

CCNA Routing and Switching Boot Camp

[Contact Us](#)**CCNAX****Length: 5 days****Format: Lecture/Lab**

Why Firefly

Firefly is trusted by end customers, technology vendors, and their channel partners to deliver innovative and immersive education services. Firefly is proud to be Cisco's current Global Learning Partner of the year and has year upon year won many other industry accolades, including being named Cisco's first ever Business Acceleration Learning Partner.

Course Description

The CCNA Routing and Switching Boot Camp is a composite course derived from ICND1 and ICND2 content merged into a single accelerated course. Overlapping content is eliminated and some content is rearranged for the purpose of course flow.

In this course, you will learn how to install, operate, configure, and troubleshoot basic IPv4 and IPv6 networks, including configuring a LAN switch, configuring an IP router, identifying basic security threats, understanding redundant topologies, troubleshooting common network issues, connecting to a WAN, configuring EIGRP and OSPF in both IPv4 and IPv6, understanding wide-area network technologies, and getting familiar with device management and Cisco licensing.

Key additions to this latest revision include an understanding of Quality of Service (QoS) elements and their applicability, how virtualized and cloud services will interact and impact enterprise networks, and an overview of network programmability with the related controller types and tools that are available to support software defined network architectures.

You will learn about the interactions and network functions of firewalls, wireless controllers and access points, along with additional focus on IPv6 and basic network security.

A full suite of labs have been developed using the virtual IOS environment with flexible topologies that reinforce concepts with hands-on, guided discovery and Labs that align to each lesson module.

Learning Objectives

- Prepare for the CCNA Routing and Switching certification
- Operate a medium-sized LAN with multiple switches, supporting VLANs, trunking, and spanning tree
- Interactions and network functions of firewalls, wireless controllers and access points
- Develop core routing and switching networking skills to configure, monitor, and troubleshoot Cisco networks for increased effectiveness and optimal performance within SMB and Enterprise settings
- 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
- Support Cisco network deployments and maintain these services in an on-going operational network.

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Course Outline

1. Building a Simple Network

- Exploring the Functions of Networking
- Understanding the Host-to-Host Communications Model
- Introducing LANs
- Operating Cisco IOS Software
- Starting a Switch
- Understanding Ethernet and Switch Operation
- Troubleshooting Common Switch Media Issues

2. Establishing Internet Connectivity

- Understanding the TCP/IP Internet Layer
- Understanding IP Addressing and Subnets
- Understanding the TCP/IP Transport Layer
- Exploring the Functions of Routing
- Configuring a Cisco Router
- Exploring the Packet Delivery Process
- Enabling Static Routing
- Learning Basics of ACL
- Enabling Internet Connectivity

3. Summary Challenge

- Establish Internet Connectivity
- Troubleshoot Internet Connectivity

4. Implementing Scalable Medium-Sized Networks

- Implementing and Troubleshooting VLANs and Trunks
- Building Redundant Switched Topologies
- Improving Redundant Switched Topologies with Ether-Channel
- Routing Between VLANs
- Using a Cisco IOS Network Device as a DHCP Server
- Understanding Layer 3 Redundancy
- Implementing RIPv2

5. Introducing IPv6

- Introducing Basic IPv6
- Understanding IPv6 Operation
- Configuring IPv6 Static Routes

6. Troubleshooting Basic Connectivity

- Troubleshooting IPv4 Network Connectivity
- Troubleshooting IPv6 Network Connectivity

7. Implementing Network Device Security

- Securing Administrative Access
- Implementing Device Hardening
- Implementing Advance Security

8. Implementing an EIGRP-Based Solution

- Implementing EIGRP
- Implementing EIGRP for IPv6

9. Summary Challenge

- Troubleshooting a Medium-Sized Network
- Troubleshooting Scalable Medium-Sized Network

10. Implementing a Scalable OSPF-Based Solution

- Understanding OSPF
- Multiarea OSPF IPv4 Implementation
- Implementing OSPFv3 for IPv6
- Troubleshooting Multiarea OSPF

11. Implementing Wide-Area Networks

- Understanding WAN Technologies
- Understanding Point-to-Point Protocols
- Configuring GRE Tunnels
- Configuring Single-Homed EBGp

12. Network Device Management

- Implementing Basic Network Device Management
- Evolution of Intelligent Networks
- Introducing QoS
- Managing Cisco Devices
- Licensing

13. Summary Challenge

- Troubleshooting Scalable Multiarea Network
- Implementing and Troubleshooting Scalable Multiarea Network

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Discovery Labs

- Lab 1: Get Started with Cisco CLI
- Lab 2: Perform Basic Switch Configuration
- Lab 3: Observe How a Switch Operates
- Lab 4: Troubleshoot Switch Media and Port Issues
- Lab 5: Inspect TCP/IP Applications
- Lab 6: Start with Cisco Router Configuration
- Lab 7: Configure Cisco Discovery Protocol
- Lab 8: Configure Default Gateway
- Lab 9: Exploration of Packet Forwarding
- Lab 10: Configure and Verify Static Routes
- Lab 11: Configure and Verify ACLs
- Lab 12: Configure a Provider-Assigned IP Address
- Lab 13: Configure Static NAT
- Lab 14: Configure Dynamic NAT and PAT
- Lab 15: Troubleshoot NAT
- Lab 16: Configure VLAN and Trunk
- Lab 17: Troubleshoot VLANs and Trunks
- Lab 18: Configure Root Bridge and Analyze STP Topology
- Lab 19: Troubleshoot STP Issues
- Lab 20: Configure and Verify EtherChannel
- Lab 21: Configure a Router on a Stick
- Lab 22: Configure a Cisco Router as a DHCP Server
- Lab 23: Troubleshoot DHCP Issues
- Lab 24: Configure and Verify HSRP
- Lab 25: Troubleshoot HSRP
- Lab 26: Configure and Verify RIPv2
- Lab 27: Troubleshoot RIPv2
- Lab 28: Configure Basic IPv6 Connectivity
- Lab 29: Configure IPv6 Static Routes
- Lab 30: Use Troubleshooting Tools
- Lab 31: Configure and Verify IPv4 Extended Access Lists
- Lab 32: Troubleshoot IPv4 Network Connectivity
- Lab 33: Configure and Verify IPv6 Extended Access Lists
- Lab 34: Troubleshoot IPv6 Network Connectivity
- Lab 35: Enhance Security of Initial Configuration
- Lab 36: Limit Remote Access Connectivity
- Lab 37: Configure and Verify Port Security
- Lab 38: Configure and Verify NTP
- Lab 39: Configure External Authentication Using RADIUS and TACACS+
- Lab 40: Configure and Verify EIGRP
- Lab 41: Configure and Verify EIGRP for IPv6
- Lab 42: Troubleshoot EIGRP
- Lab 43: Configure and Verify Single-Area OSPF
- Lab 44: Configure and Verify Multiarea OSPF
- Lab 45: Configure and Verify OSPFv3
- Lab 46: Troubleshoot Multiarea OSPF
- Lab 47: Configure Serial Interface and PPP
- Lab 48: Configure and Verify MLP
- Lab 49: Configure and Verify PPPoE Client
- Lab 50: Configure and Verify GRE Tunnel
- Lab 51: Configure and Verify Single Homed EBGP

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Challenge Labs

- Lab 1: Summary Lab: 1
- Lab 2: Summary Lab: 2
- Lab 3: Implementing RIPv2
- Lab 4: Implement IPv6 Static Routing
- Lab 5: Troubleshooting IPv4 Connectivity
- Lab 6: Troubleshooting IPv6 Connectivity
- Lab 7: Securing Device Administrative Access
- Lab 8: Implementing Device Hardening
- Lab 9: Troubleshooting EIGRP
- Lab 10: Summary Lab: 3
- Lab 11: Summary Lab: 4
- Lab 12: Troubleshooting OSPF