Implementing Cisco Unified Wireless Networking Essentials (640-722)

Exam Description: The "Implementing Cisco Unified Wireless Network Essential" (IUWNE) v2.0 640-722 exam is a 90-minute test with 60–70 questions that are associated with the Cisco CCNA® Wireless certification. This exam tests a candidate's knowledge of installing, configuring, operating, and troubleshooting small to medium-size WLANs.

The following topics are general guidelines for the content that is likely to be included on the exam. However, other related topics may also appear on any specific instance of the exam. To better reflect the contents of the exam and for clarity purposes, these guidelines may change at any time without notice.

20% 1.0 Describe WLAN Fundamentals

1.1 Describe basics of spread spectrum technology

1.2 Describe the impact of various wireless technologies
- 1.2.a Bluetooth
- 1.2.b WiMAX
- 1.2.c ZigBee
- 1.2 d Cordless phone

1.3 Describe wireless regulatory bodies, standards, and certifications
- 1.3.a FCC
- 1.3.b ETSI
- 1.3.c 802.11a/b/g/n
- 1.3.d WiFi Alliance

1.4 Describe WLAN RF principles
- 1.4.a Antenna types
- 1.4.b RF gain/loss
- 1.4.c EIRP
- 1.4.d Refraction
- 1.4.e Reflection

1.5 Describe networking technologies that are used in wireless
- 1.5.a SSID to WLAN_ID to interface to VLAN
- 1.5.b 802.1q trunking

1.6 Describe wireless topologies
- 1.6.a IBSS
- 1.6.b BSS
- 1.6.c ESS
- 1.6.d Point-to-point

1.6.e Point-to-multipoint
1.6.f Mesh
1.6.g Bridging

1.7 Describe 802.11 authentication and encryption methods
1.7.a Open
1.7.b Shared
1.7.c 802.1X
1.7.d EAP
1.7.e TKIP
1.7.f AES

1.8 Describe frame types
1.8.a Associated and unassociated
1.8.b Management
1.8.c Control
1.8.d Data

1.9 Describe basic RF deployment considerations related to site survey design of data or VoWLAN applications
1.9.a Common RF interference sources such as devices, building material, AP location
1.9.b Basic RF site survey design related to channel reuse, signal strength, and cell overlap
1.9.c DNS
1.9.d DHCP
1.9.e TFTP
1.9.f NTP
1.9.g CDP/LLDP

17% 2.0 Install a Basic Cisco Wireless LAN

2.1 Identify the components of the Cisco Unified Wireless Network architecture
2.1.a Split MAC
2.1.b LWAPP
2.1.c Standalone AP versus controller-based AP
2.1.d Specific hardware examples

2.2 Install and configure autonomous access points in the small business environment

2.3 Describe the modes of controller-based AP deployment
2.3.a Local
2.3.b Monitor
2.3.c HREAP
2.3.d Sniffer
2.3.e Rogue detector
2.3.f Bridge
2.3.g OEAP
2.3.h SE-Connect

2.4 Describe controller-based AP discovery and association
- 2.4.a DHCP
- 2.4.b DNS
- 2.4.c Master-Controller
- 2.4.d Primary-Secondary-Tertiary
- 2.4.e n+1 redundancy

2.5 Describe roaming
- 2.5.a Layer 2 and Layer 3
- 2.5.b Intracontroller and intercontroller
- 2.5.c Mobility list

2.6 Configure a WLAN controller and access points
- 2.6.a WLC: Ports, interfaces, WLANs, NTP, CLI and Web UI, CLI wizard, and LAG
- 2.6.b AP: Channel and Power

2.7 Describe RRM fundamentals including ED-RRM

2.8 Verify basic wireless network operation

15% 3.0 Install Wireless Clients

3.1 Describe client WLAN configuration requirements, such as SSID, security selection, and authentication

3.2 Identify basic configuration of common wireless supplicants
- 3.2 a Macintosh
- 3.2 b Intel Wireless Pro
- 3.2 c Windows
- 3.2 d iOS
- 3.2 e Android

3.3 Describe basic Cisco AnyConnect 3.0 or above wireless configuration parameters

3.4 Identify capabilities available in Cisco Unified CCX versions 1 through 5

19% 4.0 Implement Basic WLAN Security

4.1 Describe the general framework of wireless security and security components
- 4.1.a Authentication
- 4.1.b Encryption
- 4.1.c MFP
- 4.1.d IPS

4.2 Describe the evolution of supported authentication methods
- 4.2.a PSK
- 4.2.b 802.1X including EAP-TLS, EAP-FAST, PEAP, LEAP, and WPA/WPA2

4.3 Configure the different sources of authentication
- 4.3.a EAP local or EAP external

4.3.b RADIUS

4.4 Configure authentication and encryption methods on a WLAN
4.4.a WPA/WPA2 with PSK and 802.1x

4.5 Implement wireless guest networking

17% 5.0 Operate Basic WCS

5.1 Identify key functions of the Cisco WCS and Navigator (versions and licensing)

5.2 Navigate the WCS interface

5.3 Configure controllers and access points (APs)
5.3.a Using the configuration tab, not templates

5.4 Use preconfigured maps in the WCS
5.4.a Adding, relocating, removing access points
5.4.b Turn heat maps on/off
5.4.c View client location
5.4.d View CleanAir zones of influence

5.5 Use the WCS Monitor tab and alarm summary to verify WLAN operations

5.6 Generate standard WCS reports
5.6.a Inventory
5.6.b CleanAir
5.6.c Client-related
5.6.d AP-related
5.6.e Utilization

12% 6.0 Conduct Basic WLAN Maintenance and Troubleshooting

6.1 Identify and use basic WLAN troubleshooting tools
6.1.a WLC show debug
6.1.b Logging for client to AP connectivity, AP-to-controller connectivity

6.2 Use the WCS client troubleshooting tool

6.3 Transfer logs, configuration files, and operating system images to and from the WLC via the GUI

6.4 Differentiate and use WLC and AP (autonomous and LAP) management access methods
6.4.a Console port
6.4.b CLI
6.4.c Telnet
6.4.d SSH
6.4.e HTTP
6.4.f HTTPS
6.4.g Wired versus wireless management