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Learning Style: On Demand

Technology: Cisco

Difficulty: Beginner

Course Duration:

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

The Cisco Certified Network Associate (CCNA) certification is one of the most recognized credentials in networking, validating your ability to configure, operate, and troubleshoot small to medium-sized enterprise networks. This CCNA online training provides self-paced learning designed to help you build strong foundational skills in Cisco routing and switching, IPv4 and IPv6 configuration, wireless connectivity, network automation, and basic security practices.

Through this CCNA on-demand course, students explore Cisco networking essentials at their own pace while developing practical skills in IP addressing, device configuration, and network operations. With step-by-step guidance and real-world examples, this Cisco CCNA self-paced training equips professionals with the technical knowledge needed to pass the Cisco Certified Network Associate (200-301 CCNA) exam and succeed in modern network environments.

This CCNA online learning path emphasizes practical, job-ready skills to help students configure and secure network infrastructures, monitor performance, and troubleshoot operational issues across diverse environments. Completing this CCNA 200-301 certification course prepares professionals for roles such as Network Administrator, Systems Engineer, or IT Support Specialist.

In the United States, CCNA-certified professionals earn an average salary between $75,000 and $92,000 per year, with senior engineers and cloud networking specialists earning $100,000 or more.

Course Objective:

After taking this course, you should be able to:

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

Audience:

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

- Help desk technician

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

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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