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Course Name

CCNA Implementing and Administering CISCO Solutions

Sector Name

Information Technology

Document Type

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Course Introduction

This training course is designed to provide participants with the fundamental concepts and knowledge on how to install, operate, configure, and verify basic IPv4 and IPv6 networks.

This course covers configuring network components such as switches, routers, and wireless LAN controllers; managing network devices; and identifying basic security threats. This will also provide a foundation in network programmability, automation, and software-defined networking, and prepare participants to take the 200-301 Cisco® Certified Network Associate **(CCNA®)** exam.

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Target Audience

- ✓ Network Administrator
- ✓ Systems Administrator
- ✓ Network Engineer
- ✓ IT Support Specialist
- ✓ Network Technician
- ✓ Security Analyst
- ✓ IT Infrastructure Engineer
- ✓ Technical Support Engineer
- ✓ Cloud Network Engineer
- ✓ IT Consultant

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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 Internetwork Operating System (IOS®) software
- ✓ Describe LANs and the role of switches within LANs
- ✓ Describe Ethernet as the network access layer of 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 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's 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 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 (DHCP) clients and explain and configure network address translation (NAT) on Cisco routers
- ✓ Describe 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
- ✓ Introduce the concept of network programmability and Software-Defined 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
- ✓ Implement a basic security configuration of the device management plane
- ✓ Implement basic steps to harden network devices

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Course Outline

✓ Day 01

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

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Course Outline

✓ Day 02

Routing Between VLANs

- ✓ Introducing OSPF
- ✓ Building Redundant Switched Topologies
- ✓ Improving Redundant Switched Topologies with EtherChannel
- ✓ Exploring Layer 3 Redundancy
- ✓ Introducing WAN Technologies
- ✓ Explaining the Basics of ACL
- ✓ Enabling Internet Connectivity
- ✓ Introducing QoS

Laboratory Outline (Part 1)

- ✓ Get Started with Cisco Command-Line Interface (CLI)
- ✓ Observe How a Switch Operates
- ✓ Perform Basic Switch Configuration
- ✓ Implement the Initial Switch Configuration
- ✓ Inspect TCP/IP Applications
- ✓ Configure an Interface on a Cisco Router

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Course Outline

✓ Day 03

Laboratory Outline (Part 2)

- ✓ Configure and Verify Layer 2 Discovery Protocols
- ✓ Implement an Initial Router Configuration
- ✓ 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
- ✓ Implement IPv4 Static Routing
- ✓ Implement IPv6 Static Routing
- ✓ Configure VLAN and Trunk
- ✓ Troubleshoot VLANs and Trunk
- ✓ Configure a Router on a Stick
- ✓ Implement Multiple VLANs and Basic Routing Between the VLANs
- ✓ Configure and Verify Single-Area OSPF
- ✓ Configure and Verify EtherChannel

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Course Outline

✓ Day 04

Laboratory Outline (Part 3)

- ✓ Improve Redundant Switched Topologies with EtherChannel
- ✓ Configure and Verify IPv4 ACLs
- ✓ Implement Numbered and Named IPv4 ACLs
- ✓ Configure a Provider-Assigned IPv4 Address
- ✓ Configure Static NAT
- ✓ Configure Dynamic NAT and Port Address Translation (PAT)
- ✓ Implement PAT
- ✓ Log in to the WLC
- ✓ Monitor the WLC
- ✓ Configure a Dynamic (VLAN) Interface
- ✓ Configure a DHCP Scope
- ✓ Configure a WLAN

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Course Outline

✓ Day 05

Laboratory Outline (Part 4)

- ✓ Define a Remote Access Dial-In User Service (RADIUS) Server
- ✓ Explore Management Options
- ✓ Explore the Cisco DNA™ Center
- ✓ Configure and Verify NTP
- ✓ Configure System Message Logging
- ✓ Create the Cisco IOS Image Backup
- ✓ Upgrade Cisco IOS Image
- ✓ Configure WLAN Using Wi-Fi Protected Access 2 (WPA2) Pre-shared Key (PSK) Using the GUI
- ✓ Secure Console and Remote Access
- ✓ Enable and Limit Remote Access Connectivity
- ✓ Secure Device Administrative Access
- ✓ Configure and Verify Port Security
- ✓ Implement Device Hardening

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Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
March 15, 2027	March 19, 2027	5 days	4250.00 $	UAE , Dubai
May 24, 2027	May 28, 2027	5 days	4250.00 $	UAE , Dubai
July 26, 2027	July 30, 2027	5 days	4950.00 $	Spain , Madrid
Nov. 16, 2026	Nov. 20, 2026	5 days	4250.00 $	UAE , Dubai

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