

5031- CCNA Boot Camp V 2.0

1. Building a Simple Network (ICND1)

- Exploring the Functions of Networking
- Securing the Network
- Host-to-Host Communication Model
- TCP/IP's Internet Layer
- TCP/IP's Transport Layer
- Packet Delivery Process
- Understanding Ethernet
- Connecting to an Ethernet LAN

2. Ethernet LANs (ICND1)

- Challenges of Shared LANs
- Solving Network Challenges with Switched LAN Technology
- Packet Delivery Process
- Operating Cisco IOS Software
- Starting the Switch
- Understanding Switch Security
- Maximizing the Benefits of Switching
- Troubleshooting Switch Issues

3. Wireless Local Area Networks (WLANS) (ICND1)

- Exploring Wireless Networking
- Understanding WLAN Security
- Implementing a WLAN

4. LAN Connections (ICND1)

- Functions of Routing
- Understanding Binary Basics
- Constructing a Network Addressing Scheme
- Starting a Router
- Configuring a Router
- Packet Delivery Process
- Understanding Router Security
- Using Cisco Router and Security Device Manager
- Using a Router as a DHCP Server
- Accessing Remote Devices

5. Network Environment Management (ICND1)

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

6. Small Network Implementation (ICND2)

- Review Lab: Review of a Small Network Environment

7. Medium-Sized Switched Network Construction (ICND2)

- Implementing VLANs and Trunks
- Improving Performance with Spanning Tree
- Routing Between VLANs
- Securing the Expanded Network
- Troubleshooting Switched Networks

8. Wide Area Networks (WANs) (ICND1)

- WAN Technologies
- Enabling the Internet Connection
- Enabling Static Routing
- Configuring Serial Encapsulation
- Enabling Routing Information Protocol (RIP)

9. LAN Extension into a WAN (ICND2)

- Establishing a Point-to-Point WAN Connection with PPP
- Establishing a WAN Connection with Frame Relay
- Troubleshooting Frame Relay WANs
- Introducing VPN Solutions

10. Medium-Sized Routed Network Construction (ICND2)

- Reviewing Routing Operations
- Implementing VLSM

11. Single Area OSPF Implementation (ICND2)

- Implementing OSPF
- Troubleshooting OSPF

12. EIGRP Implementation (ICND2)

- Implementing EIGRP
- Troubleshooting EIGRP

13. Access Control Lists (ACLs) (ICND2)

- Introducing ACL Operation
- Configuring and Troubleshooting ACLs

14. Address Space Management (ICND2)

- Scaling the Network with NAT and PAT
- Transitioning to IPv6

Labs

Lab 1: Using Host-Based Tools (ICND1)

Utilize Windows applications and commands to investigate the IP configuration of your PC and the local network.

Lab 2: Observing the TCP Three-Way Handshake (ICND1)

Use a packet sniffer software application to observe the TCP initial Three-Way Handshake.

Lab 3: Observing Extended PC Network Information (ICND1)

Use PC Tools such as ping, traceroute, and ipconfig to gather network-related information.

Lab 4: Connecting to Remote Lab Equipment (ICND1)

Begin preparations for the subsequent labs. Test and practice the connectivity for your assigned workgroup equipment that will be used for the remaining lab practice exercises.

Lab 5: Switch Startup and Initial Configuration (ICND1)

Connect to your workgroup switch and complete the initial configuration.

Lab 6: Configuring Expanded Switch Networks (ICND2)

Expand the switch configuration to meet specific VLAN and network requirements.

Lab 7: Troubleshooting Switched Networks (ICND2)

Utilize troubleshooting methods discussed to gather symptoms, isolate problems, and correct the problems commonly found in a switched network.

Lab 8: Enhancing Security of Switch Configuration (ICND1)

Increase the security of the initial switch configuration.

Lab 9: Using CDP (ICND1)

Obtain information about your directly connected Cisco device using Cisco Discovery Protocol (CDP) and disable CDP from running on selected interfaces.

Lab 10: Managing Router Startup Operations (ICND1)

Make changes to control the router startup behavior, such as boot commands or configuration register settings.

Lab 11: Managing Cisco Devices (ICND1)

Understand how to use the IOS Copy and Debug commands.

Lab 12: Operating and Configuring a Cisco IOS Device (ICND1)

Practice and demonstrate the usage of the Command Line Interface (CLI) features.

Lab 13: Converting Decimal to Binary and Binary to Decimal (ICND1)

Test your ability to convert numbers from binary to decimal and decimal to binary.

Lab 14: Classifying Network Addressing (ICND1)

Classify network addresses and convert addresses from decimal to binary format or binary to decimal format.

Lab 15: Computing Usable Subnetworks and Hosts (ICND1)

Determine how to create subnets from a given IP address, how many hosts per subnet, and how many subnets per IP address.

Lab 16: Calculating Subnet Masks (ICND1)

Determine the subnet mask used based on specific criteria provided. Determine the binary and decimal format of the mask, subnet address, number of host addresses, and the Directed Broadcast address.

Lab 17: Initial Router Startup (ICND1)

Connect to your workgroup router and examine the startup process.

Lab 18: Initial Router Configuration (ICND1)

Connect to your workgroup router and complete the initial configuration.

Lab 19: Enhancing Security of Initial Router Configuration (ICND1)

Increase the security of the initial router configuration.

Lab 20: Using Security Device Manager (SDM) to Configure DHCP Server Functions (ICND1)

Use the Cisco SDM to configure DHCP server functionality on your workgroup router.

Lab 21: Managing Remote Access Sessions (ICND1)

Utilize Telnet and SSH to create connections to your workgroup devices.

Lab 22: Connecting to the Internet (ICND1)

Configure the WAN Ethernet Interface to use a DHCP-obtained address and perform Port Address Translation to the inside network.

Lab 23: Connecting to the Main Office (ICND1)

Configure your workgroup router to connect to another device via a serial interface using PPP and provide a static route to that device.

Lab 24: Establishing a Frame Relay WAN (ICND2)

Using the serial interface, create a Frame Relay connection to the Core.

Lab 25: Troubleshooting Frame Relay WANs (ICND2)

Utilize troubleshooting methods discussed to gather symptoms, isolate problems, and correct the problems commonly found in a Frame Relay network.

Lab 26: Enable Dynamic Routing to Main Office (ICND1)

Enable the workgroup router to use the dynamic routing protocol RIP.

Lab 27: Implementing OSPF (ICND2)

Configure your workgroup routers to use the dynamic routing protocol OSPF.

Lab 28: Troubleshooting OSPF (ICND2)

Utilize troubleshooting methods discussed to gather symptoms, isolate problems, and correct the problems commonly found when running the OSPF routing protocol.

Lab 29: Implementing EIGRP (ICND2)

Configure you workgroup routers to migrate from OSPF to EIGRP.

Lab 30: Troubleshooting EIGRP (ICND2)

Utilize troubleshooting methods discussed to gather symptoms, isolate problems, and correct the problems commonly found when running the EIGRP routing protocol.

Lab 31: Implementing and Troubleshooting Access Control Lists (ACLs) (ICND2)

Create and troubleshoot IP ACLs.

Lab 32: Configuring NAT and Port Address Translation (PAT) (ICND2)

Configure your workgroup router to use PAT.

Lab 33: Implementing IPv6 (ICND2)

Allocate and configure IPv6 addresses on your workgroup routers.

Lab 34: Implementing a Small Network (Review Lab) (ICND2)

Using the skills that you acquired or learned in the course, configure your workgroup switch and router with a basic configuration based on the network information provided.

Lab 35: Confirming the Re-Configuration of the Branch Network (ICND1)

Using all the skills that you have learned, you will assume the management of an incorrectly pre-configured network. You will need to reconfigure or correct the network and then test the new network configuration for accuracy.