

Introduction to CCNA

Nature of the course: Theory + Practical

Total hours per day: 2 hours

Course duration: 6 weeks

Course Summary

This course is for anyone who wants to get their CCNA certification. All technicians involved in the fundamental installation, operation, and verification of Cisco networks will benefit from this course. The following work roles are most suited to the content in this course: a) Network administrator b) Network support technician c) Entry-level network engineer d) Help Desk technician

Completion Criteria

After fulfilling all of the following criteria, the student will be deemed to have finished the Module:

1. Has attended 90% of all classes held
2. Has received an average grade of 80% on all assignments
3. Has received an average of 60% in assessments
4. The tutor believes the student has grasped all of the concepts and is ready to go on to the second module.

Required Text Books

1. CCNA Preparation Library
2. Cisco Certified Network Associate Study Guide
3. CCNA Exam Certification Guide

Course Details

WEEK 1

- Components of a computer network and their basic characteristics
- Model of host-to-host communication
- Features and functions of the Cisco Internetwork Operating System (IOS®) software
- Describe LANs and the role of switches within LANs

WEEK 2

- Describe Ethernet as the network access layer of TCP/IP and describe the
- Operation of switches
- Install a switch and perform the initial configuration
- TCP/IP Internet layer, IPv4, and its addressing scheme
- Describe the TCP/IP Transport layer and Application layer
- Explore functions of routing

WEEK 3

- Implement basic configuration on a Cisco router
- Host-to-host communications across switches and routers
- Identify and resolve common switched network issues and common problems associated with IPv4 addressing
- IPv6 main features and addresses, and configure and verify basic IPv6 connectivity
- Operation, benefits, and limitations of static routing

Week 4

- 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 Ether Channel
- Describe the purpose of Layer 3 redundancy protocols

WEEK 5

- Basic WAN and VPN concepts
- Describe the operation of Access Control Lists (ACLs) and their applications in the network
- Configure Internet access using Dynamic Host Configuration Protocol
- Basic Quality of Service (QoS) concepts
- Describe the concepts of wireless networks, which types of wireless networks can be built, and how to use Wireless LAN Controllers (WLCs)
- Describe network and device architectures and introduce virtualization

WEEK 6

- Concept of network programmability and Software-Defined Networking (SDN)
- Networking (SDN) and describe smart network management solutions such as Cisco DNA Center™, Software-Defined Access (SD-Access), and Software-Defined Wide Area Network (SD-WAN)
- Configure basic IOS system monitoring tools
- Describe the management of Cisco devices
- Describe the current security threat landscape
- Describe threat defense technologies
- Basic security configuration of the device management plane
- Basic steps to harden network devices

Learning Outcomes

- Identification of Network Fundamentals.
- Identification and configuration of LAN switching technologies.
- Description, implementation and verification of IP routing technologies.
- Identification and configuration of WAN technologies.
- Identification and configuration of infrastructure services.