INTERCONNECTING CISCO NETWORK DEVICES PART 1/ ICND1 (100-105)

Who Should Attend

Individuals seeking the Cisco CCENT certification, or Cisco CCNA Routing and Switching certification. The course is also appropriate for support technicians involved in the basic installation, operation, and verification of LAN networks.

Jobs that use ICND1 include entry-level network engineer, network administrator, network support technician, and help desk technician

Certifications Associated With This Class:

- Cisco CCENT
- Cisco CCNA Routing and Switching
- Cisco CCDA
- Cisco CCNA Security
- Cisco CCNA Wireless

Before taking the ICND1 course, learners should be familiar with:

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

Course Objectives

This course will enable students to understand QoS, virtualization and cloud services, and network programmability related to WAN, access and core segments. It will provide the foundational understanding of network layers 1-3 that are applicable to core routing and switching plus other advanced technologies. Several topics have been added including; understanding the interactions and network functions of firewalls, wireless controllers and access points, along with additional focus on IPv6 and basic network security. The configuration commands are introduced through examples and supported with lab exercises.

Upon completing this course, you will be able to meet these objectives:

- Describe network fundamentals and build simple LANs
- Establish Internet connectivity
- Manage network device security
- Expand small to medium sized networks with WAN connectivity
- Describe IPv6 basics

Course Outline

Module 1: Building a Simple Network

- Lesson 1: Exploring the Functions of Networking
- Lesson 2: Understanding the Host-to-Host Communications Model
- Lesson 3: Introducing LANs
- Lesson 4: Operating Cisco IOS Software
- Lesson 5: Starting a Switch
- Lesson 6: Understanding Ethernet and Switch Operation
- Lesson 7: Troubleshooting Common Switch Media Issues

Module 2: Establishing Internet Connectivity

- Lesson 1: Understanding the TCP/IP Internet Layer
- Lesson 2: Understanding IP Addressing and Subnets
- Lesson 3: Understanding the TCP/IP Transport Layer
- Lesson 4: Exploring the Functions of Routing
- Lesson 5: Configuring a Cisco Router
- Lesson 6: Exploring the Packet Delivery Process
- Lesson 7: Enabling Static Routing
- Lesson 8: Learning the Basics of ACL
- Lesson 9: Enabling Internet Connectivity

Module 3: Summary Challenge

- Lesson 1: Establish Internet Connectivity
- Lesson 2: Troubleshoot Internet Connectivity

Module 4: Building a Medium-Sized Network

- Lesson 1: Implementing VLANs and Trunks
- Lesson 2: Routing Between VLANs
- Lesson 3: Using a Cisco IOS Network Device as a DHCP Server
- Lesson 4: Implementing RIPv2

Module 5: Network Device Management and Security

- Lesson 1: Securing Administrative Access
- Lesson 2: Implementing Device Hardening
- Lesson 3: Configuring System Message Logging

- Lesson 4: Managing Cisco Devices
- Lesson 5: Licensing

Module 6: Summary Challenge

- Lesson 1: Implementing a Medium-Sized Network
- Lesson 2: Troubleshooting a Medium-Sized Network

Module 7: Introducing IPv6

- Lesson 1: Introducing Basic IPv6
- Lesson 2: Understanding IPv6 Operation
- Lesson 3: Configuring IPv6 Static Routes

Labs:

- Discovery 1: Get Started with Cisco CLI
- Discovery 2: Perform Basic Switch Configuration
- Discovery 3: Observe How a Switch Operates
- Discovery 4: Troubleshoot Switch Media and Port Issues
- Discovery 5: Inspect TCP/IP Applications
- Discovery 6: Start with Cisco Router Configuration
- Discovery 7: Configure Cisco Discovery Protocol
- Discovery 8: Configure Default Gateway
- Discovery 9: Exploration of Packet Forwarding
- Discovery 10: Configure and Verify Static Routes
- Discovery 11: Configure and Verify ACLs
- Discovery 12: Configure a Provider-Assigned IP Address
- Discovery 13: Configure Static NAT
- Discovery 14: Configure Dynamic NAT and PAT
- Discovery 15: Troubleshoot NAT
- Discovery 16: Configure VLAN and Trunk
- Discovery 17: Configure a Router on a Stick
- Discovery 18: Configure a Cisco Router as a DHCP Server
- Discovery 19: Troubleshoot DHCP Issues
- Discovery 20: Configure and Verify RIPv2
- Discovery 21: Troubleshoot RIPv2
- Discovery 22: Enhance Security of Initial Configuration
- Discovery 23: Limit Remote Access Connectivity
- Discovery 24: Configure and Verify Port Security
- Discovery 25: Configure and Verify NTP
- Discovery 26: Configure Syslog

- Discovery 27: Configure Basic IPv6 Connectivity
- Discovery 28: Configure IPv6 Static Routes

- Challenge 1: Implementing the Initial Switch Configuration
- Challenge 2: Implementing the Initial Router Configuration
- Challenge 3: Implementing Static Routing
- Challenge 4: Implementing Basic Numbered and Named ACLs
- Challenge 5: Implementing PAT
- Challenge 6: Summary Challenge Lab: 1
- Challenge 7: Summary Challenge Lab: 2
- Challenge 8: Troubleshooting VLANs and Trunk
- Challenge 9: Implement Multiple VLANs and Basic Routing Between the VLANs
- Challenge 10: Implementing a DHCP Server in on a Cisco IOS Device
- Challenge 11: Implementing RIPv2
- Challenge 12: Securing Device Administrative Access
- Challenge 13: Implementing Device Hardening
- Challenge 14: Configuring System Message Logging
- Challenge 15: Summary Challenge Lab: 3
- Challenge 16: Summary Challenge Lab: 4
- Challenge 17: Implement IPv6 Static Routing