode, the LED status indicators convey the status differently from the Cisco APs.

The access point status LED indicates various conditions, which are described in the following table.

Table 3: LED status indications for controller

Message type	LED state	Message meaning
Association status	Green 	Normal operating condition, but no wireless client is associated
	Blue 	Normal operating condition, at least one wireless client is associated

Message type	LED state	Message meaning
Boot loader status	Blinking Green 	DRAM test in progress; Board init in progress; Initialize Flash file system; Ethernet Init; Cisco IOS Starting; Init OK
Boot loader error	Blinking Green 	Boot loader signing verification failure
Operating status	Blinking Blue 	Software upgrade in progress
	Alternating between Green and Red 	Discovery or join process in progress
	Cycling through Red-Off-Green-Off-Blue-Off 	General warning; insufficient inline power
AP Location Command	Blinking Red	AP location command in progress
Configuration recovery in progress	Blinking Blue 	Mode button pressed for 2 to 3 seconds
Ethernet link not operational	Orange 	Ethernet link not operational
Ethernet failure	Red 	Ethernet failure
Top right ethernet LED	Off 	Link speed is 10 Mb, 100 Mb, or disconnected
	Orange 	Link speed is 1000 Mb
	Green 	Link speed is 2.5 Gb and 5 Gb.
Top left ethernet LED	Blinking Green 	Activity indicator for received signal or transmitted signal

Table 4: LED status indications for Meraki

Message type	LED state	Message meaning
Boot status	Orange 	AP is booting (permanent Orange suggests hardware issue)
Initialization status	Rainbow	AP is initializing/scanning
Upgrade status	Blinking Blue	AP is upgrading
Gateway mode (no clients)	Green 	AP in Gateway mode with no clients
Gateway mode (with clients)	Blue 	AP in Gateway mode with clients
Uplink status	Blinking Orange	AP can't find uplink



CHAPTER 3

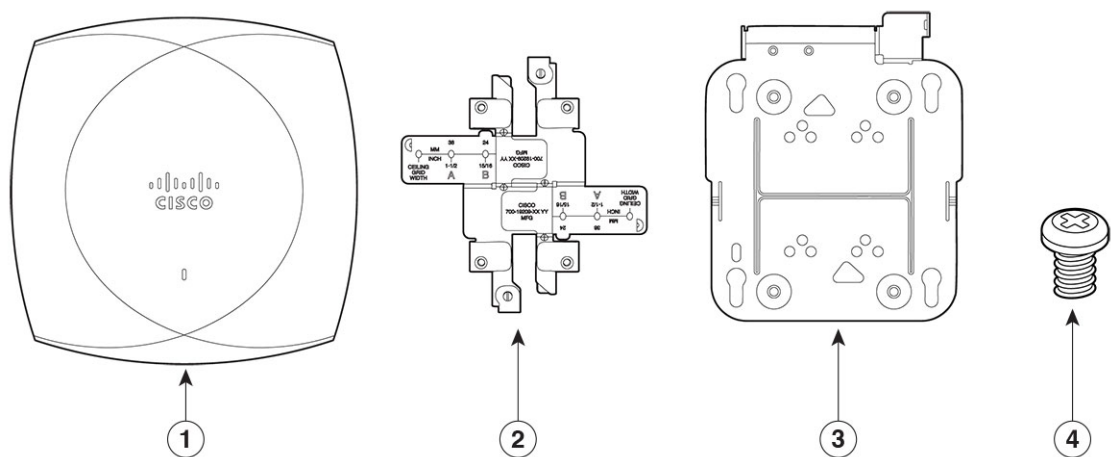
Install the Access Point

Installing an AP involves the following high-level tasks.

- [Package contents, on page 13](#)
- [Unpack the access point, on page 14](#)
- [Cisco orderable accessories, on page 14](#)
- [Preinstallation Configuration - Cisco Catalyst Mode, on page 16](#)
- [Preinstallation configuration - Cisco Meraki mode, on page 20](#)
- [Install the access point, on page 20](#)
- [Power the access point, on page 54](#)
- [Deploy the access point in a wireless network, on page 55](#)

Package contents

Each AP package contains the following items:



1	CW9174E access point
2	AIR-AP-T-RAIL-R
3	AIR-AP-BRACKET-1

4	Screws
---	--------

- One CW9174E AP
- Default mounting brackets: Adjustable ceiling-rail clips AIR-AP-T-RAIL-R= and AIR-AP-BRACKET-1=
- Orderable optional mounting brackets: AIR-AP-T-RAIL-F=, and AIR-AP-BRACKET-2=
- Cisco product documentation and pointer card

Unpack the access point

Procedure

-
- Step 1** Unpack and remove the access point and the selected mounting accessory kit from the shipping box.
- Step 2** Return the packing material to the shipping container and save it for future use.
- Step 3** Verify that you have received all the items you ordered. If any item is missing or is damaged, contact your Cisco representative or reseller for instructions.
-

Cisco orderable accessories

You can order the following accessories separately, from Cisco:

- Wi-Fi 7 antennas and accessories

Antennas	Description
CW-ANT-T-O2-D8	Tri-band omnidirectional ceiling-mount antenna with built-in accelerometer
CW-ANT-T-D2-D8	Tri-band directional patch antenna with built-in accelerometer
CW-ANT-T-O4-R	Tri-band omnidirectional dipole antenna with RP-TNC
CW-CAB-001-D8-R4	8-Port DART to 4-Port RP-TNC Cable, 1ft
AIR-CAB002-D8-R=	8-Port DART to 8-Port RP-TNC Cable, 2ft
AIR-CAB003-D8-N=	8-Port DART to 8-Port N-Type Cable, 3 ft

- AP-mounting brackets to mount the AP

Mounting brackets	Description
AIR-AP-BRACKET-1=	Low-profile bracket: Used for ceiling-mount installations.

Mounting brackets	Description
AIR-AP-BRACKET-2=	Universal bracket: Used for wall or electrical box installations.
AIR-AP-T-RAIL-F=	Flush ceiling grid clip
AIR-AP-T-RAIL-R=	Ceiling grid clip (recessed mounting)
AIR-CHNL-ADAPTER=	T-RAIL channel adapter
CW-MNT-9	Bracket for integrating CW9174E with CW-ANT-T-D2-D8
CW-MNT-ART2-00	Articulating mount
CW-ACC-ADPT1	Mounting arm adapter plate for use with C-ANT9103 mount

- Power injectors when Power over Ethernet (PoE) is not available

Power Supply	Description
CW-INJ-8	Meraki 802.3bt PoE injector Power Specifications: 60W, 10 Gbps Ethernet For more information, see Cisco Power Injector CW-INJ-8 Quick Start Guide .
AIR-PWRINJ7=	Mid-span power injector AIR-PWRINJ7= when (PoE) is not available Power specifications: 50W, 56VDC For more information, see the Cisco Multigigabit 802.3bt Power Injector .
MA-INJ-6-x	Meraki 802.3bt PoE injector Power Specifications: 60W, 55VDC For more information, see the MA-INJ-6 Meraki Multigigabit 802.3bt Power over Ethernet Injector .
MA-PWR-50WAC	Power adapter

- Console cable

Cable	Description
Console cable	Standard console cable for management communication

- Other accessories

Item	Description
CW-ACC-GPS1=	GNSS/GPS USB Module

Preinstallation Configuration - Cisco Catalyst Mode

Controller discovery process

To support the CW9174E AP, the controller must be running Cisco IOS XE 17.18.2 or a later release. For more information, see the [Cisco Wireless 9174 Series Access Points Data Sheet](#).

Guidelines and limitations

- It is not possible to edit or query an access point using the controller CLI if the name of the access point contains a space.
- Make sure that the controller is set to the current time. If the controller is set to a time that has already occurred, the access point might not join the controller because its certificate may not be valid for that time.

The AP must discover the controller before it can become an active part of the network. The AP supports the following controller discovery processes:

- Locally stored controller IP address discovery: If the access point was previously joined to a controller, the IP addresses of the primary, secondary, and tertiary controllers are stored in the access point's nonvolatile memory. This process of storing controller IP addresses on an access point for later deployment is called priming the access point. For more information about priming, see [Performing a preinstallation configuration, on page 16](#).
- DHCP server discovery: This feature uses DHCP Option 43 to provide controller IP addresses to the access points. Cisco switches support a DHCP server option that is typically used for this capability. For more information about DHCP Option 43, see [Configure DHCP option 43, on page 59](#).
- DNS discovery: The access point can discover controllers through your domain name server (DNS). For the access point to do so, you must configure your DNS to return controller IP addresses in response to CISCO-CAPWAP-CONTROLLER.localdomain, where localdomain is the access point domain name. Configuring the CISCO-CAPWAP-CONTROLLER provides backwards compatibility in an existing customer deployment. When an access point receives an IP address and DNS information from a DHCP server, it contacts the DNS to resolve CISCO-CAPWAP-CONTROLLER.localdomain. When the DNS sends a list of controller IP addresses, the access point sends discovery requests to these controllers.

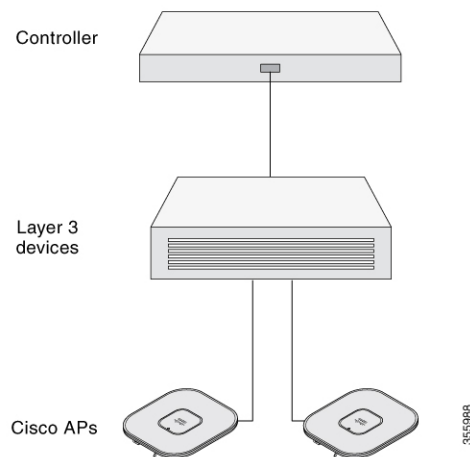
Performing a preinstallation configuration

The following procedures describe the processes to ensure that your AP installation and initial operation go as expected.



Note Performing a preinstallation configuration is an optional procedure. If your network controller is properly configured, you can install your AP in its final location and connect it to the network from there. For more information, see [Deploy the access point in a wireless network, on page 55](#).

The following illustration shows the preinstallation configuration setup:



Perform the following steps:

Before you begin

Ensure that the Cisco Controller Distribution System (DS) port is connected to the network. Use the procedure for CLI or GUI, as described in the release-appropriate [Cisco Catalyst 9800 Series Wireless Controller Software Configuration Guide](#).

- Enable Layer 3 connectivity between APs and wireless controller's wireless management interface.
- Configure the switch to which your AP has to attach. See the [Cisco Wireless Controller Configuration Guide](#) for the release you are using, for additional information.
- Ensure that the DHCP is enabled on the network. The AP must receive its IP address through DHCP.



Note An AP is assigned an IP address from the DHCP server only if a default router (gateway) is configured on the DHCP server (enabling the AP to receive its gateway IP address) and the gateway ARP is resolved.

- CAPWAP UDP ports must not be blocked in the network.
- The AP must be able to find the IP address of the controller. This can be accomplished using DHCP, DNS, or IP subnet broadcast. This guide describes the DHCP method to convey the controller IP address. For other methods, see the product documentation. See also [Configure DHCP option 43, on page 59](#) for more information.



Note The AP requires an 5G Ethernet link to prevent the Ethernet port from becoming a bottleneck for traffic.

Procedure

Step 1 Power the AP using a supported power source.

See [Power the access point, on page 54](#).

- The AP checks for cloud connectivity and attempts to connect to the Meraki dashboard.
- If the AP is unable to find cloud connectivity, it uses fast offline migration to look for a Cisco Catalyst 9800 Controller. The AP uses DHCP, DNS, and L2 discovery mechanisms for the migration. For more information, see [Global Use Access Points](#).

Note

The AP should not have cloud connectivity from its subnet if it intends to connect to a controller. If the AP joins a Meraki Dashboard, it can be later migrated to a controller.

Once the AP discovers the controller, it performs a firmware image download and reboots.

Step 2 If the preinstallation configuration is successful, the Status LED is green, indicating normal operation. Disconnect the AP and mount it on the location at which you intend to deploy it on the wireless network.

Step 3 If your AP does not indicate normal operation, turn it off and repeat the preinstallation configuration.

Note

When you are installing a Layer 3 access point on a subnet that is different from the Catalyst 9800 controller, ensure that the following setup is configured:

- A DHCP server is reachable from the subnet on which you plan to install the AP.
- The subnet has a route back to the controller.
- This route has destination UDP ports 5246 and 5247 open for CAPWAP communications.
- The route back to the primary, secondary, and tertiary controller allows IP packet fragments.
- If address translation is used, the access point and the controller have a static 1-to-1 NAT to an outside address. Port Address Translation is not supported.

Preinstallation checks and installation guidelines

Before you mount and deploy your access point, we recommend that you perform a site survey (or use the Site Planning tool) to determine the best location to install your access point.

You should have the following information about your wireless network available:

- Access point locations
- Access point mounting options:
 - Below a suspended ceiling
 - on a flat horizontal surface

- on top of a desk



Note You can mount the access point above a suspended ceiling, but you must purchase additional mounting hardware. For more information, see [Install the access point, on page 20](#).

- Access point power options: Use one of the following options to power the AP:
 - Cisco-approved power injector
 - PoE with a supporting switch
 - 54V power adapter with 50W rating



- Note**
- The Underwriter Laboratories (UL)-approved Listed Power Adapter must meet the following minimum specifications: Rated output of 42.5 to 57 Vdc, min. 0.81-1.08A, Tmax of 50°C minimum, altitude of 3048m minimum.
 - If 802.3af is used, Ethernet gets downgraded to 1GbE and the 2.4-GHz radio operates in 1x1:1 mode. IoT and scan radios are switched off.

- Operating temperature:
 - CW9174E: -4°F to 122°F (-20°C to 50°C)



- Note**
- When installing the AP in an environment where the ambient temperature is in the range of 104° and 122°F (>40° and 50°C), the access point configuration changes.
- 10SS mode: 5G and 6G radios scale to 2x2, ethernet remains at 5G, and the USB remains enabled.
 - 8SS mode: 2G and 5G radios scale to 2x2, ethernet remains at 5G, and the USB remains enabled.

- Console access using the console port

We recommend that you use a console cable that is one meter or less in length.



- Note**
- The AP may face issues while booting if you use an unterminated console cable (not plugged into any device or terminal) or a console cable that is more than one meter in length.

We recommend that you make a site map showing access point locations so that you can record the device MAC addresses from each location and return them to the person who is planning or managing your wireless network.

Preinstallation configuration - Cisco Meraki mode

Perform a preinstallation configuration - Cisco Meraki mode

This is a brief overview of the steps required to add the access point to your network. For more information about creating, configuring and managing Meraki wireless networks, see the [Cisco Meraki documentation](#).

Before you begin

You should complete these steps before going on-site to perform an installation.

Follow these steps to configure dashboard network.

Procedure

-
- | | |
|---------------|--|
| Step 1 | Log in to Cisco Meraki dashboard . If this is your first time, create a new account. |
| Step 2 | Find the network to which you plan to add your APs or create a new network. |
| Step 3 | Add your APs to your network. You will need your Meraki order number (found on your invoice) or the Cloud ID of each AP, which looks like Qxxx-xxxx-xxxx, and is found on the bottom of the unit. You will also need your license key, which you should have received via email. |
| Step 4 | Go to the map or floor plan view and place each AP on the map by clicking and dragging it to the location where you plan to mount it. |
-

What to do next

For more information about onboarding access points, see [Wireless Access Points Quick Start Guide](#).

Install the access point

Cisco Wireless 9174E Wi-Fi 7 Access Point can be mounted in the following ways:

- Ceiling mount with omnidirectional antenna or directional antenna
- Wall mount with directional antenna
- Pole mount with directional antenna
- Mounting with integrated AP and antenna mount

The standard mounting hardware supported by the AP are listed in the following table.

Table 5: Brackets and clips to mount the AP

Mounting type	Part number	Description
Brackets ¹²³	AIR-AP-BRACKET-1	Low-profile bracket: Used for ceiling-mount installations
	AIR-AP-BRACKET-2	Universal bracket: Used for wall or electrical box installations
	CW-MNT-9	Integrated AP and Antenna Mount for CW9174E and CW-ANT-T-D2-D8 for external antennas
	CW-MNT-ART2-00	Articulating mount
Clips	AIR-AP-T-RAIL-R	Ceiling grid clip (recessed mounting)
	AIR-AP-T-RAIL-F	Ceiling grid clip (flush mounting)
	AIR-CHNL-ADAPTER	Optional adapter for channel-rail ceiling grid profile

¹ Mount the AP using no less than four screw holes on a bracket.

² AIR-AP-BRACKET-3 is not compatible for use with Cisco 9174E access points.

³ You can also use the *in-tile* mounting options available from third parties. For more information, see the access point data sheet.

When mounting the AP in areas where there is a possibility of the AP being knocked off the mounting bracket, use the lock hasp at the back of the AP to lock it to the bracket.

Installation steps

This section provides a brief overview of the main steps involved in installing your access point and antenna.

To begin with, you'll mount the AP. You can mount the AP directly on a wall or a ceiling. you can opt to mount the AP and the antenna separately next to each other or use the integrated AP and antenna mount as a single unit.

Next task is to prepare the antenna assembly.

Once both of these steps are complete, the final task is to mount the antenna assembly on a wall, pole, or ceiling.

Mount the AP on a ceiling

Mount the Cisco Wireless 9174E Wi-Fi 7 Access Point to a ceiling using a mounting bracket.

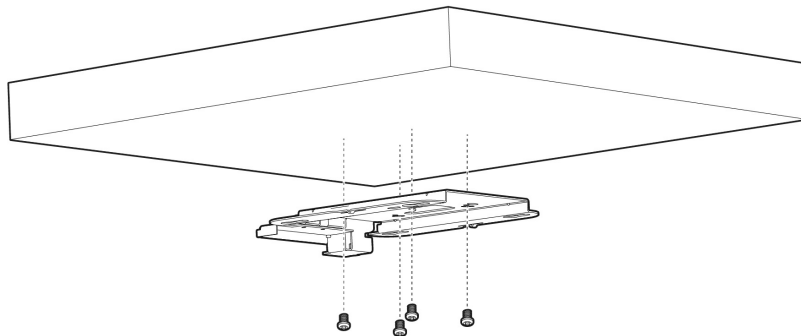
Follow these steps to mount the AP on a ceiling.

Procedure

-
- Step 1** Determine the mounting location for the AP.

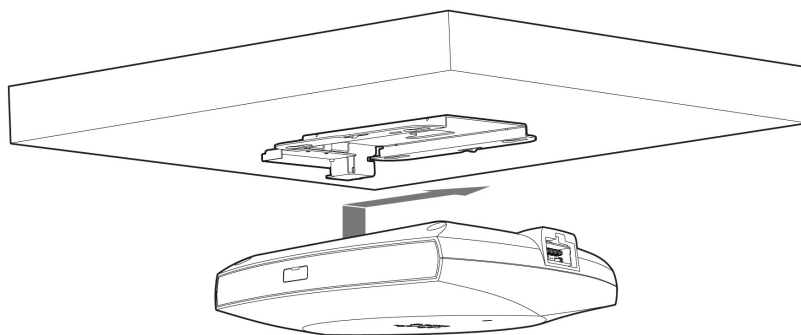
- Step 2** Mount the bracket to the chosen location on the ceiling. Secure the bracket using screws that go through the bracket and into the ceiling.

Figure 4: Mount the bracket on the ceiling



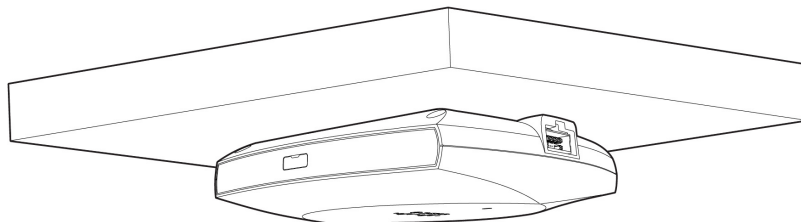
- Step 3** Align the AP with the mounted bracket. Slide the AP downwards onto the bracket until it is securely mounted.

Figure 5: Slide the AP onto the bracket



- Step 4** Verify that the AP is firmly attached to the mounting bracket and is securely mounted on the ceiling.

Figure 6: AP is mounted on the ceiling



Mount the AP on a wall

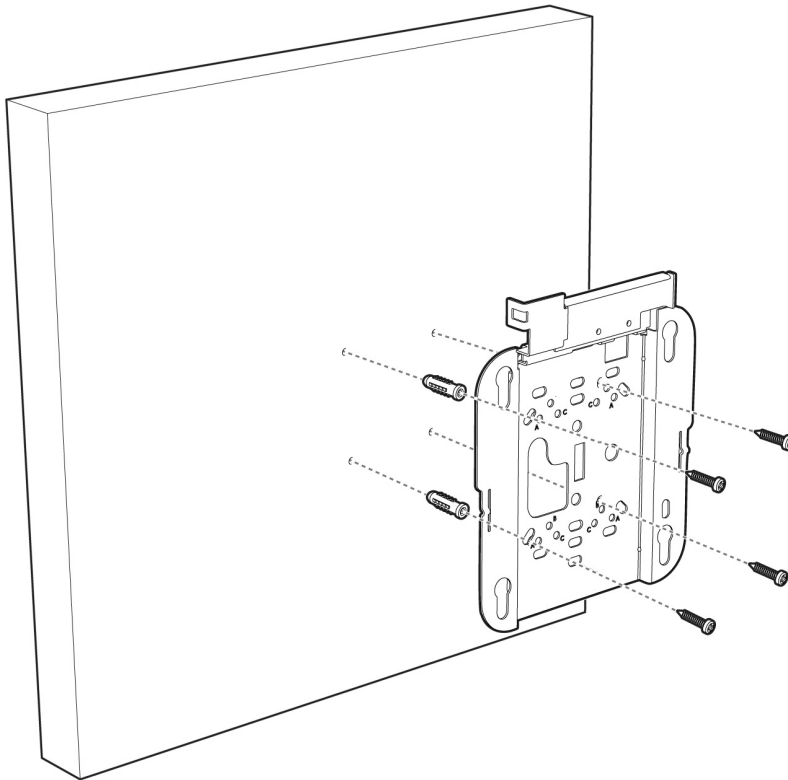
Mount the Cisco Wireless 9174E Wi-Fi 7 Access Point to a wall using a mounting bracket.

To mount the AP on a wall, use these steps:

Procedure

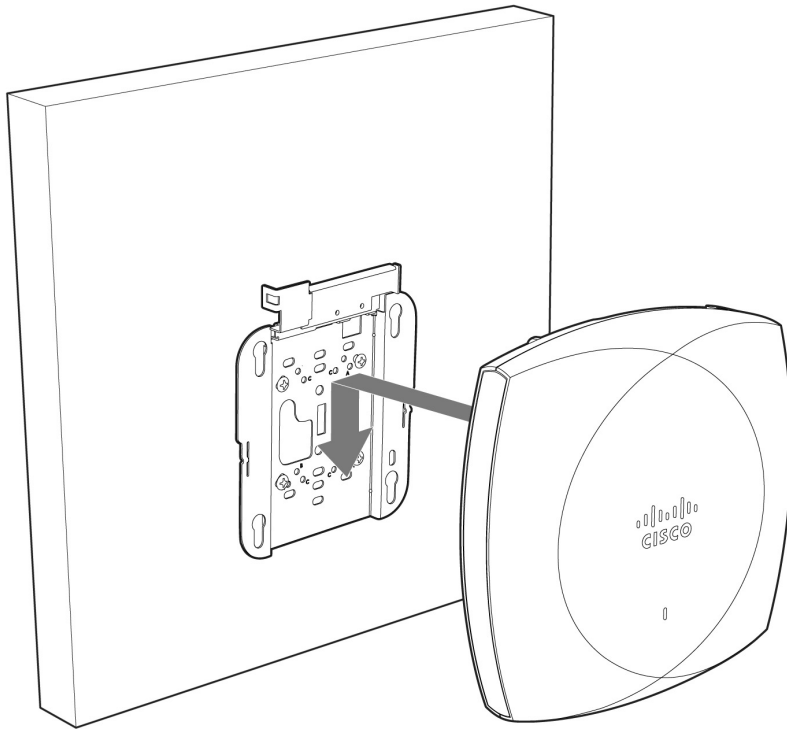
- Step 1** Determine the mounting location for the AP.
- Step 2** Mount the bracket to the chosen location on the wall. Secure the bracket using screws that go through the bracket and into the wall.

Figure 7: Mount the bracket on the wall



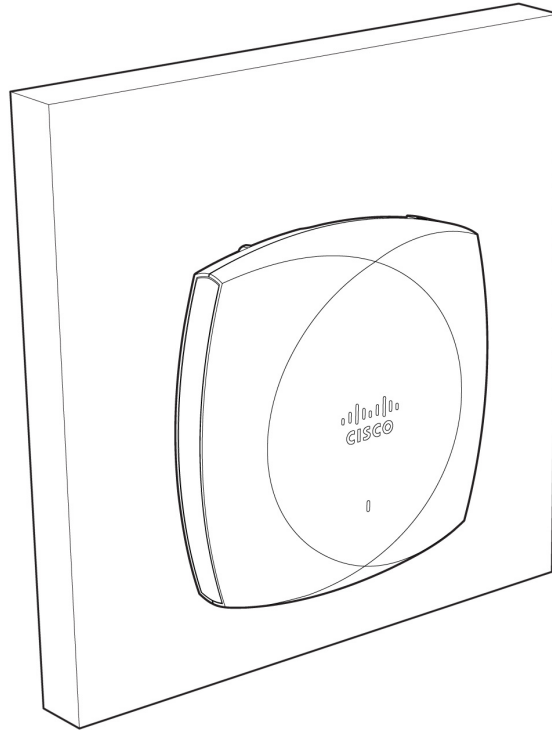
- Step 3** Align the AP with the mounted bracket. Slide the AP downwards onto the bracket until it is securely seated.

Figure 8: Slide the AP onto the bracket



Step 4 Verify that the AP is firmly attached to the mounting bracket and is securely mounted on the wall.

Figure 9: AP is mounted to the wall



Mount the omnidirectional antenna on a ceiling

Mount the CW-ANT-T-O2-D8 omnidirectional antenna on a ceiling panel to ensure optimal wireless coverage and reliable device performance in the intended area.

Ceiling-mounted antennas for APs are ideal for environments where wall mounting is insufficient, and where you want to maximize signal distribution throughout the space.

Mount the omnidirectional antenna on a ceiling

Figure 10: Package contents

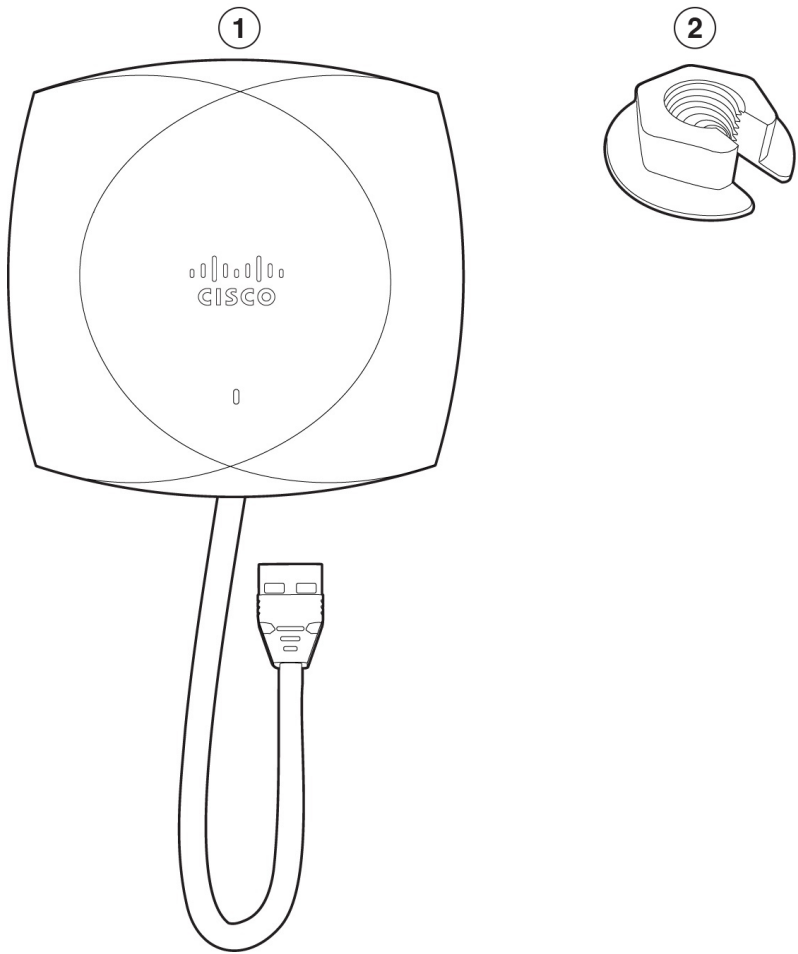
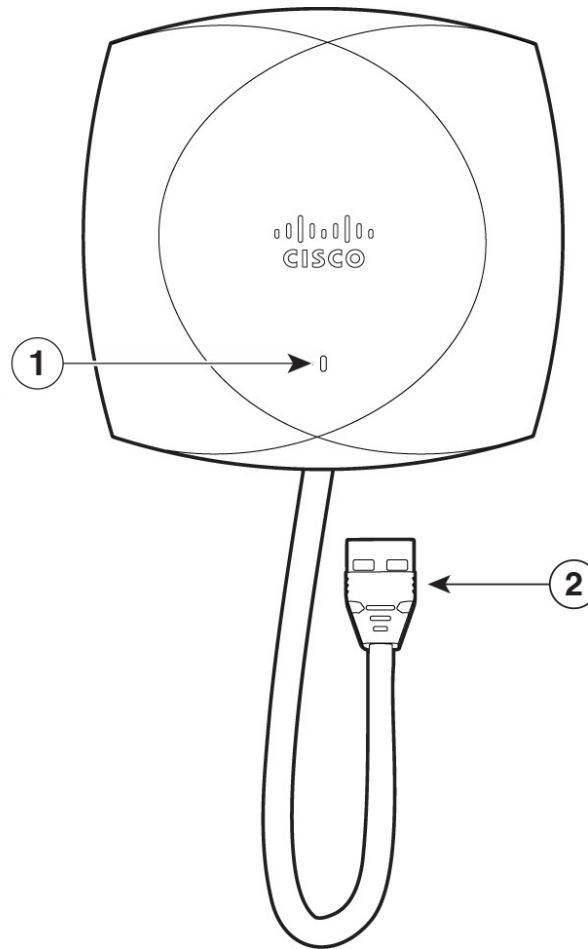


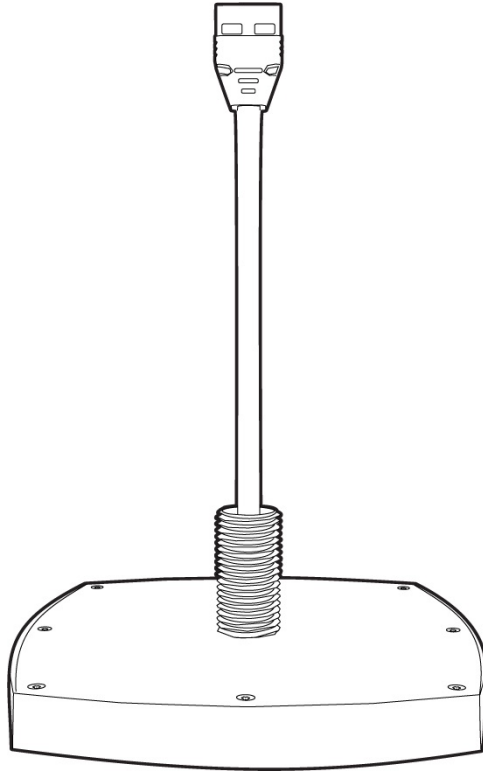
Table 6: Contents

Item #	Item	Quantity
1	CW-ANT-T-O2-D8 antenna	1
2	Mounting collar	1

Figure 11: Antenna front view

1	Status LED
2	Antenna DART Cable (2-feet or 24-inches)

Figure 12: Antenna back view



Before you begin

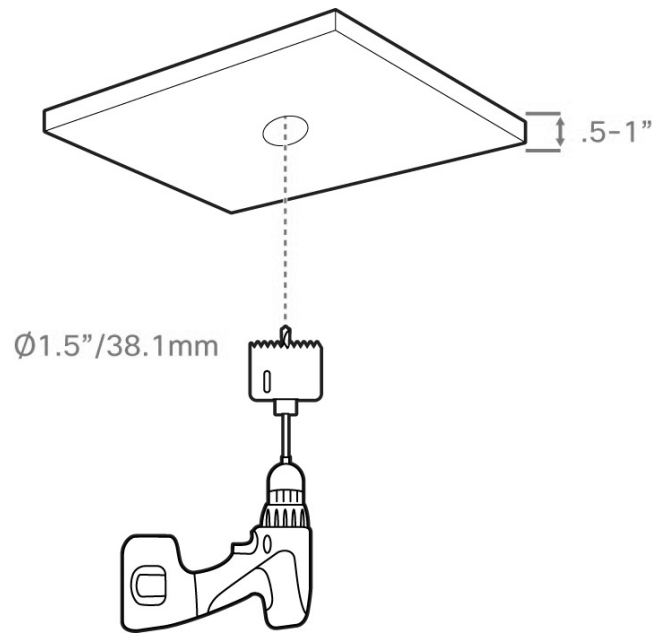
Ensure that the ceiling panel is sturdy enough to support the antenna.

Follow these steps to mount the omnidirectional antenna on the ceiling. Keep the antenna and the AP close for easier mounting.

Procedure

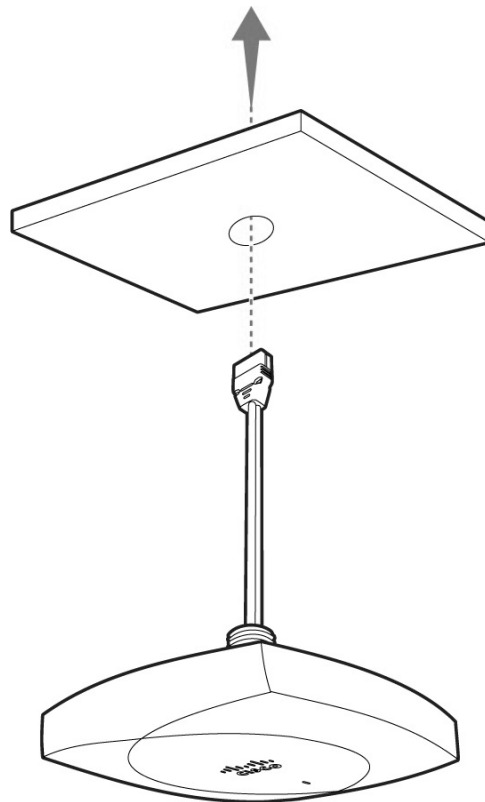
-
- Step 1** Prepare the ceiling panel. Use a hole saw, drill a circular hole with a diameter of 1.5" in the ceiling panel. Ensure the panel thickness is between 0.5" and 1".

Figure 13: Prepare the ceiling panel



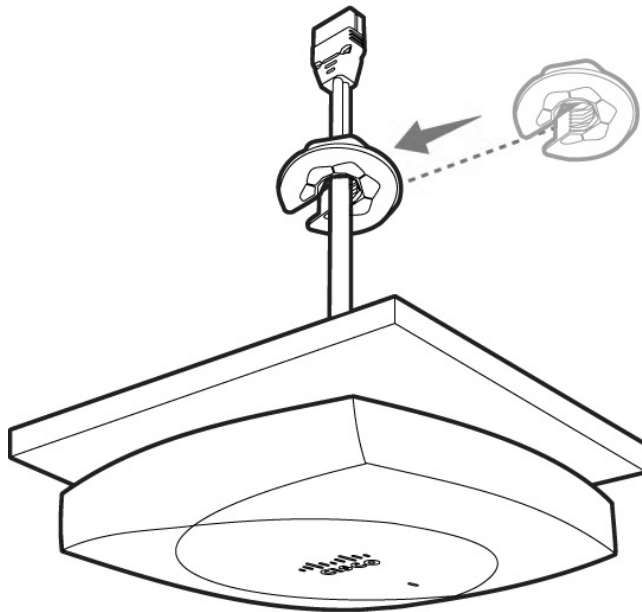
Step 2 Thread the antenna DART cable through the hole in the ceiling panel from below.

Figure 14: Insert the antenna DART cable



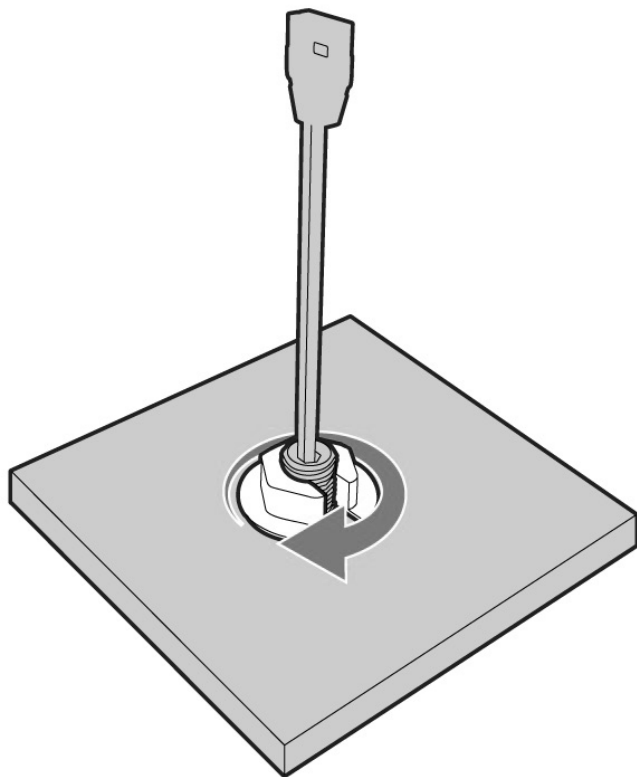
- Step 3** From the top side of the ceiling panel, insert the mounting collar into the back side of the mounting surface.

Figure 15: Insert the mounting collar



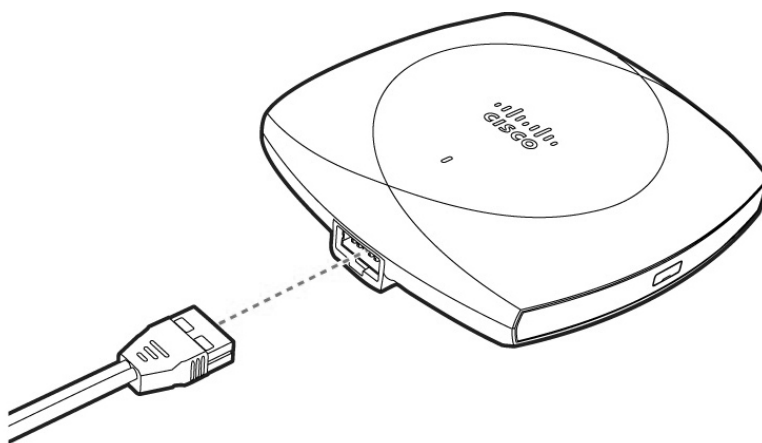
- Step 4** Tighten the mounting collar by rotating it clockwise until the AP assembly is securely fastened to the ceiling panel.

Figure 16: Secure the mount



Step 5 Plug the antenna DART cable into the Smart Antenna port on the CW9174E AP.

Figure 17: Connect the antenna DART cable



Mount the directional antenna

Use CW-ANT-T-D2-D8, the tri-band directional patch antenna with an integrated accelerometer and a DART8 connector. Begin by assembling the directional antenna. There are three different methods to assemble the antenna.

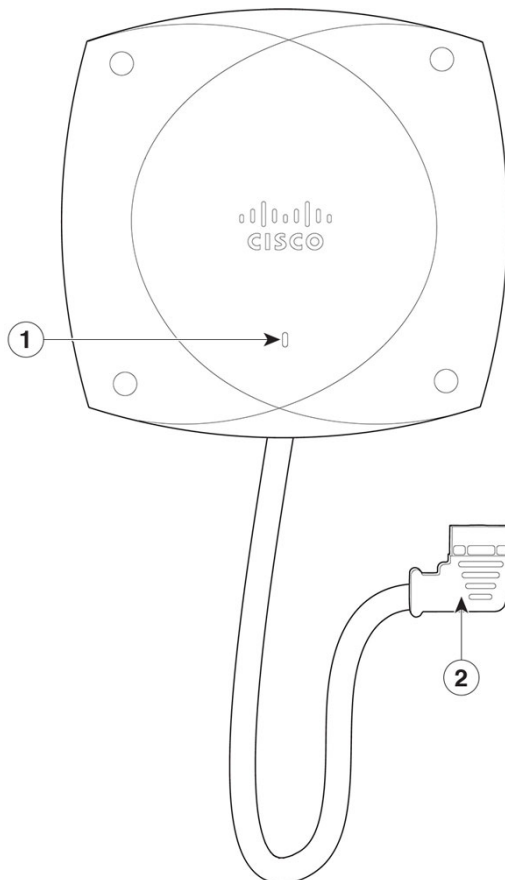
Prepare the antenna assembly

The directional antenna can be assembled in these places:

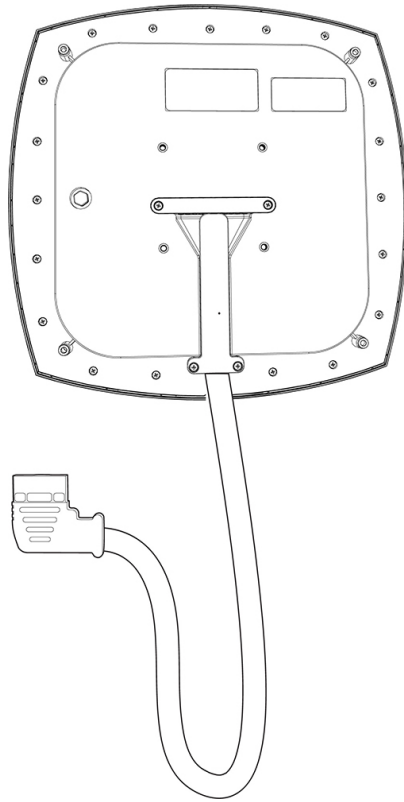
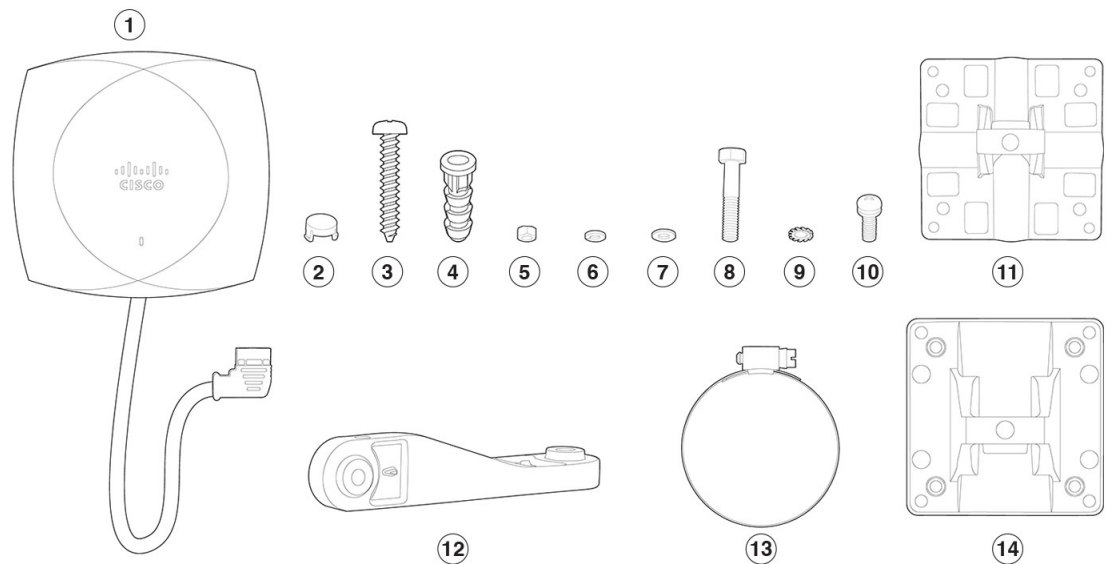
- Ceiling
- Wall
- Pole

Antenna views

Figure 18: Antenna face view



1	Status LED
2	DART cable (2-feet or 24-inches)

Figure 19: Antenna back view**Antenna package contents**

Attach the antenna directly to the wall or ceiling

Table 7: Antenna package contents

Item #	Antenna package contents	Quantity
1	CW-ANT-T-D2-D8 antenna	1
2	Screw cover	4
3	Mounting screw	4
4	Screw anchors	4
5	Nuts	2
6	Crush washer	2
7	Bolt washer	2
8	Bolts	2
9	Locking washer	2
10	Steel screws	4
11	Wall or pole mounting plate	1
12	Mounting arm	1
13	Pole clamps	2
14	Antenna mounting plate	1



Note The CW-MNT-ART2-00 articulating mount is included and can be used optionally during installation.

Attach the antenna directly to the wall or ceiling

There are two ways to attach the antenna.

- Directly to the wall or ceiling
- Attach using the CW-MNT-ART2-00 articulating mount

Follow these instructions to attach the antenna in environments that require a direct wall or ceiling-mounted installation.

Before you begin

Use only the mounting hardware provided or recommended for your AP model.

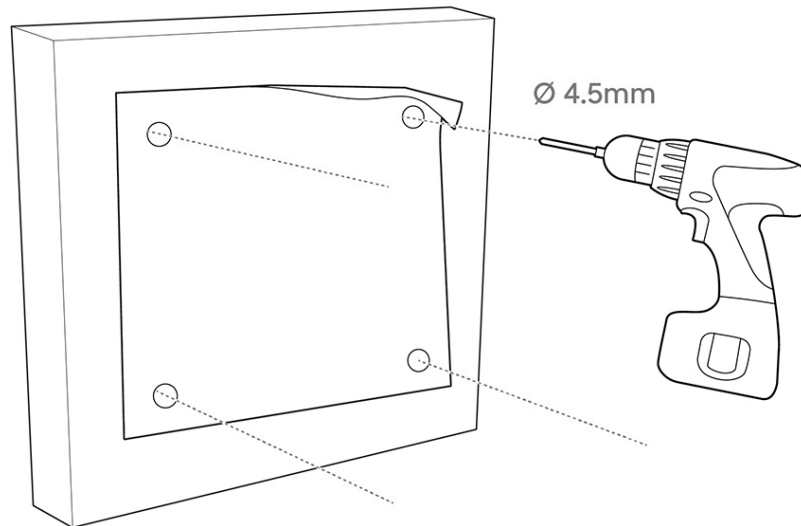
Verify the chosen mounting surface is structurally sound and can safely support the weight of the antenna.

The steps below are applicable to both wall and ceiling mounting procedure.

Procedure

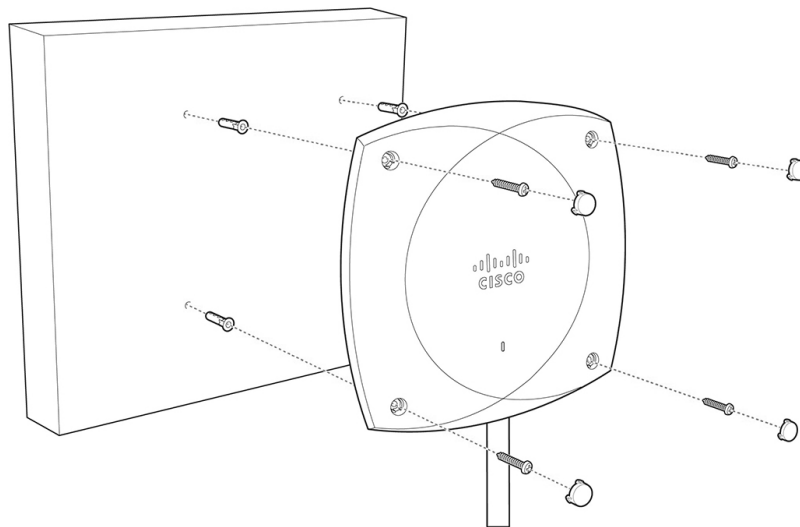
- Step 1** Mark the drill holes using a template at the desired location. Using a drill with a 4.5mm drill bit, carefully create holes at each marked location.

Figure 20: Drill holes for mounting



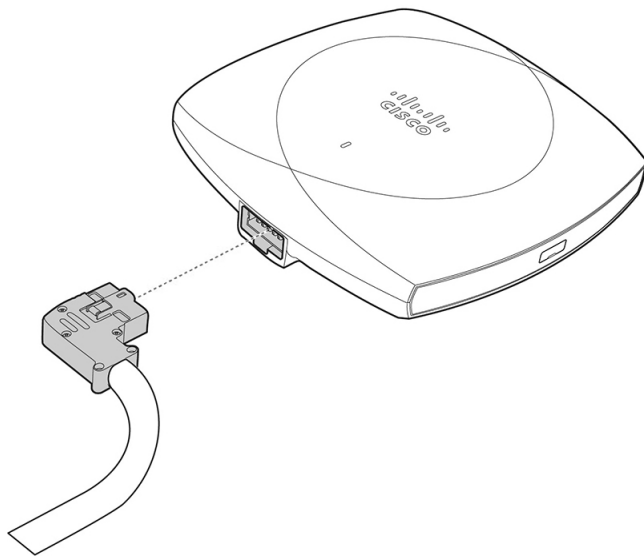
- Step 2** Mount the antenna to the wall or ceiling.
- Align the holes on the antenna with the holes drilled in the wall or ceiling.
 - Secure the antenna to the wall or ceiling using appropriate screws and, if necessary, wall anchors suitable for your surface type.
 - Ensure the antenna is firmly attached.

Figure 21: Secure the antenna to the mounting surface



- Step 3** Connect the antenna DART cable to the antenna connector on the CW9174E AP. Ensure the connector clicks into place for a secure connection.

Figure 22: Connect the DART cable



Attach the antenna using the CW-MNT-ART2-00 mount

This procedure describes how to securely attach the antenna using the articulating mount bracket.

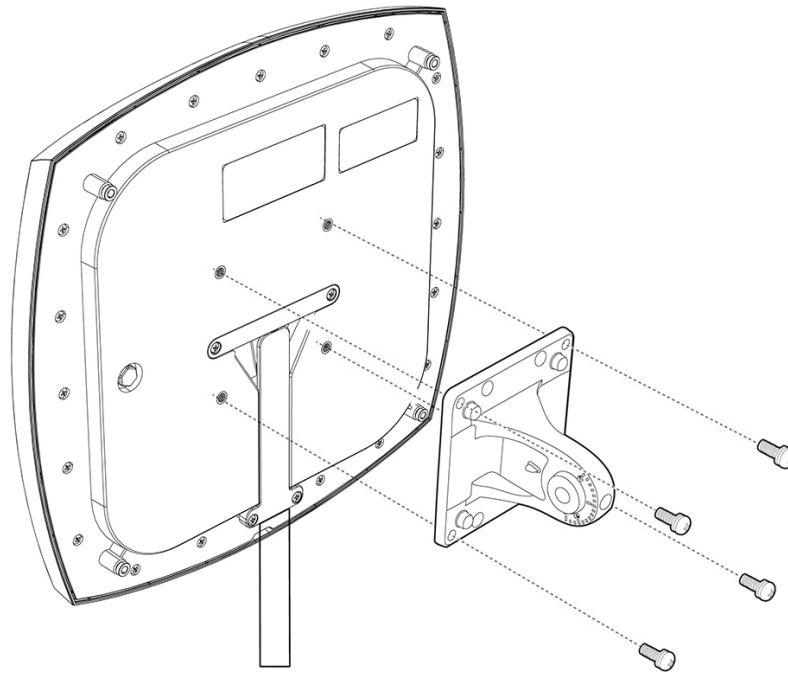
There are two ways to attach the antenna to the CW-MNT-ART2-00 mount:

- Attach the antenna directly to the CW-MNT-ART2-00 mount
- Attach to the integrated AP and Antenna mount (CW-MNT-9)

Use this procedure to properly attach the antenna to the mounting bracket before attaching it to a wall or ceiling.

Procedure

- Step 1** Position the antenna mounting plate (See item number 14 in the Antenna package contents table in [Prepare the antenna assembly](#)) on the back of the antenna.
- Step 2** Insert and tighten four steel screws (Item #10 in the Antenna package contents table) through the mounting plate and into the antenna.

Figure 23: Mount the Bracket

Step 3 Proceed to the appropriate section to wall, ceiling, or pole mount the antenna.

Attach the antenna to the integrated AP antenna mount

Attach the antenna assembly with the integrated AP antenna mount to ensure stable, safe, and reliable operation in the deployment environment.

Mounting the antenna assembly with the integrated AP antenna mount ensures secure and stable installation for optimal wireless coverage in various deployment environments. You can attach the antenna and then the mounting plate to complete the process.

Before you begin

Follow these steps to attach the antenna assembly with the integrated AP antenna mount.

Figure 24: CW-MNT-9 package contents

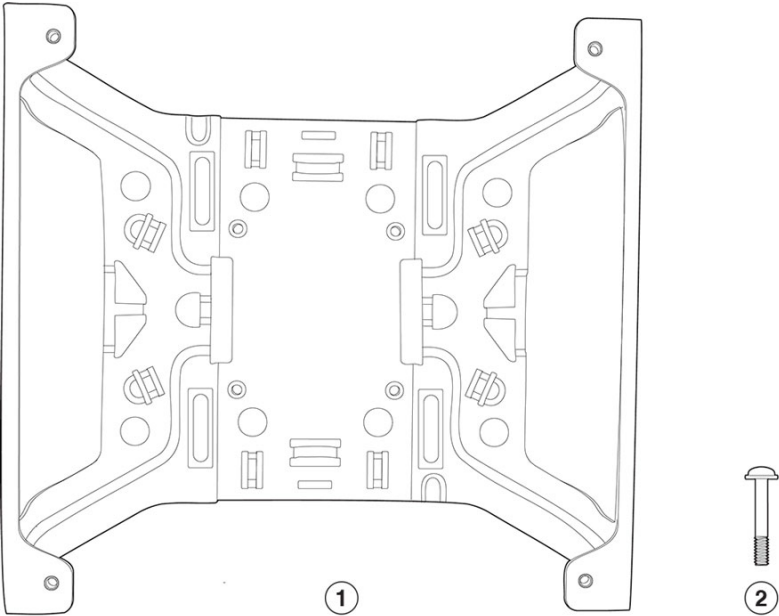


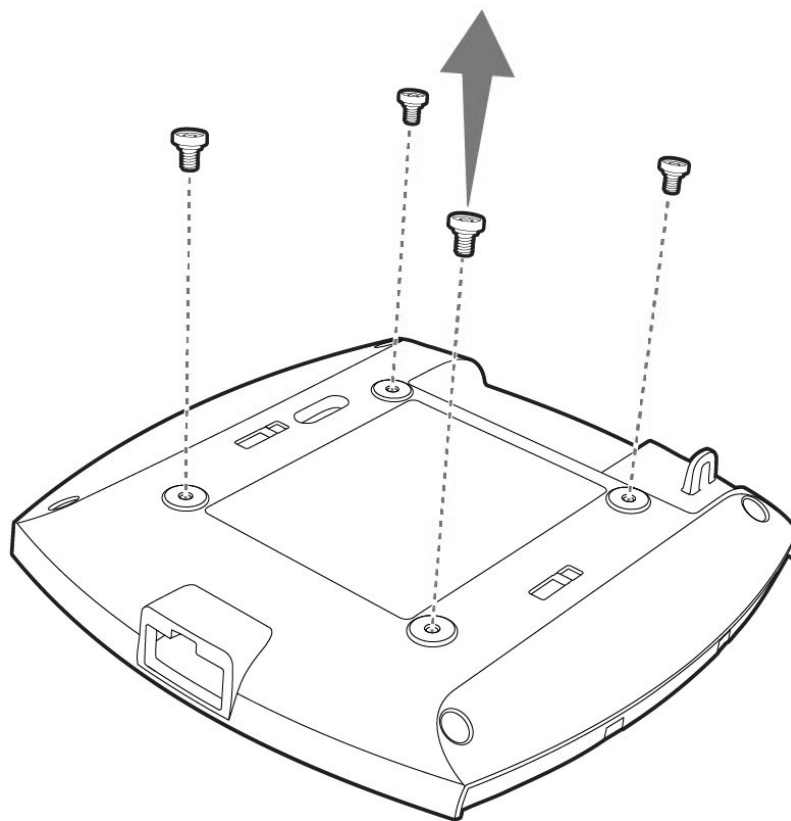
Table 8: Package contents

Item #	Antenna package contents	Quantity
1	CW-MNT-9	1
2	Screws	4

Procedure

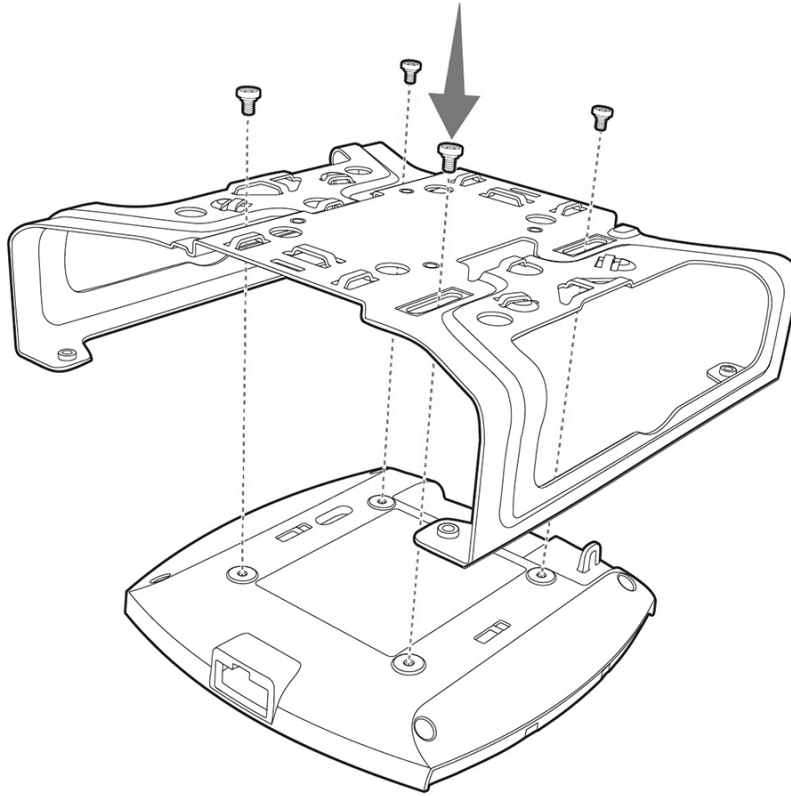
Step 1 Unscrew and remove the rubber feet from the AP using a Philips screwdriver.

Figure 25: Remove the base plate screws



- Step 2** Attach the CW-MNT-9 (integrated AP antenna mount) using the rubber feet removed from step 1.
- a) Align the integrated AP antenna mount with the screw holes on the AP base.
 - b) Use the four screws to secure the integrated AP antenna mount to the AP.

Figure 26: Attach the integrated AP antenna mount

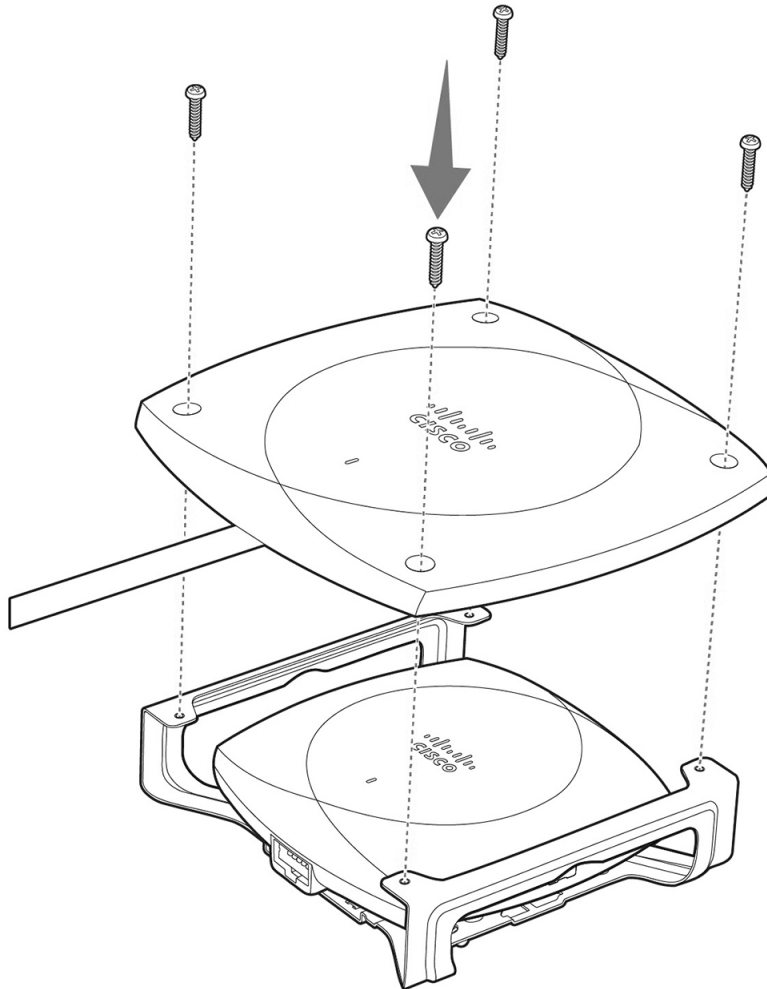


Step 3

Mount the antenna (CW-ANT-T-D2-D8) on the top to the AP unit (CW-MNT-9 - integrated AP antenna mount and AP) using the four mounting screws provided.

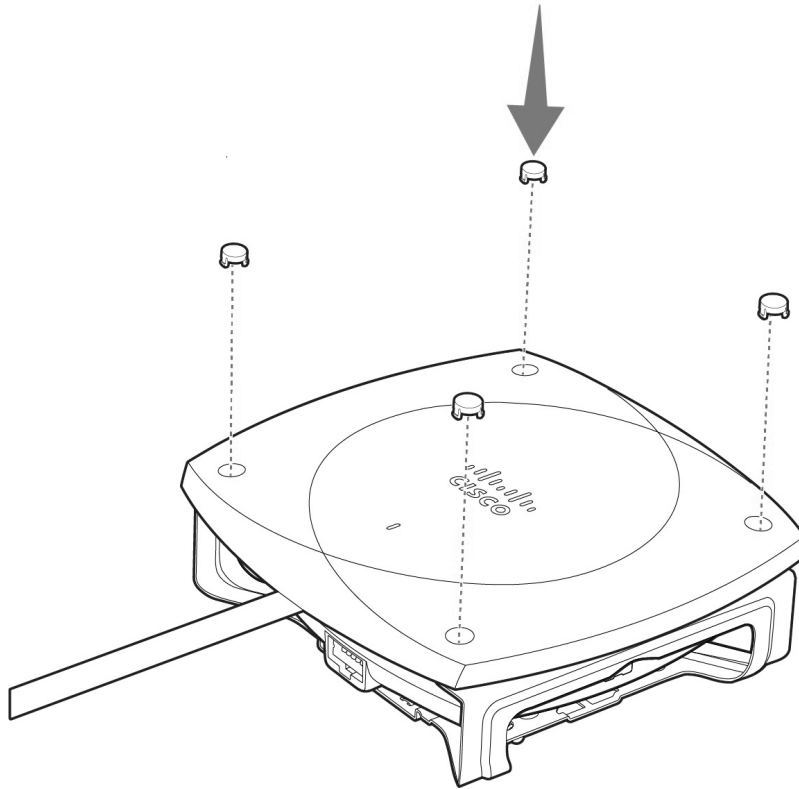
- a) Place the antenna onto the assembled AP unit (integrated AP antenna mount and AP).
- b) Insert and tighten the four long screws (See item number 2 in CW-MNT-9 package content) through the antenna into the AP unit.

Figure 27: Secure the AP



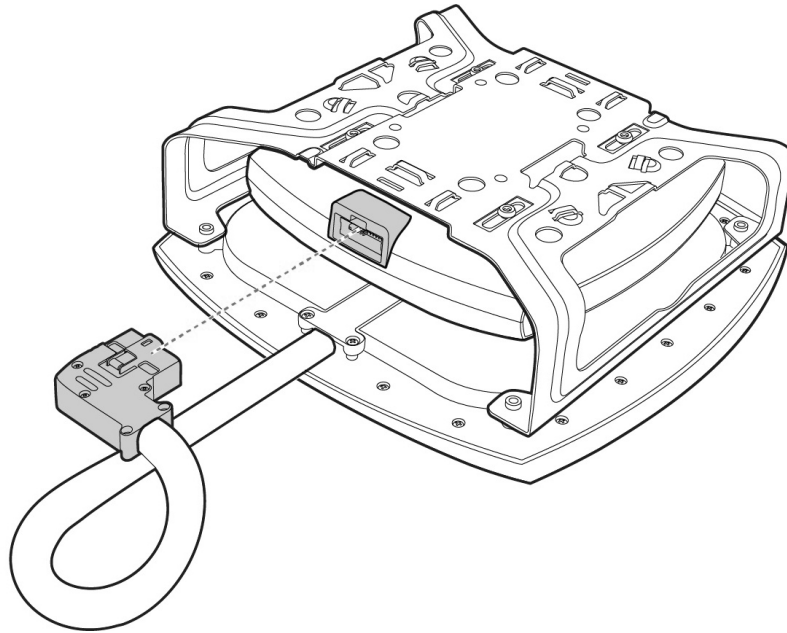
Step 4 Place screw covers over each screw head on top of the antenna to cover and protect the screws.

Figure 28: Install screw covers



- Step 5** Connect the antenna DART cable to the antenna connector on the CW9174E AP.
- Plug the antenna DART cable into the AP's port to establish connection.
 - Ensure the cable is properly latched.

Figure 29: Connect and secure the antenna DART cable

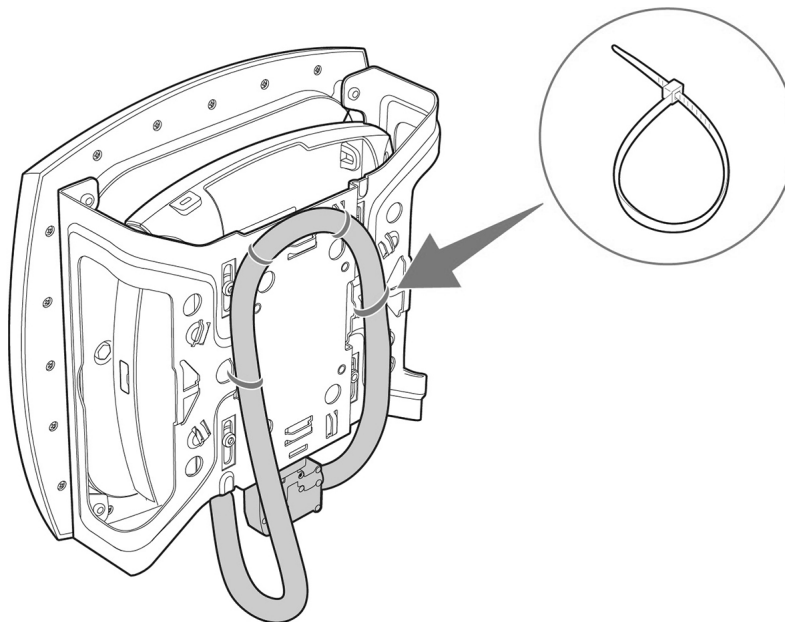


Step 6

Route the antenna DART cable and secure with cable ties.

- a) Route the cable through the designated channels in the integrated AP antenna mount.
- b) Use cable ties (not included) to secure the cable neatly to the integrated AP antenna mount, preventing movement.

Figure 30: Route and secure the antenna DART cable



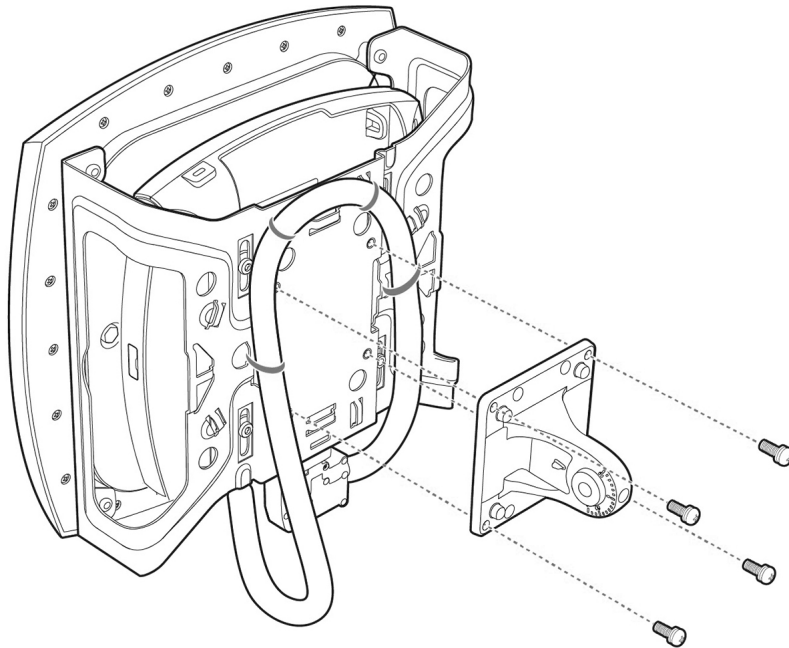
Step 7

Install the antenna mounting plate to the integrated AP antenna mount (CW-MNT-9) using the four steel screws (See item number 10 in the Antenna package contents table in [Prepare the antenna assembly](#)) provided.

Mount the antenna assembly on a wall, ceiling, or pole

- Align the antenna mounting plate with the integrated AP antenna mount's screw holes.
- Insert and tighten the four mounting screws to secure the AP unit assembly.

Figure 31: Attach the antenna mounting plate to the AP unit assembly



What to do next

- Ensure all screws are tightened securely but do not overtighten to avoid damage.
- After antenna is assembled, go to the appropriate section to perform the mounting procedure for ceiling, pole, or wall.

Mount the antenna assembly on a wall, ceiling, or pole

Ensure that you have completed assembling the antenna before mounting the antenna assembly on the desired location.



Note

You can install the antenna assembly with a mounting arm (See item number 12 in the Antenna package contents table in [Prepare the antenna assembly, on page 32](#)) or attach it directly to the wall or pole using the mounting plate (See item number 11 in the Antenna package contents table in [Prepare the antenna assembly, on page 32](#)).

Mount the antenna with the articulating arm

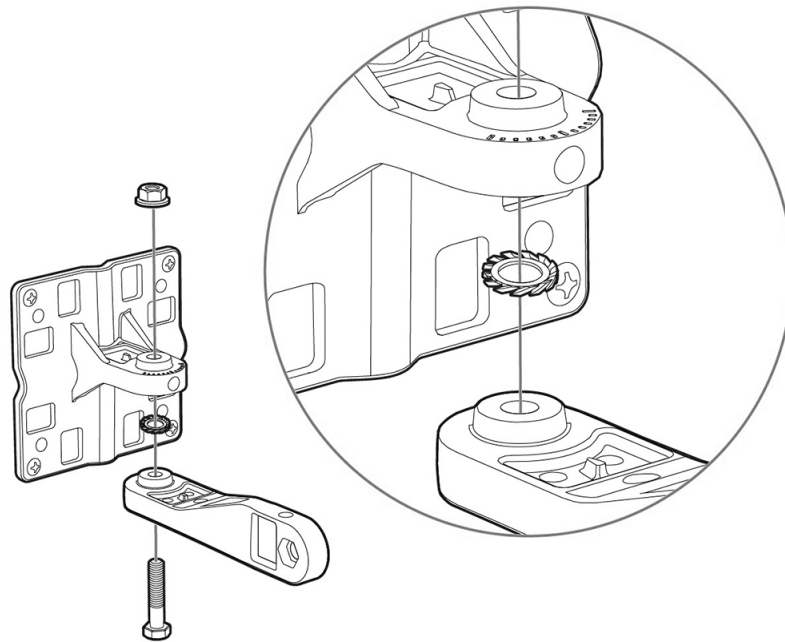
You can mount the antenna with the articulating arm to ensure optimal network coverage and secure mounting for reliable wireless connectivity.

Follow these steps to mount the antenna assembly with the articulating arm.

Procedure

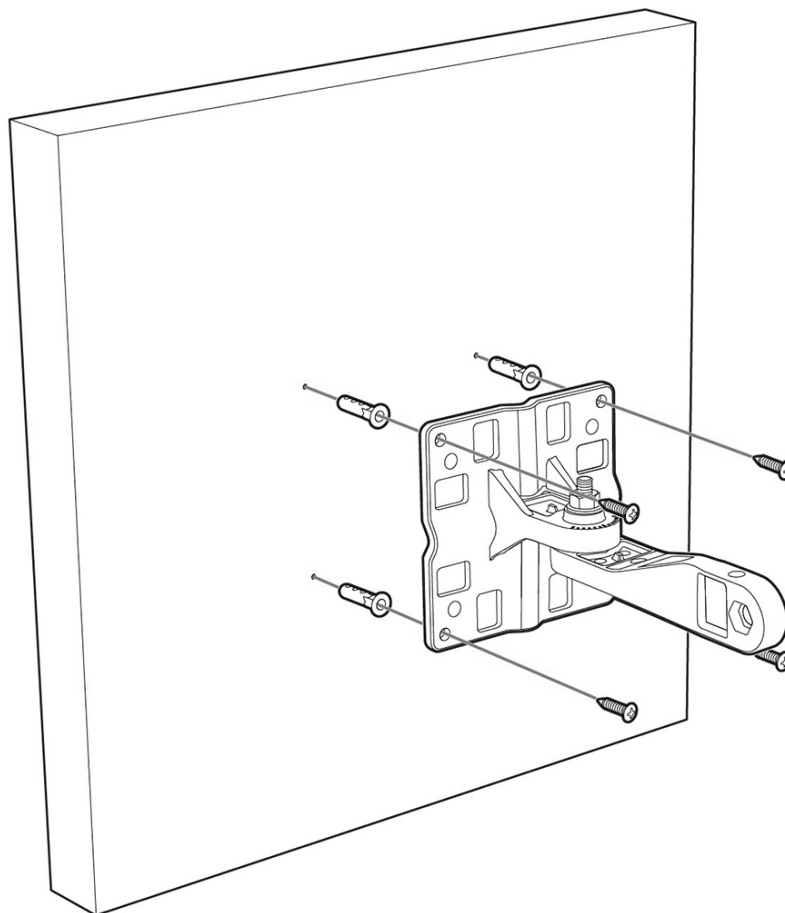
- Step 1** Assemble the wall mount bracket and the articulating arm.
- Align the articulating arm with the mount bracket as shown in figure below.
 - Insert the bolt, washer, and lock washer through the arm and bracket.
 - Secure with the nut, ensuring all parts are in the correct order and orientation.

Figure 32: Assemble the wall mount bracket



- Step 2** Attach the mount bracket to the wall.
- Position the assembled bracket on the wall at the desired mounting location.
 - Use appropriate wall anchors or screws (as per wall material) to fasten the bracket securely to the wall with the four screws.

Figure 33: Attach bracket to wall



Step 3

Attach the antenna assembly to the bracket.

- a) Align the antenna assembly with the mounting arm and bracket.
- b) Install the antenna assembly to the articulating arm using the nut, bolt, washer, crush washer and lock washer provided.
- c) Ensure that the antenna assembly is securely fastened to the articulating arm.

Figure 34: Mount the integrated AP and antenna assembly

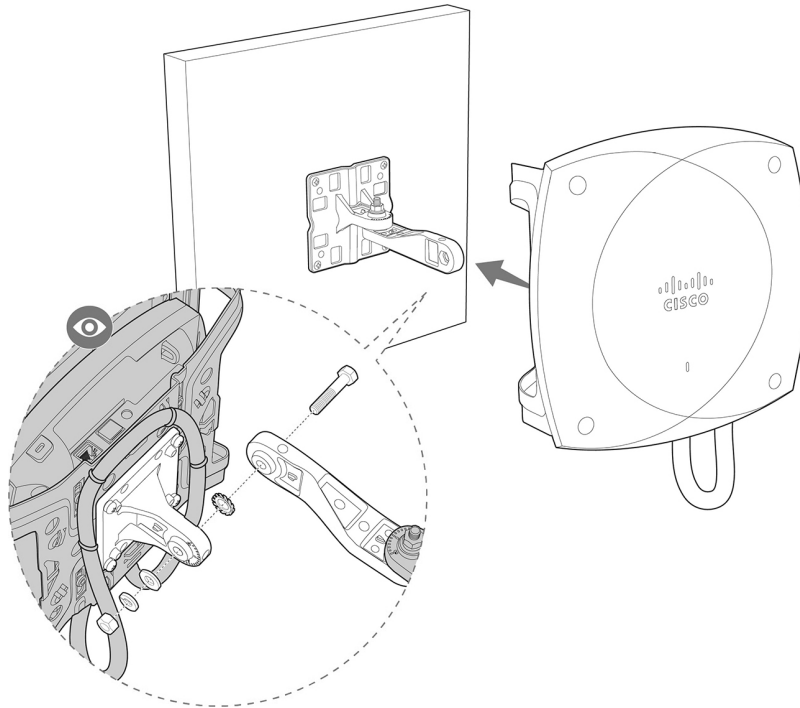
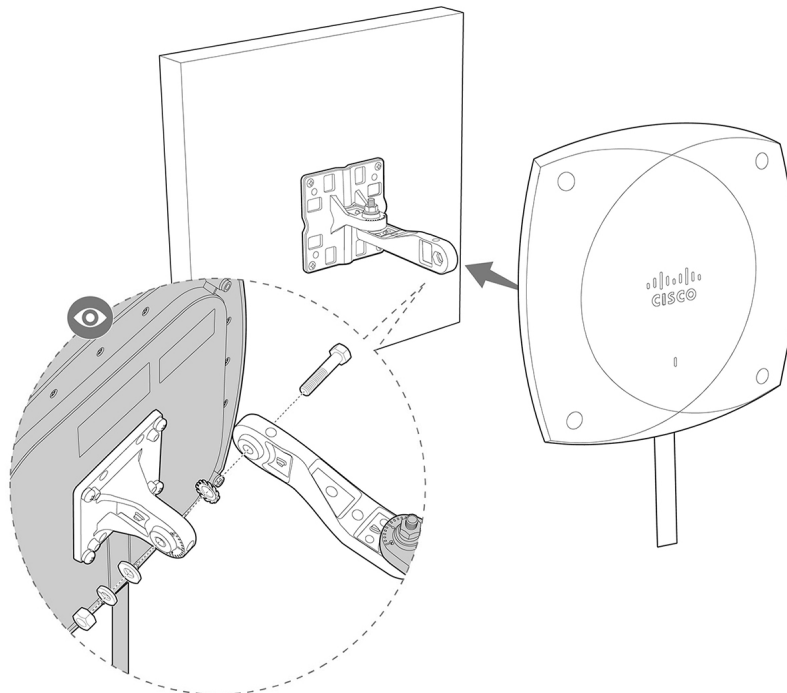
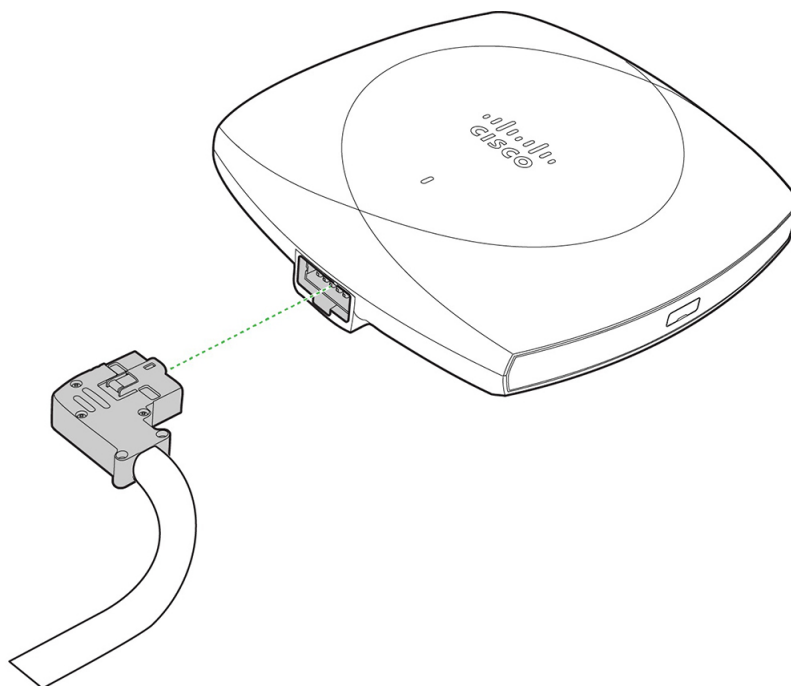


Figure 35: Mount the antenna assembly



Step 4 Connect the antenna DART cable to the antenna connector on the CW9174E.

Figure 36: Connect the antenna DART cable**Note**

This step is not needed for integrated AP and antenna mount.

Mount the antenna on a pole with the directional antenna

Use this procedure to securely mount the antenna assembly on a pole using the directional antenna. Proper mounting ensures optimal signal coverage and stability of the AP.

A pole-mounted directional antenna enables focused wireless coverage, minimizes interference, and increases reliability for end devices located in the intended direction.

Before you begin

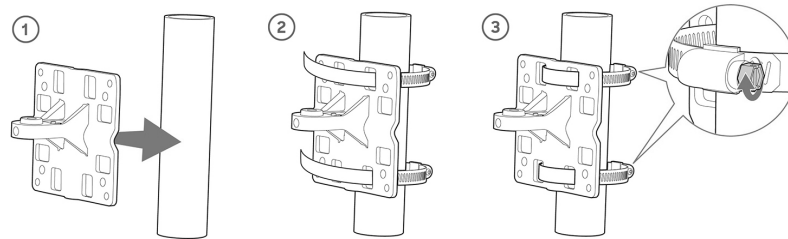
- Use only the hardware supplied with the package content.
- Do not overtighten metal bands or bolts.
- Confirm that the antenna faces the intended coverage area before final tightening.

Follow these steps to mount the antenna assembly on a pole with the directional antenna.

Procedure

-
- Step 1** Place the mounting bracket against the pole at the desired height and orientation.

Figure 37: Position the mounting bracket

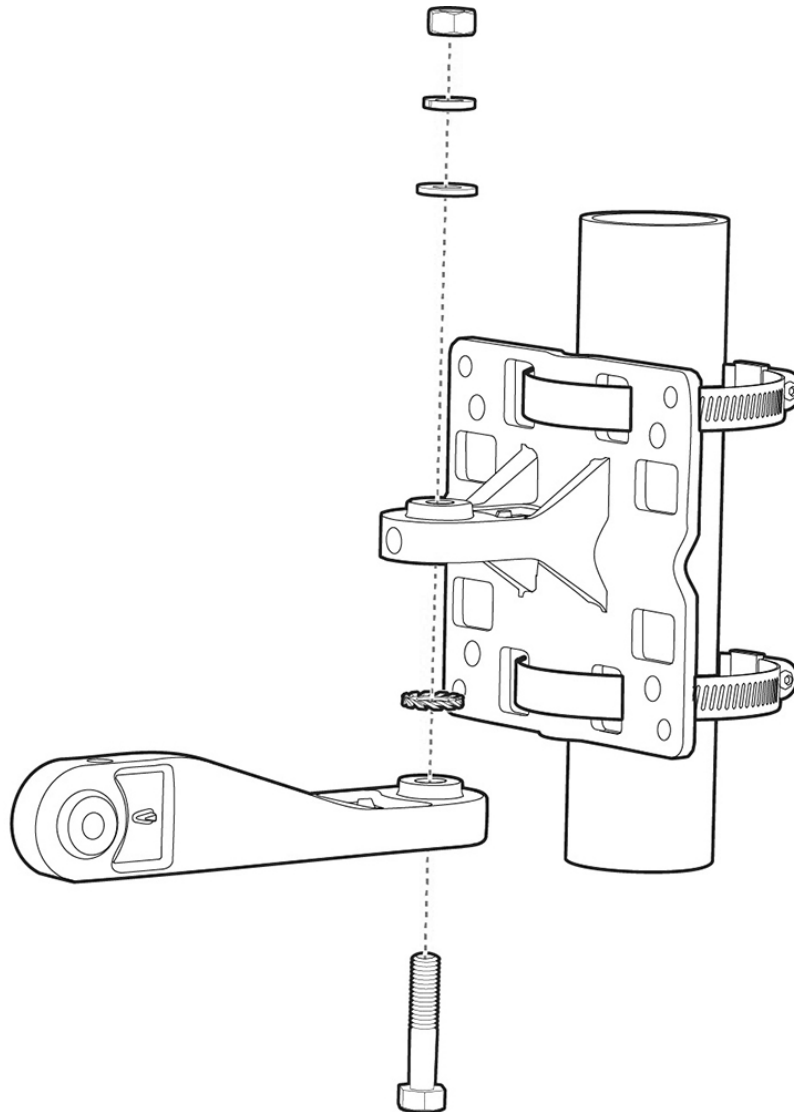


Step 2

Attach the bracket to the pole.

- a) Wrap the provided metal bands around the pole and through the slots in the mounting bracket.
- b) Tighten the bands securely so the bracket is firmly fixed to the pole.

Figure 38: Secure with metal bands



- Step 3** Mount the antenna assembly with the mounting arm to the bracket. You can mount the AP, antenna and the integrated AP antenna mount or only the AP directly to the bracket.

Figure 39: Mount the antenna assembly

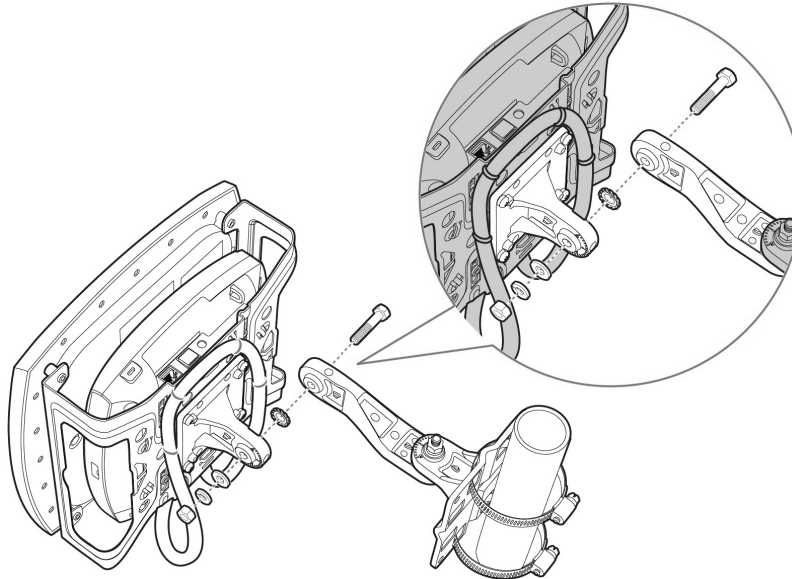
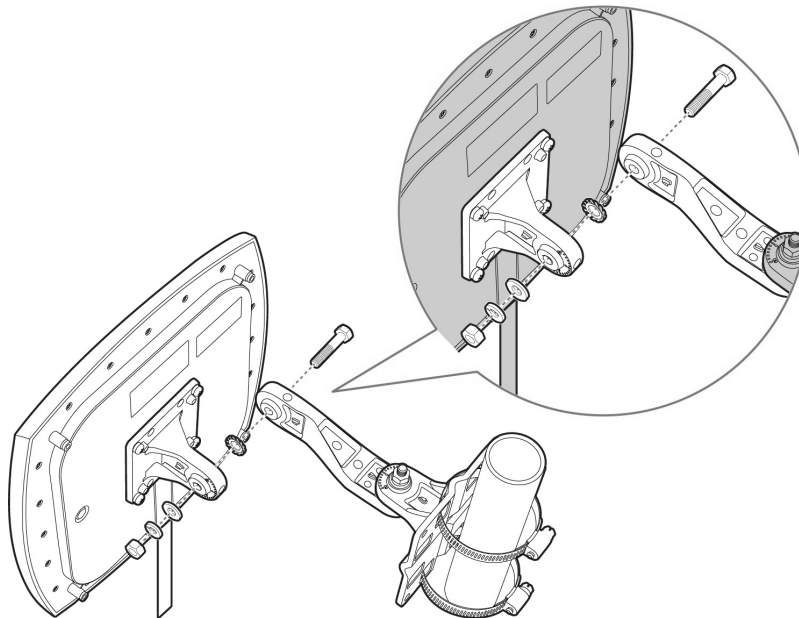


Figure 40: Mount the antenna assembly



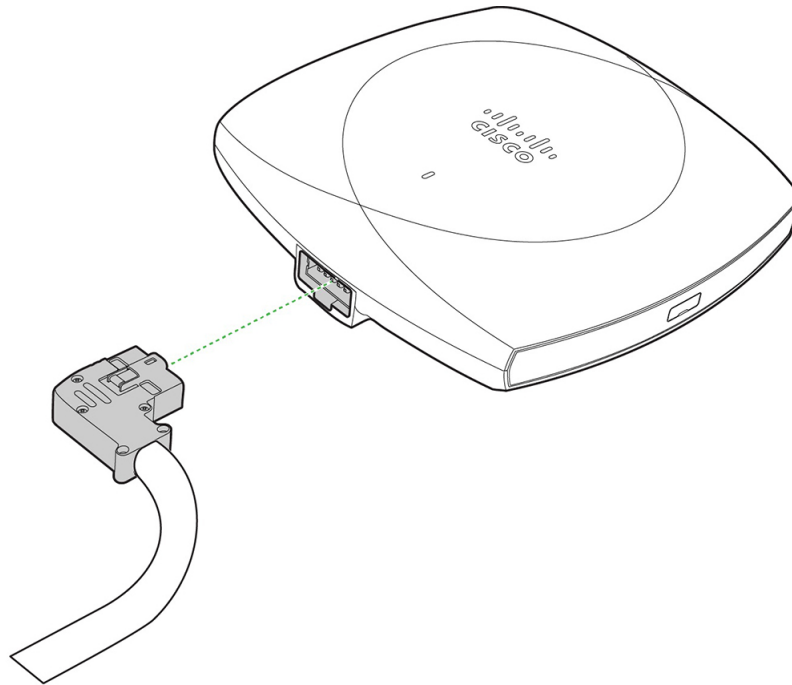
- Position the directional antenna so its mounting holes align with the holes on the mounting arm.
- Insert the screws and washers as indicated.
- Tighten all hardware to ensure the antenna is securely attached to the arm.

- Step 4** Connect the antenna DART cable with the CW9174E AP.

- Plug the antenna DART cable into the AP's designated port.

- b) Ensure the connector clicks into place for a secure connection.

Figure 41: Connect antenna DART cable



Note

This step is not needed for integrated AP and antenna mount.

What to do next

- Ensure all fasteners are tightened to specified torque values.
- Verify the bracket and antenna orientation matches deployment requirements.
- Verify all electrical connections before powering up the AP.

Mount the antenna on a ceiling with the directional antenna and bracket

Securely install the antenna assembly with the directional antenna on a ceiling, ensuring optimal performance and physical stability.

Follow this task when you need to mount the antenna assembly with the directional antenna in large areas that require targeted wireless coverage.

Before you begin

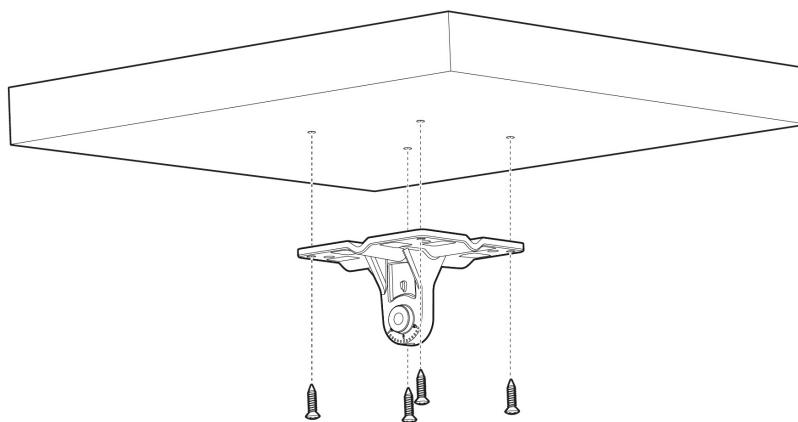
Use only the mounting hardware provided or recommended for your AP model.

Follow these steps to mount the antenna assembly on a ceiling with the directional antenna.

Procedure

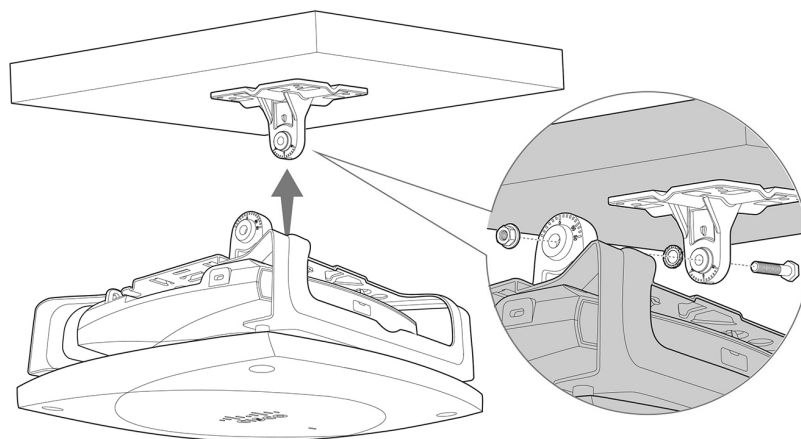
- Step 1** Secure the wall or pole mount plate to the ceiling using screws (not included) appropriate for the mounting surface.
- Hold the ceiling mount bracket against the desired location on the ceiling.
 - Align the bracket's holes with the pre-drilled holes or mark and drill holes if needed.
 - Secure the bracket to the ceiling using the provided screws. Ensure the bracket is firmly attached and level.

Figure 42: Attach the ceiling mount bracket



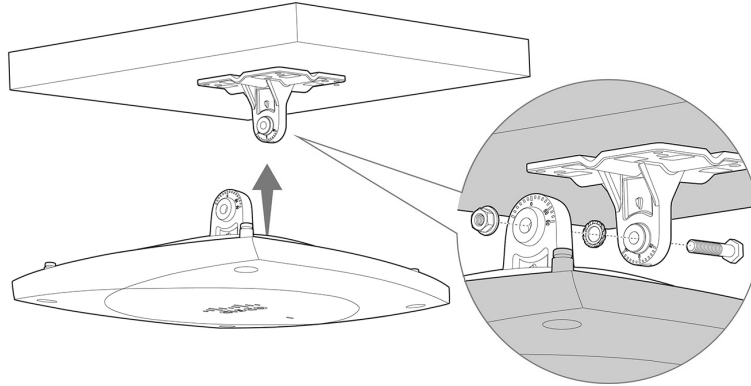
- Step 2** Mount the antenna assembly (CW9174E, antenna and the integrated AP antenna mount) to the mounting plate using the nut, bolt and lock washer included.
- Insert the mounting screw through the mount bracket and into the AP's mounting point.
 - Tighten the mounting screw to ensure the antenna assembly is securely fastened to the bracket.
 - For APs with an integrated AP antenna mount, ensure the arm is properly seated and secure the nut and washers as shown.

Figure 43: External mounting arm



- d) For antennas with a direct mount, align the mounting holes and secure the antenna assembly with the appropriate hardware.

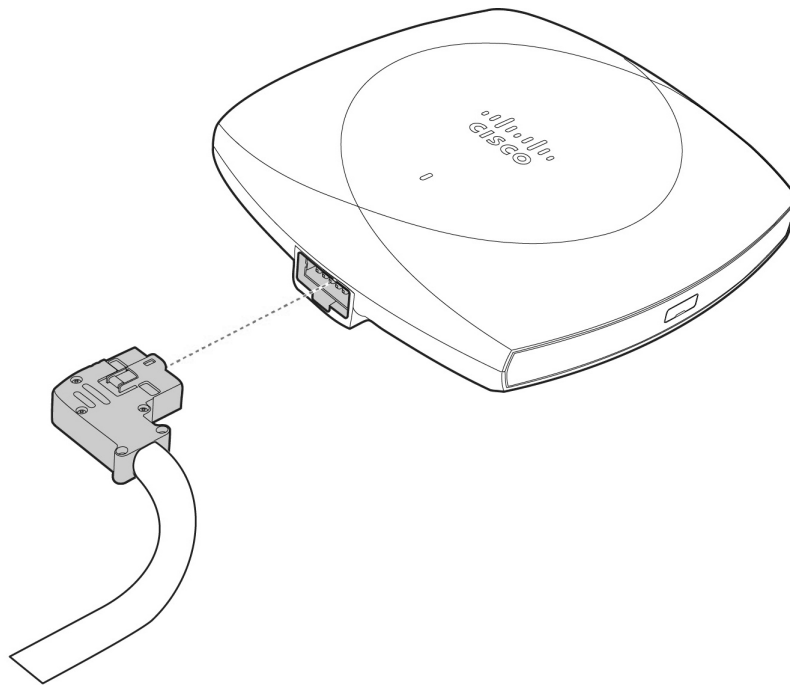
Figure 44: Direct mount



Step 3

Connect the antenna DART cable to the antenna connector on the CW9174E AP. Ensure the connector clicks into place for a secure connection.

Figure 45: Connect the antenna DART cable



Note

This step is not needed for integrated AP and antenna mount.

Install the CW-ANT-T-04-R Wi-Fi 7 antenna

The CW-ANT-T-04-R is a tri-band omnidirectional dipole with RP-TNC antenna equipped with RP-TNC connectors. You need these accessories to use this antenna:

- For tri-band, 10 spatial stream operation: AIR-CAB002-D8-R=, an 8-port Smart Antenna Connector to RP-TNC Connector cable.
- For dual-band, 8 spatial stream operation: CW-CAB-001-D8-R4, an 8-port Smart Antenna Connector to 4-port RP-TNC connector.

A mounting bracket must be procured, custom fabricated, or 3D printed to suit your specific use case, as Cisco does not currently offer mounting brackets for this antenna for use with the CW9174E.

Antenna ports A, B, C, and D operate at 6 GHz, while ports E, F, G, and H support dual-band operation at 2.4 GHz and 5 GHz. For proper isolation, maintain a minimum spacing of 5 inches between antennas.

Power the access point



Caution

Ensure that the AP is powered using a Underwriters' Laboratories-compliant (UL-compliant) PoE power source. You must connect the unit only to the PoE network, without routing to the outside plant.



Note

Actual power consumption may vary depending on access point usage. It is recommended that you ensure that Link Layer Discovery Protocol (LLDP)/Cisco Discovery Protocol is enabled to allow proper power negotiation.

Power Source	2GHz Radio	5GHz Radio	6G Radio	Link Speed	USB	Max Power Consumption	Configuration
802.3bt/Class 5/UPOE, DC Jack	2x2	4x4	4x4	5G	Y (9W)	37.3W	10SS, Tri-band
802.3bt/Class 5/UPOE, DC Jack	4x4	4x4	-	5G	Y (9W)	32.1W	8SS, Dual-band
802.3at/POE+	2x2	4x4	4x4	2.5G	Y (2.5W)	25.5W	10SS, Tri-band
802.3at/POE+	4x4	4x4	-	2.5G	Y (2.5W)	25.5W	8SS, Dual-band
802.3af/POE	-	-	-	1G	N	13.9W	All radios off

Deploy the access point in a wireless network

After you mount the access point, follow these steps to deploy it on a wireless network:

Procedure

Step 1 Connect and power up the access point.

Step 2 Observe the access point LED.

For LED status descriptions, see [Access point LED states, on page 10](#).

- When you power up the access point, it begins a power-up sequence that you can verify by observing the access point LED. If the power-up sequence is successful, the discovery and join process begins. During this process, the LED blinks green, red, and off sequentially. When the access point joins a controller, the LED is green if no clients are associated, or blue if one or more clients are associated.
 - If the LED is not on, it is most likely that the access point is not receiving power.
 - If the LED blinks sequentially for more than five minutes, the access point is unable to find its primary, secondary, and tertiary controller. Check the connection between the access point and the Cisco Wireless Controller, and be sure that the access point and the Cisco Wireless Controller are either on the same subnet or that the access point has a route back to its primary, secondary, and tertiary Cisco Wireless Controller. Also, if the access point is not on the same subnet as the Cisco Wireless Controller, ensure that there is a properly configured DHCP server on the same subnet as the access point.
-



CHAPTER 4

Troubleshooting

- [Using the reset button, on page 57](#)
- [Troubleshooting the access point to Cisco controller join process, on page 58](#)
- [Important information for controller-based deployments, on page 59](#)
- [Configure DHCP option 43, on page 59](#)

Using the reset button

Using the **Reset** button (see [Figure 2: CW9174E top view with connectors and ports, on page 9](#)), you can reset the AP to factory default.

To reset the AP to the default factory-shipped configuration, perform the following steps:

1. Unplug the AP from the power source.
2. Hold the **Reset** button.
3. Power on the AP.

Press, and continue to press the **Reset** button for the duration corresponding to your requirements listed in the table below:

0-5 seconds	Blinks green for Meraki mode, and blue for Catalyst mode.
> 10 seconds	The AP undergoes configuration wipe.
> 20 seconds	Ap resets completely and enters maintain management mode.
> 30 seconds	Configures FIPS in Catalyst mode.
> 60 seconds	The LED light turns solid pink, which indicates a factory reset.
> 90 seconds	LED turns off.

Troubleshooting the access point to Cisco controller join process



Note As specified in the [Cisco Wireless Solutions Software Compatibility Matrix](#), ensure that your controller is running Cisco IOS XE 17.18.2 or a later release to support the Cisco Wireless 9174E AP.

Access points can fail to join a controller for many reasons—a RADIUS authorization is pending, self-signed certificates are not enabled on the controller, the access point and the controller regulatory domains do not match, and so on.

Controller software enables you to configure the access points to send all CAPWAP-related errors to a syslog server. All the CAPWAP error messages can be viewed from the syslog server itself.

If the CW9174E is in Meraki Management mode, it does not attempt to join the Cisco Catalyst 9800 Series Wireless Controller. For more information, see [Cisco Wireless Global Use Access Points Deployment Guide](#).

The state of the access point is not maintained on the controller. It can be difficult to determine why the discovery request from a certain access point was rejected. In order to troubleshoot such joining problems, we recommend that you run trace commands on the Cisco Catalyst 9800 Wireless Controller.

The controller collects all the join-related information for each access point that sends a CAPWAP discovery request to the controller. Collection begins with the first discovery message received from the access point and ends with the last configuration payload sent from the controller to the access point.

When the controller is maintaining join-related information for the maximum number of access points, it does not collect information for any more access points.

An access point sends all the syslog messages to the IP address 255.255.255.255 by default.

You can also configure a DHCP server to return a syslog server IP address to the access point using Option 7 on the server. The access point then starts sending all the syslog messages to this IP address.

When the access point joins a controller for the first time, the controller sends the global syslog server IP address (the default is 255.255.255.255) to the access point.

The AP sends all the syslog messages to this IP address until it is overridden by the following configuration:

- The access point is still connected to the same controller, and the global syslog server IP address configuration on the controller has been changed using the **syslog host syslog-ip-address** command. In this case, the controller sends the new global syslog server IP address to the access point.

To configure the global syslog server IP address, run these commands:

1. **configure terminal**
2. **ap profile ap-profile-name**
3. **syslog host syslog-ip-address**
4. **exit**

- The access point is disconnected from the controller and joins another controller. In this case, the new controller sends its global syslog server IP address to the access point.

- Whenever a new syslog server IP address overrides the existing syslog server IP address, the old address is erased from persistent storage, and the new address is stored in its place. The access point also starts sending all the syslog messages to the new IP address, provided the access point can reach the syslog server IP address.



Note You can configure the syslog server for access points and view the access point join information only from the controller CLI.

Important information for controller-based deployments

Keep these guidelines in mind when you use Cisco Wireless 9174E APs:

- The AP does not support Wireless Domain Services (WDS) and cannot communicate with WDS devices. However, the controller provides functionality equivalent to WDS when the AP joins it.
- CAPWAP does not support Layer 2. The AP must get an IP address and discover the controller using Layer 3, DHCP, DNS, or IP subnet broadcast.
- The AP console port is enabled for monitoring and debug purposes.



Note The default band rate is 115200.

- All the configuration commands are disabled when the AP is connected to a controller.

Configure DHCP option 43

You can use DHCP Option 43 to provide a list of controller IP addresses to the access points, enabling them to find and join a controller.

The following is a DHCP Option 43 configuration example on a Windows 2003 Enterprise DHCP server for use with Cisco Catalyst lightweight access points. For other DHCP server implementations, see the product documentation for configuring DHCP Option 43. In Option 43, you should use the IP address of the controller management interface.



Note DHCP Option 43 is limited to one access point type per DHCP pool. You must configure a separate DHCP pool for each access point type.

The CW9174E access point uses the type-length-value (TLV) format for DHCP Option 43. DHCP servers must be programmed to return the option based on the access point DHCP Vendor Class Identifier (VCI) string (DHCP Option 43). The VCI string for the CW9174E access point is:

Cisco Wireless AP CW9174E

The following is the format of the TLV block:

- Type: 0xf1 (decimal 241)
- Length: Number of controller IP addresses x 4
- Value: IP addresses of the wireless controller management interfaces listed sequentially in Hex code.

To configure DHCP Option 43 in the embedded Cisco IOS DHCP server, follow these steps:



Note The procedure describes configuration process for an AP that has completed the initial discovery process. For more information on day 0 workflow, see [Global Use Access Points](#).

Procedure

Step 1 Enter the configuration mode

Step 2 Create the DHCP pool, including the necessary parameters, such as default router and name server. A DHCP scope example is as follows:

```
ip dhcp pool <pool name>
network <IP Network> <Netmask>
default-router <Default router>
dns-server <DNS Server>
```

Here:

<pool name> is the name of the DHCP pool, such as AP9174E.

<IP Network> is the network IP address where the controller resides, such as 10.0.15.1.

<Netmask> is the subnet mask, such as 255.255.255.0.

<Default router> is the IP address of the default router, such as 10.0.0.1.

<DNS Server> is the IP address of the DNS server, such as 10.0.10.2.

Step 3 Add the Option 43 line using the following syntax:

```
option 43 hex <hex string>
```

The hex string is assembled by concatenating the following TLV values:

Type + Length + Value

For example, if there are two controllers with management interface IP addresses, 10.126.126.2 and 10.127.127.2, the type is f1(hex), the length is $2 * 4 = 8 = 08$ (hex), and the IP addresses translate to 0a7e7e02 and 0a7f7f02. Assembling the string then yields f1080a7e7e020a7f7f02. The resulting Cisco IOS command added to the DHCP scope is **option 43 hex f1080a7e7e020a7f7f02**.



CHAPTER 5

Safety Guidelines and Warnings

- [Safety instructions, on page 61](#)

Safety instructions

Translated versions of the following safety warnings are provided in the translated safety warnings document that is shipped with your AP. The translated warnings are also available in the Translated Safety Warnings for Cisco Catalyst Access Points, which is available on Cisco.com.



Warning Statement 1071—Warning Definition

IMPORTANT SAFETY INSTRUCTIONS

Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Read the installation instructions before using, installing, or connecting the system to the power source. Use the statement number at the beginning of each warning statement to locate its translation in the translated safety warnings for this device.

SAVE THESE INSTRUCTIONS



Warning Statement 1005—Circuit Breaker

This product relies on the building's installation for short-circuit (overcurrent) protection. To reduce risk of electric shock or fire, ensure that the protective device is rated not greater than: **20 A**



Warning Statement 1074—Comply with Local and National Electrical Codes

To reduce risk of electric shock or fire, installation of the equipment must comply with local and national electrical codes.

**Danger**

In order to comply with FCC radio frequency (RF) exposure limits, antennas should be located at a minimum of 25.98 inches (66 cm) or more from the body of all persons. Statement 332



CHAPTER 6

Declarations of conformity and regulatory information

This section provides declarations of conformity and regulatory information for the Cisco Wireless 9174E Wi-Fi 7 Access Point. You can find additional information at: <https://www.cisco.com/c/dam/assets/prod/wireless/wireless-compliance-tool/index.html>.

- [Manufacturers Federal Communication Commission declaration of conformity statement, on page 63](#)
- [VCCI statement for Japan, on page 64](#)
- [Canadian compliance statement, on page 66](#)
- [European community, Switzerland, Norway, Iceland, and Liechtenstein compliance, on page 68](#)
- [United Kingdom compliance, on page 68](#)
- [Administrative rules for Cisco Wireless Access Points in Taiwan, on page 69](#)
- [Operation of Cisco Wireless Access Points in Brazil, on page 69](#)
- [Declaration of conformity for RF exposure, on page 70](#)
- [Declaration of conformity statements, on page 73](#)

Manufacturers Federal Communication Commission declaration of conformity statement



Access Point model	Certification number
CW9174E	UDX-600218020

Manufacturer:

Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA

This device complies with Part 15 rules. Operation is subject to the following conditions:

1. This device may not cause harmful interference.

2. This device must accept any interference received, including interference that may cause undesired operation.
3. This equipment may only be operated indoors. Operation outdoors is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna
- Increase separation between the equipment and receiver
- Connect the equipment to an outlet on a circuit different from which the receiver is connected
- Consult the dealer or an experienced radio/TV technician
- Professional Installation is recommended

**Caution**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. 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. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible. FCC regulations restrict the operation of this device to indoor use only. The operation of this device is prohibited on oil platforms, cars, trains, boats, and aircraft. Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.

VCCI statement for Japan

Warning	Warning This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.
警告	Warning この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。 取扱説明書に従って正しい取り扱いをして下さい。 VCCI-B

Access Point model:

CW9174E

Guidelines for operating Cisco Wireless Access Points in Japan

This section provides guidelines for avoiding interference when operating Cisco Wireless Access Points in Japan. These guidelines are provided in both Japanese and English.

この機器の使用周波数帯では、電子レンジ等の産業・科学・医療用機器のほか工場の製造ライン等で使用されている移動体識別用の構内無線局（免許を要する無線局）及び特定小電力無線局（免許を要しない無線局）が運用されています。

1. この機器を使用する前に、近くで移動体識別用の構内無線局及び特定小電力無線局が運用されていないことを確認して下さい。
2. 万一、この機器から移動体識別用の構内無線局に対して電波干渉の事例が発生した場合には、速やかに使用周波数を変更するか又は電波の発射を停止した上、下記連絡先にご連絡頂き、混信回避のための処置等（例えば、ノークーティションの設置など）についてご相談して下さい。
3. その他、この機器から移動体識別用の特定、小電力無線局に対して電波干渉の事例が発生した場合など何かお困りのことが起きたときは、次の連絡先へお問い合わせ下さい。

連絡先: 03-6434-6500

English Translation

This equipment operates in the same frequency bandwidth as industrial, scientific, and medical devices such as microwave ovens and mobile object identification (RF-ID) systems (licensed premises radio stations and unlicensed specified low-power radio stations) used in factory production lines.

1. Before using this equipment, make sure that no premises radio stations or specified low-power radio stations of RF-ID are used in the vicinity.
2. If this equipment causes RF interference to a premises radio station of RF-ID, promptly change the frequency or stop using the device; contact the number below and ask for recommendations on avoiding radio interference, such as setting partitions.
3. If this equipment causes RF interference to a specified low-power radio station of RF-ID, contact the number below.

Contact Number: 03-6434-6500

Statement 371—Power Cable and AC Adapter

接続ケーブル、電源コード、ACアダプタ、バッテリーなどの部品は、必ず添付品または指定品をご使用ください。添付品・指定品以外の部品をご使用になると故障や動作不良、火災の原因となります。また、電気用品安全法により、当該法の認定（PSEとコードに表記）でなくUL認定（ULまたはCSAマークがコードに表記）の電源ケーブルは弊社が指定する製品以外の電気機器には使用できないためご注意ください。

English Translation

When installing the product, please use the provided or designated connection cables/power cables/AC adaptors. Using any other cables/adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL-certified cables (that have the “UL” shown on the code) for any other electrical devices than products designated by CISCO. The use of cables that are certified by Electrical Appliance and Material Safety Law (that have “PSE” shown on the code) is not limited to CISCO-designated products.

Canadian compliance statement

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s license-exempt RSS(s). Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation of the device.

L’émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d’Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L’exploitation est autorisée aux deux conditions suivantes:

- L’appareil ne doit pas produire de brouillage.
- L’appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d’en compromettre le fonctionnement.

Wi-Fi 7 Device

- Devices shall not be used for control of or communications with unmanned aircraft systems.
- Devices shall not be used on oil platforms.
- Devices shall not be used on automobiles.
- Devices shall not be used on trains.
- Devices shall not be used on maritime vessels.

appareil Wi-Fi 7

- Les dispositifs ne doivent pas être utilisés pour commander des systèmes d’aéronef sans pilote ni pour communiquer avec de tels systèmes.
- Les dispositifs ne doivent pas être utilisés sur les plateformes de forage pétrolier.
- Les dispositifs ne doivent pas être utilisés dans les automobiles.
- Les dispositifs ne doivent pas être utilisés dans les trains.
- Les dispositifs ne doivent pas être utilisés sur les navires maritimes.

The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

Les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

The transmitter module may not be co-located with any other transmitter or antenna.

Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

Pour les produits disponibles aux États-Unis / Canada du marché, seul le canal 1 à 11 peuvent être exploités. Sélection d'autres canaux n'est pas possible.

This radio transmitter [IC: 6961A-600218020] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Le présent émetteur radio [IC: 6961A-600218020] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.

Antenna Type	Model Number	Antenna Gain(dBi)	Remark
Directional Array	AIR-ANT2513P4M-N	13	For 2.4G
Directional Array	AIR-ANT2513P4M-N	13	For 5G
Directional Patch	C-ANT9103	6	For 6G
Narrow Patch	MA-ANT-3-F6	11.2	For BT & IEEE 802.15.4

Standard power access points

- The antenna height shall be determined by the installer or operator of the standard-power access point or fixed client device, or by automatic means. This information shall be stored internally in the device. Provision of accurate device information is mandatory.
- Information for antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the EIRP elevation mask requirement set forth in section 4.5.4 (c) shall be clearly indicated.
- La hauteur de l'antenne doit être déterminée par l'installateur ou l'opérateur du point d'accès de puissance normale ou du dispositif client fixe, ou par des dispositifs automatiques. Cette information doit être enregistrée dans le dispositif. La fourniture d'information précise sur le dispositif est obligatoire.
- Le ou les types d'antennes, le ou les modèles d'antennes et le ou les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la section 4.5.4 c. s'appliquant au masque de p.i.r.e. doivent être clairement indiqués.

Industry Canada

Access Point model	Certification number
CW9174E	6861A-600218020

European community, Switzerland, Norway, Iceland, and Liechtenstein compliance

The product carries the CE Mark:



The device is restricted to indoor use only when operating between 5150 MHz and 5350 MHz frequency range.

This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm (7.87 inches) between the radiator & your body.



Note This equipment is intended to be used in all EU and EFTA countries. Outdoor use may be restricted to certain frequencies and/or may require a license for operation. For more details, contact Cisco Corporate Compliance.

Access Point model:

CW9174E

Manufacturer:

Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA

United Kingdom compliance

The device is restricted to indoor use only when operating between 5150 MHz and 5350 MHz frequency range. This equipment should be installed and operated with minimum distance 20 cm (7.87 inches) between the radiator & your body.

Access Point model:

CW9174E

Manufacturer:

Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA

Administrative rules for Cisco Wireless Access Points in Taiwan

This section provides administrative rules for operating Cisco Wireless Access Points in Taiwan. The rules for all access points are provided in both Simplified Chinese and English.

Simplified Chinese translation

【低功率射頻器材技術規範】取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。應避免影響附近雷達系統之操作。

【本器材須經專業工程人員安裝及設定，始得設置使用，且不得直接販售給一般消費者】

English translation

Without permission granted by the NCC, any company, enterprise, or user is not allowed to change frequency, enhance transmitting power or alter original characteristic as well as performance to a approved low power radio-frequency devices. The low power radio-frequency devices shall not influence aircraft security and interfere legal communications; If found, the user shall cease operating immediately until no interference is achieved. The said legal communications means radio communications is operated in compliance with the Telecommunications Management Act. The low power radio-frequency devices must be susceptible with the interference from legal communications or ISM radio wave radiated devices.

The operations near the radar system shall not be influenced.

This section contains special information for operation of Cisco Wireless Access Points in Taiwan.

Access point model	Certification number
CW9174E	TBD

Operation of Cisco Wireless Access Points in Brazil

Figure 46: Brazil Regulatory Information



This section contains special information for operation of Cisco Wireless Access Points in Brazil.

Portuguese

Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

English

This equipment is not entitled to the protection from harmful interference and may not cause interference with duly authorized systems.

equipamento Wi-Fi 7

O uso deste equipamento é restrito a ambientes fechados e proibido em plataformas petrolíferas, carros, trens, embarcações e no interior de aeronaves abaixo de 3.048 m (10.000 pés).

Wi-Fi 7 Device

Indoor use only. Operation on oil platforms, cars, trains, boats and aircraft shall be prohibited except for on large aircraft flying above 10,000 ft.

Access Point model	Certification number
CW9174E	TBD

Declaration of conformity for RF exposure

This section contains information on compliance with guidelines related to RF exposure.

Generic discussion on RF exposure

The Cisco products are designed to comply with the following national and international standards on Human Exposure to Radio Frequencies:

- US 47 Code of Federal Regulations Part 2 Subpart J
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers / IEEE C 95.1 (99)
- International Commission on Non Ionizing Radiation Protection (ICNIRP) 98
- Ministry of Health (Canada) Safety Code 6. Limits on Human Exposure to Radio Frequency Fields in the range from 3kHz to 300 GHz
- Australia Radiation Protection Standard



Note The 2.4 GHz output power has been lowered for U.S and Canada regulatory domains, for channels one to four, channel 10 and 11.

To ensure compliance with various national and international Electromagnetic Field (EMF) standards, the system should only be operated with Cisco approved antennas and accessories.

This device meets international guidelines for exposure to radio waves

The CW9174E device includes a radio transmitter and receiver. It is designed not to exceed the limits for exposure to radio waves (radio frequency electromagnetic fields) recommended by international guidelines. The guidelines were developed by an independent scientific organization (ICNIRP) and include a substantial safety margin designed to ensure the safety of all persons, regardless of age and health.

As such the systems are designed to be operated as to avoid contact with the antennas by the end user. It is recommended to set the system in a location where the antennas can remain at least a minimum distance as specified from the user in accordance to the regulatory guidelines which are designed to reduce the overall exposure of the user or operator.

Separation Distance
20 cm (7.87 inches)

The World Health Organization has stated that present scientific information does not indicate the need for any special precautions for the use of wireless devices. They recommend that if you are interested in further reducing your exposure then you can easily do so by reorienting antennas away from the user or placing the antennas at a greater separation distance than recommended.

This device meets FCC guidelines for exposure to radio waves

The CW9174E device includes a radio transmitter and receiver. It is designed not to exceed the limits for exposure to radio waves (radio frequency electromagnetic fields) as referenced in FCC Part 1.1310. The guidelines are based on IEEE ANSI C 95.1 (92) and include a substantial safety margin designed to ensure the safety of all persons, regardless of age and health.

As such the systems are designed to be operated as to avoid contact with the antennas by the end user. It is recommended to set the system in a location where the antennas can remain at least a minimum distance as specified from the user in accordance to the regulatory guidelines which are designed to reduce the overall exposure of the user or operator.

The device has been tested and found compliant with the applicable regulations as part of the radio certification process.

Separation Distance
66 cm (25.98 inches)

The US Food and Drug Administration has stated that present scientific information does not indicate the need for any special precautions for the use of wireless devices. The FCC recommends that if you are interested in further reducing your exposure then you can easily do so by reorienting antennas away from the user or placing the antennas at a greater separation distance than recommended or lowering the transmitter power output.

This device meets the industry Canada guidelines for exposure to radio waves

The CW9174E device includes a radio transmitter and receiver. It is designed not to exceed the limits for exposure to radio waves (radio frequency electromagnetic fields) as referenced in Health Canada Safety Code 6. The guidelines include a substantial safety margin designed into the limit to ensure the safety of all persons, regardless of age and health.

As such the systems are designed to be operated as to avoid contact with the antennas by the end user. It is recommended to set the system in a location where the antennas can remain at least a minimum distance as specified from the user in accordance with the regulatory guidelines which are designed to reduce the overall exposure of the user or operator.

Table 9: Separation Distance

Frequency	Distance
2.4 GHz	38 cm (14.96 inches)
5 GHz	
6 GHz	

Health Canada states that present scientific information does not indicate the need for any special precautions for the use of wireless devices. They recommend that if you are interested in further reducing your exposure you can easily do so by reorienting antennas away from the user, placing the antennas at a greater separation distance than recommended, or lowering the transmitter power output.

Cet appareil est conforme aux directives internationales en matière d'exposition aux fréquences radioélectriques

Cet appareil de la gamme CW9174E comprend un émetteur-récepteur radio. Il a été conçu de manière à respecter les limites en matière d'exposition aux fréquences radioélectriques (champs électromagnétiques de fréquence radio), recommandées dans le code de sécurité 6 de Santé Canada. Ces directives intègrent une marge de sécurité importante destinée à assurer la sécurité de tous, indépendamment de l'âge et de la santé.

Par conséquent, les systèmes sont conçus pour être exploités en évitant que l'utilisateur n'entre en contact avec les antennes. Il est recommandé de poser le système là où les antennes sont à une distance minimale telle que précisée par l'utilisateur conformément aux directives réglementaires qui sont conçues pour réduire l'exposition générale de l'utilisateur ou de l'opérateur.

Table 10: Distance d'éloignement

Fréquence	Distance
2.4 GHz	38 cm (14.96 inches)
5 GHz	
6 GHz	

Santé Canada affirme que la littérature scientifique actuelle n'indique pas qu'il faille prendre des précautions particulières lors de l'utilisation d'un appareil sans fil. Si vous voulez réduire votre exposition encore davantage, selon l'agence, vous pouvez facilement le faire en réorientant les antennes afin qu'elles soient dirigées à l'écart de l'utilisateur, en les plaçant à une distance d'éloignement supérieure à celle recommandée ou en réduisant la puissance de sortie de l'émetteur.

Additional information on RF exposure

You can find additional information on the subject at the following links:

- Cisco Systems Spread Spectrum Radios and RF Safety white paper at this URL:

http://www.cisco.com/warp/public/cc/pd/witc/ao340ap/prodlit/rfhr_wi.htm

- FCC Bulletin 56: Questions and Answers about Biological Effects and Potential Hazards of Radio Frequency Electromagnetic Fields
- FCC Bulletin 65: Evaluating Compliance with the FCC guidelines for Human Exposure to Radio Frequency Electromagnetic Fields

You can obtain additional information from the following organizations:

- World Health Organization Internal Commission on Non-Ionizing Radiation Protection
- United Kingdom, National Radiological Protection Board
- Cellular Telecommunications Association at this URL:

<https://www.ctia.org>

- The Mobile & Wireless Forum at this URL:

<https://www.mwfai.org>

Declaration of conformity statements

All the Declaration of Conformity statements related to this product can be found at the following location:

<https://pas.cisco.com/pdtncc/#/>

