



# Installing the Access Point

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Installing an AP involves the following high-level tasks.

- [Unpacking the Package, on page 1](#)
- [Performing a Preinstallation Configuration \(Optional\), on page 3](#)
- [Mounting the Access Point, on page 5](#)
- [Powering the Access Point, on page 7](#)

## Unpacking the Package

### Package Contents

Each AP package contains the following items:

- One C9136I AP
- Default mounting brackets: Adjustable ceiling-rail clip AIR-AP-T-RAIL-R and AIR-AP-BRACKET-1=
- Orderable optional mounting brackets: AIR-AP-T-RAIL-F, AIR-AP-BRACKET-2=
- Cisco product documentation and pointer card

## Unpacking the Access Point

### Procedure

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- 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 items ordered. If any item is missing or damaged, contact your Cisco representative or reseller for instructions.
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## Cisco Orderable Accessories

Order the following accessories separately from Cisco:

- AP-mounting brackets to mount the C9136I AP.

Mounting Brackets	Description
AIR-AP-BRACKET-1=	For low profile installations
AIR-AP-BRACKET-2=	For electrical or network boxes above ceiling mounts

- Power injectors when PoE is not available.

Power Supply	Description
AIR-PWRINJ7=	Mid-span power injector AIR-PWRINJ7= when Power over Ethernet (PoE) is not available

## 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, or on top of a desk




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**Note** You can mount the access point above a suspended ceiling, but you must purchase additional mounting hardware: For more information, see [Mounting the Access Point, on page 5](#).

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- Access point power options: Use either of the following options to power the AP:
  - Cisco-approved power injector
  - PoE with a supporting switch




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**Note**

- The Underwriter Laboratories (UL)-approved Listed Power Adapter must meet the following minimum specifications—rated output of 42.5 to 57 Vdc, min. 1.11A, Tma is 50°C minimum, altitude is 3048m minimum.
- If 802.3af is used, all the radios get switched off. Ethernet gets downgraded to 1 GbE. The USB port is also off.

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- Operating temperature:

- C9136I: 32°F to 122°F (0°C to 50°C)



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**Note** When installing the C9136I AP in an environment where the ambient temperature is in the range of 104°F and 122°F (>40°C and 50°C), the access point configuration will change from 8x8 to 4x4 on the 5-GHz radios, and the uplink Ethernet will downgrade to 1 GbE. However, the USB port will remain enabled.

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- Console access using the console port

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



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**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.

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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.

## Performing a Preinstallation Configuration (Optional)

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

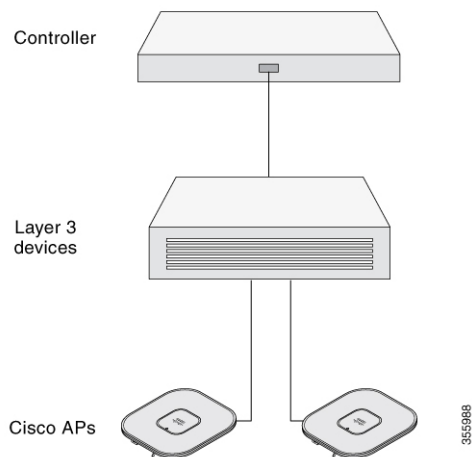


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**Note** Performing a preinstallation configuration is an optional procedure. If your network controller is properly configured, you can install your access point in its final location and connect it to the network from there. For more information, see [Deploying the Access Point on the Wireless Network](#).

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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, Cisco Controller Management, and AP-Manager 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.
- Configure the Cisco Catalyst 9800 Series Wireless Controller as the primary so that new APs always join it.
- Ensure that the DHCP is enabled on the network. The AP must receive its IP address through DHCP.




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**Note** An 802.11ax 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.

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- 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 the [Configuring DHCP Option 43](#) for more information.




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**Note** The AP requires a multi-gigabit Ethernet (5 Gbps) link to prevent the Ethernet port from becoming a bottleneck for traffic.

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## Procedure

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**Step 1** Power the AP using supported power source.

See [Powering the Access Point, on page 7](#).

- As the AP attempts to connect to the controller, the LED cycles through a green, red, and off sequence, which can take up to five minutes.

**Note** If the AP remains in this mode for more than five minutes, the AP cannot find the primary Cisco 9800 controller. Check the connection between the AP and the Cisco 9800 controller and be sure that they are on the same subnet.

- If the AP shuts down, check the power source.
- After the AP finds the Cisco Catalyst 9800 Series Wireless Controller, it attempts to download the new operating system code if the AP code version differs from the Cisco Catalyst 9800 Series Wireless Controller code version. While this is happening, the Status LED blinks blue.

If the operating system download is successful, the AP reboots.

**Step 2** (Optional) Configure the AP. Use the controller CLI, GUI, or Cisco Spaces to customize the access point-specific 802.11ax network settings.

**Step 3** If the preinstallation configuration is successful, the Status LED is green, indicating normal operation. Disconnect the AP and mount it at the location at which you intend to deploy it on the wireless network.

**Step 4** 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 Cisco 9800 controller, ensure 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.
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## Mounting the Access Point

Cisco Catalyst 9136 Series Access Points can be mounted in the following places:

- Suspended ceiling
- Hard ceiling
- Wall
- Electrical or network box

- Above a suspended ceiling

For detailed instructions on mounting the AP, see the Access Point Mounting Instructions document at:

[http://www.cisco.com/c/en/us/td/docs/wireless/access\\_point/mounting/guide/apmount.html](http://www.cisco.com/c/en/us/td/docs/wireless/access_point/mounting/guide/apmount.html).

The standard mounting hardware supported by the AP is listed in the table below.

**Table 1: Brackets and Clips for Mounting the AP**

	Part Number	Description
Brackets <sup>123</sup>	AIR-AP-BRACKET-1	Low-profile bracket: Used for ceiling-mount installations (This is the default option.)
	AIR-AP-BRACKET-2	Universal bracket: Used for wall or electrical box installations.
Clips	AIR-AP-T-RAIL-R	Ceiling grid clip (recessed mounting) (This is the default option.)
	AIR-AP-T-RAIL-F	Ceiling grid clip (flush mounting)
	AIR-CHNL-ADAPTER	Optional adapter for channel-rail ceiling grid profile.

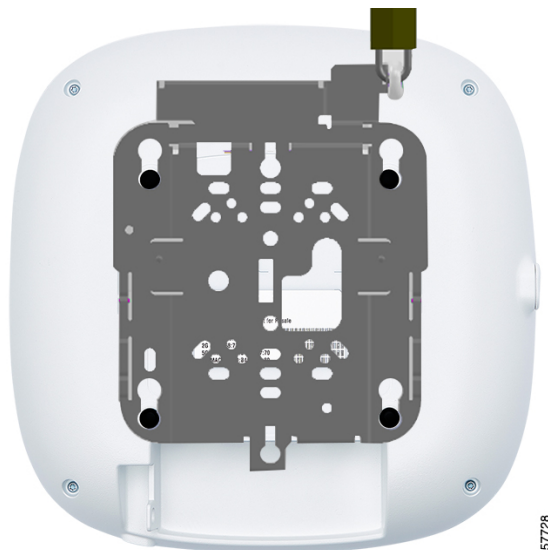
<sup>1</sup> Mount the AP using no less than four screw holes on a bracket.

<sup>2</sup> AIR-AP-BRACKET-3 is not compatible for use with Cisco Catalyst 9136 series access points.

<sup>3</sup> You can also use *in-tile* mounting options available from third parties. For more information, see the [C9136 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 (see [Figure 1: Locking the AP to the Bracket, on page 6](#)) to lock it to the bracket.

**Figure 1: Locking the AP to the Bracket**



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# Powering the Access Point



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**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.

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The AP can be powered only through PoE using the following:

- 802.3bt: Any 802.3bt-compliant switch port or Cisco Power Injector AIR-PWRINJ7=
- Cisco Universal PoE (Cisco UPoE)
- 802.3at (PoE+): Any 802.3at (30.0 W)-compliant switch port
- 802.3af: Any 802.3af (15.4 W)-compliant switch port



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**Note** If 802.3af is used, all the radios get switched off, the Ethernet port is downgraded to 1 GbE, and the USB port is shut off.

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- Supports dual-PoE hitless redundant power functionality.

## Redundant Power over Ethernet

The AP supports PoE power input on both the 5-GbE ports. The dual-PoE hitless redundant power feature enables the AP to support hitless failover when the powered port experiences a power failure. When the PoE is present on both ports, only one port draws power, and the other is in standby mode. The AP switches over to the standby port in a hitless transition if the active PoE port fails.

The hitless failover functions correctly when both PSE ports are of the same type, that is, 802.3at x2 or 802.3bt x2. You can use the switch-based PSE ports and power injectors in this configuration.



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**Note** The dual-PoE operation requires even power input. The AP may reboot if there is drop in power at one of the PoE ports. A UPoE providing 60 W is recommended to ensure that all the radios are operational, with all the spatial streams active, and the necessary Ethernet speed to operate in full 5G mode. To avoid AP rebooting because of low power in any two ports, use only one Ethernet port to power the AP.

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