

# CCNA

## Network Essential & OSI Model

- ❖ Basics of Networking
- ❖ OSI Model
- ❖ Hubs
- ❖ Network Topologies
- ❖ Cisco Hierarchical Model

## TCP/IP Protocol Suite & IP Addressing

- ❖ TCP/IP Protocol
- ❖ Address Resolution Protocol (ARP)
- ❖ Type of Casting 35
- ❖ Networking Addressing /IP Addresses
- ❖ Subnetting and VLSM
- ❖ Route Summarization

## Cabling and Device Introduction

- ❖ Routing Basics
- ❖ Boot Sequence
- ❖ Configuring a Router Using CLI and SDM
- ❖ Ping Protocol
- ❖ Traceroute Protocol
- ❖ Cisco Discovery Protocol
- ❖ Configuring Router using SDM & HTTP Protocol

## Wild Card mask

- ❖ Access List
- ❖ Standard Access List
- ❖ Extended Access List
- ❖ Network Address Translation

## Switched Networks

- ❖ Mac-Address
- ❖ Hubs and Bridges
- ❖ Switches
- ❖ Virtual Local Area Networks
- ❖ VLAN Trunking Protocol

- ❖ Spanning Tree Protocol (STP)
- ❖ EtherChannel
- ❖ Port security

## **IP Version 6**

- ❖ mPv6 Need of an Hour
- ❖ Ipv6 Addressing
- ❖ Configuring Ipv6 on Cisco Routers

## **Wireless Networking**

- ❖ Wireless Networking Basics
- ❖ Wireless Frequencies and Channel Groups
- ❖ Wireless Access Points
- ❖ Wireless Security
- ❖ Check Your Skills
- ❖ Lease Lines
- ❖ Frame-Relay

## **Layer 2 Technologies**

- ❖ Configure and verify PPP
- ❖ Explain Frame Relay

## **VPN Technologies**

- ❖ Configure and verify GRE
- ❖ Describe DMVPN (single hub)
- ❖ Describe Easy Virtual Networking (EVN)

## **Infrastructure Services**

- ❖ Configure and verify device management
- ❖ Configure and verify SNMP
- ❖ Configure and verify logging
- ❖ Configure and verify Network Time Protocol (NTP)
- ❖ Configure and verify IPv4 and IPv6 DHCP
- ❖ Configure and verify IPv4 Network Address Translation (NAT)
- ❖ Describe IPv6 NAT
- ❖ Configure and verify IP SLA
- ❖ Configure and verify tracking objects

- ❖ Configure and verify Cisco NetFlow

## **LAN Switching Technologies**

- ❖ SPAN, RSPAN
- ❖ Stackwise

## **Switch Security Features**

- ❖ DHCP snooping
- ❖ IP Source Guard
- ❖ Dynamic ARP inspection
- ❖ Port security
- ❖ Private VLAN
- ❖ Storm control

## **Security Using Cisco IOS**

- ❖ AAA with
- ❖ TACACS+ and RADIUS
- ❖ AAA with TACACS+ and RADIUS
- ❖ Local privilege authorization fallback