

CCENT Study Guide 6

Section 9.6

As you work through this final section, you can review the material necessary to prepare you to obtain a CCENT certification. To obtain a CCENT certification, you must pass the 640-822 ICND1 examination. These study guides provide a method to organize your review based on the ICND1 exam objectives.

The troubleshooting of WLANs is included in the Discovery 1 Course. Therefore, the focus of the troubleshooting chapter in Discovery 2 does not include wireless networks. This study guide reviews the material from Discovery 1 that applies to the wireless network objectives on the ICND1 exam.

Wireless Networks

Objective: Describe standards associated with wireless media (including: IEEE WI-FI Alliance, ITU/FCC)

Discovery 1 Review Chapters:

Wireless Technologies: The various types of radio frequency wireless transmissions are introduced in the *Wireless Technology* section. Pay attention to the graphic showing the radio frequencies associated with common wireless standards. This section includes the topics *Types of Wireless Networks and Their Boundaries* and *Wireless LAN Standards*. The material in both topics should be memorized because it is important information to consider when choosing the appropriate wireless technology.

Discovery 2 Review Chapters: none

Objective: Identify and describe the purpose of the components in a small wireless network. (including: SSID, BSS, ESS)

Discovery 1 Review Chapters:

Wireless Technologies: The section *Wireless LANs* discusses the role of the various components in a WLAN, including access points, wireless bridges, clients, and antennas. It is important to understand the difference between an ad hoc wireless network and a network operating in infrastructure mode. Be sure to review the terminology associated with WLAN topologies. The topic *Wireless Channels* explains the necessity for configuring access points to operate on separate channels when overlapping coverage areas exist. Selecting the correct WLAN components and standards is covered in the *Planning the WLAN* section.

Discovery 2 Review Chapters: none

Objective: Identify the basic parameters to configure on a wireless network to ensure that devices connect to the correct access point

Discovery 1 Review Chapters:

Wireless Technologies: In the section *Wireless LANs*, the topics *Configuring the Access Point* and *Configuring the Wireless Client* provide the parameters necessary to successfully configure and implement a simple wireless network. The labs in both topics help reinforce the information. Although this chapter describes the configuration of a Linksys access point, the same parameters must be configured on most other types of

access points as well. The section **Configuring an Integrated AP and Wireless Client** contains additional considerations for planning and installing a wireless network.

Discovery 2 Review Chapters: none

Objective: Compare and contrast wireless security features and capabilities of WPA security (including: open, WEP, WPA-1&2)

Discovery 1 Review Chapters:

Wireless Technologies: Review the section **Security Considerations on a Wireless Lan** in detail. The types of attacks that are common on WLANs and the recommended security measures to take to prevent them are critical to successfully implementing a wireless LAN. Pay attention to all of the various ways to secure a wireless LAN and the features and benefits of each method. The topic **Installing and Securing the AP** within the **Configuring an Integrated AP and Wireless Client** section describes the recommended security measures to implement.

Discovery 2 Review Chapters:

ISP Responsibility: The differences between the various wireless encryption and authentication methods are described in the topic **Wireless Security** in the **Security Tools** section.

Objective: Identify common issues with implementing wireless networks

Discovery 1 Review Chapters:

Troubleshooting Your Network: Problems that prevent wireless clients from connecting to the wireless access point are described in the **Common Issues** section. Methods to isolate the causes of these problems can be found in the **Troubleshooting Radio Problems in the WLAN** topic. Mismatches in client and access point configurations are covered in the **Troubleshooting Association and Authentication Problems on a WLAN** topic.

Discovery 2 Review Chapters: none

Practice Activities:

1. Create a chart of the various WLAN standards. Include the frequency ranges and the common applications of the various standards.
2. Create diagrams illustrating the WLAN ESS and BSS topologies.
3. Compare the open, WEP and WPA 1 and 2 methods for authenticating wireless users.
4. Practice configuring a Windows wireless client, making note of all of the possible parameter settings.
5. Create a chart of the security measures that can be taken on a wireless network. Describe the type of threat that each measure addresses. Describe the level of security that the measure provides.

Example:

Security Measure	Threat	Security Level
Disable SSID broadcast	Unauthorized access and use of resources	Low
WPA-2	Unauthorized access and	High

	use of network resources	
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