

# CCNA V2.0

Cisco CCNA Training @ Zoom will cover all aspects of the new CCNA v2 200-120 curriculum in detail. We provide the best Infrastructure for Theory and Labs, all our labs are well equipped with the State-of-the-art Equipment. The Training will be provided by Senior Network/WAN Engineers with several years of field experience.

## Course Contents

- Introduction to Wide Area Networks
- Internetwork Operating System (IOS)
- IP Routing (Static & Dynamic)
- LAN Switching
- IPv4 & IPv6
- STP, PVSTP & RSTP
- Virtual Private Network - VPN
- Redundancy Protocols
- Network monitoring tools
- NAT & PAT
- Cisco Express Forwarding
- Network Device Security
- WAN Technologies
- Troubleshooting

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**+**  
**Practicals**

# Course Details

## Operation of IP Data Networks

- Functions of Routers, Switches, Bridges and Hubs
- OSI and TCP/IP models
- Data flow between two hosts across a network

## LAN Switching Technologies

- Identify basic switching concepts
  - Types of switching
  - Collision / Broadcast Domains
  - CAM Table
- Configure and verify initial switch configuration
- Switch operation (ping, telnet and ssh)
- Identify enhanced switching technologies
  - RSTP / PVSTP
  - Ether channels
- Configure and verify VLANs / Trunking
  - DTP / Auto negotiation
- Configure and verify PVSTP operation
  - Root bridge election / STP Modes

## IP Routing Technologies

- Describe basic routing concepts
  - C E F
  - Packet forwarding
  - Router lookup process
- Describe the boot process of Cisco IOS routers
- Configure and verify basic Router configuration
- Configure and verify interface (serial and Ethernet)
- Configure and verify Static & Default routing
- Manage Cisco IOS Files
  - Boot preferences / Cisco IOS image(s)
  - Licensing
- Differentiate methods of routing and routing protocols
  - Static vs. Dynamic
  - Link state vs. Distance Vector
  - Administrative distance
- Configure and verify OSPF (single area)
  - Benefit of single area
  - neighbor adjacencies
  - OSPF states, Multi area
  - Configure OSPF v2 & OSPF v3
  - Router ID, Passive interface, LSA types
- Configure and verify EIGRP (single AS)
  - Feasible Distance / Feasible Successors
  - Administrative distance
  - Feasibility condition
  - Metric composition
  - Router ID, Auto summary, Path selection
  - Load balancing (Equal & Unequal)
  - Passive interface
- InterVLAN routing (Router on a stick)
  - sub interfaces, encapsulation
- Configure SVI interfaces

## IP Services

- Configure and verify DHCP (IOS Router)
  - Configuring router interfaces to use DHCP
  - DHCP options
  - Excluded addresses, Lease time
- ACL (Types, Features & Applications of ACLs)
  - Standard, Extended, Named & Numbered
  - Log option
- Configure and verify ACL.
- Identify the basic operation of NAT
  - Purpose, Pool, Static, 1 to 1 & Overloading
  - Source addressing & One way NAT
- Configure and verify NAT
- Configure and verify NTP as a client
- Recognize High availability (FHRP, VRRP, HSRP & GLBP)
- Configure and verify Syslog
- Describe SNMP v2 & v3

## IP addressing (IPv4 / IPv6)

- Private and public IP addresses for IPv4
- IPv6 addressing scheme
- IPv4 addressing scheme using VLSM and summarization
- IPv6 in conjunction with IPv4 such as (dual stack)
- Describe IPv6 addresses
  - Global unicast
  - Multicast
  - Link local
  - Unique local
  - eui 64
  - auto configuration

## Network Device Security

- Configure and verify network device security
  - Enable secret vs enable
  - Disable telnet
  - SSH / VTYS
  - Physical security
  - Service password
- Configure and verify Switch Port Security
  - Sticky MAC / MAC address limitation
  - Static / dynamic
  - Violation modes (Err disable/Shutdown)
  - Protect restrict
  - Err disable recovery

## Troubleshooting

- Troubleshoot and Resolve VLAN problems
  - Identify that VLANs are configured
  - port membership correct
  - IP address configured
- Troubleshoot and Resolve trunking problems
  - correct trunk states
  - correct encapsulation configured
  - correct vlans allowed
- Troubleshoot and Resolve STP
  - Root switch
  - Priority
  - Mode is correct
  - Port states
- Troubleshoot and Resolve routing issues
  - Routing is enabled
  - Routing table is correct
  - Correct path selection
- Troubleshoot and Resolve OSPF problems
  - Neighbor advances
  - Hello and Dead timers
  - OSPF area, Interface MTU
  - Network types, Neighbor states
  - OSPF topology database
- Troubleshoot and Resolve EIGRP problems
  - Neighbor adjacencies
  - AS number
  - Load balancing
- Troubleshoot and Resolve interVLAN
  - Connectivity
  - Encapsulation
  - Subnet, Native VLAN
  - Port mode trunk status
- Troubleshoot and Resolve ACL issues
  - Statistics, Permitted networks, Direction
- Troubleshoot and Resolve WAN implementation issues
  - Serial interfaces, PPP, Frame relay
- Monitor NetFlow statistics
- Troubleshoot etherchannel problems

## WAN Technologies

- Identify different WAN Technologies
  - Metro Ethernet, VSAT, Cellular 3G & 4G
  - ISDN, DSL, Frame relay, MPLS, VPN & Cable
- Configure and verify Frame Relay on Cisco routers