

Course Code CCNA
Duration 5 days

Overview

The Implementing and Administering Cisco Solutions course provides a broad range of fundamental knowledge for all IT careers. Through a combination of lecture and hands-on labs, you will learn how to install, operate, configure, and verify a basic IPv4 and IPv6 network. The course covers configuring network components such as switches, routers, and Wireless LAN Controllers; managing network devices; and identifying basic security threats. Network programmability, automation, and software-defined networking are also covered at a foundational level.

This course helps you prepare to take the 200-301 Cisco Certified Network Associate (CCNA) exam.

Audience

Anyone looking to start a career in networking or wishing to achieve the Cisco CCNA Certification.

Learning Objectives

By actively participating in this course, you will learn about the following:

- ▶ Identifying the components of a computer network and describe their basic characteristics.
- ▶ Understanding the model of host-to-host communication.
- ▶ Describing the features and functions of the Cisco IOS Software.
- ▶ Describing LANs and the role of switches within LANs.
- ▶ Describing Ethernet as the network access layer of TCP/IP and describe the operation of switches.
- ▶ Installing a switch and perform the initial configuration.
- ▶ Describing the TCP/IP internet Layer, IPv4, its addressing scheme, and subnetting.
- ▶ Describing the TCP/IP Transport layer and Application layer.
- ▶ Exploring functions of routing.
- ▶ Implementing basic configuration on a Cisco router.
- ▶ Explaining host-to-host communications across switches and routers.
- ▶ Identifying and resolving common switched network issues and common problems associated with IPv4 addressing.
- ▶ Describing IPv6 main features, addresses and configure and verify basic IPv6 connectivity.
- ▶ Describing the operation, benefits, and limitations of static routing.
- ▶ Describing, implementing and verifying VLANs and trunks.
- ▶ Describing the application and configuration of inter-VLAN routing.
- ▶ Explaining the basics of dynamic routing protocols and describe components and terms of OSPF.
- ▶ Explaining how STP and RSTP work.
- ▶ Configuring link aggregation using EtherChannel.
- ▶ Describing the purpose of Layer 3 redundancy protocols.
- ▶ Describing basic WAN and VPN concepts.
- ▶ Describing the operation of ACLs and their applications in the network.
- ▶ Configuring internet access using DHCP clients and explain and configure NAT on Cisco routers.
- ▶ Describing the basic QoS concepts.
- ▶ Describing the concepts of wireless networks, which types of wireless networks can be built and how to use WLC.
- ▶ Describing network and device architectures and introduce virtualization.



- Introducing the concept of network programmability and SDN and describe the smart network management solutions like Cisco DNA Center, SD-Access and SD-WAN.
 - Configuring basic IOS system monitoring tools.
 - Describing the management of Cisco devices.
 - Describing the current security threat landscape.
 - Describing threat defense technologies.
 - Implementing a basic security configuration of the device management plane.
 - Implementing basic steps to harden network devices.
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Pre-Requisites

- Basic computer literacy
 - Basic PC operating system navigation skills
 - Basic internet usage skills
 - Basic IP address knowledge
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Course Contents

Modules

- Exploring the Functions of Networking
- Introducing the Host-To-Host Communications Model
- Operating Cisco IOS Software
- Introducing LANs
- Exploring the TCP/IP Link Layer
- Starting a Switch
- Introducing the TCP/IP Internet Layer, IPv4 Addressing, and Subnets
- Explaining the TCP/IP Transport Layer and Application Layer
- Exploring the Functions of Routing
- Configuring a Cisco Router
- Exploring the Packet Delivery Process
- Troubleshooting a Simple Network
- Introducing Basic IPv6
- Configuring Static Routing
- Implementing VLANs and Trunks
- Routing Between VLANs
- Introducing OSPF
- Building Redundant Switched Topologies
- Improving Redundant Switched Topologies with EtherChannel
- Exploring Layer 3 Redundancy
- Introducing WAN Technologies
- Explaining Basics of ACL
- Enabling Internet Connectivity
- Introducing QoS
- Explaining Wireless Fundamentals
- Introducing Architectures and Virtualization
- Explaining the Evolution of Intelligent Networks
- Introducing System Monitoring
- Managing Cisco Devices
- Examining the Security Threat Landscape
- Implementing Threat Defense Technologies
- Implementing Device Hardening



Labs

- Get Started with Cisco CLI
- Observe How a Switch Operates
- Perform Basic Switch Configuration
- Inspect TCP/IP Applications
- Configure an Interface on a Cisco Router
- Configure and Verify Layer 2 Discovery Protocols
- Configure Default Gateway
- Explore Packet Forwarding
- Troubleshoot Switch Media and Port Issues
- Troubleshoot Port Duplex Issues
- Configure Basic IPv6 Connectivity
- Configure and Verify IPv4 Static Routes
- Configure IPv6 Static Routes
- Configure VLAN and Trunk
- Configure a Router on a Stick
- Configure and Verify Single-Area OSPF
- Configure and Verify EtherChannel
- Configure and Verify IPv4 ACLs
- Configure a Provider-Assigned IPv4 Address
- Configure Static NAT
- Configure Dynamic NAT and PAT
- Log into the WLC
- Monitor the WLC
- Configure a Dynamic (VLAN) Interface
- Configure a DHCP Scope
- Configure a WLAN
- Define a RADIUS Server
- Explore Management Options
- Explore the Cisco DNA Center
- Configure and Verify NTP
- Create the Cisco IOS Image Backup
- Upgrade Cisco IOS Image
- Configure WLAN Using WPA2 PSK Using the GUI
- Secure Console and Remote Access
- Enable and Limit Remote Access Connectivity
- Configure and Verify Port Security

Exam Details

This course leads to the 200-301 - Cisco Certified Network Associate Exam (CCNA).

Further Information

For more information or to book this course, please contact our Course Enquiries Team on **01752 227330** (Option 2) or email us at enquiries@skilltec.co.uk.