SLOG SOLUTIONS PRIVATE LIMITED
TECHNOLOGY: Networking
DURATION: 6 WEEKS

Operation of IP Data Networks

- Recognize the purpose and functions of various network devices such as routers, switches, bridges and hubs.
- Select the components required to meet a given network specification
- Identify common applications and their impact on the network
- Describe the purpose and basic operation of the protocols in the OSI and TCP/IP models
- Predict the data flow between two hosts across a network
- Identify the appropriate media, cables, ports, and connectors to connect Cisco network devices to other network devices and hosts in a LAN

LAN Switching Technologies

- Determine the technology and media access control method for Ethernet networks
- Identify basic switching concepts and the operation of Cisco switches

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- Collision Domains
- Broadcast Domains
- Ways to switch
  (i) Store
  (ii) Forward
  (iii) Cut through
- CAM Table
- Configure and verify initial switch configuration including remote access management
- hostname
- console and VTY logins
- exec-timeout
- service password encryption
- copy run start
- Verify network status and switch operation using basic utilities such as ping, telnet,SSH.
- Describe how VLANs create logically separate networks and the need for routing between them
- Explain network segmentation and basic traffic management concepts
- Configure and verify VLANs

IP Addressing (IPv4/IPv6)

- Describe the operation and necessity of using private and public IP addresses for IPv4 addressing

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- Identify the appropriate IPv6 addressing scheme to satisfy addressing requirement in a LAN/WAN environment
- Identify the appropriate IPv4 addressing scheme using VLSM and summarization to satisfy addressing requirements in a LAN/WAN environment
- Describe the technological requirements for running IPv6 in conjunction with IPv4
- dual stack
- Describe IPv6 addresses
- global unicast
- multicast
- link local
- unique local
- eui 64
- auto-configuration

IP Routing Technologies

- Describe basic routing concepts
- packet forwarding
- router lookup process
- Process Switching/Fast Switching/CEF
- Configure and verify utilizing the CLI to set basic Router configuration
  1. hostname
  2. local user and password
  3. enable secret password
  4. console & VTY logins
  5. exec-timeout
  6. service password encryption
  7. interface IP Address

- Loopback
    1. banner
    2. motd
    3. copy run start
- Configure and verify operation status of a device interface
    1. Serial
    2. Ethernet
- Verify router configuration and network connectivity using ping
- Extended
    1. Traceroute
    2. Telnet
    3. SSH
- sh cdp neighbors
- Configure and verify routing configuration for a static or default route given specific
- routing requirements
- Differentiate methods of routing and routing protocols
- Static vs. dynamic
- Link state vs. distance vector
- next hop
- Ip routing table
- Passive Interfaces (how they work)
- Admin distance
- split horizon
- metric

- Configure and verify OSPF
    1. Benefit of single area
    2. Configure OSPv2
    3. Configure OSPv3
    4. Router ID
    5. Passive Interface
- Discuss multi-area OSPF
- Understand LSA types and purpose
- Configure and verify interVLAN routing (Router on a stick)
- sub interfaces
- upstream routing
- encapsulation
- Configure SVI interfaces
- Manage Cisco IOS Files
- Boot Preferences
- Cisco IOS Images (15)
- Licensing
    1. Show license
    2. Change license
- Configure and verify EIGRP (single AS)
- Feasible Distance/Feasible Successors/Administrative distance
    1. Feasibility condition
    2. Metric composition
    3. Router ID
    4. Auto summary
    5. Path Selection
    6. Load Balancing
        (i) Unequal
        (ii) Equal
- Describe the types, features, and applications of ACLs
- standard (editing and sequence numbers)
- extended
- named

- Configure and verify ACLs in a network environment
- Identify the basic operation of NAT
- Configure and verify NTP as a client

Network Device Security
- Configure and verify network device security
- Device password security
- disable telnet
- Configure and verify Switch Port Security
- protect restrict
- Configure and verify ACLs to filter network traffic
- Configure and verify ACLs to limit telnet and SSH access to the router

WAN Technologies
- Identify different WAN Technologies Metro Ethernet
    1. VSAT
    2. MPLS
    3. Frame relay
- Configure and verify a basic WAN serial connection
- Configure and verify a PPP connection between Cisco routers

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SOLUTIONS PVT. LTD.

SLOG SOLUTIONS PVT.LTD.
HELPLINE 7456000240/7456000241
www.slogsolutions.com