

Cisco CCNA Certification Training

100 hours

Course Overview/Description

The CCNA® certification indicates a professional's knowledge of and foundation in basic networking. This course incorporates content based on the objectives for the Cisco CCNA exam version 640-802 focusing on providing the skills and knowledge necessary to install, operate, and troubleshoot a small and medium branch office Enterprise network, including configuring several switches and routers, connecting to a WAN and implanting network security. A student should be able to complete configuration and implementation of a small branch office network under supervision. In order to prepare students to obtain the CCNA® certification credential, this program is comprised of content based on the stated objectives for this exam. Upon successful completion of this program, students should be prepared to sit for the Cisco® 640-802 certification exam.

No other self-paced program is as up-to-date or as complete as this package. This program contains online tutorials, practice questions, online labs (using real not simulated Cisco equipment) and a mentor to answer any questions you may have pertaining to curriculum and course completion.

The original program length is 6 months. If you need more time, you may request one free 6 month extension. Extension requests must be made before your initial 6 month access period has expired. If you require more time beyond 12 months, you may request one 6 month extension for a fee of \$165.

Course Objectives

Upon completion of this course, you should 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 routers startup and configuration.
- Review how to configure and troubleshoot a small network.
- Expand the switched network from a small 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 to configure, verify, and troubleshoot ACLs on a medium-sized network.
- Successfully complete the Cisco® 640-802 exam.

Course Outline

I. Building a Simple Network

- a. Exploring the Functions of Networking
- b. Securing the Network
- c. Understanding the Host-to-Host Communications Model
- d. Understanding the TCP/IP Internet Layer
- e. Understanding the TCP/IP Transport Layer
- f. Exploring the Packet Delivery Process
- g. Understanding the Ethernet
- h. Connecting to an Ethernet LAN

II. Ethernet LANs

- a. Understanding the Challenges of Shared LANs
- b. Solving Network Challenges with Switched LAN Technology
- c. Exploring the Packet Delivery Process
- d. Operating Cisco IOS® Software
- e. Starting a Switch
- f. Understanding Switch Security
- g. Maximizing the Benefits of Switching
- h. Troubleshooting Switch Issues

III. Wireless LANs

- a. Exploring Wireless Networking
- b. Understanding WLAN Security
- c. Implementing a WLAN

IV. LAN Connections

- a. Exploring the Functions of Routing
- b. Understanding Binary Basics
- c. Constructing a Network Addressing Scheme
- d. Starting a Route
- e. Configuring a Cisco® Router
- f. Exploring the Packet Delivery Process
- g. Understanding Cisco® Router Security
- h. Using Cisco® SDM
- i. Using a Cisco® Router as a DHCP Server
- j. Accessing Remote Devices

V. WAN Connections

- a. Under WAN Technologies
- b. Enabling the Internet Connection
- c. Enabling Static Routing
- d. Configuring Serial Encapsulation
- e. Enabling RIP

VI. Network Environment Management

- a. Discovering Neighbors on the Network
- b. Managing Router Startup and Configuration
- c. Managing Cisco® Devices

VII. Small Network Implementation

- a. Introducing the Review Lab

VIII. Medium-Sized Switched Network Construction

- a. Medium-Sized Switched Network Construction
- b. Implementing VLANs and Trunks
- c. Improving Performance with Spanning Tree
- d. Routing Between VLANs
- e. Securing the Expanded Network
- f. Troubleshooting Switched Networks

IX. Medium-Sized Routed Network Construction

- a. Reviewing Routing Operations
- b. Implementing VLSM

X. Single-Area OSPF Implementation

- a. Implementing OSPF
- b. Troubleshooting Switched Networks

XI. EIGRP Implementation

- a. Implementing EIGRP
- b. Troubleshooting EIGRP

XII. Access Control Lists

- a. Access Control Lists
- b. Introducing ACL Operation
- c. Configuring and Troubleshooting ACLs

XIII. Address Space Management

- a. Scaling the Network with NAT and PAT
- b. Transitioning to IPv6

XIV. LAN Extension into a WAN

- a. Introducing VPN Solutions
- b. Establishing a WAN Connection with Frame Relay
- c. Troubleshooting Frame Relay WANs

Prerequisites/Audience

Experience working in a network environment is recommended. The intended audience for this program is individuals interested in learning the skills necessary to become Cisco® CCNA® certified.



PC Requirements/Materials Included

Remote lab requirements:

- It is recommended the lab portion of this course is completed on a PC running Windows 2000 or higher.
- The PC's browser application must be either Internet Explorer version 5.0 or higher or Mozilla Firefox version 3.0 or higher
- The PC must be connected to a high speed internet connection
- The PC must have pop up blockers turned off
- The PC must not be located behind a caching proxy firewall
- The PC must have Java JRE version 1.6.0 or higher installed

*It is possible to run the remote labs with other operating systems (Linux or Apple), however only the designated Windows OS's with the required browser will be eligible for support.

Certification Requirements: The CCNA® certification indicates a foundation in and apprentice knowledge of networking for the small office/home office (SOHO) and small/medium business market. CCNA® certified professionals can install, configure, and operate LAN, WAN, and dial access services for small, simple networks, including but not limited to use of these protocols and technologies: IP, IPv6, Wireless, EIGRP, PPP, HDLC, NAT, Static Routing, Frame Relay, OSPF, VLANs, VTP, Ethernet, and Access Control Lists.

Materials Included

Each student will be provided with the *CCNA: Cisco Certified Network Associate Study Guide: Exam 640-802, 6th Edition*, by Todd Lammle.

Instructor Bio

Brock Stout is a graduate of the University of Dayton, and has honed his skills as an IT professional and instructor contracting with a multitude of fortune 500 companies over the last 15 years. Brock has an extensive background in CCNA curriculum development and is currently teaching at the collegiate level. Brock also owns an IT consulting firm providing a myriad of services including remote labs. Brock has designed and taught numerous networking classes for adult education programs public and private.