CCNA 200-301 Training Syllabus

Module-1 Overview of Networking: 01:30 hrs

Learning Objective:

In this module, you will understand the main components of Networking like Types of Network, network devices.

Topics:

- Introduction to Networks
- Preview
- Network Types
- Preview
- The Internet and the DNS Server
- Preview

Hands-On:

- Overview of a Networking like Types of Network, network devices etc.
- Overview of Internet and Role of DNS Server

Module-2 IP Addressing [Classes, Private Addressing, Subnetting] 04:20hrs

Learning Objective:

In this module, you will understand the Classes of IP Addresses and What is the Difference between Public and Private IP.

Topics:

- IP Addressing
- IP Address Classes
- Private Addressing
- Subnetting
- Class C - Subnetting Examples
- Class B - Subnetting Examples
- Class A - Subnetting Examples
- Supernetting
- Supernetting Examples

Hands-On:

- Overview of Subnetting and Different Classes Subnet etc.
- Overview of IP Addressing, Public and Private IP's.

Module-3 Reference Models & TCP / UDP Protocols   01:10hrs

Learning Objective:

In this module, you will understand use of Reference Models [OSI and IP Model] & TCP / UDP Protocols.

Topics:

- Networking Models

Hands-On:

- Overview of OSI and TCP/IP Models and It's Layers etc.
- Overview of TCP and UDP Protocols.

Module-4 Initializing a Cisco Router 02:00 hrs

Learning Objective:

In this module, you will Learn Router Components and Basic router configurations.

Topics:

- Router Components
- Basic Router Configuration
- Initial Configurations
- Configuring Terminal history
- Configuring a Router Banner
- Working with the Configuration Files
- Securing the Router Console Access
- Configuring Alias

Hands-On:

- Overview of Routers and its Configuration etc.

Module-5 WAN Connections [PPP, Authentication, MLPP] 01:15hrs

Learning Objective:

In this module, you will understand the PPP, Authentication, MLPP.

Topics:

- Serial Interface Protocols
- Configuring and Verifying Point-to-point HDLC Connections
- Configuring and Verifying Point-to-point PPP Connections
- Configuring PPP Authentication using PAP
- Configuring PPP Authentication using CHAP
- Configuring PPP Multilink

Hands-On:

- Overview of WAN Technologies and their protocols etc.
- Overview of PPP, Authentication, MLPP Protocols.

Module-6 Remote Management [Telnet SSH] 01:00 hrs

Learning Objective:

In this module, you will understand about the Telnet SSH Protocols and Remote Management.

Topics:

- Remote Management
- Configuring Telnet using a Password
- Configuring Telnet using an Username and Password
- Configuring SSH using an Username and Password

Hands-On:

- Overview of Remote protocols Like Telnet SSH and it's Configurations.

Module-7 IP Routing 06:30hrs

Learning Objective:

In this module, you will understand about the Telnet SSH Protocols and Remote Management.

Topics:

- Routing Basics
- Distance Vector Routing Protocol
- Link State Routing Protocol
- Configuring Static Routes
- Configuring Default Routes
- Configuring Floating Static
- OSPF Overview
- Configuring OSPF in a Single Area on a Point - To - Point Link
- Configuring OSPF in a Single Area on a Ethernet Link
- OSPF - Calculating Metrics
- OSPF Multi-Area Overview
- Configuring OSPF is a Multi-Area Network
- FHRP Services
- HSRP
- VRRP

Hands-On:

- Overview of Routing protocols Like : Distance Vector Routing Protocol, Link State Routing Protocol
- Configuring of Routing Protocols.

Module-8 IPv6 [Addressing, Static Routes, OSPFv3] 02:00hrs

Learning Objective:

In this module, you will understand IPv6 [Addressing, Static Routes, OSPFv3]

Topics:

- IPv6 Addressing
- IPv6 Addressing Types

- IPv6 Address Assignments from ISP and Subnetting

- IPv6 Address Assignment using Manual Mechanism

- IPv6 Address Assignment using SLAAC

- Configuring IPv6 Static Routes

- Configuring IPv6 Default Route

- Configuring OSPFv3

Hands-On:

- Overview of IPv6 [Addressing, Static Routes, OSPFv3] and it's Configurations.

Module-9 LAN Switching 05:15hrs

Learning Objective:

In this module, you will understand IPv6 [Addressing, Static Routes, OSPFv3]

Topics:

- Switching Overview

- VLANs & Port Types

- VLAN Trunking Protocol (VTP)

- VLAN, VTP & Port Types Lab

- Inter-VLAN Routing

- Physical - To - Logical Mapping

- Spanning-Tree Protocol (STP)

- STP Root Switch

- STP PortFast

- STP BPDU Guard

- STP BPDU Guard Lab

- EtherChannels - Port Channels

- EtherChannel - Static Mode

- EtherChannel – LACP

Hands-On:

- Overview of LAN Switching Technologies and their protocols etc.

- Overview of STP, VTP, VLAN Protocols.

Module-10 Infrastructure / IP Services 03:30hrs

Learning Objective:

In this module, you will understand IPv6 [Addressing, Static Routes, OSPFv3]

Topics:

- DHCP Server
- Configuring a Router as a DHCP Server
- Configure a Router as a DHCP Relay Agent
- Configuring a Router as a HTTP-HTTPS Server
- Configuring a Router as a DNS Server
- Network Address Translation (NAT)
- Dynamic NAT
- Static NAT
- Dynamic PAT
- Static PAT
- Network Time Protocol (NTP)
- Network Time Protocol Lab
- Quality of Service (QoS)
- Qos - Policing
- Qos - Bandwidth Reservation & Prioritization

Hands-On:

- Overview of Infrastructure / IP Services [DNS, DHCP Server, NTP, QoS].

Module-11 Router Maintenance 20:00min

Learning Objective:

In this module, you will learn About the Router Maintenance.

Topics:

- Backing up configuration to a TFTP Server
- Restoring configuration from a TFTP Server

Hands-On:

- Overview of Router Maintenance and TFTP Server.

Module-12 Wireless Networking 01:00hrs

Learning Objective:

In this module, you will learn About the Wireless Networking.

Topics:

- Wireless Networking Overview
- Initializing the WLC from the CLI
- Configuring a Controller-based WLAN

Hands-On:

- Overview of Wireless Networking.

Module-13 Security Fundamentals 04:50hrs

Learning Objective:

In this module, you will learn About the WAN Technologies and their protocols.

Topics:

- Overview of Site - To - Site VPNs using Crypto Maps
- GRE Site - To - Site VPN
- GRE Over IPSec
- Tunnel-Interface Based IPSec - S-VTI
- Access Control Lists Overview
- Standard Numbered ACL
- Standard Named ACL
- Extended Numbered ACL
- Extended Named ACL
- Time-based ACL
- IPv6 Access Lists
- Port Security
- Port Security - Lab
- Configuring DHCP Snooping
- Configuring ARP Inspection

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Hands-On:

- Overview of WAN Technologies and their protocols etc.
- Overview of PPP, Authentication, MLPP Protocols.

Module-14 Additional Labs 05:45hrs

Learning Objective:

In this module, you will learn Hands on Lab for all Routing and Switching Protocols.

Topics:

- RIPv2 Overview
- Configuring Basic RIP v2
- RIP v2 - Passive Interfaces
- RIP v2 - Auto-Summarization
- EIGRP Overview
- Configuring Basic EIGRP
- EIGRP - Passive Interfaces
- EIGRP - Auto-Summarization
- Calculating EIGRP Metrics
- EIGRP - Load Balancing
- BGP Overview
- Configuring eBGP
- WAN Technologies Overview
- MPLS Unicast Routing
- Multi-Point GRE- DMVPN
- PPP Over Ethernet (PPPoE)

Hands-On:

- In This Module you will learn Hands on Labs for above Topics.