Interconnecting Cisco Networking Devices, Part 2 (ICND2) v3.0

What you'll learn in this course

The **Interconnecting Cisco Networking Devices, Part 2 (ICND2)** v3.0 course helps you prepare for the Cisco CCNA® Routing and Switching certification and for associate-level routing and switching network engineering roles. This course gives you the knowledge and skills you need to install, configure, operate, and troubleshoot a small enterprise network. In addition this latest revision provides an understanding of Quality-of-Service (QoS) elements and their applicability and of how virtualized and cloud services will interact with and impact enterprise networks, along with an overview of network programmability and the related controller types and tools that are available to support Software-Defined Network (SDN) architectures.

In this course, you'll use a full suite of labs in the virtual Cisco IOS® Software environment, with flexible topologies to help reinforce your knowledge and hands-on exercises that align to each lesson module.

This course is the second of two courses in a series that can help you prepare for the CCNA Routing and Switching certification. The first course in the series is **Interconnecting Cisco Networking Devices, Part 1** (ICND1).

Course duration

- Instructor-led training: 5 days with hands-on lab practice
- Virtual instructor-led training: 5 days of web-based classes with hands-on lab practice
- E-learning: Equivalent of 5 days of instruction with hands-on lab practice

How you'll benefit

This course will help you:

- Learn to install, configure, operate, and troubleshoot a small enterprise network
- Understand QoS elements and their applicability
- Prepare to pass the 200-105 ICND2 exam, which completes the second half of the requirements for the CCNA Routing and Switching certification
- Prepare to pass the combined 200-125 CCNA exam, which completes all the requirements for the CCNA Routing and Switching certification. To help you prepare fully for the 200-125 CCNA exam, we recommend that you take this course after you take the **Interconnecting Cisco Networking Devices, Part 1** (ICND1) course.

Who should enroll

- Network administrators
- Network support engineers
- Network engineer associates
- Network specialists
- Network analysts

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How to enroll

- For instructor-led training, visit the Cisco® Learning Locator.
- For private group training, visit Cisco Private Group Training.
- For self-paced e-learning, visit the Cisco Learning Network Store.
- For e-learning volume discounts, email ask_cpll@cisco.com.
- For digital library access, visit Cisco Platinum Learning Library.

Technology areas

- Routing and switching
- Network fundamentals

Course details

Objectives

After taking this course, you should be able to:

- Operate a medium-sized LAN with multiple switches, supporting VLANs, trunking, and spanning tree
- Troubleshoot IP connectivity
- Describe how to configure and troubleshoot Enhanced Interior Gateway Routing Protocol (EIGRP) in an IPv4 environment, and configure EIGRP for IPv6
- Configure and troubleshoot Open Shortest Path First (OSPF) in an IPv4 environment and configure OSPF for IPv6
- Define the characteristics, functions, and components of a WAN
- Describe how device management can be implemented

Prerequisites

We recommend that you have the following skills and knowledge before taking this course:

- Understanding of network fundamentals
- Ability to implement LANs
- Proficiency implementing Internet connectivity
- Basic network management skills
- Basic network security skills
- Ability to implement basic IPv6 connectivity

Outline

- Implementation of Scalable Medium-Sized Networks
  - Troubleshooting VLAN Connectivity
  - Building Redundant Switched Topologies
  - Improving Redundant Switched Topologies with EtherChannel
  - Understanding Layer 3 Redundancy
- Troubleshoot Basic Connectivity
  - Troubleshooting IPv4 Network Connectivity
  - Troubleshooting IPv6 Network Connectivity

- Implementation of an EIGRP-Based Solution
  - Implementing EIGRP
  - Implementing EIGRP for IPv6
  - Troubleshooting EIGRP
- Summary Challenge 1
  - Implementing and Troubleshooting Scalable Medium-Sized Networks, Part 1
  - Implementing and Troubleshooting Scalable Medium-Sized Networks, Part 2
- Implementation of a Scalable OSPF-Based Solution
  - Understanding OSPF
  - Implementing Multiarea OSPF IPv4
  - Implementing OSPFv3 for IPv6
  - Troubleshooting Multiarea OSPF
- Wide-Area Networks
  - Understanding WAN Technologies
  - Understanding Point-to-Point Protocols
  - Configuring GRE Tunnels
  - Configuring Single-Homed EBGP
- Network Device Management
  - Implementing Basic Network Device Management and Security
  - Learning About the Evolution of Intelligent Networks
  - Introducing QoS
- Summary Challenge 2
  - Implementing and Troubleshooting a Scalable Multiarea Network, Part 1
  - Implementing and Troubleshooting a Scalable Multiarea Network, Part 2

Lab outline

- Troubleshoot VLAN and Trunk Issues
- Configure Root Bridge and Analyze STP Topology
- Configure and Verify EtherChannel
- Configure and Verify HSRP
- Troubleshoot HSRP
- Use Troubleshooting Tools
- Configure SPAN
- Configure and Verify IPv4 Extended Access Lists
- Troubleshoot IPv4 Network Connectivity
- Configure and Verify IPv6 Extended Access Lists
- Troubleshoot IPv6 Network Connectivity
- Configure and Verify EIGRP
- Configure and Verify EIGRP for IPv6
- Troubleshoot EIGRP Issues

- Configure and Verify Single-Area OSPF
- Configure and Verify Multiarea OSPF
- Configure and Verify OSPFv3
- Troubleshoot Multiarea OSPF
- Configure Serial Interface and PPP
- Configure and Verify MLP
- Configure and Verify a PPPoE Client
- Configure and Verify a GRE Tunnel
- Configure and Verify Single-Homed EBGP
- Configure External Authentication Using RADIUS and TACACS+
- Configure SNMP

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