

Course Description: Interconnecting Cisco Networking Devices: Accelerated (CCNAX) v1.0 is an extended hours instructor-led boot camp that provides students with the knowledge and skills necessary to install, operate, and troubleshoot a small to medium-sized network, including connecting to a WAN and implementing network security.

This course is the equivalent of Interconnecting Cisco Network Devices Part 1 v1.0 and Interconnecting Cisco Network Devices Part 2 v1.0 together.

The ideal candidate would be someone who has worked in a data network environment (PC support/helpdesk or network operations/monitoring), and has had hands-on experience, though no formal training, with Cisco IOS devices. This boot camp will serve to review and expand on what the candidate already knows and add to it, the detailed configuration and implementation of Cisco IOS devices.

Prospective CCNAX v1.0 students should prepare themselves for course days consisting of at least 10 hours and as long as 12 hours. Homework will be assigned and reviewed daily.

Those new to networking and to Cisco IOS should consider taking the ICND1 and ICND2 classes instead of CCNAX v1.0.

Who Should Attend: The primary audience for this course includes Network Administrators, Network Engineers, Network Managers, and Systems Engineers. The secondary audience for this course includes Network Designers and Project Managers.

Prerequisites: Students should have basic computer literacy, basic Microsoft Windows navigation skills, and basic Internet usage skills.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Describe how networks function, identifying major components, function of network components, and the OSI reference model
- Describe issues related to increasing traffic on an Ethernet LAN and expand the switched network from a small LAN to a medium-sized LAN with multiple switches supporting VLANs, trunking, and spanning tree
- Describe the reasons for extending the reach of a LAN and the methods that can be used, with a focus on RF wireless access
- Describe the reasons for connecting networks and connecting multiple IP subnets with routers
- Configure and verify a Cisco router for WAN connections with HDLC and PPP encapsulation, PAT, static routing, and describe the components that make up a VPN solution
- Use the command-line interface to discover neighbors on the network and manage the router startup and configuration
- Describe routing concepts as they apply to a medium-sized network, discuss routing with dynamic routing with distance vector and link-state routing protocols, and configure RIP
- Configure, verify, and troubleshoot single-area OSPF
- Configure, verify, and troubleshoot EIGRP

Course Outline:

Module 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

Module 2: Switching

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
Securing the Switch
Maximizing the Benefits of Switching
Implementing VLANs and Trunks
Improving Performance with Spanning Tree
Routing Between VLANs
Troubleshooting Switched Networks

Module 3: Wireless LANs

Exploring Wireless Networking
Understanding WLAN Security
Implementing a WLAN

Module 4: LAN Connections

Understanding Binary Basics
Constructing a Network Addressing Scheme

Exploring the Packet Delivery Process
Starting a Cisco Router
Configuring a Cisco Router
Understanding Cisco Router Security
Using Cisco SDM
Using a Cisco Router as a DHCP Server

Module 5: WAN Connections

Understanding WAN Technologies
Enabling the Internet Connection
Introducing VPN Solutions
Configuring Serial Encapsulation
Enabling Static Routing

Module 6: Network Environment Management

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

Module 7: Medium-Sized Routed Network Construction

Exploring the Functions of Routing
Enabling RIP
Implementing VLSM

Module 8: Single-Area OSPF Implementation

Implementing OSPF
Troubleshooting OSPF

Module 9: EIGRP Implementation

Implementing EIGRP
Troubleshooting EIGRP

Module 10: Access Control Lists

Introducing ACL Operation
Configuring and Troubleshooting ACLs

Module 11: Address Space Management

Scaling the Network with NAT and PAT
Transitioning to IPv6

Module 12: LAN Extension into a WAN with Frame Relay

Establishing a WAN Connection with Frame Relay
Troubleshooting Frame Relay WANs