



Lab 1.2.7 Wireless Component and Media Identification

Estimated Time: 30 Minutes

Number of Team Members: 5 teams with 2 students per team

WLAN Networking Devices



Cisco Aironet 1200 Series Access Point
(802.11a and 802.11b)



Cisco Aironet Client Adapters



Cisco Aironet Antenna



Cisco Aironet 1400 Series
5 GHz Bridge
802.11a



Cisco Aironet 350 Series
2.4 GHz Bridge
802.11b

Objective

The following objectives will be covered in this lab

- Identify the basic media characteristics of wireless LANs
- Identify the components of a Wireless LAN
- Describe the functions of the Wireless components

Scenario

Wireless Local Area Networks (WLANs) have become a popular choice in network installations. Implementing a WLAN is simple because installation is generally limited to installing building mounted antennas and placing the access points (AP).

Local Area Networks (LANs) will quickly become a mixture of wired and wireless systems depending on the network needs and design constraints.

In larger enterprise networks, the core and distribution layers will continue as wired backbone systems. Enterprise systems are typically connected by fiber optics and unshielded twisted pair (UTP) cabling. Even in many smaller networks, there still remains a wired LAN at some level.

Preparation

The instructor will setup 4 equipment stations:

| | Wireless | Wired |
|------------------|-------------------|--------------------------------|
| Station 1 | AP(s) | Hub or Switch |
| Station 2 | Bridge(s) | Fiber Optic, modem, WAN Switch |
| Station 3 | Client Adapter(s) | Wired Ethernet NIC |
| Station 4 | Antenna(s) | Ethernet Cable |

The instructor will allow the students to examine the equipment and be able to compare the equipment to wired networking equipment.

The following tools and resources will be required to complete the lab:

- A conventional PCI and PCMCIA Network Interface Card(s) for wired networking connections
- Physical media such as UTP
- A conventional wired network hub or switch
- The Cisco Wireless course equipment bundle

Safety

Do not handle any wireless devices while they are powered. A general rule is to not touch or come within several inches of any powered antenna. Also, make sure to power down any device before removing a PCI or PCMCIA card. Most important, do not remove antennas from a Wireless AP or Bridge while powered. This can damage the unit.

Station 1 AP

The AP station contains at least one model of a wireless AP. Depending on the academy equipment inventory, there may be multiple models and vendors. There will also be some wired equivalent devices.

- a. What models of Cisco APs are currently listed at cisco.com?

- b. What is the model of the AP at the station?

- c. What is the frequency range(s) of the AP provided?

- d. Does the AP have a detachable antenna or is the antenna built in?

- e. What wired ports are available?

- f. What is the wired equivalent to the AP that is located at station 1?

- g. What are the advantages and disadvantages of the wired and wireless access devices?

| Device | Advantage | Disadvantage |
|--------|-----------|--------------|
| | | |
| | | |

- h. Draw and label the appropriate icons for the AP, hub, and switch in the space below.

Station 2 bridge

The bridge station contains at least one model of wireless bridge. Depending on the academy equipment inventory, there may be multiple models and vendors. There will also be some wired equivalent devices or media.

- a. What models of Cisco bridges are currently listed at cisco.com?

- b. What is the model of the bridge at the station?

- c. What is the frequency range of the bridge provided?

- d. Does the bridge have a detachable antenna or is the antenna built in?

- e. What wired ports are available?

- f. What is the wired equivalent to the bridge that is located at station 2?

- g. What are the advantages and disadvantages of the wired and wireless bridge devices?

| Device | Advantage | Disadvantage |
|--------|-----------|--------------|
| | | |
| | | |

- h. Draw and label the appropriate icons for the bridge, modem, and serial line in the space below.

Station 3 client adapters

The client adapter station contains several models of wired and wireless adapters. Depending on the academy equipment inventory, there may be multiple models and vendors. There will also be some wired equivalent devices.

- a. What models of client adapters are currently listed at cisco.com?

- b. What are the models of the client adapters at the station?

- c. Does the client adapter have a detachable antenna or is the antenna built in?

- d. What frequency range does the client adapter operate at?

- e. What is the wired equivalent to the wireless client adapter that is located at station 3?

- f. What are the advantages and disadvantages of the wired and wireless client adapter?

| Device | Advantage | Disadvantage |
|--------|-----------|--------------|
| | | |
| | | |

- g. Draw and label the appropriate icons for the client adapter in the space below.

Station 4 antenna

The antenna station contains at least one antenna model. Depending on the academy equipment inventory, there may be multiple models and vendors. There will also be some wired equivalent devices or media.

- a. What is the model of the antenna?

- b. What is the frequency range of the antenna provided?

- c. What is the wired equivalent to the antenna that is located at station 4?

- d. What are the advantages and disadvantages of the antenna devices?

| Device | Advantage | Disadvantage |
|--------|-----------|--------------|
| | | |
| | | |

- e. Draw and label the appropriate icons for the antenna, wireless signal, and Ethernet line in the space below.
