



## Cisco Interconnecting Cisco Networking Devices Part 1 (ICND1)

**Duration:**

Traditional Instructor Led Learning - 5.00 Day(s)

Mentored Learning - Flexible

**Overview:**

This course focuses on providing the skills and knowledge necessary to install, operate, and troubleshoot a small branch office Enterprise network, including configuring a switch, a router, and connecting to a WAN and implementing network security.

**Who Should Attend:**

Channel Partner / Reseller Customer Employee

**At Course Completion:**

Upon completion of this course, you should be able to: - How networks function, identifying major components, and function of network components. - Understand issues related to increasing traffic on an Ethernet LAN and identify switched LAN technology solutions to Ethernet networking issues - Extending the reach of a LAN and the methods that can be used with a focus on RF wireless access - Functions of Wide Area Networks (WANs), the major devices of WANs, and configure PPP encapsulation, static and dynamic routing, PAT and RIP routing. - Use of the command-line interface to discover neighbors on the network and managing the router's startup and configuration Technical Features of this course include the following: - The Open System Interconnection (OSI) reference model. - Ethernet and TCP/IP - IOS Software - Wireless LANs - LAN and WAN Technologies Associated Certification: CCENT

**Outline:****Lesson 1: Building a Simple Network**

- Exploring the Functions of Networking
- Securing the Network
- Understanding the Host-to-Host Communications Model
- Understanding the TCP/IP Internet Layer
- Understanding the TCP/IP Transport Layer
- Exploring the Packet Delivery Process
- Understanding Ethernet
- Connecting to an Ethernet LAN
- Lab 1-1: Using Windows Applications as Network Tools
- Lab 1-2: Observing the TCP Three-Way Handshake
- Lab 1-3: Observing Extended PC Network Information

**Lesson 2: Ethernet Local Area Networks**

- Understanding the Challenges of Shared LANs
- Solving Network Challenges with Switched LAN Technology
- Exploring the Packet Delivery Process

- Operating Cisco IOS Software
- Starting a Switch
- Understanding Switch Security
- Maximizing the Benefits of Switching
- Troubleshooting Switch Issues
- Lab 2-1: Connecting to Remote Lab Equipment
- Lab 2-2: Performing Switch Startup and Initial Configuration
- Lab 2-3: Enhancing the Security of Initial Switch Configuration
- Lab 2-4: Operating and Configuring a Cisco IOS Device

**Lesson 3: Wireless Local Area Networks**

- Exploring Wireless Networking
- Understanding WLAN Security
- Implementing a WLAN

**Lesson 4: Local Area Network Connections**

- Exploring the Functions of Routing
- Understanding Binary Basics
- Constructing a Network Addressing Scheme
- Starting a Cisco Router
- Configuring a Cisco Router
- Exploring the Packet Delivery Process
- Understanding Cisco Router Security
- Using Cisco SDM
- Using a Cisco Router as a DHCP Server
- Accessing Remote Devices
- Lab 4-1: Converting Decimal to Binary and Binary to Decimal
- Lab 4-2: Classifying Network Addressing
- Lab 4-3: Computing Usable Subnetworks and Hosts
- Lab 4-4: Calculating Subnet Masks
- Lab 4-5: Performing Initial Router Startup
- Lab 4-6: Performing Initial Router Configuration
- Lab 4-7: Enhancing the Security of Initial Router Configuration
- Lab 4-8: Using Cisco SDM to Configure DHCP Server Function
- Lab 4-9: Managing Remote Access Sessions

**Lesson 5: Wide Area Networks Connections**

- Understanding WAN Technologies
- Enabling the Internet Connection
- Enabling Static Routing
- Configuring Serial Encapsulation
- Enabling RIP
- Lab 5-1: Connecting to the Internet
- Lab 5-2: Connecting to the Main Office
- Lab 5-3: Enabling Dynamic Routing to the Main Office

**Lesson 6: Network Environment Management**

- Discovering Neighbors on the Network
- Managing Cisco Router Startup and Configuration
- Managing Cisco Devices

- Lab 6-1: Using Cisco Discovery Protocol
- Lab 6-2: Managing Router Startup Options
- Lab 6-3: Managing Cisco Devices
- Lab 6-4: Confirming the Reconfiguration of the Branch Network