AKSARA UNITED MANAGEMENT SDN BHD (1210369-W)

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Cisco Certified Network Associate (Fast Track) Version 200 - 301

Course Duration: 5 days; Instructor-led

METHODOLOGY

This program will be conducted with interactive lectures, PowerPoint presentation, discussion and practical exercise.

COURSE OUTLINES

Module 1: Networking Fundamentals

- Explain the role and function of network components including Routers, L2 and L3 Switches, Next-generation firewalls and IPS, Access Points, WLC Controllers, Endpoints and Servers
- Describe characteristics of network topology architectures 2 tier, 3 tier, Spine Leaf, Wan, Small Office/Home Office (SOHO) and cloud
- Compare physical interface and cabling types Single-Mode Fiber, Multi-Mode Fiber and Copper, Connections (Ethernet shared Media and Point to Point) and POE
- Identify interface and cable issues (collisions, errors, mismatch duplex, and/or speed)
- Compare TCP to UDP
- Configure and verify IPv4 addressing and subnetting
- Describe the need for private IPv4 addressing
- Configure and verify IPv6 addressing and prefix
- Compare IPv6 address types like Global Unicast, Unique Local, Link Local, Anycast and Multicast
- Verify IP parameters for Client OS (Windows, Mac OS, Linux)
- Describe wireless principles Including Wi-Fi Channels, SSID, RF and Encryption
- Explain virtualization fundamentals (virtual machines)
- Describe switching concepts like Mac Learning and Aging, Frame Switching and Mac Address Table

Module 2: IP Connectivity

- How Router will inter Interpret the components of routing table including Routing Protocol, Prefix, Network Mask, Next Hop, Administrative Distance and Metric
- How Router Determine how a router makes a forwarding decision by default on the Basis of Administrative Distance and Routing Protocol Metric
- Configure and verify IPv4 and IPv6 static routing For Network Route and Default Route
- Configure and verify single area OSPFv2 with Neighbor Adjacencies, Point to Point, DR and BDR and Router ID Configuration

Module 3: 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 behavior (PHB) for QoS such as classification, marking, queuing, congestion, policing, shaping
- Configure network devices for remote access using SSH
- Describe the capabilities and function of TFTP/FTP in the network

Module 4: Security Fundamentals

- Define key security concepts (threats, vulnerabilities, exploits, and mitigation techniques)
- Describe security program elements (user awareness, training, and physical access control)
- Configure device access control using local passwords
- Describe security password policies elements, such as management, complexity, and password alternatives (multifactor authentication, certificates, and biometrics)

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- Describe remote access and site-to-site VPNs
- Configure and verify access control lists
- Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection, and port security)
- Differentiate authentication, authorization, and accounting concepts
- Describe wireless security protocols (WPA, WPA2, and WPA3)
- Configure WLAN using WPA2 PSK using the GUI

Module 5: Network Access
- Configure and verify VLANs (normal range) spanning multiple switches
- Configure and verify Interswitch connectivity
- Configure and verify Layer 2 discovery protocols (Cisco Discovery Protocol and LLDP)
- Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
- Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
- Compare Cisco Wireless Architectures and AP modes
- Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, and LAG)
- Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, and TACACS+/RADIUS)
- Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings

Module 6: Automation and Programmability
- Explain how automation impacts network management
- Compare traditional networks with controller-based networking
- Describe controller-based and software defined architectures (overlay, underlay, and fabric)
- Compare traditional campus device management with Cisco DNA Center enabled device management
- Describe characteristics of REST-based APIs (CRUD, HTTP verbs, and data encoding)

- Recognize the capabilities of configuration management mechanisms Puppet, Chef, and Ansible
- Interpret JSON encoded data