INFOSOFT IT SOLUTIONS

Training | Projects | Placements

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CCNA TRAINING COURSE

Network Fundamentals

- ## Network Components

You will learn about the roles and functions of network components.

1. Routers
2. L2 and L3 Switches
3. Servers
4. Endpoints and Access Points

- ## Network Topology Architecture

You will understand the characteristics of network topology architectures.

1. 2-tier
2. 3-tier
3. Spine-leaf
4. WAN
5. SOHO
6. On-premise and cloud

- ## Compare TCP to UDP

Learn the difference between these two Internet protocols.

- ## IPv4 and IPv6 Addressing

1. Understand the need for IPv4 addressing
2. Configure and verify IPv4 addressing and subnetting
3. Configure and verify IPv6 addressing and prefix

- ## Compare IPv6 Address Types

1. Global unicast
2. Unique local
3. Link-local
4. Anycast
5. Multicast
6. Modified EUI 64

- ## Switching

Understand switching concepts.

1. A MAC learning and ageing
2. Frame switching
3. Frame flooding
4. MAC address table

Network Access

- ## Multiple switches

Configure and verify VLANs spanning multiple switches.

1. Access ports
2. Default VLAN
3. Connectivity

- ## Spanning Tree Protocol (STP)

Understand the need for Rapid PVST+ Spanning Tree Protocol and identify its basic operations.

1. Root port
2. Root bridge
3. Port States
4. PortFast benefits

- ## WLAN

Understand physical infrastructure connections of WLAN components.

1. AP/WLC management access connections
2. SSH, HTTP, HTTPS
3. LAN access
4. WLAN connection

5. WLAN advanced settings

IP Connectivity

- ## Routing Table

Interpret the components of a routing table.

1. Routing protocol code
2. Prefix
3. Network Mask
4. Next hop

- ## Router

Determine how a router decides by default.

1. Longest match
2. Administrative distance
3. Routing protocol metric

- ## Static Routing

Learn to configure and verify IPv4 and IPv6 static routing.

1. Default route
2. Network route
3. Host route
4. Floating static

- ## OSPF (v2)

Configure and verify single area OSPF (v2).

1. Neighbour adjacencies
2. Point-to-point
3. Broadcast
4. Router ID

IP Services

- ## Network Address Translation (NAT)

Learn to configure and verify inside source NAT using static and pools.

- ## Network Time Protocol (NTP)

Learn to configure and verify NTP operating in client and server mode.

- ## DHCP and DNS

Learn the difference between the role of (Dynamic Host Configuration Protocol) DHCP and (Domain Name System) DNS within the network.

- ## SNMP and Syslog

Explain functions of SNMP in network operations and the use of Syslog features.

1. Facilities
2. Levels

- ## Per-Hop Behavior (PHB)

Explain the forwarding PHB for QoS.

- ## TFTP/ FTP

Explain the functions of TFTP and FTP in a network.

Security Fundamentals

- ## Key Security Concepts

1. Threats
2. Vulnerabilities
3. Exploits
4. Mitigation techniques

- ## Security Program Elements

Describe the Security Program Elements.

1. User awareness
2. Training
3. Physical access control

- ## Virtual Private Networks (VPNs)

Define remote access and site-to-site VPNs.

- ## Security Features

Configure Layer 2 security features.

1. DHCP snooping
2. Dynamic ARP inspection
3. Port security

- ## Wireless Security Protocols

Describe wireless security protocols.

1. WPA
2. WPA2
3. WPA3

- **WLAN**

Learn configuring WLAN.

1. WPA2 PSK
2. GUI

Automation and Programmability

- ## Network Management

Explain how automation impacts network management.

- ## Controller-based and Software-defined architectures

Learn to distinguish between controller-based and software-defined architectures (overlay, underlay & fabric).

1. Control Plane
2. Data Plane
3. Northbound APIs
4. Southbound APIs

- ## Device Management

Learn to compare traditional campus device management with Cisco DNA Center.

- **REST-based APIs**

Describe the characteristics of REST-based APIs.

1. CRUD
2. HTTP verbs
3. Data encoding

- ## Configuration Management

Recognize the capabilities of configuration management mechanisms.

1. Puppet
2. Chef
3. Ansible