



Associated Certifications: CCNA
Length: 5 days - 8 am to 6 pm

Introduction: In this five-day instructor-led course you will learn to install, configure, operate, and verify a basic Ipv4 and Ipv6 network. This course focuses on configuring a LAN switch, configuring an IP router identifying basic security threats, understanding redundant topologies, troubleshooting common network issues, connecting to a wide-area network (WAN), configuring EIGRP and OSPF in both IPv4 and IPv6, understanding WAN technologies, and getting familiar with device management and Cisco licensing. Certification exam: 200-125 CCNAX

Prerequisites:

- A solid understanding of Ipv4 and Ipv6 based networks
- A basic knowledge of network subnetting and IP routing
- Knowledge of TCP/IP Networking

Objectives:

- Network fundamentals and build simple LANs
- Establish Internet connectivity
- Manage and secure network devices
- Operate a medium-sized LAN with multiple switches, supporting VLANs, trunking, and spanning tree
- Troubleshoot IP connectivity
- Describe how to configure and troubleshoot EIGRP in an IPv4 environment, and configure EIGRP for IPv6
- Configure and troubleshoot OSPF in an IPv4 environment and configure OSPF for IPv6
- Characteristics, functions, and components of a WAN
- How device management can be implemented using the traditional and intelligent ways.
- QoS, virtualization and cloud services, and network programmability related to WAN, access and core segments.

Course Outline

I. Building a Simple Network

- A. Exploring the Functions of Networking
- B. Understanding the Host-to-Host Communications Model
- C. Introducing LANs
- D. Operating Cisco IOS Software
- E. Starting a Switch
- F. Understanding Ethernet and Switch Operation
- G. Troubleshooting Common Switch Media Issues

II. Establishing Internet Connectivity

- A. Understanding the TCP/IP Internet Layer
- B. Understanding IP Addressing and Subnets
- C. Understanding the TCP/IP Transport Layer
- D. Exploring the Functions of Routing
- E. Configuring a Cisco Router
- F. Exploring the Packet Delivery Process
- G. Enabling Static Routing
- H. Managing Traffic Using ACLs
- I. Enabling Internet Connectivity



III. Implementing Scalable Medium-Sized Networks

- A. Implementing and Troubleshooting VLANs and Trunks
- B. Building Redundant Switched Topologies
- C. Improving Redundant Switched Topologies with Ether Channel
- D. Routing Between VLANs
- E. Using a Cisco IOS Network Device as a DHCP Server
- F. Understanding Layer 3 Redundancy
- G. Implementing RIPv2

IV. Introducing IPv6

- A. Introducing Basic IPv6
- B. Understanding IPv6
- C. Configuring IPv6 Routing

V. Troubleshooting Basic Connectivity

- A. Troubleshooting IPv4 Network Connectivity
- B. Troubleshooting IPv6 Network Connectivity

VI. Implementing Network Device Security

- A. Securing Administrative Access
- B. Implementing Device Hardening
- C. Implementing Traffic Filtering with ACLs

VII. Implementing an EIGRP-Based Solution

- A. Implementing EIGRP
- B. Implementing EIGRP for IPv6

VIII. Implementing a Scalable, OSPF-Based Solution

- A. Understanding OSPF
- B. Multi area OSPF IPv4 Implementation
- C. Implementing OSPFv3 for IPv6
- D. Troubleshooting Multi area OSPF

IX. Implementing a Wide-Area Networks

- A. Understanding WAN Technologies
- B. Understanding Point-to-Point Protocols
- C. Configuring GRE Tunnels
- D. Configuring Single-Homed EBGP

X. Network Device Management

- A. Implementing Basic Network Device Management
- B. Evolution of Intelligent Networks
- C. Introducing QoS
- D. Managing Cisco Devices
- E. Licensing