



# CHAPTER 1

## Overview

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The Cisco Aironet 1240AG Series Access Point is available in autonomous and lightweight configurations. The autonomous access points can support standalone network configurations with all configuration settings maintained within the access points. The lightweight access points operate in conjunction with a Cisco wireless LAN controller with all configuration information maintained within the controller.

## Product Terminology

The following terms refer to the autonomous and lightweight products:

- *access point*  
*autonomous access point* describes only the autonomous product.

The term *lightweight access point*

*access point*

*bridge*

## Autonomous Access Points

Cisco Aironet 1240AG Series Access Point (AIR-AP1242AG or AIR-AP1242G) provides a secure, affordable, and easy-to-use wireless LAN solution that combines mobility and flexibility with the enterprise-class features required by networking professionals. With a management system based on Cisco IOS software, the 1240AG series is a Wi-Fi certified, wireless LAN transceiver.

The autonomous 1242AG access point contains two integrated radios: a 2.4-GHz radio (IEEE 802.11g) and a 5-GHz radio (IEEE 801.11a). The autonomous 1242G access point contains a single integrated radio: a 2.4-GHz radio (IEEE 802.11g).

The access point serves as the connection point between wireless and wired networks or as the center point of a stand-alone wireless network. In large installations, wireless users within radio range of an access point can roam throughout a facility while maintaining seamless, uninterrupted access to the network.

You can configure and monitor the access point using the command-line interface (CLI), the browser-based management system, or Simple Network Management Protocol (SNMP).

## Lightweight Access Points

radio: a 2.4-GHz radio (IEEE 802.11g). Using a controller, you can configure the radio settings.

In the Cisco Centralized Wireless LAN architecture, access points operate in the lightweight mode (as opposed to autonomous mode). The lightweight access points associate to a controller. The controller manages the configuration, firmware, and control transactions such as 802.1x authentication. In addition, all wireless traffic is tunneled through the controller.

LWAPP is an Internet Engineering Task Force (IETF) draft protocol that defines the control messaging for setup and path authentication and run-time operations. LWAPP also defines the tunneling mechanism for data traffic.

In an LWAPP environment, a lightweight access point discovers a controller by using LWAPP discovery mechanisms and then sends it an LWAPP join request. The controller sends the lightweight access point an LWAPP join response allowing the access point to join the controller. When the access point is joined, the access point downloads its software if the versions on the access point and controller do not match. After an access point joins a controller, you can reassign it to any controller on your network.

LWAPP secures the control communication between the lightweight access point and controller by means of a secure key distribution, utilizing X.509 certificates on both the access point and controller.

This chapter provides information on the following topics:

[Guidelines for Using Cisco Aironet Lightweight Access Points, page 1-2](#)

[Hardware Features, page 1-3](#)

[Network Examples with Autonomous Access Points, page 1-8](#)

## Guidelines for Using Cisco Aironet Lightweight Access Points

- Lightweight access points can only communicate with Cisco 2006 series wireless LAN controllers or 4400 series controllers. Cisco 4100 series, Airespace 4012 series, and Airespace 4024 series controllers are not supported because they lack the memory required to support access points running Cisco IOS software.
- Lightweight access points do not support Wireless Domain Services (WDS) and cannot communicate with WDS devices. However, the controller provides functionality equivalent to WDS when the access point associates to it.

Lightweight access points support eight BSSIDs per radio and a total of eight wireless LANs per access point. When a lightweight access point associates to a controller, only wireless LANs with IDs 1 through 8 are pushed to the access point.

Lightweight access points do not support Layer 2 LWAPP. They must get an IP address and discover the controller using DHCP, DNS, or IP subnet broadcast.

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## Hardware Features

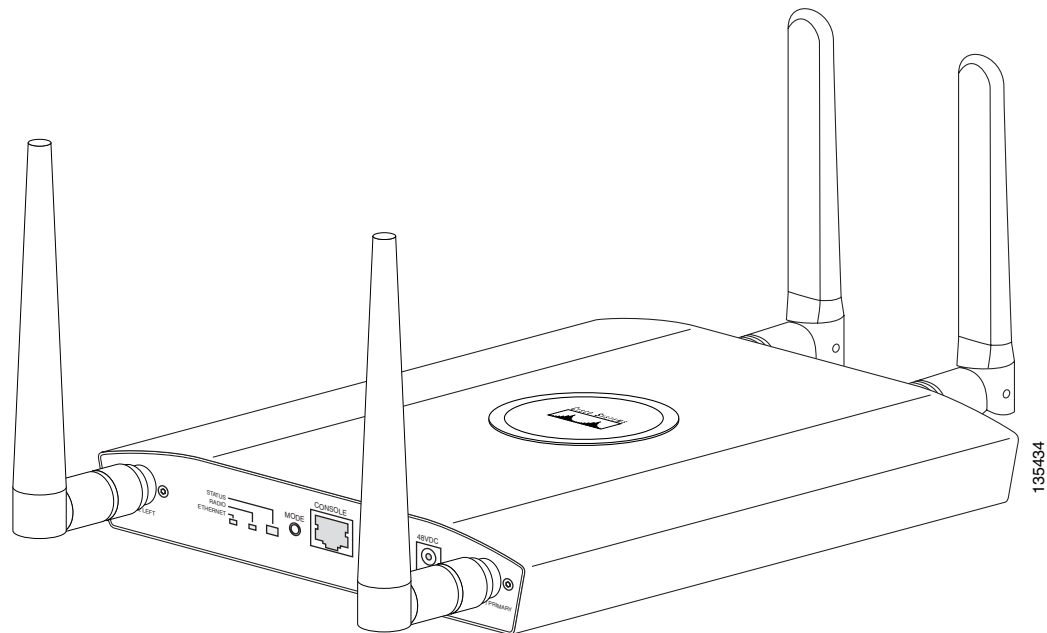
Key hardware features of the access point include:

- Dual-radio operation (see [page 1-5](#))
- Ethernet port (see [page 1-5](#))
- Console port (see [page 1-5](#))
- LEDs, (see [page 1-5](#))
- Multiple power sources (see [page 1-6](#))
- UL 2043 certification (see [page 1-6](#))
- Anti-theft features (see [page 1-6](#))

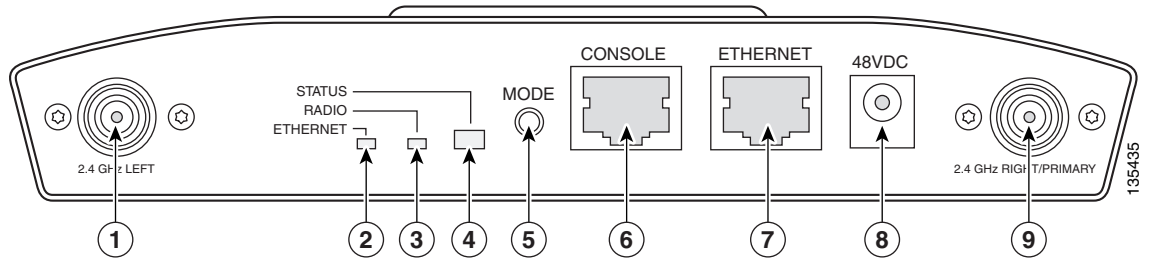
Refer to [Appendix C, “Access Point Specifications,”](#) for a list of access point specifications.

[Figure 1-1](#) shows the access point with antennas.

**Figure 1-1**      **Access Point with Antennas**

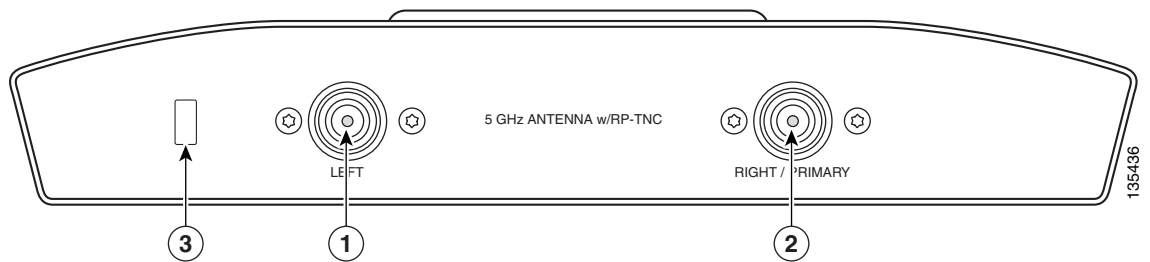


**Figure 1-2 Access Point 2.4 GHz Connector End**



1		6	Console port (RJ-45)
2		7	
3		8	48-VDC power port
4		9	2.4-GHz antenna connector (right/primary)
5			

**Figure 1-3 Access Point 5-GHz Connector End**




## Single or Dual-Radio Operation

*Radio1*

*Radio0*

## Antennas Supported

[http://www.cisco.com/en/US/prod/collateral/wireless/ps7183/ps469/product\\_data\\_sheet09186a008022b11b.html](http://www.cisco.com/en/US/prod/collateral/wireless/ps7183/ps469/product_data_sheet09186a008022b11b.html)

## Ethernet Port

## Console Port

cable to connect your computer's COM port to the access point's serial console port. (Refer to [Appendix E, "Console Cable Pinouts,"](#) for a description of the console port pinouts.) Assign the following port settings to a terminal emulator to open the management system pages: 9600 baud, 8 data bits, No parity, 1 stop bit, and no flow control.



Note

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## LEDs

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## Power Sources



### Warning

**This product must be connected to a Power over Ethernet (PoE) IEEE 802.3af compliant power source or an IEC60950 compliant limited power source.** Statement 353



### Caution

Be careful when handling the access point; the bottom plate might be hot.

The access point supports the following power sources:

Power module

Inline power:

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- 
- 



## UL 2043 Certification

operation in a building's environmental air space, such as above suspended ceilings, in accordance with Section 300-22(c) of the NEC, and with Sections 2-128, 12-010(3) and 12-100 of the *Canadian Electrical Code*

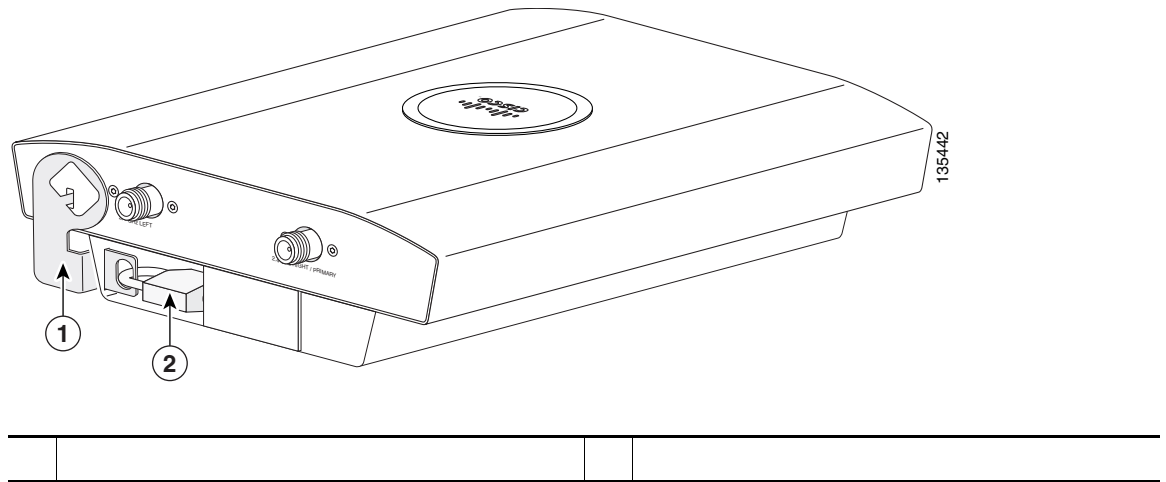


## Anti-Theft Features

Security cable keyhole—You can use the security cable slot (see [Figure 1-3](#)) to secure the access point using a standard security cable, like those used on laptop computers (refer to the “[Using a Security Cable](#)” section on page 2-17).

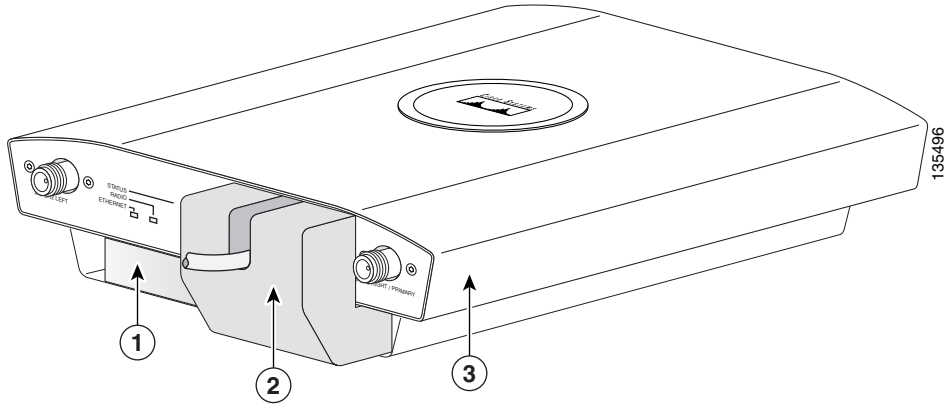
Security hasp—When you mount the access point on a wall or ceiling using the mounting plate and the security hasp, you can lock the access point to the plate with a padlock (see [Figure 1-4](#)). Compatible padlocks are Master Lock models 120T and 121T or equivalent.

**Access Point with Security Hasp and Padlock**



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*Access Point with Mounting Plate and Cable Security Bracket*



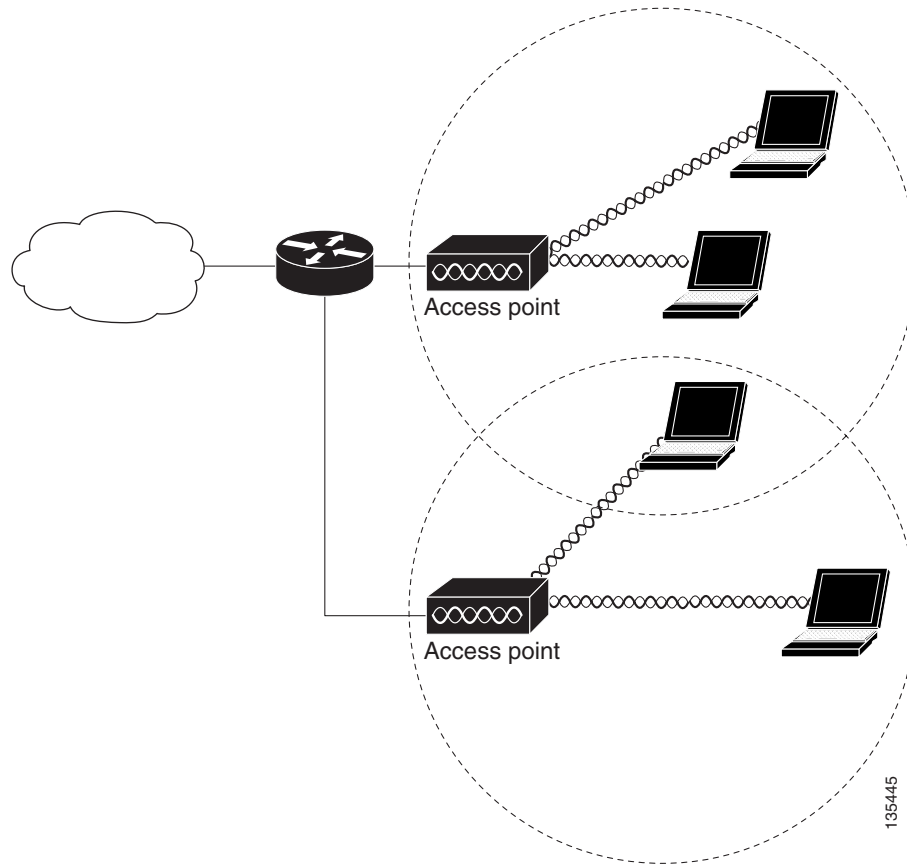
1		3	
2			

## Network Examples with Autonomous Access Points

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# Root Access Point on a Wired LAN

Figure 1-6 Access Points as Root Units on a Wired LAN



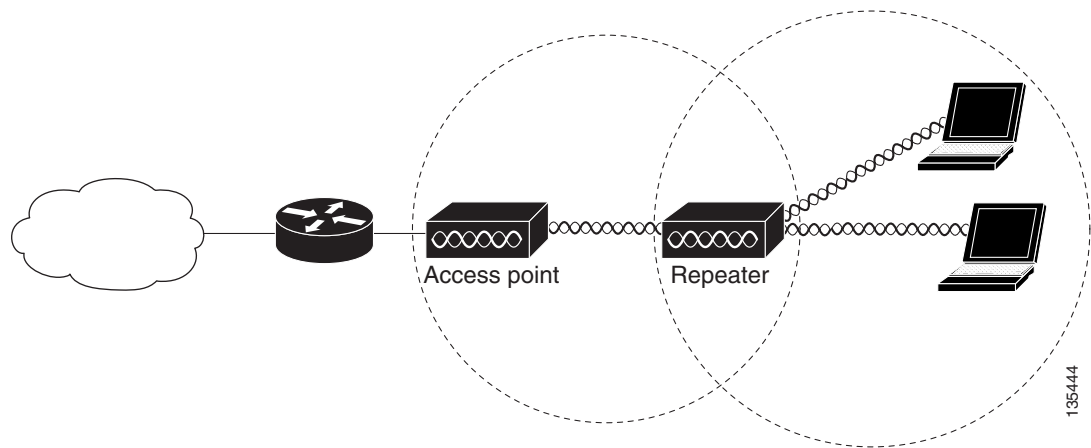
# Repeater Unit that Extends Wireless Range

Cisco IOS

Software Configuration Guide for Cisco Aironet Access Points



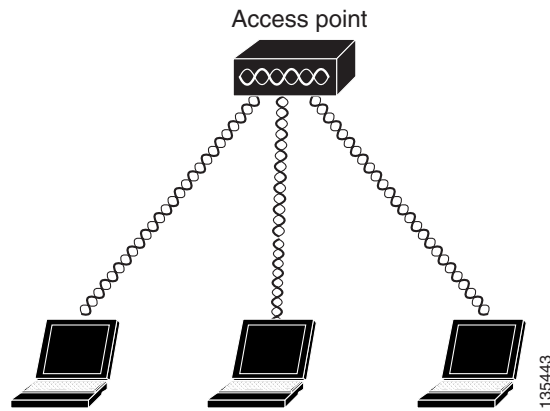
**Figure 1-7** Access Point as Repeater



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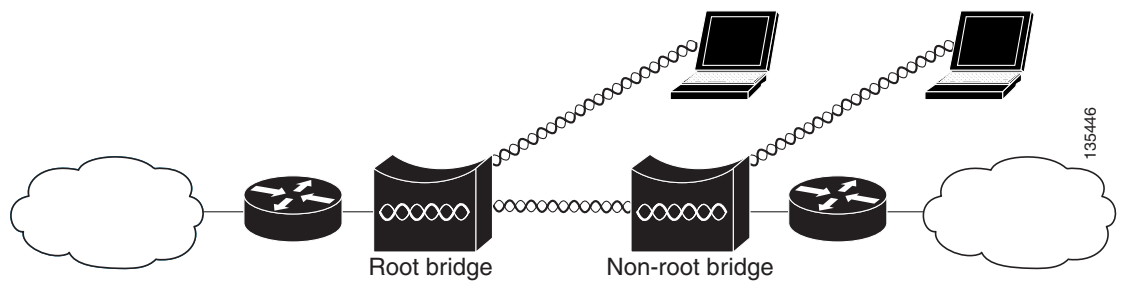
# Central Unit in an All-Wireless Network

**Figure 1-8** Access Point as Central Unit in All-Wireless Network



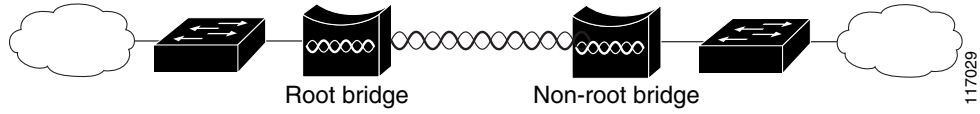
# Bridge Network with Wireless Clients

**Figure 1-9** Root Bridge and Non-root Bridge with Clients

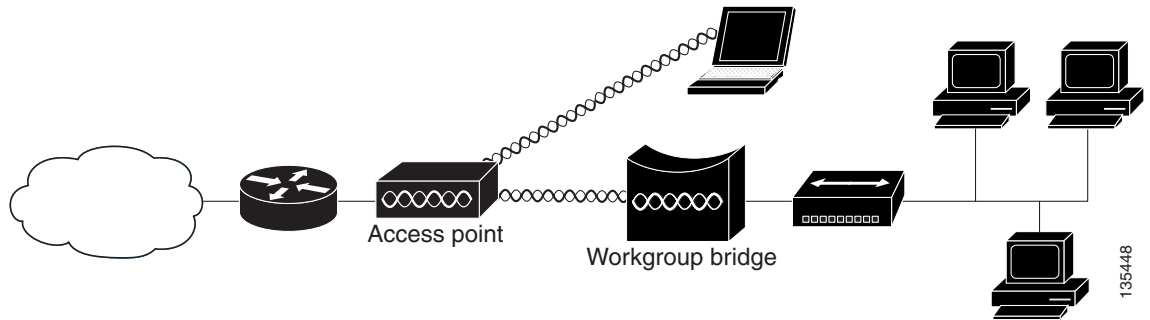


# Point-to-Point Bridge Configuration

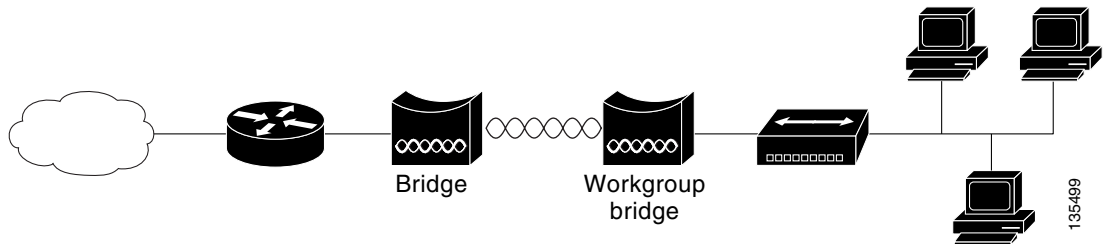
**Figure 1-10** *Point-to-Point Bridge Configuration*



**Figure 1-11** *Workgroup Bridge Communicating with an Access Point*



**Figure 1-12** *Workgroup Bridge Communicating with a Bridge*



**Figure 1-13** Typical Lightweight Access Point Network Configuration Example

