CCNA Bootcamp

Course Description

CCNA Bootcamp combines both the Interconnecting Cisco Network Devices Part 1 (ICND1) course and the Interconnecting Cisco Network Devices Part 2 (ICND2) course into one five-day class.

ICND1 provides the fundamental knowledge prerequisite to successfully complete the ICND2 course. Together, the ICND1 and ICND2 courses provide the preparation that Cisco recommends for the Cisco Certified Network Associate examination. CCNA Bootcamp allows you to get that preparation in just one work week.

Students will learn fundamental computer networking concepts and apply them as they configure a LAN/WAN network using Cisco routers and Catalyst switches. Through lectures, discussions, demonstrations, exercises, and laboratory projects, students are given information sufficient to identify and recommend the best Cisco solutions for anywhere from small to enterprise-sized businesses. CCNA ACC also provides the installation, configuration, and troubleshooting information that technical support people require to install, manage, and configure Cisco products.

Prerequisites

The knowledge and skills that you must have before attending this course are as follows:

- Basic computer literacy
- Windows navigation skills
- Basic Internet usage skills
- Fundamental understanding of data networking and IP addressing
- Familiarity with the Cisco IOS command-line interface

Associated Certifications

- Cisco Certified Entry Networking Technician (CCENT)
- Cisco Certified Network Associate (CCNA)

Who Should Attend

This course is intended for the following audience:

- Network Administrator
- Network Engineer
- Network Manager
- Systems Engineer

The secondary audience for this course is as follows:

- Network Designer
- Project Manager

Number of Days

5 Days instructor-led classroom training. (Approx. 10-12 hours each day.)

Course Objectives

After completing this course, you will be able to:

- Describe how networks function, identifying major components, function of network components and the Open System Interconnection (OSI) reference model
- Using the host-to-host packet delivery process , describe issues related to increasing traffic on an Ethernet LAN and identify switched LAN technology solutions to Ethernet networking issues
- Describes the reasons for extending the reach of a LAN and the methods that can be used with a focus on RF wireless access
- Describes the reasons for connecting networks with routers and how routed networks transmit data through networks using TCP/IP
- Describe the function of Wide Area Networks (WANs), the major devices of WANs, and configure PPP encapsulation, static and dynamic routing, PAT and RIP routing
- Use the command-line interface to discover neighbors on the network and managing the router's startup and configuration
- Expand a small-sized, switched LAN to a medium-sized LAN with multiple switches, supporting VLANs, trunking, and spanning tree
- Describe routing concepts as they apply to a medium-sized network and discuss considerations when implementing routing on the network
- Configure, verify, and troubleshoot OSPF
- Configure, verify, and troubleshoot EIGRP
- Determine how to apply ACLs based on network requirements, and configure, verify, and troubleshoot ACLs on a medium-sized network

- Describe when to use and configure NAT or PAT on a medium-sized network and explain and configure IPv6 addressing on a Cisco router
- Identify and implement the appropriate WAN technology based on network requirements

Course Outline

- Building a Simple Network
  - Lesson 1: Exploring the Functions of Networking
  - Lesson 2: Securing the Network
  - Lesson 3: Understanding the Host-to-Host Communication Model
  - Lesson 4: Understanding TCP/IP's Internet Layer
  - Lesson 5: Understanding TCP/IP's Transport Layer
  - Lesson 6: Exploring the Packet Delivery Process
  - Lesson 7: Understanding Ethernet
  - Lesson 8: Connecting to an Ethernet LAN
- Ethernet Local Area Networks
  - Lesson 1: Understanding the Challenges of Shared LANs
  - Lesson 2: Solving Network Challenges with Switched LAN Technology
  - Lesson 3: Exploring the Packet Delivery Process
  - Lesson 4: Operating Cisco IOS Software
  - Lesson 5: Starting a Switch
  - Lesson 6: Understanding Switch Security
  - Lesson 7: Maximizing the Benefits of Switching
  - Lesson 9: Troubleshooting Switch Issues
- Wireless Local Area Networks
  - Lesson 1: Exploring Wireless Networking
  - Lesson 2: Understanding WLAN Security
  - Lesson 3: Implementing a WLAN
- Exploring the Functions of Routing
  - Lesson 1: Exploring the Functions of Routing
  - Lesson 2: Understanding Binary Basics
  - Lesson 3: Constructing a Network Addressing Scheme
  - Lesson 4: Starting a Router
  - Lesson 5: Configuring a Router
  - Lesson 6: Exploring the Packet Delivery Process
  - Lesson 7: Understanding Router Security
  - Lesson 8: Using Cisco Router and Security Device Manager
  - Lesson 9: Using a Router as a DHCP Server
  - Lesson 10: Accessing Remote Devices
- Wide Area Networks
  - Lesson 1: Understanding WAN Technologies
  - Lesson 2: Enabling the Internet Connection
  - Lesson 3: Enabling Static Routing
  - Lesson 4: Configuring Serial Encapsulation

    - Lesson 5: Enabling Routing Information Protocol (RIP)
- Network Environment Management
    - Lesson 1: Discovering Neighbors on the Network
    - Lesson 2: Managing Router Startup and Configuration
    - Lesson 3: Managing Cisco Devices
- Medium-Sized Switched Network Construction
    - Lesson 1: Implementing VLANs and Trunks
    - Lesson 2: Improving Performance with Spanning Tree
    - Lesson 3: Routing Between VLANs
    - Lesson 4: Securing the Expanded Network
    - Lesson 5: Troubleshooting Switched Networks
- Medium-Sized Routed Network Construction
    - Lesson 1: Implementing VLSM
    - Lesson 2: Reviewing Routing Operations
- Single Area OSPF Implementation
    - Lesson 1: Implementing OSPF
    - Lesson 2: Troubleshooting OSPF
- EIGRP Implementation
    - Lesson 1: Troubleshooting EIGRP
    - Lesson 2: Implementing EIGRP
- Access Control Lists
    - Lesson 1: Introducing ACL Operation
    - Lesson 2: Configuring and Troubleshooting ACLs
- Address Space Management
    - Lesson 1: Scaling the Network with NAT and PAT
    - Lesson 2: Transitioning to IPv6
- LAN Extension into a WAN
    - Lesson 1: Introducing VPN Solutions
    - Lesson 2: Establishing a Point-to-Point WAN Connection with PPP
    - Lesson 3: Establishing a WAN Connection with Frame Relay
    - Lesson 4: Troubleshooting Frame Relay WANs

Hands-on Lab Exercises

ICND1

- 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
- Lab 2-1: Connecting to Remote Lab Equipment
- Lab 2-2: Switch Startup and Initial Config
- Lab 2-3: Enhancing Security of Switch Configuration
- Lab 2-4: Operating and Configuring a Cisco IOS Device
- 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: Initial Router Startup
- Lab 4-6: Initial Router Configuration
- Lab 4-7: Enhancing Security of Initial Router Configuration
- Lab 4-8: Using SDM to Configure DHCP Server Function
- Lab 4-9: Managing Remote Access Sessions
- Lab 5-1: Connecting to the Internet
- Lab 5-2: Connecting to the Main Office
- Lab 5-3: Enable Dynamic Routing to Main Office
- Lab 6-1: Using CDP
- Lab 6-2: Managing Router Startup Options
- Lab 6-3: Managing Cisco Devices

ICND2

- Lab 2-1: Configuring Expanded Switched Networks
- Lab 2-2: Troubleshooting Switched Networks
- Lab 4-1: Implementing OSPF
- Lab 4-2: Troubleshooting OSPF
- Lab 5-1: Implementing EIGRP
- Lab 5-2: Troubleshooting EIGRP
- Lab 6-1: Implementing and Troubleshooting ACLs
- Lab 7-1: Configuring NAT and PAT
- Lab 7-2: Implementing IPv6
- Lab 8-1: Establishing a Frame Relay WAN
- Lab 8-2: Troubleshooting Frame Relay WANs

Lab Topology