Document Generated: 02/18/2026

Learning Style: Virtual Classroom

Technology: Cisco

Difficulty: Beginner

Course Duration: 5 Days

Next Course Date: March 23, 2026

Implementing and Administering Cisco Solutions (CCNA) v2.1)

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

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