CCNA – Cisco Certified Network Associate

Zetlan Technologies

Online Course

ZETLAN TECHNOLOGIES

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Course Modules

1. Explain the role and function of network components

- Routers
- Layer 2 and Layer 3 switches
- Next-generation firewalls and IPS
- Access points
- Controllers (Cisco DNA Centre and WLC)
- Endpoints
- Servers
- PoE

2. Describe characteristics of network topology architectures

- Two-tier
- Three-tier
- Spine-leaf
- WAN
- Small office/home office (SOHO)
- On-premise and cloud

3. Compare physical interface and Cabling Types

- Single-mode fiber, multimode fiber, copper
- Connections (Ethernet shared media and point-to-point)
- Identify interface and cable issues (collisions, mismatch duplex,etc)
- Compare TCP to UDP

Course Modules

4. Netwok Address

- Describe the need for private IPv4 addressing
- Configure and verify IPv4 addressing and subnetting
- Configure and verify IPv6 addressing and prefix

5. Describe IPv6 address types

- Unicast (global, unique local, and link local)
- Anycast
- Multicast
- Modified EUI 64
- Verify IP parameters for Client OS (Windows, Mac OS, Linux)

6. Describe wireless principles

- Nonoverlapping Wi-Fi channels
- SSID
- RF
- Encryption

7. Explain virtualization fundamentals

- Server Virtualization
- Containers
- VRFs

8. Describe switching concepts

- MAC learning and aging
- Frame switching
- Frame flooding
- MAC address table

9. Configure and verify VLANs spanning multiple switches

- Access ports (data and voice)
- Default VLAN
- Inter VLAN connectivity

10. Configure and verify inter-switch connectivity

- Trunk ports
- 802.1Q
- Native VLAN
- Configure and verify Layer 2 Discovery Protocols
- Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)

11. Determine how a router makes a forwarding decision

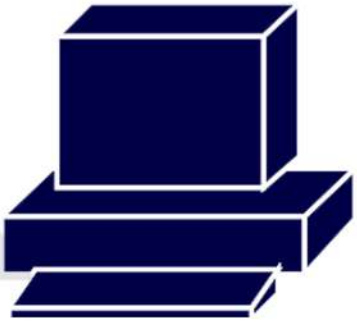
- Longest prefix match
- Administrative distance
- Routing protocol metric

12. Interpret basic operatns of Rapid PVST+ Spanng Tree Protocol

- Root port, root bridge (primary/secondary), and other port names
- Port states (forwarding/blocking)
- Port Fast
- Describe Cisco Wireless Architectures and AP modes
- Physical infrastructure conctions of WLAN components(AP, WLC,)
- Describe AP and WLC management access connections
- Interpret the wireless LAN GUI config for client connectivity

13. Interpret the components of routing table

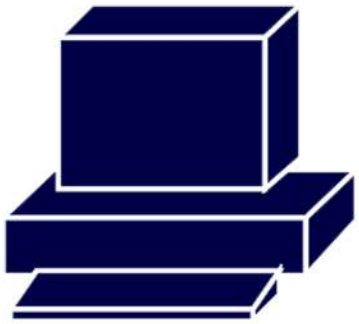
- Routing protocol code
- Prefix
- Network mask
- Next hop
- Administrative distance
- Metric
- Gateway of last resort



14. Configure and verify IPv4 and IPv6 static routing

- Default route
- Network route
- Host route
- Floating static

15. Configure and verify single area OSPFv2



- Neighbor adjacencies
- Point-to-point
- Broadcast (DR/BDR selection)
- Router ID
- The purpose, functions, & concepts of first hop redundancy protoco

16. IP Services

- Configure and verify inside source NAT using static and pools
- Configure and verify NTP operating in a client and server mode
- Explain the role of DHCP and DNS within the network
- Explain the function of SNMP in network operations
- Describe the use of syslog features including facilities and levels
- Configure and verify DHCP client and relay
- Explain the forwarding per-hop behaviour (PHB) for QoS,
- Configure network devices for remote access using SSH
- Describe the capabilities and functions of TFTP/FTP in the network

17. Security Fundamentals

- Define key security concepts (threats, vulnerabilities, exploits, etc
- Describe security program elements (user awareness, training,etc)
- Configure and verify device access control using local passwords
- Describe security password policies elements
- Describe IPsec remote access and site-to-site VPNs
- Configure and verify access control lists
- Configure and verify Layer 2 security features
- Compare authentication, authorization, and accounting concepts
- Describe wireless security protocols (WPA, WPA2, and WPA3)
- Configure and verify WLAN within the GUI using WPA2 PSK

18. Automation and Programmability

- Explain how automation impacts network management
- Compare traditional networks with controller-based networking
- Describe controller-based, software defined architecture
- Northbound and Southbound APIs
- Compare traditional campus device management with Cisco DNA
- Describe characteristics of REST-based APIs (CRUD, HTTP verbs,)
- Capabilities of config mngmnt mechnsms Puppet, Chef, & Ansible

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