FIREFLY

MODULAR
10 sessions

CCNA -IMPLEMENTING AND ADMINISTERING CISCO SOLUTIONS

OVERVIEW

The Implementing and Administering Cisco Solutions (CCNA) v2.1 course gives you a broad range of fundamental knowledge for all IT careers.

Through a combination of hands-on labs and self-study, you will learn how to install, operate, configure, and verify basic IPv4 and IPv6 networks. The course covers configuring network components such as switches, routers, and wireless LAN controllers; managing network devices; and identifying basic security threats. The course also gives you a foundation in network programmability, automation, and software-defined networking.

This course helps you prepare to take the 200-301 Cisco Certified Network Associate (CCNA) exam. By passing this one exam, you earn the CCNA certification.

PREREQUISITES

Before taking this course, you should have:

- Basic computer literacy
- Basic PC operating system navigation skills
- Basic Internet usage skills
- Basic IP address knowledge

There are no formal prerequisites for CCNA certification, but you should make sure to have a good understanding of the exam topics.

LEARNING OBJECTIVES

- Identify the components of a computer network and describe their basic characteristics
- Understand the model of host-to-host communication
- Describe the features and functions of the Cisco IOS Software
- Describe LANs and the role of switches within LANs
- Describe Ethernet as the network access layer of transmission control protocol and the internet protocol (TCP/IP) and describe the operation of switches
- Install a switch and perform the initial configuration
- Describe the TCP/IP internet layer, IPv4, its addressing scheme, and subnetting
- Describe the TCP/IP transport layer and application layer
- Explore the functions of routing
- Implement basic configuration on a Cisco router
- Explain host-to-host communications across switches and routers
- Identify and resolve common switched network issues and common problems associated with IPv4 addressing
- Describe IPv6 main features and addresses, and configure and verify basic IPv6 connectivity
- Describe the operation, benefits, and limitations of static routing
- Describe, implement, and verify virtual local area networks (VLANs) and trunks
- Describe the application and configuration of inter-VLAN routing
- Explain the basics of dynamic routing protocols and describe components and terms of open shortest path first (OSPF)
- Explain how Spanning Tree Protocol (STP) and Rapid Spanning Tree Protocol (RSTP) work
- Configure link aggregation using EtherChannel
- Describe the purpose of Layer 3 redundancy protocols
- Describe basic wide-area network (WAN) and virtual private network (VPN) concepts
- Describe the operation of access control lists (ACLs) and their applications in the network
- Configure internet access using dynamic host configuration protocol (DHCP) clients and explain and configure network address translation (NAT) on Cisco routers
- Describe the basic quality of service (QoS) concepts
- Describe the concepts of wireless networks, which types of wireless networks can be built and how to use WLC
- Describe network and device architectures and introduce virtualization
- Explain software-defined networks
- Configure basic Cisco IOS system monitoring tools
- Describe the management of Cisco devices
- Describe the current security threat landscape
- Describe threat defense technologies
- Implement a basic security configuration of the device management plane
- Implement basic steps to harden network devices
- Discuss the need of network programmability in Enterprise networks, common programmability protocols, and configuration management tools
- Describe AI and ML in network operations

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Session 1:

Network Fundamentals

This session introduces fundamental networking concepts, including the OSI (Open Systems Interconnection) model, TCP/IP protocols, IP addressing, subnetting, network topologies, and basic network troubleshooting.

Topics Covered:

- Exploring the Functions of Networking
- Introducing the Host-To-Host Communications Model
- Operating Cisco IOS Software
- Get Started with Cisco CLI
- Introducing LANS

Session 2:

Switches and TCP/IP

In this session, we will delve into the fundamental concepts and practical aspects of switches and their relationship with the TCP/IP protocol suite

FASTLab 1:

- Implement the Initial Switch Configuration

Topics Covered:

- Exploring the TCP/IP Link Layer
- Observe How a Switch Operates
- Starting a Switch
- Perform Basic Switch Configuration
- Introducting the TCP/IP Internet Layer, IPV4 Addressing, and Subnets

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Session 3:

Router Fundamentals

This session gives a comprehensive overview of TCP/IP networking fundamentals and practical skills in configuring and verifying networking devices.

FASTLab 2:

- Implement an Initial Router Configuration

Topics covered:

- Introducing the TCP/IP Internet Layer, IPV4 Addressing, and Subnets
- Explaining the TCP/IP Transport Layer and Application Layer
- Inspect TCP/IP Applications
- Exploring the Functions of Routing
- Configuring a Cisco Router
- Configure an Interface on a Cisco Router
- Configure and Verify Layer 2 Discovery Protocols

Session 4:

Packets and Ports

This session explores packet delivery and transport across networks, and how to manage through configuration and troubleshooting.

Topics covered:

- Exploring the Packet Delivery Process
- Configure Default Gateway
- Explore Packet Forwarding
- Troubleshooting a Simple Network
- Troubleshoot Switch Media and Port Issues
- Troubleshoot Port Duplex Issues

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Session 5:

IPv6 and Static Routes
This session explores practical skills in IPv6 and IPv4 implementation and static routing configuration.

FASTLab 3:

- Implement IPv4 Static Routing

FASTLab 4:

- Implement IPv6 Static Routing

Topics covered:

- Introducing Basic IPv6
- Configure Basic IPv6 Connectivity
- Configuring Static Routing
- Configure and Verify Ipv4 Static Routes
- Configure IPv6 Static Routers

Session 6:

VLANs and Dynamic Routing.
In this session we discover what VLANs are and how they are used within the enterprise. We will also discover how we can route between them. We will continue the discussion on routing by introducing dynamic routing protocols. We will explore single area OSPF and learn how to configure it in our environment.

FASTLab 5:

- Troubleshoot VLANs and Trunk

FASTLab 6:

- Implement Multiple VLANs and Basic Routing Between the VLANs

Topics covered:

- Implementing VLANs and Trunks
- Configure VLANs and Trunks
- Routing Between VLANs
- Configure Inter-VLAN Routing
- Introducing OSPF
- Configure and Verify Single-Area OSPF

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Session 7:

Network Redundancy and Security.
This session will look at how we can add redundancy to our networks using Spanning Tree and EtherChannel. We will also explore the concept of ACLs and the importance of network security.

FASTLab 7:

- Improve Redundant Switched Topologies with EtherChannel

FASTLab 8:

- Implement Numbered and Named IPv4 ACLs

Topics covered:

- Building Redundant Switched Topologies
- Improving Redundant Switched Topologies with EtherChannel
- Configure and Verify EtherChannel
- Explaining the Basics of ACL
- Configure and Verify IPv4 ACLs

Session 8:

Address Translation, Introduction to AI and ML, and System monitoring
In this session we introduce the networking concepts of NAT and PAT, and the crucial role they play in our network. We will also explore the concepts of AI and Machine Learning and their plase in modern network operations.

FASTLab 9:

- Implement PAT

FASTLab 10:

- Configure System Message Loggins

Topics covered:

- Enabling Internet Connectivity
- Configure a Provider-Assigned IPv4 Address
- Configure Static NAT
- Configure Dynamic NAT and PAT
- Introducing AI and ML in Network Operations
- Introducing System Monitoring
- Configure and Verify NTP

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Session 9:

Management and Security

This session examines how Cisco devices are managed, how access is secured, and how to harden network devices against attack.

FASTLab 11:

- Secure Device Administrative Access

FASTLab 12:

- Implement Device Hardening

Topics covered:

- Manage Cisco Devices
- Create the Cisco IOS Image Backup
- Upgrade Cisco IOS Image
- Securing Administrative Access
- Secure Console and Remote Access
- Enable and Limit Remote Access Connectivity
- Implementing Device Hardening
- Configure and Verify Port Security

Session 10:

Wrap Up and Q&A

This session is designed as a bonus session to help guide participants in preparation for the certification exam and answer any outstanding questions they may have.

Topics covered:

- Q&A
- Self-study topics for certification success

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MODULAR

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WHY CCNA MODULAR?

The CCNA Modular takes the Cisco authorized certified 5-day class and breaks it down into a series of expert-led 4-hour sessions with hands-on lab practice. The bite-sized approach breaks down the traditional CCNA training content into manageable, easily digestible portions that can be completed within 10 weeks. This approach allows learners to focus on specific topics or tasks and promotes regular, consistent learning without overwhelming participants with large amounts of information at once.

WHO SHOULD ATTEND

Firefly's CCNA Modular is a structured live training program that delivering bite-sized portions over a series of 10 weeks so attendees can better absorb and apply the knowledge, while accommodating their busy schedules and minimizing the risk of information overload.

This series is targeted towards beginners to networking through to individuals preparing for CCNA (Cisco Certified Network Associate).

The job roles best suited to this course are:

- Entry-level network engineer
- Network administrator
- Network support technician
- Help desk technician

FEATURES

- Live Instructor-led virtual training with hands-on lab practice
- 10 consecutive sessions
- Runs weekly
- First class instructors - Cisco expert who will guide you in preparation for the certification

BENEFITS

- Easy to consume 4-hour chunks allow the student to digest contents and ask questions each week
- Modular approach allows students to consume the topics more relevant to their job function and deployment
- Allows for better retention and understanding of the course content. You'll have ample time to digest the information, ask questions, and reinforce your knowledge.
- The extended duration of the training enables practical application and reinforcement of the learned concepts. You'll have the opportunity to practice your skills, work on real-world scenarios, and develop the confidence to tackle networking challenges.
- Access to single point of contact for support on all questions throughout the series
- Delivered by an expert on the topic
- After attending this class, you will have the required knowledge to take the CCNA certification exam
- Stay motivated by learning with a cohort and a dedicated instructor guiding you all the way

Experience the ultimate flexibility in your Cisco Authorized CCNA training with Firefly. We offer Live Instructor-Led training options tailored to your schedule and learning style. Whether you prefer an intensive 5-day full-time course or need a more flexible approach, with our Modular delivery, we've got you covered.

Click on the link below to sign up for the next CCNA Modular cohort

SIGN UP HERE