



Overview

Cisco Aironet 1300 Series Outdoor Access Points/Bridges (hereafter called *access points/bridges*) provide campus building-to-building wireless connectivity. Operating in the 2.4-GHz ISM band and conforming to the 802.11g standard, the 1300 series access point/bridge delivers a 54-Mbps data rate. The access point/bridge communicates with any 802.11b or 802.11g clients when in the access point mode and other 1300 series access points/bridges when in the bridging mode.

The access point/bridge is a self-contained unit designed for outdoor installations but can also be used inside with a window mounting option. You can connect external antennas to the access point/bridge to attain various antenna gains and coverage patterns. The access point/bridge supports both point-to-point and point-to-multipoint configurations. Two point-to-point links (three links if 802.11b) can be stacked in order to increase data throughput or provide cold standby redundancy.

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

This chapter provides information on the following topics:

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- [Management Options, page 1-2](#)
- [Network Configuration Examples, page 1-2](#)
- [Troubleshooting, page 1-6](#)

Features

Access point/bridges running Cisco IOS offer these software features:

- VLANs—Allow VLAN trunking on both wireless and Ethernet interfaces.
- QoS—Use this feature to support quality of service for prioritizing traffic on the wireless interface.
- RADIUS Accounting—Enable accounting on the access point/bridge to send accounting data about wireless client devices to a RADIUS server on your network.
- TACACS+ administrator authentication—Enable TACACS+ for server-based, detailed accounting information and flexible administrative control over authentication and authorization processes. It provides secure, centralized validation of administrators attempting to gain access to your access point/bridge.
- Enhanced security—Enable three advanced security features to protect against sophisticated attacks on your wireless network's WEP keys: Message Integrity Check (MIC) and WEP key hashing. Enhanced security for WPA/TKIP is also available.
- Enhanced authentication services—Set up non-root bridges to authenticate to your network like other wireless client devices. After you provide a network username and password for the non-root bridge, it authenticates to your network using LEAP, Cisco's wireless authentication method, and receives and uses dynamic WEP keys.
- Enhanced authentication for CCKM
- Fast Roaming support

Management Options

You can use the access point/bridge management system through the following interfaces:

- The IOS command-line interface (CLI), which you use through a Telnet session. Most of the examples in this manual are taken from the CLI. [Chapter 4, “Using the Command-Line Interface,”](#) provides a detailed description of the CLI.
- A web-browser interface, which you use through a web browser. [Chapter 3, “Using the Web-Browser Interface,”](#) provides a detailed description of the web-browser interface.
- Simple Network Management Protocol (SNMP). [Chapter 17, “Configuring SNMP,”](#) explains how to configure your access point/bridge for SNMP management.

Network Configuration Examples

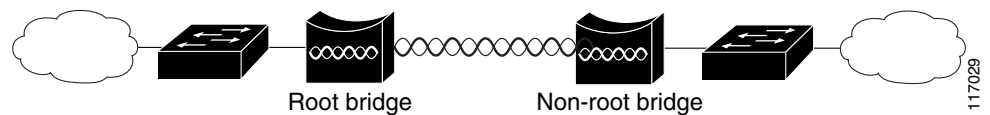
This section describes the access point/bridge's role in common wireless bridging configurations: point-to-point, point-to-multipoint, redundant bridging, access point mode, and workgroup bridge mode. One bridge in any pair or group of bridges must be a root bridge, and the bridge or bridges associated to the root bridge must be set to non-root.

Point-to-Point Bridging

In a point-to-point configuration, a non-root bridge associates to a root bridge. In installation mode, the bridge listens for another 1300 series bridge. If it does not recognize another bridge, the bridge becomes a root bridge. If it recognizes another bridge, it becomes a non-root bridge associated to the bridge it recognizes. See [Chapter 2, “Configuring the Access Point/Bridge for the First Time,”](#) for instructions on initial bridge setup.

[Figure 1-1](#) shows bridges in a point-to-point configuration.

Figure 1-1 Point-to-Point Bridge Configuration



Note

If your bridges connect one or more large, flat networks (a network containing more than 256 users on the same subnet) we recommend that you use a router to connect the bridge to the large, flat network.

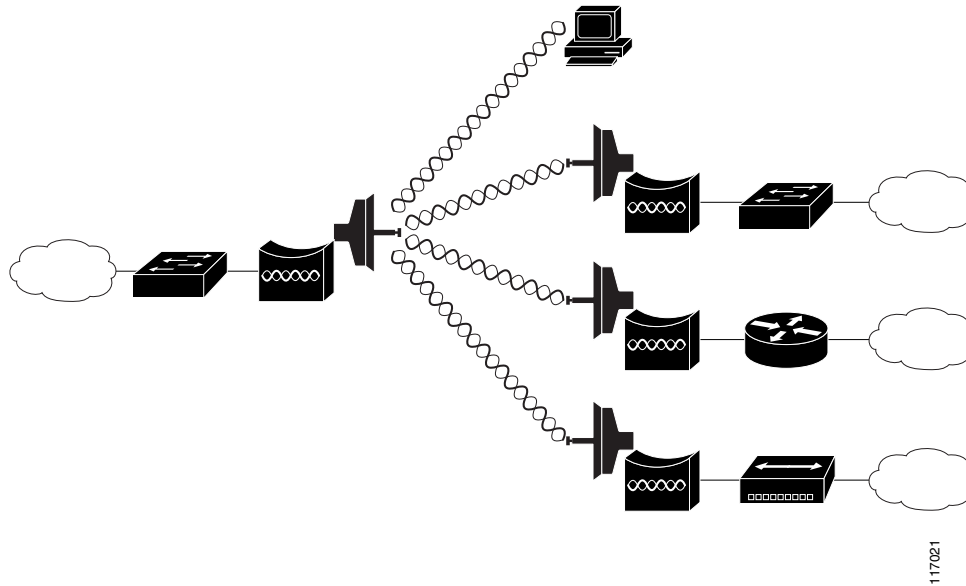
Point-to-Multipoint Bridging

In a point-to-multipoint configuration, two or more non-root bridges associate to a root bridge. Up to 17 non-root bridges can associate to a root bridge, but the non-root bridges must share the available bandwidth.

See [Chapter 2, “Configuring the Access Point/Bridge for the First Time,”](#) for instructions on initial bridge setup.

[Figure 1-2](#) shows bridges in a point-to-multipoint configuration.

Figure 1-2 Point-to-Multipoint Bridge Configuration



Note

If your bridges connect one or more large, flat networks (a network containing more than 256 users on the same subnet) we recommend that you use a router to connect the bridge to the large, flat network.

Redundant Bridging

You can set up two pairs of bridges to add redundancy or load balancing to your bridge link. The bridges must use non-adjacent, non-overlapping radio channels to prevent interference, and they must use Spanning Tree Protocol (STP) to prevent bridge loops. See [Chapter 8, “Configuring Spanning Tree Protocol,”](#) for instructions on configuring STP.

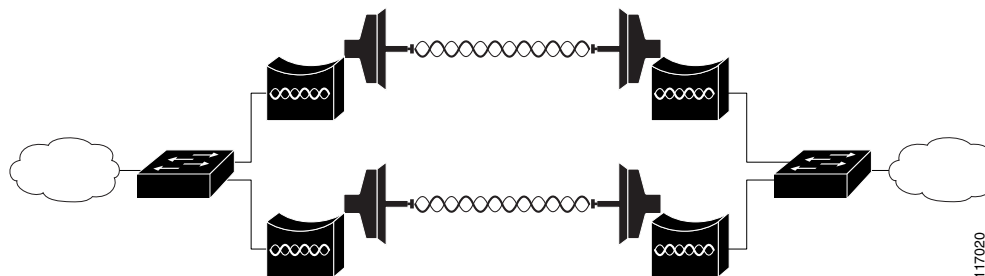


Note

STP is disabled by default.

[Figure 1-3](#) shows two pairs of redundant bridges.

Figure 1-3 Redundant Bridge Configuration

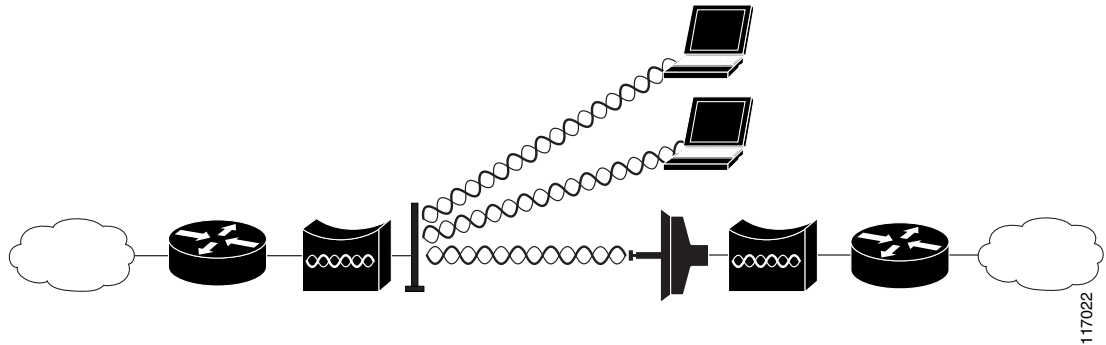


Access Point Mode

You can configure the access point/bridge to function as an access point. In the access point mode, the access point/bridge emulates a Cisco Aironet 1100 Series Access Point. In the access point mode, the access point/bridge accepts associations from client devices. See [Chapter 20, “Special Configurations,”](#) for instructions on configuring the access point/bridge as an access point.

[Figure 1-4](#) Shows a typical scenario where the access point/bridge functions as an access point.

Figure 1-4 Access Point Mode

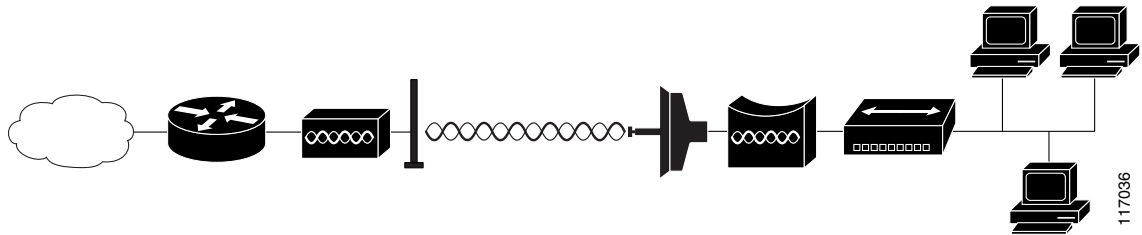


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Workgroup Bridge Mode

You can configure the access point/bridge to function as a workgroup bridge. In the workgroup bridge mode, the access point/bridge emulates a Cisco Aironet 350 Series Workgroup Bridge; [Figure 1-5](#) shows a typical scenario where the access point/bridge functions as a workgroup bridge. See [Chapter 20, “Special Configurations,”](#) for instructions on how to configure the access point/bridge as a workgroup bridge.

Figure 1-5 Workgroup Bridge Mode



Troubleshooting

For basic troubleshooting procedures, refer to the “Troubleshooting” chapter in the *Cisco Aironet 1300 Series Outdoor Access Point/Bridge Hardware Installation Guide*.

For the most up-to-date, detailed troubleshooting information, refer to the Cisco TAC website at <http://www.cisco.com/cisco/web/support/index.html>. Click **Technology Support**, select **Wireless/Mobility** from the menu on the left, and click **Wireless LAN**.