

# **Implementing and Administering Cisco Solutions (CCNA v1.0)**

**Modality: Virtual Classroom**

**Duration: 5 Days**

**CLC: 42 Units**

## **About this Course:**

Implementing and Administering Cisco Solutions teaches professionals how to install, operate, configure, and verify a basic IPv4 and IPv6 network. You'll learn how to configure network components, such as a switch, router, and Wireless LAN Controller. You'll also gain skills needed to manage network devices, and identify basic security threats.

## **Course Objectives:**

After taking this course, you should be able to:

- Identify the components of a computer network and explain their basic characteristics
- Describe the features and functions of the Cisco IOS Software
- Explain IPv4 and IPv6 addressing scheme
- Implement basic configurations on a Cisco router
- Identify and resolve common switching and routing networking issues
- Describe network and device architectures and explain virtualization
- Describe the smart network management solutions like Cisco DNA Center, SD-Access and SD-WAN
- Outline threat defense technologies
- And many, many more aspects of a basic IPv4 and IPv6 network

## **Audience:**

- Entry-level network engineer
- Network administrator
- Network support technician
- Help desk technician

## **Prerequisites:**

Before taking this course, you should have:

- Basic computer literacy
- Basic PC operating system navigation skills
- Basic Internet usage skills
- Basic IP address knowledge

## **Course Outline:**

- Section 1: Exploring the Functions of Networking
- Section 2: Introducing the Host-To-Host Communications Model
- Section 3: Operating Cisco IOS Software
- Section 4: Introducing LANs
- Section 5: Exploring the TCP/IP Link Layer
- Section 6: Starting a Switch
- Section 7: Introducing the TCP/IP Internet Layer, IPv4 Addressing, and Subnets
- Section 8: Explaining the TCP/IP Transport Layer and Application Layer
- Section 9: Exploring the Functions of Routing
- Section 10: Configuring a Cisco Router
- Section 11: Exploring the Packet Delivery Process
- Section 12: Troubleshooting a Simple Network
- Section 13: Introducing Basic IPv6
- Section 14: Configuring Static Routing
- Section 15: Implementing VLANs and Trunks
- Section 16: Routing Between VLANs
- Section 17: Introducing OSPF
- Section 18: Building Redundant Switched Topologies
- Section 19: Improving Redundant Switched Topologies with EtherChannel
- Section 20: Exploring Layer 3 Redundancy
- Section 21: Introducing WAN Technologies
- Section 22: Explaining Basics of ACL
- Section 23: Enabling Internet Connectivity
- Section 24: Introducing QoS
- Section 25: Explaining Wireless Fundamentals
- Section 26: Introducing Architectures and Virtualization
- Section 27: Explaining the Evolution of Intelligent Networks
- Section 28: Introducing System Monitoring
- Section 29: Managing Cisco Devices
- Section 30: Examining the Security Threat Landscape
- Section 31: Implementing Threat Defense Technologies
- Section 32: Securing Administrative Access
- Section 33: Implementing Device Hardening

## Labs Outline:

- Discovery 1: Get Started with Cisco CLI
- Discovery 2: Observe How a Switch Operates
- Discovery 3: Perform Basic Switch Configuration
- Discovery 4: Inspect TCP/IP Applications
- Discovery 5: Configure an Interface on a Cisco Router
- Discovery 6: Configure and Verify Layer 2 Discovery Protocols
- Discovery 7: Configure Default Gateway
- Discovery 8: Explore Packet Forwarding
- Discovery 9: Troubleshoot Switch Media and Port Issues
- Discovery 10: Troubleshoot Port Duplex Issues
- Discovery 11: Configure Basic IPv6 Connectivity

Discovery 12: Configure and Verify IPv4 Static Routes  
Discovery 13: Configure IPv6 Static Routes  
Discovery 14: Configure VLAN and Trunk  
Discovery 15: Configure a Router on a Stick  
Discovery 16: Configure and Verify Single-Area OSPF  
Discovery 17: Configure and Verify EtherChannel  
Discovery 18: Configure and Verify IPv4 ACLs  
Discovery 19: Configure a Provider-Assigned IPv4 Address  
Discovery 20: Configure Static NAT  
Discovery 21: Configure Dynamic NAT and PAT  
Discovery 22: Log into the WLC  
Discovery 23: Monitor the WLC  
Discovery 24: Configure a Dynamic (VLAN) Interface  
Discovery 25: Configure a DHCP Scope  
Discovery 26: Configure a WLAN  
Discovery 27: Define a RADIUS Server  
Discovery 28: Explore Management Options  
Discovery 29: Explore the Cisco DNA Center  
Discovery 30: Configure and Verify NTP  
Discovery 31: Create the Cisco IOS Image Backup  
Discovery 32: Upgrade Cisco IOS Image  
Discovery 33: Configure WLAN Using WPA2 PSK Using the GUI  
Discovery 34: Secure Console and Remote Access  
Discovery 35: Enable and Limit Remote Access Connectivity  
Discovery 36: Configure and Verify Port Security  
FASTLab 1: Implement the Initial Switch Configuration  
FASTLab 2: Implement an Initial Router Configuration  
FASTLab 3: Implement IPv4 Static Routing  
FASTLab 4: Implement IPv6 Static Routing  
FASTLab 5: Troubleshoot VLANs and Trunk  
FASTLab 6: Implement Multiple VLANs and Basic Routing Between the VLANs  
FASTLab 7: Improve Redundant Switched Topologies with EtherChannel  
FASTLab 8: Implement Numbered and Named IPv4 ACLs  
FASTLab 9: Implement PAT  
FASTLab 10: Configure System Message Logging  
FASTLab 11: Secure Device Administrative Access  
FASTLab 12: Implement Device Hardening