

## CCNA Training Course Content

### CHAPTER 1 : INTRODUCTION TO NETWORKS

- OSI Model
- Transmission Control Protocol / Internet Protocol (TCP/IP)
- Infrastructure
- Cloud Computing on Enterprise Architecture
- Network tiered Architecture
- Network topologies
- Network cables and their Implementations
- Analyze and find Trouble shooting Methodologies
- IPv4 Subnetting
- IPv4 Address Types
- Private Address(IPv4)
- Stateless Address Auto-Configuration (IPv6)
- IPv6 Address Types
- Exercises on Subnetting with all classes of IP

### CHAPTER 2 : LOCAL AREA NETWORKS AND SWITCHES (LAN) & IMPLEMENTATION

- Switch Concepts
- Frame Formats(Internet & Ethernet)
- Troubleshooting (Interface & Cables)
- VLANs( Configure, Verify and Troubleshoot with Multiple Switches)
- Inter Switch Configuration for VLANs
- STP Protocols
- STP Protocols features and Configuration (PortFast& BPDU Guard)
- Layer 2 Protocols Configuration
- L2/L3 Ethernet Channels
- Switch stacking and Chassis aggregation
- Lab Session I Configuring Switch

### CHAPTER 3 : ROUTING

- Concepts of Routing
- Components of a Routing Table
- Discuss how the routing is implemented and with different information sources
- Inter VLAN Routing Configuration and Verification
- Static Routing Vs Dynamic Routing
- Distance Vector Routing Vs Link State Routing Protocol

- Interior Routing Vs Exterior Routing Protocols
- IPV4 Vs IPV6 Static Routing Protocols
  
- OSPFv2 for IPv4 Configuration
- OSPFv3 for IPv6 Configuration
- EIGRP for IPv4 Configuration
- EIGRP for IPv6 Configuration
- RIPv2 for IPv4 Configuration
- Layer 3 issues
- Lab Session 2 Configuring Different routing protocols

#### **CHAPTER 4 : WAN TECHNOLOGIES AND IMPLEMENTATION**

- PPP and MLPPP on WAN interfaces configuration
- Configuration of PPPoE client-side interfaces using local authentication
- Configuration of GRE Tunnel Connectivity
- Discuss WAN Topology
- WAN Access Connectivity
- Configure and Verify single-homed branch connectivity using eBGP IPv4
- Describe basic QoS concepts
- Lab Session 3 Configuring Tunnel

#### **CHAPTER 5 : INFRASTRUCTURE SERVICES**

- Describe DNS lookup operation
- Troubleshoot client connectivity issues involving DNS
- Configure and verify DHCP on a router (excluding static reservations)
- Troubleshoot client- and router-based DHCP connectivity issues
- Configure, verify, and troubleshoot basic HSRP
- Configure, verify, and troubleshoot inside source NAT
- Configure and verify NTP operating in a client/server mode
- Lab Session 4 Configuring Infra Services

#### **CHAPTER 6 : INFRASTRUCTURE SECURITY**

- Configuration of port security
- Describe common access layer threat mitigation techniques
- Configure, verify, and troubleshoot IPv4 and IPv6 access list for traffic filtering
- Verify ACLs using the APIC-EM Path Trace ACL Analysis tool
- Configure, verify, and troubleshoot basic device hardening
- Describe device security using AAA with TACACS+ and RADIUS
- Lab Session 5 – Configure and verify IPv4 and IPv6

#### **CHAPTER 7 : INFRASTRUCTURE MANAGEMENT**

- Configure and verify device-monitoring protocols
- Troubleshoot network connectivity issues using ICMP echo-based IP SLA
- Configure and verify device management

- Configure and verify initial device configuration
- Maintaining the Device
- Use Cisco IOS tools to troubleshoot and resolve problems
- Describe network programmability in enterprise network architecture
- Lab Session 6- Handling of CISCO IOS tools

### **Contact Info:**



+91 9884412301 | +91 9884312236



Know more about [CCNA](#)



info@credosystemz.com



New # 30, Old # 16A, Third Main Road,  
Rajalakshmi Nagar, Velachery, Chennai  
(Opp. to MuruganKalyanaMandapam)

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