

CCNA-wireless

Describe WLAN fundamentals

- Describe basics of spread spectrum technology (modulation, DSS, OFDM, MIMO, Channels reuse and overlap, Rate-shifting, CSMA/CA)
- Describe the impact of various wireless technologies (Bluetooth, WiMAX, ZigBee, cordless phone)
- Describe wireless regulatory bodies, standards and certifications (FCC, ETSI, 802.11a/b/g/n, WiFi Alliance)
- Describe WLAN RF principles (antenna types, RF gain/loss, EIRP, refraction, reflection, ETC)
- Describe networking technologies used in wireless (SSID --> WLAN_ID --> Interface --> VLAN, 802.1q trunking)
- Describe wireless topologies (IBSS, BSS, ESS, Point-to-Point, Point-to-Multipoint, basic Mesh, bridging)
- Describe 802.11 authentication and encryption methods (Open, Shared, 802.1X, EAP, TKIP, AES)
- Describe frame types (associated/unassociated, management, control, data)

Install a basic Cisco wireless LAN

- Describe the basics of the Cisco Unified Wireless Network architecture (Split MAC, LWAPP, stand-alone AP versus controller-based AP, specific hardware examples)
- Describe the Cisco Mobility Express Wireless architecture (Smart Business Communication System -- SBCS, Cisco Config Agent -- CCA, 526WLC, 521AP - stand-alone and controller-based)
- Describe the modes of controller-based AP deployment (local, monitor, HREAP, sniffer, rogue detector, bridge)
- Describe controller-based AP discovery and association (OTAP, DHCP, DNS, Master-Controller, Primary-Secondary-Tertiary, n+1 redundancy)
- Describe roaming (Layer 2 and Layer 3, intra-controller and inter-controller, mobility groups)
- Configure a WLAN controller and access points WLC: ports, interfaces, WLANs, NTP, CLI and Web UI, CLI wizard, LAG AP: Channel, Power
- Configure the basics of a stand-alone access point (no lab) (Express setup, basic security)
- Describe RRM

Install Wireless Clients

- Describe client OS WLAN configuration (Windows, Apple, and Linux.)
- Install Cisco ADU
- Describe basic CSSC
- Describe CCX versions 1 through 5

Implement basic WLAN Security

- Describe the general framework of wireless security and security components (authentication, encryption, MFP, IPS)
- Describe and configure authentication methods (Guest, PSK, 802.1X, WPA/WPA2 with EAP-TLS, EAP-FAST, PEAP, LEAP)
- Describe and configure encryption methods (WPA/WPA2 with TKIP, AES)
- Describe and configure the different sources of authentication (PSK, EAP-local or -external, Radius)

Operate basic WCS

- Describe key features of WCS and Navigator (versions and licensing)
- Install/upgrade WCS and configure basic administration parameters (ports, O/S version, strong passwords, service vs. application)
- Configure controllers and APs (using the Configuration tab not templates)
- Configure and use maps in the WCS (add campus, building, floor, maps, position AP)
- Use the WCS monitor tab and alarm summary to verify the WLAN operations

Conduct basic WLAN Maintenance and Troubleshooting

- Identify basic WLAN troubleshooting methods for controllers, access points, and clients methodologies

- Describe basic RF deployment considerations related to site survey design of data or VoWLAN applications, Common RF interference sources such as devices, building material, AP location Basic RF site survey design related to channel reuse, signal strength, cell overlap
- Describe the use of WLC show, debug and logging
- Describe the use of the WCS client troubleshooting tool
- Transfer WLC config and O/S using maintenance tools and commands
- Describe and differentiate WLC WLAN management access methods (console port, CLI, telnet, ssh, http, https, wired versus wireless management)