

CCNA

TOPICS

Operation of IP Data Networks

Collision and Broadcast Domains

Network Types

Network Devices

Basics of Switch

Basics of Router

Data flow

OSI Reference Model

OSI vs TCP/IP

Cabling

TCP and UDP

Communication Media

IPv4 Addressing and Subnetting

Classes

Sub-netting

FLSM

VLSM

LAN Switching Technologies

Icons for Network Devices
Layer-2 Forwarding Methods
VLANs – A Layer-2 or Layer-3 Function
Layer-3 Switching
Interfaces vs Lines
Cisco IOS Modes on Cisco Devices
Enable Passwords
Line Passwords and Configuration
Console and VTY logins
exec-timeout (Execute timeout)
Content addressable memory (CAM) table

Securing Network

Discuss how to secure devices using AAA
TACACS+
RADIUS
ICMP echo-based IP SLA to troubleshoot connectivity
Managing Configuration Files
IOS Troubleshooting Commands
SSH (Secure Shell)
telnet
Discuss network programmability in an enterprise network architecture Northbound —
-vs- Southbound API
Describe DHCP snooping to prevent a malicious user
Extended ping
Trace-route
Switched Port Analyzer (SPAN) to connect a network monitor to a switch port
CDP and LLDP
Management IP address in SVI
Local user and password
Enable secret password (Md5)
Service password encryption
Running-config vs Startup-config
banner MOTD
Manage Cisco IOS Files
SNMP
Cloud Resources

The Routing Table

Routing Table Basics

Administrative Distance vs. Metric

Viewing the routing table

Choosing the Best Route (Example)

Static vs. Dynamic Routing

Static vs. Dynamic Routing

Dynamic Routing Categories

Distance-vector Routing Protocols

Link- State Routing Protocols

Configuring Static Routes

Advanced Static Routes Parameters

Default Routes

Configure and verify RIP

Configuring RIP

RIP Version 1

RIP Version 2

Split horizon

Route poison

Holddown timer

Maximum hop-count

Configure and verify EIGRP part -1

Feasible Distance

Feasible Successors

Administrative distance

Feasibility condition

EIGRP Neighbors

Metric composition

Auto summary

Path Selection

Load Balancing

EIGRP with IPv4 & IPV6

Configure and verify EIGRP Part-2

EIGRP Topology Table

EIGRP Route States

EIGRP Metrics

Configuring EIGRP Metrics

Configuring Basic EIGRP

EIGRP Auto-Summarization

Troubleshooting EIGRP

Configure and verify OSPF Part -1

OSPFv2

IPv6 and OSPFv3.

Router ID

OSPF Neighbors

OSPF Neighbor States

Passive Interface

Configure and verify OSPF Part -2

Discuss multi-area OSPF

LSAs and the OSPF Topology Database

The OSPF Metric

Configuring Basic OSPF

Troubleshooting OSPF

VLANs and VTP

Virtual LANs (VLANs)

VLAN Example

Advantages of VLANs

VLAN Frame-Tagging

Inter-Switch Link (ISL)

IEEE 802.1Q

Configuring Trunk Links

VLAN Trunking Protocol (VTP)

VTP Modes

Enhanced switching technologies

Switching Loops

Spanning Tree Protocol (STP)

STP Types

Electing an STP Root Bridge

Identifying Root Ports

Identifying Designated Ports

Port ID

STP Port States

STP Timers

Basic STP Configuration

RSTP

EtherChannels

DTP

IP Services

Recognize High availability

HSRP

Configure and verify DHCP (IOS Router)

Configure and verify NTP as a client

Access-Lists

Standard IP Access List

Extended IP Access List

Named Access Lists

APIC-EM(Application Policy Infrastructure Controller – Enterprise Module)

Verify Access Control List (ACLs) using APIC-EM Path Tree ACL Analysis tool

Network Device Security

Configure and verify switch port security

Sticky MAC

MAC address limitation

port security

BGP and other WAN Technologies

Configure and verify a single-homed eBGP (External Border Gateway Protocol)

Troubleshooting HDLC Encapsulation

PPP Encapsulation

Multilink PPP (MLPPP)

Configuring PPP

Configure PPPoE

NAT

NAT (Network Address Translation)

Configuring static and Dynamic NAT

PAT (Port Address Translation)

Troubleshooting NAT

IPv6 Addressing

IPv6 Basics

The IPv6 Address

The IPv6 Prefix

The IPv6 Address Hierarchy

Describe Internet VPN options

Dynamic Multipoint VPN (DMVPN)

site-to-site VPN

client VPN

Configure, verify, and troubleshoot GRE tunnel connectivity

Describe Quality of Service (QoS)

Theory of marking traffic, trusting certain devices (e.g. Cisco IP Phones)

Preferring voice traffic over network gaming traffic

setting a speed limit on traffic using policing and shaping, and congestion management

JJK ACADEMY