CCNAv1.0 (CCNA 200-301)

The new **Cisco CCNA Exam v1.0 (CCNA 200-301)** is an associate level course of Cisco career certifications. The course has been designed for a candidate's knowledge and skills related to network fundamentals, network access, IP connectivity, IP services, security fundamentals, and automation and programmability. The course, Implementing and Administering Cisco Solutions (CCNA), also helps candidates to prepare for **CCNA (200-301)** vendor exam.

CSL Training designed the course **40%** theory and **60%** lab topics based. There are **20+** cisco devices available to complete **30+** CCNA lab topics. After completing the course, you will get a chance to sit the CCNA vendor exam. **CSL Training** will guide up to your passing success. So, We believe that you will get better CCNA Training from our institution.

Course Objectives

- Network Fundamentals
- Network Access Technologies
- IP (IPv4 & IPv6) Connectivity
- IP Services (ACL, HSRP, EtherChannel, DHCP, NAT, DNS)
- Security Fundamentals
- Network Automation and Programmability
- Implementing Network Device Security
- Network Device Management

Target Audience

- IT Professional
- Network Professional
- Network Support Engineer
- Network Admin
- System Engineer
- Network Product Pre-sales engineer

Course Pre-requisite

- Basic Computer Knowledge
- Data Communication Systems
- Networking Fundamental
- Computer Networking Components
- OSI References Model
- TCP/IP Protocols

Course Duration

- **Offline - 72 Hours**, 24 Sessions, 3 Hours per sessions (weekly 2 Days)
- **Online - 75 Hours**, 30 Sessions, 2.5 Hours per sessions (weekly 2 Days)

Course Outline

Module 01: Networking Fundamentals

- The OSI and TCP/IP Models
- The TCP/IP Application Layer
- The TCP/IP Transport Layer
- The TCP/IP Internet Layer
- The TCP/IP Network Access Layer
- Data Encapsulation Summary
- Networking Icons
- Networking Devices
- Physical Layer
- LAN Device Connection Guidelines
- LANs and WANs
- Small Office/Home Office (SOHO)
- Physical and Logical Topologies
- Hierarchical Campus Designs

Module 02: Ethernet Switching

- Evolution to Switching
- Switching Logic
- Collision and Broadcast Domains
- Frame Forwarding
- Ethernet Overview
- Legacy Ethernet Technologies
- Current Ethernet Technologies
- UTP Cabling
- Benefits of Using Switches
- Ethernet Addressing
- Ethernet Framing
- The Role of the Physical Layer

Module 03: Switch Configuration Basics

- Accessing and Navigating the Cisco IOS
- Basic Switch Configuration Commands
- Half Duplex, Full Duplex, and Port Speed
- Verifying Network Connectivity
- Troubleshoot Interface and Cable Issues

Module 04: IPv4 Addressing

- IPv4 Address Introduction
- IPv4 Classes
- Private and Public IP Addressing
- Subnetting (Class A, Class B & Class C)
- VLSM Design

Module 05: IPv6 Addressing

Overview and Benefits of IPv6
The IPv6 Protocol
IPv6 Address Types
Representing the IPv6 Address
IPv6 Subnetting
EUI-64 Concept
Stateless Address Autoconfiguration
Migration to IPv6

Module 06: VLAN and Trunking Concepts and Configurations

VLAN Concepts
Trunking VLANs
VLAN Configuration and Verification
Trunking Configuration and Verification
VLAN Troubleshooting
Trunking Troubleshooting

Module 07: STP Operation

STP Concepts and Operation
STP Algorithm
STP Convergence
STP Varieties
PVST Operation
Rapid PVST+ Operation
Configuring and Verifying Varieties of STP

Module 08: EtherChannel and HSRP

EtherChannel Operation
Benefits of EtherChannel
Implementation Restrictions
EtherChannel Protocols
Configuring EtherChannel
Verifying EtherChannel
Troubleshooting EtherChannel
First-Hop Redundancy Concepts
FHRPs
HSRP Operation
HSRP Configuration and Verification
HSRP Load Balancing
Troubleshooting HSRP

Module 09: DHCP and DNS

DHCPv4
DHCPv4 Configuration Options
DHCPv6
DHCPv6 Configuration Options
DHCP Troubleshooting
DNS Operation
Troubleshooting DNS
Verifying Host IP Configuration

Module 10: Wireless Networking s

- Wireless Standards
- Wireless Topologies
- AP Architectures
- Wireless Security Protocols
- Logging Into a Cisco WLC
- Configuring a WLC with a WLAN

Module 11: LAN Security and Device Hardening

Endpoint Security
Access Control
Port Security
LAN Threat Mitigation

Module 12: Basic Routing Concepts

Packet Forwarding
Routing Methods
Classifying Dynamic Routing Protocols
Dynamic Routing Metrics
Administrative Distance
IGP Comparison Summary
Routing Loop Prevention
Link-State Routing Protocol Features

Module 13: Basic Router Configuration

Basic Router Configuration with IPv4
Basic Router Configuration with IPv6
Verifying IPv4 and IPv6 Network Connectivity
Small Office or Home Office Routers
Basic IP Addressing Troubleshooting

Module 14: The Routing Table

Two Router Functions
Components of the Routing Table

Module 15: Inter-VLAN Routing

Inter-VLAN Routing Concepts
Router on a Stick Configuration and Verification
Multilayer Switching Inter-VLAN Routing Configuration and Verification

Module 16: Static and Default Route Configuration

Static and Default Routing Overview
IPv4 Static Route Configuration

Module 17: OSPF Operation & Implementation

- Single-Area OSPF Operation
- Single-Area OSPFv2 Configuration
- Verifying OSPFv2
- OSPFv2 Versus OSPFv3
- Multiarea OSPF Operation
- Multiarea OSPFv2 Configuration
- Troubleshooting of OSPF

Module 18: Network Security Concepts

Security Fundamentals
Network Attacks
Security Program

Module 19: ACL Operation & Implementation

ACL Operation
Planning to Use ACLs
Configuring Standard Numbered IPv4 ACLs
Configuring Extended Numbered IPv4 ACLs
Configuring Named IPv4 ACLs
Verifying IPv4 ACLs
Comparing IPv4 and IPv6 ACLs
Configuring IPv6 ACLs
Verifying IPv6 ACLs
Troubleshooting ACLs

Module 20: NAT

NAT Concepts
Configuring Static NAT
Verifying NAT
Troubleshooting NAT

Module 21: WAN, VPN, and IPsec

WAN Topologies
WAN Connection Options
VPN Technology

Module 22: CDP and LLDP

CDP Overview
LLDP Overview

Module 23: Device Management & Monitoring

SNMP Operation
Configuring SNMP
Verifying SNMP
Syslog
Network Time Protocol
Cisco IOS File System and Devices
Managing Cisco IOS Images
Password Recovery

Module 24: Cloud, Virtualization, and SDN

Cloud Computing
Software-Defined Networking

Module 25: SDA and Cisco DNA Center

SDA Architecture
Cisco DNA Center

Module 26: Network Automation

Data Formats
RESTful APIs
Configuration Management Tools