

Implementing and Administering Cisco Solutions

Duration: 5 Days **Course Code: CCNA** **Version: 1.0**

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.

Target Audience:

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

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

Prerequisites:

Attendees should meet the following prerequisites:

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

Testing and Certification

Recommended as preparation for the following exams:

- **200-301** - Cisco Certified Network Associate Exam (CCNA)

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.

- **CLFNDU** - Understanding Cisco Collaboration Foundations
- **DCFNDU** - Understanding Cisco Data Center Foundations
- **ENFNDU** - Understanding Cisco Enterprise Foundations
- **SFNDU** - Understanding Cisco Security Foundations
- **SPFNDU** - Understanding Cisco Service Provider Network Foundations
- **WLFNDU** - Understanding Cisco Wireless Foundations

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

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

Content:

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| Exploring the Functions of Networking | Troubleshooting a Simple Network | Enabling Internet Connectivity |
| Introducing the Host-To-Host Communications Model | Introducing Basic IPv6 | Introducing QoS |
| Operating Cisco IOS Software | Configuring Static Routing | Explaining Wireless Fundamentals |
| Introducing LANs | Implementing VLANs and Trunks | Introducing Architectures and Virtualization |
| Exploring the TCP/IP Link Layer | Routing Between VLANs | Explaining the Evolution of Intelligent Networks |
| Starting a Switch | Introducing OSPF | Introducing System Monitoring |
| Introducing the TCP/IP Internet Layer, IPv4 Addressing, and Subnets | Building Redundant Switched Topologies | Managing Cisco Devices |
| Explaining the TCP/IP Transport Layer and Application Layer | Improving Redundant Switched Topologies with EtherChannel | Examining the Security Threat Landscape |
| Exploring the Functions of Routing | Exploring Layer 3 Redundancy | Implementing Threat Defense Technologies |
| Configuring a Cisco Router | Introducing WAN Technologies | Implementing Device Hardening |
| Exploring the Packet Delivery Process | Explaining Basics of ACL | Labs: |
| | | <ul style="list-style-type: none">■ 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

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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