

Routing and Switching Pro (V7)

Competency Assessment Objectives

Device Setup and Configuration

Setup and configure a router

- View router configuration information
- Configure router hostnames and interface descriptions
- Configure router banners
- Manage router configuration files

Setup and configure a switch

- View switch configuration information
- Configure switch hostnames and interface descriptions
- Configure switch banners
- Manage switch configuration files

Interface Configuration

Configure a router interface

- View the status of router interfaces
- View directly connected devices using CDP
- Manage the CDP configuration
- Configure Ethernet and serial router interfaces
- Troubleshoot router connections

Configure a switch interface

- View the status of switch interfaces
- Configure interface speed and duplex settings

- View directly connected network devices using CDP
- Manage the CDP configuration

Network Connectivity

Configure device IP settings

- Configure router TCP/IP settings
- Configure switch TCP/IP settings
- Troubleshoot LAN communications

Implement IP routing

- Calculate and configure subnet masks for network hosts
- Configure static routes on a router
- View the routing table on a router
- Manage auto-summarization between networks

Configure OSPFv2 routing

- Enable OSPF routing
- Configure and manage OSPF routing
- Troubleshoot OSPF routing

Network Access

Configure switch VLANs

- View information about VLANs configured on a switch
- Manage default VLAN configuration settings
- Configure VLANs on a switch
- Use trunking to extend VLAN to multiple switches
- Troubleshoot VLAN issues

Configure interVLAN routing

- Configure interVLAN routing
- Troubleshoot interVLAN routing issues

Configure spanning tree

- View STP configuration information
- Manually configure a switch as a root bridge
- Configure Rapid PVST+

Configure EtherChannel

- Configure EtherChannel using PAGP
- Configure EtherChannel using LACP

Configure wireless networking

- Create a wireless network
- Secure a wireless network
- Design a wireless network
- Implement and configure a wireless network
- Optimize a wireless network
- Troubleshoot a wireless network

Network IP Services

Configure NAT

- Configure static NAT on a router
- Configure dynamic NAT on a router
- Configure overloaded PAT on a router

Configure DHCP

- Configure the DHCP service on a router

- Configure DHCP bindings
- Configure a DHCP relay agent

Configure DNS

- Configure DNS
- Create DNS zones
- Create DNS records
- Troubleshoot DNS

Security

Configure router security

- Configure router passwords
- Secure router access
- Restrict router remote access

Configure switch security

- Configure switch passwords
- Secure switch access
- Enable switch port security
- Configure Allowed VLANs
- Restrict switch remote access

Configure access control list

- Implement standard, extended, and named ACLs
- Use wildcard masks in ACLs
- Use ACLs to permit allowed network traffic
- Use ACLs to block disallowed network traffic
- Block disallowed traffic

Implement security measures

- Implement anti-malware measures
- Scan and detect open ports
- Implement device hardening
- Analyze network traffic using Wireshark
- Analyze network traffic for potential security risks