



Installation and Configuration

This guide provides you with the information needed to mount AP1020 and AP1030 Cisco Aironet 1000 Series 802.11a/b/g lightweight access points. Cisco Aironet 1000 Series 802.11a/b/g lightweight access points are part of the innovative Cisco Wireless LAN Solution (Cisco WLAN Solution), and require no manual configuration after they are mounted.

This document is written assuming that you have already performed a site survey as described in the *Cisco Aironet 1000 Series IEEE 802.11a/b/g Lightweight Access Point Deployment Guide*, that Cisco Aironet 1000 Series lightweight access point locations and mounting options have been selected, and that you have one Cisco Aironet 1000 Series lightweight access point per indicated location.

After the site survey is done, you should have a map indicating the following:

- Cisco Aironet 1000 Series lightweight access point locations.
- Cisco Aironet 1000 Series lightweight access point mounting options: hanging from a ceiling, in the ceiling plenum, projecting away from the wall, flat against the wall, or using the Ceiling-Mount Bezel Kit.
- Cisco Aironet 1000 Series lightweight access point power options: power supplied by the AC-to-DC power supply orderable from the factory, or PoE from a network device or a PoE injector/hub (usually located in a wiring closet).



Caution

Plenum-mounted Cisco Aironet 1000 Series 802.11a/b/g lightweight access points **MUST BE** powered using PoE to comply with safety regulations.

If you do not have a map, make one so you can record the MAC addresses from each location and return them to the person who is planning or managing this wireless network.

Refer to the following sections to install the Cisco Aironet 1000 Series 802.11a/b/g lightweight access points.



Note

When mounting Cisco Aironet 1000 Series 802.11a/b/g lightweight access points, be sure to maintain a 20 cm (8 in.) separation between the Cisco Aironet 1000 Series 802.11a/b/g lightweight access points and bystanders to comply with FCC RF exposure regulations. Refer to the [“FCC Statements for Cisco Aironet 1000 Series Lightweight Access Points”](#) section for more information.

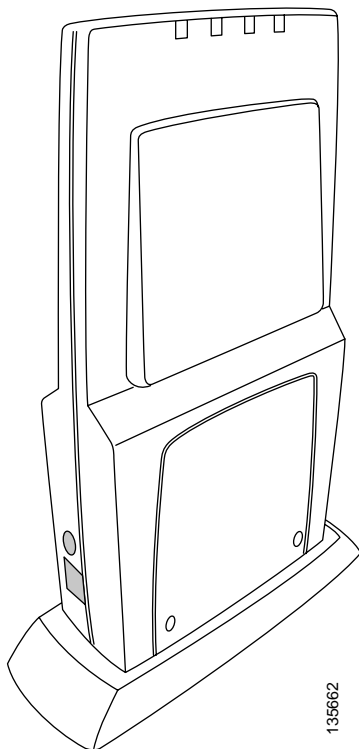
For more details about Cisco Aironet 1000 Series lightweight access point installations, refer to the [“Planning Notes”](#) section at the end of this document.

ATTENTION!

While Cisco Aironet 1000 Series IEEE 802.11a/b/g lightweight access points have been engineered for easy installation, there are some very important guidelines for installation:

- PLACE Cisco Aironet 1000 Series Lightweight Access Points NO MORE THAN 140 FEET APART FROM EACH OTHER. Placing Cisco Aironet 1000 Series 802.11a/b/g lightweight access points farther apart almost always results in poor coverage.
- DO NOT MOUNT Cisco Aironet 1000 Series Lightweight Access Points OUTSIDE BUILDINGS.
- DO NOT MOUNT Cisco Aironet 1000 Series Lightweight Access Points ON BUILDING PERIMETER WALLS UNLESS THE OPERATOR WANTS TO PROVIDE COVERAGE OUTSIDE THE BUILDING.
- BE SURE that plenum-mounted Cisco Aironet 1000 Series 802.11a/b/g lightweight access points are powered using Power over Ethernet (PoE) and use only the metal brackets (not the Ceiling-Mount Base or the Hanging-Ceiling Clips) to comply with safety regulations.
- BE SURE THAT Cisco Aironet 1000 Series Lightweight Access Points ARE INSTALLED VERTICALLY as shown in [Figure 1](#). Installing Cisco Aironet 1000 Series 802.11a/b/g lightweight access points vertically either standing up in a plenum or hanging from a ceiling, creates the largest coverage area per Cisco Aironet 1000 Series lightweight access point. Hanging Cisco Aironet 1000 Series 802.11a/b/g lightweight access points from the ceiling provides the best RF coverage.

Figure 1 Access Point Installed Vertically

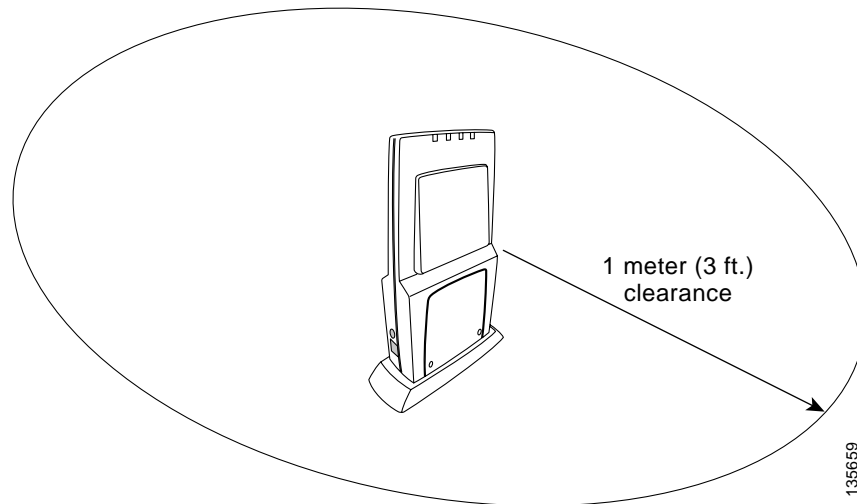


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- DO NOT MOUNT Cisco Aironet 1000 Series lightweight access point ANTENNAS WITHIN ONE METER (3 FT.) OF ANY METAL OBSTRUCTIONS. THE RF WAVES FROM Cisco Aironet 1000 Series Lightweight Access Points ARE BLOCKED AND/OR REFLECTED BY METAL OBJECTS

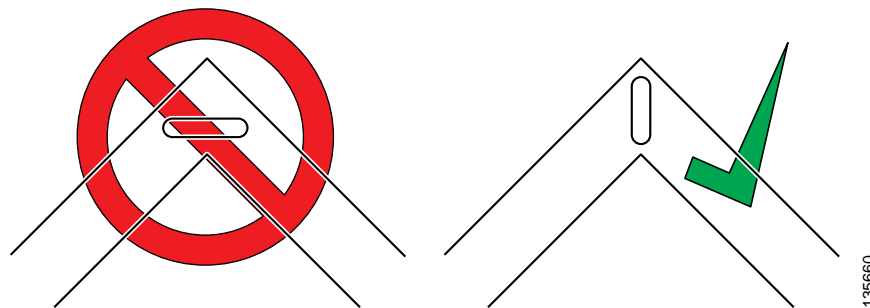
such as metal HVAC ducts, conduit, pipes, bookcases, elevator shafts, stairwells, and metal walls. REFER TO THE *Cisco Aironet 1000 Series IEEE 802.11a/b/g Lightweight Access Point Deployment Guide* BEFORE MOUNTING Cisco Aironet 1000 Series Lightweight Access Points NEAR METAL OBSTRUCTIONS.

Figure 2 Access Point Clearance



- WHEN MOUNTING Cisco Aironet 1000 Series Lightweight Access Points IN THE CORNER OF A RIGHT-ANGLE HALLWAY INTERSECTION, MOUNT THE Cisco Aironet 1000 Series Lightweight Access Point AT A 45-DEGREE ANGLE TO THE TWO HALLWAYS. The Cisco Aironet 1000 Series lightweight access point internal antennas are not omnidirectional and cover a larger area when mounted this way.

Figure 3 Mounting the Access Point in the Correct Direction



When a Cisco Aironet 1000 Series lightweight access point is configured with an IP address and is moved to a different IP segment, it attempts to join a Cisco Wireless LAN Controller. If it is unable to join a Cisco Wireless LAN Controller after a number of attempts, it does an arp for the default configured gateway. If the Cisco Aironet 1000 Series lightweight access point is on the wrong subnet, it will not be able to resolve the gateway arp and it will attempt to contact a DHCP server. This is the Cisco Aironet 1000 Series lightweight access point IP address fallback feature. However, if the destination IP segment does not have a DHCP server, the Cisco Aironet 1000 Series lightweight access point retains its original IP address and can never join the network.

Collecting Required Tools and Supplies

This section describes the tools and information that you should have before installing the access point.

- One Cisco Aironet 1000 Series lightweight access point per location.
- Cisco Aironet 1000 Series lightweight access point Mounting Kits, factory-supplied with each Cisco Aironet 1000 Series lightweight access point.
- Optional Cisco Aironet 1000 Series lightweight access point Mounting Kits, factory-orderable.
- Optional AC-to-DC external power supplies, factory-orderable. Note that this option requires the power cable to be run through the plenum in a metal conduit to meet safety requirements.
- Map showing Cisco Aironet 1000 Series lightweight access point locations and mounting and power options.
- Screwdrivers, drills, and ladder.
- An assortment of sheet metal and drywall screws and toggle bolts.
- CAT-5 (or higher) cables to connect the Cisco Aironet 1000 Series lightweight access point locations and other network devices.
- Optional Kensington MicroSaver Security Cable to secure each Cisco Aironet 1000 Series lightweight access point.

Continue with “[Pre-Installation Configuration](#).”

Pre-Installation Configuration

The following procedures are designed to ensure that your Cisco Aironet 1000 Series lightweight access point physical installation and that initial operation goes as expected. If you are unable to prepare your Cisco Aironet 1000 Series lightweight access point for deployment, this step also describes RMA (Return Material Authorization) procedures.

Perform the following procedure on each Cisco Aironet 1000 Series lightweight access point BEFORE deploying it in its final location.

- [Preparing a Version 3.0 Cisco Aironet 1000 Series Lightweight Access Point](#) OR
- [Alternate Method of Preparing a Version 3.0 Cisco Aironet 1000 Series Lightweight Access Point](#) for installation in a Version 3.0 deployment

If you are unable to perform the following procedure, refer to the “[Obtaining Technical Assistance](#)” section.

Preparing a Version 3.0 Cisco Aironet 1000 Series Lightweight Access Point

If your Cisco Aironet 1000 Series lightweight access point has Operating System 3.0 or a later version loaded on it, continue with this procedure.

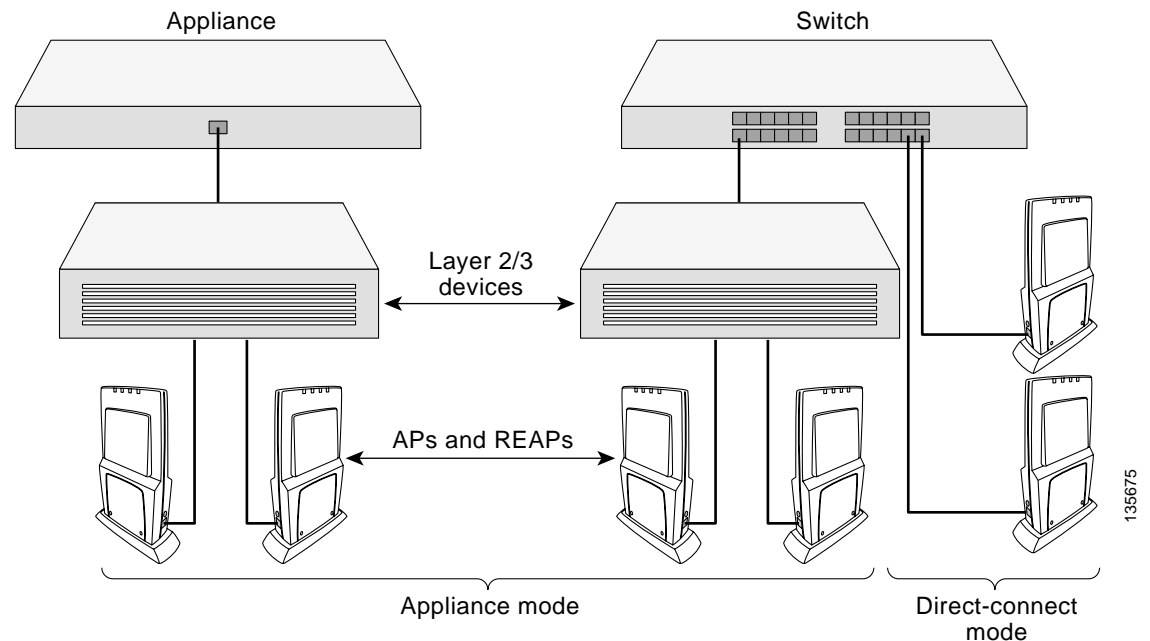


Note

This procedure is written assuming that you are preparing a version 3.0 Cisco Aironet 1000 Series lightweight access point to operate with a Cisco Wireless LAN Controller.

Configuration Setup

Figure 4 Configuration Setup



Does My Cisco Aironet 1000 Series Lightweight Access Point Qualify for this Procedure?

If your 3.0 or later version Cisco Aironet 1000 Series lightweight access point(s) cannot be configured for any reason using the following procedure, refer to the “[Obtaining Technical Assistance](#)” section.

Configuration Steps for a Cisco Aironet 1000 Series Lightweight Access Point

To configure an access point, perform these steps:

- Step 1** Configure the Cisco Wireless LAN Controller in **LWAPP Layer 3 Mode** and be sure its DS Port is connected to the network.



Note

When you are installing a Cisco 1030 remote edge lightweight access point, a DHCP server must be accessible by the access point.

- a. Be sure Cisco Aironet 1000 Series lightweight access point ports are available through the Cisco Wireless LAN Controller Management/AP-Manager Interface.
- b. Set the Cisco Wireless LAN Controller as the Master so that new Cisco Aironet 1000 Series 802.11a/b/g lightweight access points always associate with it. Use the CLI command *show network config* to determine if the Cisco Wireless LAN Controller DS Port is the Master. If the Cisco Wireless LAN Controller DS Port is not, make it the Master using the CLI command *config network master-base disable*.

- Step 2** Take the Cisco Aironet 1000 Series lightweight access point out of the box and plug it into the same subnet as the Cisco Wireless LAN Controller.

- Step 3** Apply power to the Cisco Aironet 1000 Series lightweight access point.

- a. Use 802.3af-compatible PoE from the Cisco Wireless LAN Controller or from an orderable inline power injector. If you do not have PoE available, use an orderable external AC-to-48 VDC Power Supply plugged into the side of the Cisco Aironet 1000 Series lightweight access point.



Note

Cisco Aironet 1000 Series 802.11a/b/g lightweight access points support 802.3af Power over Ethernet (PoE). These access points do not support Cisco prestandard PoE. Please use Cisco 802.3af capable PoE switches or power injectors.

- b. After you power up the Cisco Aironet 1000 Series lightweight access point, the RED Alarm LED comes on for about 15-20 seconds and then all the LEDs blink sequentially back and forth, indicating that the Cisco Aironet 1000 Series lightweight access point is trying to find a Cisco Wireless LAN Controller to associate with. This can continue for up to five minutes. If the Cisco Aironet 1000 Series lightweight access point remains in this mode for more than five minutes, the Cisco Aironet 1000 Series lightweight access point is unable to find the Master Cisco Wireless LAN Controller. Check the connection between the Cisco Aironet 1000 Series lightweight access point and the Cisco Wireless LAN Controller and be sure the Cisco Aironet 1000 Series lightweight access point and the Cisco Wireless LAN Controller are on the same subnet.
- c. If the power light does not come on, check the power (it can be powered either with PoE or from an orderable Cisco Aironet 1000 Series lightweight access point External Power Supply).
- d. Be sure that a DHCP server is configured in the Cisco Wireless LAN Controller for both the Management Interface and AP-Manager Interface using the CLI, Web User Interface, or Cisco WCS interface, and that the DHCP server is operating correctly.

- e. After the Cisco Aironet 1000 Series lightweight access point finds the Cisco Wireless LAN Controller, it attempts to download the new Operating System code if the Cisco Aironet 1000 Series lightweight access point code version differs from the Cisco Wireless LAN Controller code version. While this is happening, the LEDs on the top of the Cisco Aironet 1000 Series lightweight access point blink simultaneously.

Step 4 After the Operating System code download is successful, the Cisco Aironet 1000 Series lightweight access point reboots. The GREEN LED turns on and the two YELLOW LEDs indicate the states of the 802.11a and 802.11b/g networks. If any part of the network is disabled in the Cisco Wireless LAN Controller, the corresponding YELLOW LED remains off.

**Note**

The Red LED can light for about 10-20 seconds when the Cisco Aironet 1000 Series lightweight access point reboots. If the RED LED comes on AND STAYS ON for more than a minute, disconnect the Cisco Aironet 1000 Series lightweight access point and call Cisco Technical Assistance Center (TAC).

- Use the CLI command *show ap summary*. If the new Cisco Aironet 1000 Series lightweight access point appears on the list, it has been configured successfully.
- From the CLI, Web User Interface or Cisco WCS interface, configure the Cisco Aironet 1000 Series lightweight access point with its Primary, Secondary, and Tertiary Cisco Wireless LAN Controller names.
- If you will be using the Cisco Aironet 1000 Series lightweight access point in a Controller Mobility Group, set the Controller Mobility Group name using the CLI, Web User Interface or Cisco WCS interface.
- If required, use the CLI, Web User Interface or Cisco WCS interface to customize the Cisco Aironet 1000 Series lightweight access point-specific 802.11a, 802.11b and 802.11g network settings. Once again, the two YELLOW LEDs indicate the states of the 802.11a and 802.11b/g networks. If any part of the network is disabled, the corresponding YELLOW LED remains off.

Step 5 If everything works (the GREEN LED is on and the RED LED is off), disconnect the Cisco Aironet 1000 Series lightweight access point and take it to its final destination and install it as described later in this document. If your Cisco Aironet 1000 Series lightweight access point fails this visual test, refer to [“Obtaining Technical Assistance”](#) to return your Cisco Aironet 1000 Series lightweight access point.

**Note**

When you are installing a Cisco 1030 remote edge lightweight access point or a Layer 3 Cisco Aironet 1000 Series lightweight access point on a different subnet than the Cisco Wireless LAN Controller, BE SURE that a DHCP server is available on the subnet where you will be installing the Cisco Aironet 1000 Series lightweight access point, and that the subnet has a route back to the Cisco Wireless LAN Controller. Also be sure that the route back to the Cisco Wireless LAN Controller has destination UDP ports 12222 and 12223 open for LWAPP communications. Ensure the route back to the Primary, Secondary, and Tertiary Cisco Wireless LAN Controller allows IP packet fragments. Finally, be sure that if address translation is used, that the Cisco Aironet 1000 Series lightweight access point and the Cisco Wireless LAN Controller have a static 1-to-1 NAT to an outside address. (Port Address Translation is not supported.)

Step 6 When you have installed and powered up the Cisco Aironet 1000 Series lightweight access point in its final destination, verify that the LEDs are in the same state they were in at the end of Step 4.

- If no LEDs are on, the Cisco Aironet 1000 Series lightweight access point is most likely not receiving power.

- If the LEDs blink sequentially for more than five minutes, the Cisco Aironet 1000 Series lightweight access point is unable to find its Primary, Secondary, or Tertiary Cisco Wireless LAN Controller. Check the connection between the Cisco Aironet 1000 Series lightweight access point and the Cisco Wireless LAN Controller, and be sure the Cisco Aironet 1000 Series lightweight access point and the Cisco Wireless LAN Controller are either on the same subnet or that the Cisco Aironet 1000 Series lightweight access point has a route back to its Primary, Secondary, and Tertiary Cisco Wireless LAN Controller.
- If the Cisco Aironet 1000 Series lightweight access point is not on the same subnet as the Cisco Wireless LAN Controller, be sure there is a DHCP server on the same subnet as the Cisco Aironet 1000 Series lightweight access point. Also, be sure that the route between the Cisco Aironet 1000 Series lightweight access point and the Cisco Wireless LAN Controller can process IP fragmented packets.

Step 7 If no LEDs are on, the Cisco Aironet 1000 Series lightweight access point is most likely not receiving power. If all the LEDs blink sequentially for more than five minutes, the Cisco Aironet 1000 Series lightweight access point is unable to find its Primary, Secondary, and Tertiary Cisco Wireless LAN Controllers. Check the connection between the Cisco Aironet 1000 Series lightweight access point and the Cisco Wireless LAN Controller, and be sure that they are either on the same subnet or that the Cisco Aironet 1000 Series lightweight access point has a route back to its Primary, Secondary, and Tertiary Cisco Wireless LAN Controller. Note that the Cisco 1030 remote edge lightweight access points at each remote location must be on the same subnet to allow client roaming. Also, if the Cisco Aironet 1000 Series lightweight access point is not on the same subnet as the Cisco Wireless LAN Controller, be sure there is a DHCP server on the same subnet as the Cisco Aironet 1000 Series lightweight access point.

After you have prepared all Cisco Aironet 1000 Series 802.11a/b/g lightweight access points, reconfigure the Cisco Wireless LAN Controller so it is not the Master. A Master Cisco Wireless LAN Controller should only be used for configuring Cisco Aironet 1000 Series 802.11a/b/g lightweight access points and not in a working network. Note that the Master Cisco Wireless LAN Controller is normally not used in a deployed network, so the Master Cisco Wireless LAN Controller setting is automatically disabled upon reboot or OS code upgrade.

After completing “[Pre-Installation Configuration](#)” for all Cisco Aironet 1000 Series 802.11a/b/g lightweight access points, continue with “[Preparing Mounting Locations](#).”

Alternate Method of Preparing a Version 3.0 Cisco Aironet 1000 Series Lightweight Access Point

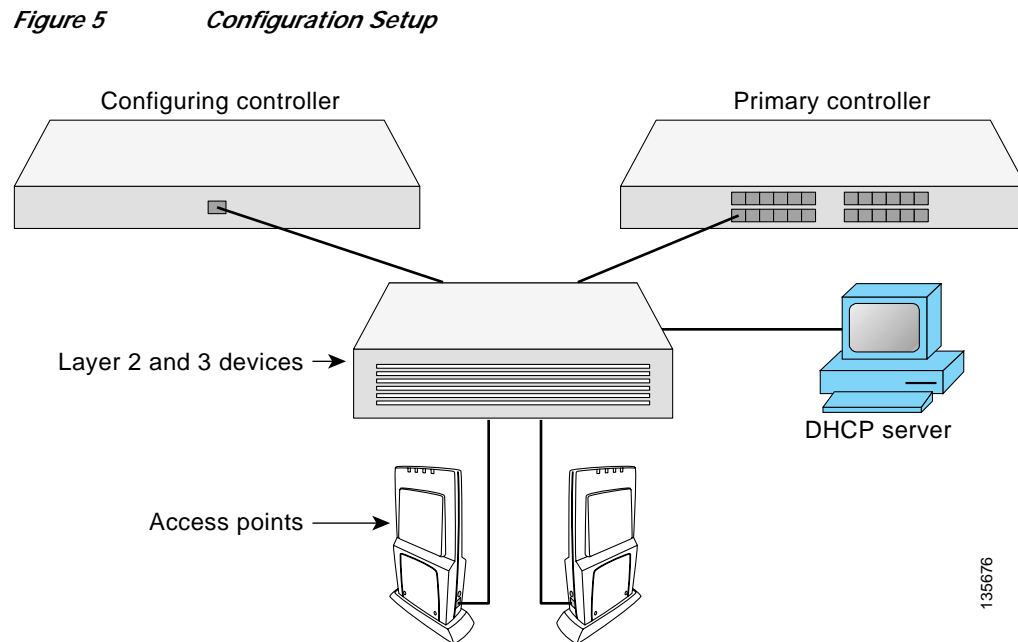
If your Cisco Aironet 1000 Series lightweight access point has Operating System 3.0 or later, you may choose to use this procedure.



Note

This procedure assumes that you are preparing a version 3.0 Cisco Aironet 1000 Series lightweight access point to operate with a version 3.0 Cisco Wireless LAN Controller. It also assumes that your Cisco Wireless LAN Controller is already operating in **LWAPP Layer 3 Mode**. It also assumes that you are using the Internet Software Consortium (ISC) DHCP Server V3.0p11. Finally, it assumes that if you have deployed multiple Cisco Wireless LAN Controllers, the Cisco Wireless LAN Controller you use to initialize the Cisco Aironet 1000 Series lightweight access point is in an existing *Controller Mobility Group* with the *Primary, Secondary, and Tertiary Cisco Wireless LAN Controllers* you want to assign to the new Cisco Aironet 1000 Series lightweight access point.

Configuration Setup



Does My Cisco Aironet 1000 Series Lightweight Access Point Qualify for this Procedure?

- If your 3.0 or later version Cisco Aironet 1000 Series lightweight access point(s) cannot be configured for any reason using the following procedure, refer to the “[Obtaining Technical Assistance](#)” section.

Configuration Steps for a Cisco 1000 Series Lightweight Access Point

1. Configure the Internet Software Consortium (ISC) V3.0p11 DHCP Server to provide the vendor-specific Option 43 using the following entries:

```
option controller code 43 = text;
option controller "<Switch IP Address>;"
```

in which **<Switch IP Address>** is the IP address of the Cisco Wireless LAN Controller you are going to use to prepare the Cisco Aironet 1000 Series lightweight access point, or which can be a comma-delimited string of Cisco Wireless LAN Controller IP addresses.

(These commands direct all discovery messages for unconfigured Cisco Aironet 1000 Series 802.11a/b/g lightweight access points to the configuring Cisco Wireless LAN Controller.)

2. Be sure the configuring Cisco Wireless LAN Controller is in **LWAPP Layer 3 Mode** (use the CLI command `show switchconfig` to determine the mode; if it is set to Layer 3, use the CLI command `config switchconfig mode L2` to change it to Layer 2). Be sure that the configuring Cisco Wireless LAN Controller is in the same Controller Mobility Group as the planned *Primary, Secondary, and Tertiary Cisco Wireless LAN Controllers*, and that the configuring Cisco Wireless LAN Controller DS Port is connected to the network.

3. Also be sure that the DHCP server is configured in the Cisco Wireless LAN Controller for both the Management Interface and AP-Manager Interface using the CLI, Web User Interface, or Cisco WCS user interface.

**Note**

When you are installing a Cisco Aironet 1000 Series lightweight access point, a DHCP server must be accessible by the Cisco Aironet 1000 Series lightweight access point.

4. Take the Cisco Aironet 1000 Series lightweight access point out of the box and plug it into the network so that it can request an IP address from the DHCP server.
5. Apply power to the Cisco Aironet 1000 Series lightweight access point:
 - a. Use 802.3af-compatible PoE from the network equipment or from an orderable inline power injector. If you do not have PoE available, use an orderable AC-to-48 VDC External Power Supply plugged into the side of the Cisco Aironet 1000 Series lightweight access point.

**Note**

Cisco Aironet 1000 Series 802.11a/b/g lightweight access points support 802.3af Power over Ethernet (PoE). These access points do not support Cisco prestandard PoE. Please use Cisco 802.3af capable PoE switches or power injectors

- b. After you power up the Cisco Aironet 1000 Series lightweight access point, the RED Alarm LED comes on for about 15-20 seconds and then all the LEDs blink sequentially back and forth, indicating that the Cisco Aironet 1000 Series lightweight access point is trying to find a Cisco Wireless LAN Controller to connect to. This can continue for up to five minutes. If the Cisco Aironet 1000 Series lightweight access point remains in this mode for more than five minutes, the Cisco Aironet 1000 Series lightweight access point is unable to find the Master Cisco Wireless LAN Controller. Check the connection between the Cisco Aironet 1000 Series lightweight access point and the Cisco Wireless LAN Controller and be sure that they are on the same subnet.
 - c. If the power light does not come on, check the power (it can be powered either with PoE or a from an orderable Cisco Aironet 1000 Series lightweight access point External Power Supply).
6. The Cisco Aironet 1000 Series lightweight access point requests an IP address from the DHCP server, and the DHCP server returns an IP address for the Cisco Aironet 1000 Series lightweight access point, and also returns the IP Address of the configuring Cisco Wireless LAN Controller.

After the Cisco Aironet 1000 Series lightweight access point finds the configuring Cisco Wireless LAN Controller, it attempts to download the new Operating System code if the Cisco Aironet 1000 Series lightweight access point code version differs from the configuring Cisco Wireless LAN Controller code version. While this is happening, the LEDs on the top of the Cisco Aironet 1000 Series lightweight access point blink simultaneously.
7. After the Operating System code is downloaded, the Cisco Aironet 1000 Series lightweight access point reboots. The GREEN LED turns on and the two YELLOW LEDs indicate the states of the 802.11a and 802.11b/g networks. If any part of the network is disabled in the configuring Cisco Wireless LAN Controller, the corresponding YELLOW LED remains off.
 - Note that the Red LED can light for about 10-20 seconds when the Cisco Aironet 1000 Series lightweight access point reboots. If the RED LED comes on AND STAYS ON for more than a minute, disconnect the Cisco Aironet 1000 Series lightweight access point and call Cisco Technical Assistance Center (TAC).

- From the CLI, Web User Interface or Cisco WCS interface, configure the Cisco Aironet 1000 Series lightweight access point with its Primary, Secondary, and Tertiary Cisco Wireless LAN Controller names (any of which can be the name of the configuring Cisco Wireless LAN Controllers).
 - If required, use the CLI, Web User Interface or Cisco WCS interface to customize the Cisco Aironet 1000 Series lightweight access point-specific 802.11a, 802.11b and 802.11g network settings. Once again, the two YELLOW LEDs indicate the states of the 802.11a and 802.11b/g networks. If any part of the network is disabled, the corresponding YELLOW LED remains off.
8. If everything works (the GREEN LED is on and the RED LED is off), reboot the Cisco Aironet 1000 Series lightweight access point and install it as described in this document. If your Cisco Aironet 1000 Series lightweight access point fails this visual test, refer to the [“Obtaining Technical Assistance”](#) section to return your Cisco Aironet 1000 Series 802.11a/b/g lightweight access points.

**Note**

When you are installing a Cisco 1030 remote edge lightweight access point or a Layer 3 Cisco Aironet 1000 Series lightweight access point on a different subnet than the Cisco Wireless LAN Controller, BE SURE that a DHCP server is available on the subnet where you will be installing the Cisco Aironet 1000 Series lightweight access point and that the subnet has a route back to the Primary, Secondary, and Tertiary Cisco Wireless LAN Controller. Ensure that the route back to the Cisco Wireless LAN Controller has destination UDP ports 12222 and 12223 open for LWAPP communications. Ensure the route back to the Primary, Secondary, and Tertiary Cisco Wireless LAN Controller allows IP packet fragments. Finally, be sure that if address translation is used, the Cisco Aironet 1000 Series lightweight access point and the Cisco Wireless LAN Controller have a static 1-to-1 NAT to an outside address. (Port Address Translation is not supported.)

9. When you have installed and powered up the Cisco Aironet 1000 Series lightweight access point in its final destination, verify that the LEDs are in the same state they were in at the end of Step 7.
- If no LEDs are on, the Cisco Aironet 1000 Series lightweight access point is most likely not receiving power.
 - If the LEDs blink sequentially for more than five minutes, the Cisco Aironet 1000 Series lightweight access point is unable to find its Primary, Secondary, or Tertiary Cisco Wireless LAN Controller. Check the connection between the Cisco Aironet 1000 Series lightweight access point and the Cisco Wireless LAN Controller, and be sure that they are either on the same subnet or that the Cisco Aironet 1000 Series lightweight access point has a route back to its Primary, Secondary, and Tertiary Cisco Wireless LAN Controllers.
 - Note that the Cisco 1030 remote edge lightweight access points at each remote location must be on the same subnet to allow client roaming. Also, if the Cisco Aironet 1000 Series lightweight access point is not on the same subnet as the Cisco Wireless LAN Controller, be sure that a DHCP server is accessible on the same subnet as the Cisco Aironet 1000 Series lightweight access point.

After completing [“Pre-Installation Configuration”](#) for all Cisco Aironet 1000 Series 802.11a/b/g lightweight access points, continue with [“Preparing Mounting Locations.”](#)

Preparing Mounting Locations

On your map, you should have the Cisco Aironet 1000 Series lightweight access point locations, mounting options, and power options.

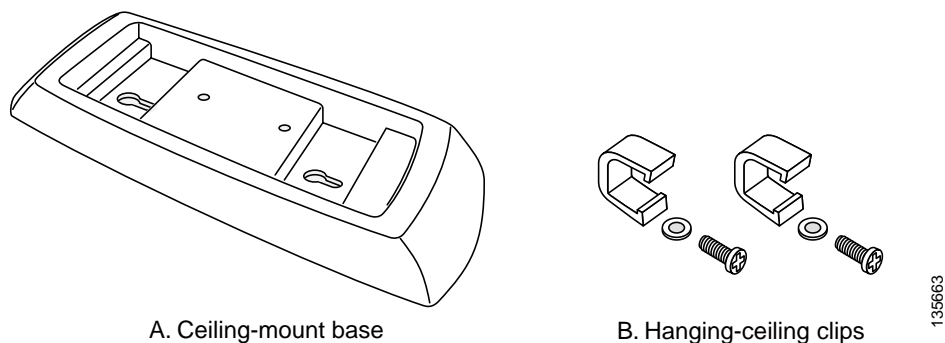


Note

BE SURE that plenum-mounted Cisco Aironet 1000 Series 802.11a/b/g lightweight access points use only the metal Projection-Mount and Flush-Mount brackets (not the Ceiling-Mount Base or the Hanging-Ceiling Clips) and are powered using PoE to comply with safety regulations. Also, external antennas are NOT to be used when installing Cisco Aironet 1000 Series 802.11a/b/g lightweight access points in a plenum.

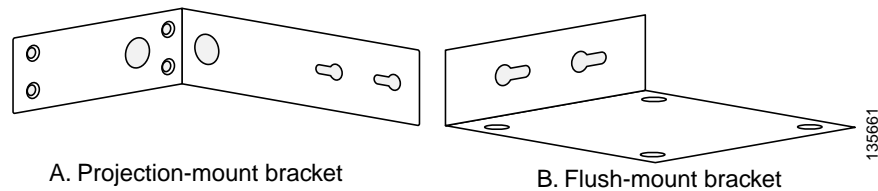
1. Find the required mounting locations.
 - Use the ceiling-mount base to mark the wall or ceiling locations for sheet metal, drywall, or other screws. Be sure to leave enough space around the Cisco Aironet 1000 Series lightweight access point and base to plug the CAT-5 cable, optional external antenna cable(s), optional power supply cable, and optional Kensington MicroSaver Security Cable into the sides of the Cisco Aironet 1000 Series lightweight access point.

Figure 6 *Factory-Supplied Mounting Options*



- Alternatively, attach the hanging ceiling clips to the Cisco Aironet 1000 Series lightweight access point. Be sure you leave enough space around the Cisco Aironet 1000 Series lightweight access point to plug the CAT-5 cable, optional external antenna cable(s), optional power supply cable, and optional Kensington MicroSaver Security Cable into the sides of the Cisco Aironet 1000 Series lightweight access point.
- Alternatively, use the optional mounting bases or brackets to mark the wall or ceiling locations for sheet metal, drywall, or other screws. Be sure to leave enough space around the Cisco Aironet 1000 Series lightweight access point and brackets to plug the CAT-5 cable, optional external antenna cable(s), optional power supply cable, and optional Kensington MicroSaver Security Cable into the sides of the Cisco Aironet 1000 Series lightweight access point.

Figure 7 **Factory-Orderable Mounting Brackets**



2. If necessary, drill holes for the various cables where they can be mostly hidden from casual view. When you are mounting the Cisco Aironet 1000 Series lightweight access point using an optional orderable projection-mount L-bracket (the one with two long legs), the cables can be routed through the 5/8-in. (15.9 mm) holes in the bracket.
3. Route the CAT-5, optional power supply, optional external antenna cable(s), and optional Kensington MicroSaver Security cables to where they can plug into the Cisco Aironet 1000 Series lightweight access point. Be sure to leave about 6 in. (15 cm) of slack in the cables for future modifications.
4. Attach the brackets to the wall or ceiling, or install screws for ceiling-mount base:
 - Where you are going to use the projection-mount or flush-mount bracket, use customer-supplied sheet metal, drywall, or other screws to attach the bracket to the ceiling or wall.
 - Where you are going to use the ceiling-mount base, install customer-supplied sheet metal, drywall, or other screws with 1/4 in. (6.35 mm) or smaller heads protruding from the ceiling about 0.1 in. (2.5 mm).

You are now ready to install the Cisco Aironet 1000 Series 802.11a/b/g lightweight access points. Continue with [“Mounting the Cisco Aironet 1000 Series Lightweight Access Points.”](#)

Mounting the Cisco Aironet 1000 Series Lightweight Access Points

Using the supplied or optional orderable Cisco Aironet 1000 Series lightweight access point mounting kits, mount each Cisco Aironet 1000 Series lightweight access point in its indicated location, oriented as shown on the map. Note that you can mount the Cisco Aironet 1000 Series 802.11a/b/g lightweight access points in the ceiling plenum or below the ceiling, but that they perform best when mounted below the ceiling.

**Note**

The Cisco Aironet 1000 Series lightweight access point supports Antenna Sectorization, which can be used to increase the number of clients and client throughput in a given air space. Installers can mount two Cisco Aironet 1000 Series 802.11a/b/g lightweight access points back-to-back and the Network operator can disable the second antenna in both Cisco Aironet 1000 Series 802.11a/b/g lightweight access points to create a 360-degree coverage area with two sectors.

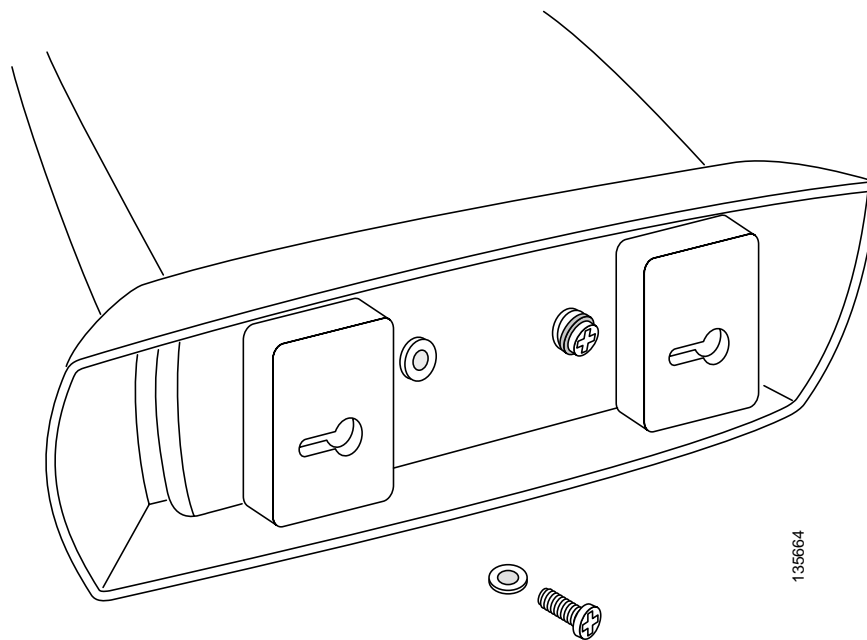
The Cisco Aironet 1000 Series 802.11a/b/g lightweight access points can be mounted in one of the following configurations:

- Ceiling-Mount Base -- Refer to [Ceiling Mount Base](#).
- Ceiling-Mount Clips -- Refer to [Ceiling-Mount Clips](#).
- Projection Wall Mount -- Refer to [Projection Wall Mount](#).
- Flush Wall Mount -- Refer to [Flush Wall Mount](#).
- Ceiling-Mount Bezel -- Refer to the *Cisco Aironet 1000 Series Lightweight Access Point Ceiling-Mount Bezel Kit Installation and Configuration Guide*.

Ceiling Mount Base

When you are mounting the Cisco Aironet 1000 Series lightweight access point in the middle of a ceiling (flat sides toward the room or hallway), use the ceiling-mount base to mount the Cisco Aironet 1000 Series lightweight access point as shown in the following figure and as described below:

Figure 8 *Attaching the Cisco Aironet 1000 Series Lightweight Access Point and Ceiling-Mount Base*



1. Copy the MAC address(es) from the label(s) on the Cisco Aironet 1000 Series lightweight access point onto the corresponding location on the map. MAC addresses have the format 00xxxxxxxxxx.
2. Attach the ceiling-mount base to the bottom of the Cisco Aironet 1000 Series lightweight access point using the factory-supplied machine screws and washers.
3. Position the ceiling-mount base so its keyhole slots are partly on the drywall, sheet metal, or other screw heads installed in [“Preparing Mounting Locations.”](#)



Note

If the screws do not securely hold the ceiling-mount base, remove the Cisco Aironet 1000 Series lightweight access point and adjust the screws until they hold the ceiling-mount base securely.

4. Attach the cables to the sides of the Cisco Aironet 1000 Series lightweight access point.



Note

When the Cisco Aironet 1000 Series lightweight access point is powered up and is associated with a Cisco Wireless LAN Controller (Green/Power and Yellow/802.11b/g and/or Yellow or Amber/802.11a LEDs lit), the Cisco Aironet 1000 Series lightweight access point is broadcasting its beacon signal(s). When this happens, complete the installation as quickly as possible to remove yourself from within 8 in. (20 cm) of the Cisco Aironet 1000 Series lightweight access point to comply with FCC RF radiation exposure guidelines.

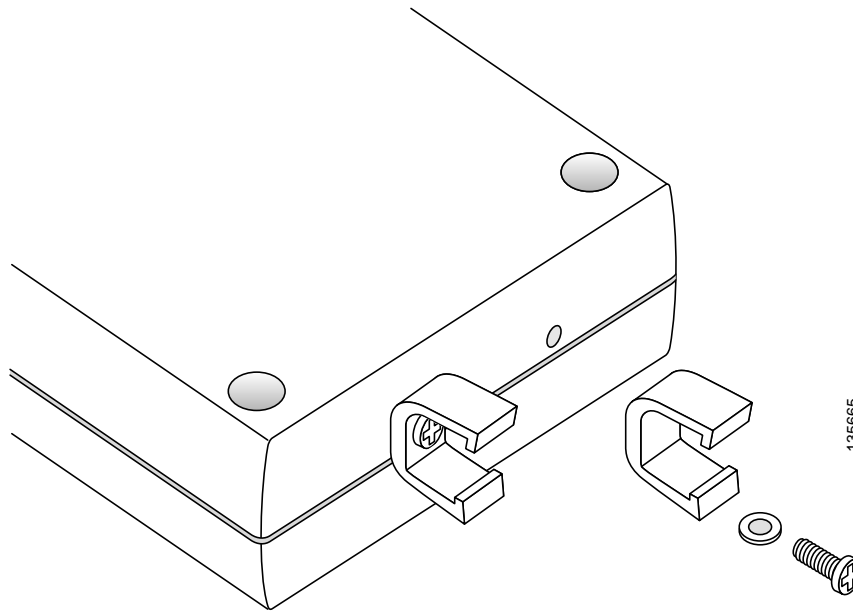
5. Slide the ceiling-mount base onto the drywall, sheet metal, or other screw heads until it fits snugly in place.

You installed the access point. Repeat [“Mounting the Cisco Aironet 1000 Series Lightweight Access Points”](#) for each location, and then continue with [“Returning MAC Information.”](#)

Ceiling-Mount Clips

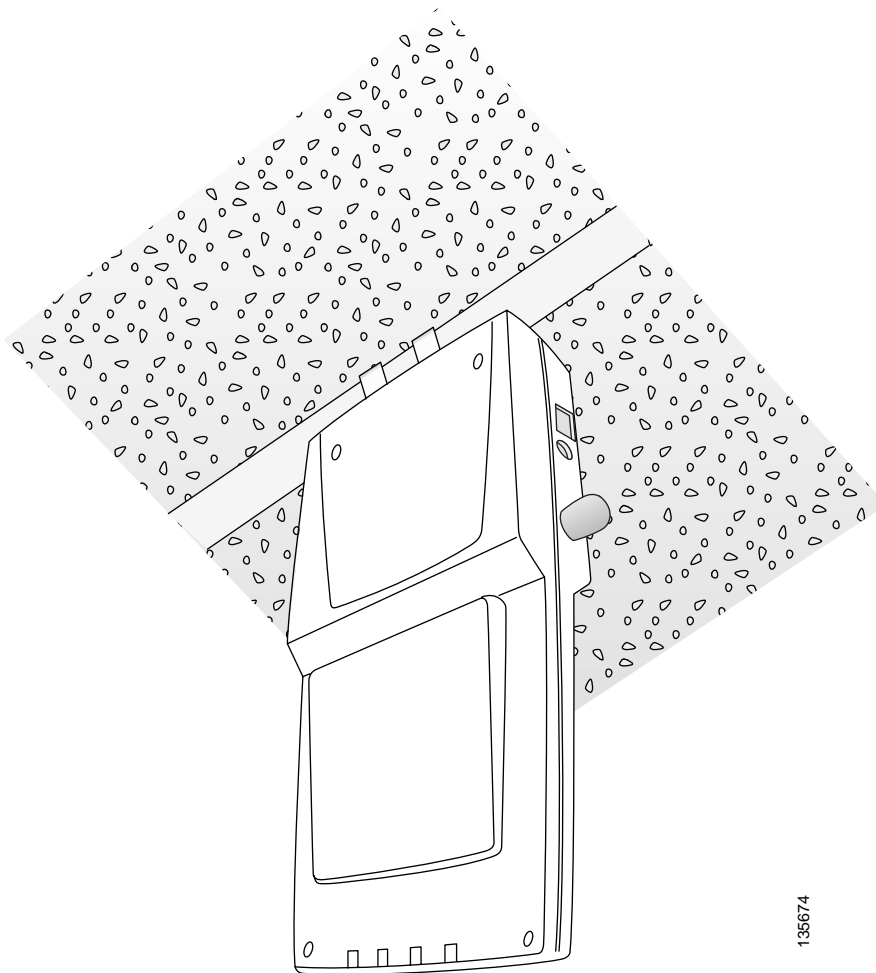
When you are mounting the Cisco Aironet 1000 Series lightweight access point on the extruded aluminium rails of a hanging ceiling, use the ceiling-mount clips to mount the Cisco Aironet 1000 Series lightweight access point as shown in the following figure and as described below:

Figure 9 *Assembling the Cisco Aironet 1000 Series Lightweight Access Point and Ceiling-Mount Clips*



1. Copy the MAC address(es) from the label(s) on the Cisco Aironet 1000 Series lightweight access point onto the corresponding location on the map. MAC addresses have the format 00xxxxxxxxxx.
2. Attach the ceiling-mount clips to the bottom of the Cisco Aironet 1000 Series lightweight access point using the factory-supplied machine screws and washers.
3. Snap the ceiling-mount clips onto a hanging ceiling rail.

Figure 10 *Clipping the Cisco Aironet 1000 Series Lightweight Access Point and Ceiling-Mount Clips to a Hanging-Ceiling Rail*



4. Attach the cables to the sides of the Cisco Aironet 1000 Series lightweight access point.



Note

- Be sure the cables are routed away from the Cisco Aironet 1000 Series lightweight access point antennas.
- When the Cisco Aironet 1000 Series lightweight access point is powered up and is associated with a Cisco Wireless LAN Controller (Green/Power and Yellow/802.11b/g and/or Yellow or Amber/802.11a LEDs lit), the Cisco Aironet 1000 Series lightweight access point is broadcasting its beacon signal(s). When this happens, complete the installation as quickly as possible to remove yourself from within 8 in. (20 cm) of the Cisco Aironet 1000 Series lightweight access point to comply with FCC RF radiation exposure guidelines.

You have installed the Cisco Aironet 1000 Series lightweight access point. Repeat “[Mounting the Cisco Aironet 1000 Series Lightweight Access Points](#)” for each Cisco Aironet 1000 Series lightweight access point location, and then continue with “[Returning MAC Information](#).”

Projection Wall Mount

When you are mounting the Cisco Aironet 1000 Series lightweight access point out from a wall (flat sides along the wall or hallway), use an optional separately orderable factory-orderable projection-mount L-bracket.

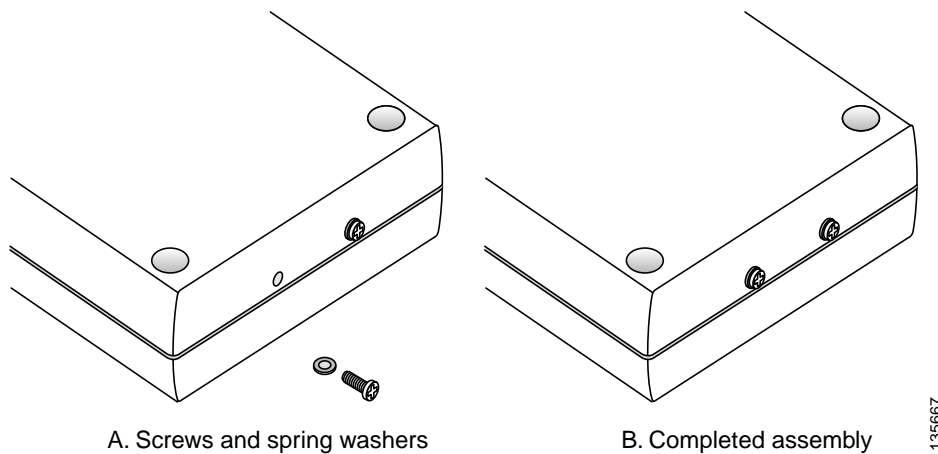
1. Before proceeding, gently screw the two factory-supplied screws and spring washers into the bottom of the Cisco Aironet 1000 Series lightweight access point. Be sure the spring washers have their convex (high center sections) pointing toward the screw heads.



Note

The Cisco Aironet 1000 Series lightweight access point threaded holes have precision-depth threads. Do not overtighten the screws, or the bracket will not fit under the screw heads.

Figure 11 *Attaching the Mounting Screws and Spring Washers to the Cisco Aironet 1000 Series Lightweight Access Point*



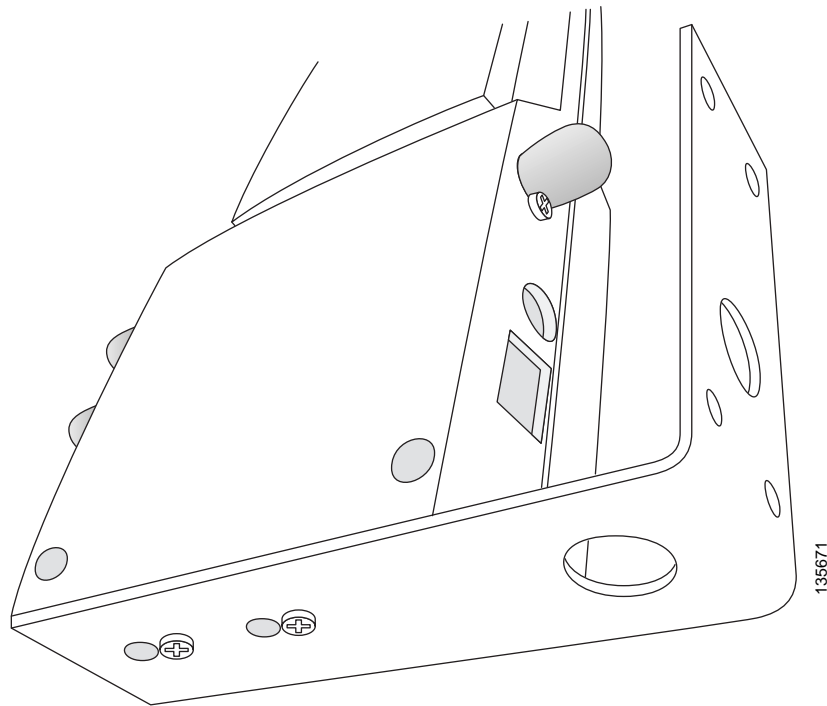
2. Copy the MAC address(es) from the label(s) on the Cisco Aironet 1000 Series lightweight access point onto the corresponding location on the map. MAC addresses have the format 00xxxxxxxxxx.
3. You have already attached the projection-mount L-bracket to the wall in “[Preparing Mounting Locations](#).”
4. Slide the screws into the keyhole slots on the mounting bracket as shown in the following figure.



Note

If the screws do not securely hold the bracket, remove the Cisco Aironet 1000 Series lightweight access point and adjust the screws until they securely hold the bracket.

Figure 12 *Attaching the Cisco Aironet 1000 Series Lightweight Access Point to the Projection-Mount Bracket*



5. Attach the cables to the sides of the Cisco Aironet 1000 Series lightweight access point.

**Note**

- Be sure the cables are routed away from the Cisco Aironet 1000 Series lightweight access point antennas.
- When the Cisco Aironet 1000 Series lightweight access point is powered up and is associated with a Cisco Wireless LAN Controller (Green/Power and Yellow/802.11b/g and/or Yellow or Amber/802.11a LEDs lit), the Cisco Aironet 1000 Series lightweight access point begins broadcasting its beacon signal(s). When this happens, complete the installation as quickly as possible to remove yourself from within 8 in. (20 cm) of the Cisco Aironet 1000 Series lightweight access point to comply with FCC RF radiation exposure guidelines.

You have installed the Cisco Aironet 1000 Series lightweight access point. Repeat “[Mounting the Cisco Aironet 1000 Series Lightweight Access Points](#)” for each Cisco Aironet 1000 Series lightweight access point location, and then continue with “[Returning MAC Information](#).”

Flush Wall Mount

When you are mounting the Cisco Aironet 1000 Series lightweight access point against a wall (flat side toward the inside of the building), use an optional separately orderable factory-orderable flush-mount bracket.

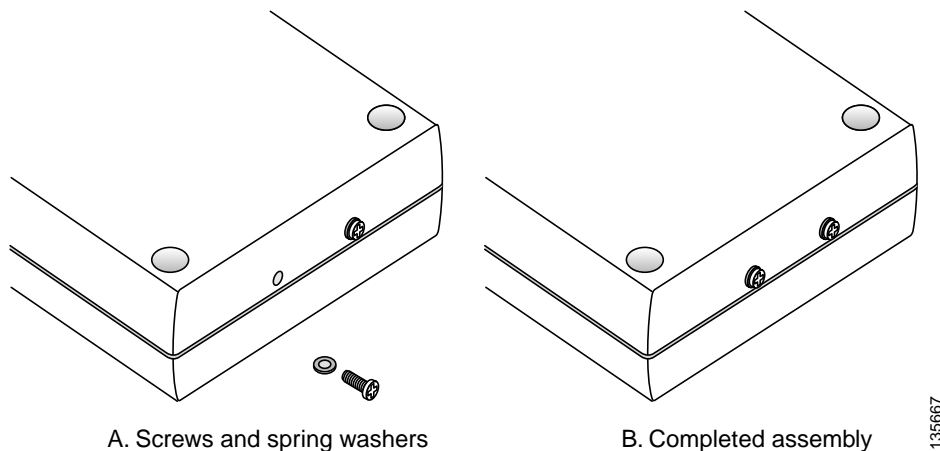
1. Before proceeding, gently screw the two factory-supplied screws and spring washers into the bottom of the Cisco Aironet 1000 Series lightweight access point. Be sure the spring washers have their convex (high center sections) pointing toward the screw heads.



Note

The Cisco Aironet 1000 Series lightweight access point threaded holes have precision-depth threads. Do not overtighten the screws, or the bracket will not fit under the screw heads.

Figure 13 *Attaching the Mounting Screws and Spring Washers to the Cisco Aironet 1000 Series Lightweight Access Point*



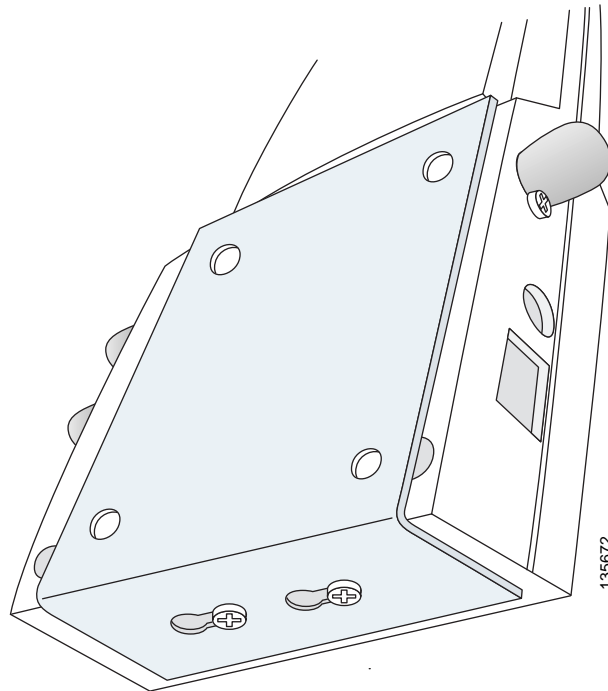
2. Copy the MAC address(es) from the label(s) on the Cisco Aironet 1000 Series lightweight access point onto the corresponding location on the map. MAC addresses have the format 00xxxxxxxx.
3. You have already attached the flush-mount bracket to the wall in [“Preparing Mounting Locations.”](#)
4. Slide the screws into the keyhole slots on the mounting bracket as shown in the following figure.



Note

- Be sure the side of the Cisco Aironet 1000 Series lightweight access point with the door is facing away from the wall. This ensures that the correct antenna is facing the building, and makes future upgrades easier.
- If the screws do not securely hold the bracket, remove the Cisco Aironet 1000 Series lightweight access point and adjust the screws until they securely hold the bracket.

Figure 14 *Attaching the Cisco Aironet 1000 Series Lightweight Access Point to the Flush-Mount Bracket*



5. Attach the cables to the sides of the Cisco Aironet 1000 Series lightweight access point.



Note

- Be sure the cables are routed away from the Cisco Aironet 1000 Series lightweight access point antennas.
- When the Cisco Aironet 1000 Series lightweight access point is powered up and is associated with a Cisco Wireless LAN Controller (Green/Power and Yellow/802.11b/g and/or Yellow or Amber/802.11a LEDs lit), the Cisco Aironet 1000 Series lightweight access point begins broadcasting its beacon signal(s). When this happens, complete the installation as quickly as possible to remove yourself from within 8 in. (20 cm) of the Cisco Aironet 1000 Series lightweight access point to comply with FCC RF radiation exposure guidelines.

You have installed the Cisco Aironet 1000 Series lightweight access point. Repeat “[Mounting the Cisco Aironet 1000 Series Lightweight Access Points](#)” for each Cisco Aironet 1000 Series lightweight access point location, and then continue with “[Returning MAC Information](#).”

Returning MAC Information

When you have completed the installations as outlined in “[Mounting the Cisco Aironet 1000 Series Lightweight Access Points](#),” return the MAC addresses and their locations on the maps or floor plans to the network planner or manager. The Network operators will use the MAC address and location information to create maps for precise wireless Operating System management.

Also return any unused mounting kit hardware and external power supplies to the network planner or manager for use in future deployments.



Note

Please remind the Network Planner or Manager that now is a good time to register the Cisco Aironet 1000 Series 802.11a/b/g lightweight access points.
