

Implementing and Administering Cisco Solutions - Classroom Training

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.

Course Objectives:

After completing this course you should be able to:

- 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 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 main features, addresses and configure and verify basic IPv6 connectivity
- Describe the operation, benefits, and limitations of static routing
- Describe, implement and verify 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 OSPF
- Explain how STP and 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 ACLs and their applications in the network
- Configure internet access using DHCP clients and explain and configure NAT on Cisco routers
- Describe the basic 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
- Introduce the concept of network programmability and SDN and describe the smart network management solutions like Cisco DNA Center, SD-Access and 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

Continues on Page 2:

Course Content:

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

Follow On Courses:

This course covers network fundamentals, network access, IP connectivity, IP Services, security fundamentals and verification of Cisco Networks and is a great starting point for those starting their Cisco career certification journey. The following courses are recommended for further study:

- Understanding Cisco Collaboration Foundations (CLFNDU)
- Understanding Cisco Data Center Foundations (DCFNDU)
- Understanding Cisco Enterprise Foundations (ENFNDU)
- Understanding Cisco Security Foundations (SFNDU)
- Understanding Cisco Service Provider Network Foundations (SPFNDU)

- Understanding Cisco Wireless Foundations (WLFNDU)

Alternatively should you wish to progress to the professional level then you may wish to review:

- Implementing and Operating Cisco Collaboration Core Technologies (CLCOR)
- Implementing and Operating Cisco Data Center Core Technologies (DCCOR)
- Implementing and Operating Cisco Enterprise Network Core Technologies. (ENCOR)
- Implementing and Operating Cisco Security Core Technologies (SCOR)
- Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR)

