MERCURY

CCNA (For networking and infrastructure)

02 - 06 Mar 2025
Sharm El-Sheikh (Egypt)

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Ref.: 15091_250230 **Date:** 02 - 06 Mar 2025 **Location:** Sharm El-Sheikh (Egypt) **Fees:** 4500 **Euro**

Introduction:

Implementing and Administering Cisco Solutions is a comprehensive entry-level Cisco course that is designed to wholly equip IT personnel and technology enthusiastsspecifically, those looking to start a career in IT with knowledge and skills related to network fundamentals, network access, IP connectivity, IP services, security fundamentals, automation and programmability.

Targeted Groups:

- Entry-level IT personnel
- Network Engineer
- Network Analyst
- Network Support Engineer

Course Objectives:

At the end of this course the participants will be able to:

- Explain the role and function of network components
- Describe characteristics of network topology architectures
- Configure and verify Interswitch connectivity
- Configure and verify Layer 2 discovery protocols Cisco Discovery Protocol and LLDP
- Interpret the components of the routing table
- Configure and verify inside source NAT using static and pools
- Define key security concepts threats, vulnerabilities, exploits, and mitigation techniques
- Explain how automation impacts network management

Course Content:
Unit 1: Network Fundamentals:

- Explain the role and function of network components
- Describe characteristics of network topology architectures
- Compare physical interface and cabling types
- Identify interface and cable issues collisions, errors, mismatch duplex, and/or speed
- Compare TCP to UDP
- Configure and verify IPv4 addressing and subnetting
- Describe the need for private IPv4 addressing
- Configure and verify IPv6 addressing and prefix
- Compare IPv6 address types
- Verify IP parameters for Client OS Windows, Mac OS, Linux
- Describe wireless principles
- Explain virtualization fundamentals virtual machines
- Describe switching concepts

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Unit 2: Network Access:

- Configure and verify VLANs normal range spanning multiple switches
- Configure and verify Interswitch connectivity
- Configure and verify Layer 2 discovery protocols Cisco Discovery Protocol and LLDP
- Configure and verify Layer 2/Layer 3 EtherChannel LACP
- Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
- Compare Cisco Wireless Architectures and AP modes
- Describe physical infrastructure connections of WLAN components AP,WLC, access/trunk ports, and LAG
- Describe AP and WLC management access connections Telnet, SSH, HTTP,HTTPS, console, and TACACS+/RADIUS
- Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings

Unit 3: IP Connectivity:

- Interpret the components of the routing table
- Determine how a router makes a forwarding decision by default
- Configure and verify IPv4 and IPv6 static routing
- Configure and verify single area OSPFv2
- Describe the purpose of the first-hop redundancy protocol

Unit 4: IP Services:

- Configure and verify inside source NAT using static and pools
- Configure and verify NTP operating in a client and server mode
- Explain the role of DHCP and DNS within the network
- Explain the function of SNMP in network operations
- Describe the use of Syslog features including facilities and levels
- Configure and verify DHCP client and relay
- Explain the forwarding per-hop behavior PHB for QoS such as classification, marking, queuing, congestion, policing, shaping
- Configure network devices for remote access using SSH
- Describe the capabilities and function of TFTP/FTP in the network

Unit 5: Security Fundamentals:

- Define key security concepts threats, vulnerabilities, exploits, and mitigation techniques
- Describe security program elements user awareness, training, and physical access control
- Configure device access control using local passwords
- Describe security password policies elements, such as management, complexity, and password alternatives multifactor authentication, certificates, and biometrics
- Describe remote access and site-to-site VPNs
- Configure and verify access control lists
- Configure Layer 2 security features DHCP snooping, dynamic ARP inspection, and port security
- Differentiate authentication, authorization, and accounting concepts
- Describe wireless security protocols WPA, WPA2, and WPA3
- Configure WLAN using WPA2 PSK using the GUI

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Unit 6: Automation and Programmability:

- Explain how automation impacts network management
- Compare traditional networks with controller-based networking
- Describe controller-based and software-defined architectures overlay, underlay, and fabric
- Compare traditional campus device management with Cisco DNA Center enabled device management
- Describe characteristics of REST-based APIs CRUD, HTTP verbs, and data encoding
- Recognize the capabilities of configuration management mechanisms Puppet, Chef, and Ansible
- Interpret JSON encoded data

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