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Learning Style: On Demand

Technology: Cisco

Difficulty: Beginner

Course Duration: 40 Hours

Implementing and Administering Cisco Solutions (CCNA) v2.1) - On Demand

Course Information

About this course:

The Implementing and Administering Cisco Solutions (CCNA) v1.0 course will help

you learn how to install, operate, configure, and verify basic IPv4 and IPv6 networks. The course gives you a foundation in network programmability, automation, and software-defined networking, while also covering configuring network components such as switches, routers, and wireless LAN controllers; managing network devices; and identifying basic security threats.

After completing this course, you will be well-prepared to take the 200-301 Cisco® Certified Network Associate (CCNA®) exam, passing which you will earn a CCNA certification.

Course Objective:

After taking this course, you should be able to:

- Implement basic configurations on a Cisco router
- Identify the components of a computer network and explain their basic characteristics
- Identify and resolve common switching and routing networking issue
- Describe the features and functions of the Cisco IOS Software
- Describe network and device architectures and explain virtualization
- Describe the smart network management solutions like Cisco DNA Center, SD-Access and SD-WAN
- Explain IPv4 and IPv6 addressing scheme
- Outline threat defense technologies
- And many, many more aspects of a basic IPv4 and IPv6 network

Audience:

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

Prerequisite:

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 having a good understanding of the exam topics will help excel.

Course Outline:

- 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, 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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