CISCO CERTIFIED SUPPORT TECHNICIAN CCST NETWORKING 100-150

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
5 Days	Entry	R&S	ILT / VILT	No

INTRODUCTION

This five-day Cisco Certified Support Technician (CCST) Networking certification course is designed to be a first step into network engineering. The aim of this course is to instil skills and knowledge of computer network operations, as well as basic configuration and troubleshooting. The CCST is also a first step toward the CCNA certification.

AUDIENCE PROFILE

This course is primarily intended for:

− Network Support Technician, Entry-level Help Desk Technician, or IT Support Specialist.

PREREQUISITES

The recommended knowledge and skills that a learner must have before attending this course are as follows:

− Basic knowledge about computer hardware and operating systems (Windows, Linux, and mobile)

COURSE OBJECTIVES

On completion of this course, participants should be able to:

− Identify the fundamental building blocks of networks.
− Differentiate between bandwidth and throughput.
− Differentiate between LAN, WAN, MAN, CAN, PAN, and WLAN.
− Compare and contrast cloud and on-premises applications and services.
− Describe common network applications and protocols.
− Compare and contrast private addresses and public addresses.
− Identify IPv4 addresses and subnet formats.
− Identify IPv6 addresses and prefix formats.
− Identify cables and connectors commonly used in local area networks.
− Differentiate between Wi-Fi, cellular, and wired network technologies.
− Identify types of endpoint devices.
− Demonstrate how to set up and check network connectivity on Windows, Linux, Mac, Android, and Apple mobile OS.
− Identify the status lights on a Cisco device when given instruction by an engineer.
− Use a network diagram provided by an engineer to attach the appropriate cables.
− Identify the various ports on network devices.
− Explain basic routing concepts.
− Explain basic switching concepts.
− Demonstrate effective troubleshooting methodologies and help desk best practices, including ticketing, documentation, and information gathering.
− Perform a packet capture with Wireshark and save it to a file.
− Run basic diagnostic commands and interpret the results.

– Differentiate between different ways to access and collect data about network devices.

– Run basic show commands on a Cisco network device.

– Describe how firewalls operate to filter traffic.

– Describe foundational security concepts.

– Configure basic wireless security on a home router (WPAx).

COURSE CONTENT

1. Shipping Things
- Foundation Topics
- Addressing
- Packaging Data
- Tunnels

2. Addresses
- Address Scope
- Physical Addresses
- Internet Protocol Version 4
- Why Two Addresses
- Internet Protocol Version 6
- Aggregation
- Network Prefixes
- Ports and Sockets
- Network Address Translation

3. Routing and Switching
- Assigning IP Addresses to Hosts
- Host-to-Host Communication and Address Resolution on a Single Wire
- Switching Packets
- Routing Packets
- Redirects and Relays

4. Wired Host Networking Configuration
- Windows
- macOS
- Linux
- Verifying Connectivity
- Finding Your Public IP Address

5. What's in a Network?
- Hosts and Virtual Hosts
- Mobile Devices
- Things
- Middleboxes
- The Global Internet

6. Network Models
- Why Are Models Important?
- The OSI Seven-Layer Model
- The TCP/IP Model
- The Recursive Internet Architecture

7. Wired Networks

- Electrical Transmission and Interference
- The Maximum Transmission Unit
- Ethernet over Copper
- Fiber
- Pluggable Interfaces

8. Wireless Networks
- Free Space Concepts
- Wi-Fi
- Cellular
- Satellite

9. Bandwidth, Delay, and Jitter
- Bandwidth and Throughput
- Bandwidth and Delay
- Jitter
- Measuring Network Performance

10. Basic Network Hardware
- Hardware, Ports, and Lights
- Network Diagrams
- Network Wiring
- Handling the Heat

11. Local Area Networks
- Building and Campus Networks
- The Home Network

12. Wide Area Networks
- Common Challenges to Building Wide Area Networks
- Metro and Last-Mile Network Design
- Transit Provider Design
- Ring and Hub-and-Spoke Topologies

13. Data Centers and Fabrics
- Web Applications
- Internet Exchange Points
- Spine-and-Leaf Fabrics

14. Network Transport
- Internet Protocol Version 4

- Internet Protocol Version 6
- User Datagram Protocol
- Transmission Control Protocol
- Quick UDP Internet Connections (QUIC)
- Identifying Flows

15. Application Transport
- Marshalling Systems
- Secure Shell
- Hypertext Transfer Protocol
- File Transfer Protocol

16. Names and Time
- The Domain Name Space
- The Life of a DNS Query
- DNS Architecture and Operations
- DNS Security and Privacy
- Encrypted DNS Queries
- Oblivious Encrypted DNS Queries
- Encrypted DNS Records
- Diagnosing DNS
- The Network Time Protocol

17. Cloud Computing
- Cloud Computing
- Public versus Private Cloud
- The Impact of Cloud Computing on Network Engineering

18. Security and Privacy Concepts
- A Security Taxonomy
- Privacy Concepts
- Authentication, Authorization, and Accounting

19. Attacks and Threats
- Defining Attacks and Threats
- Gaining Access
- Lateral Movement
- Attack Actions
- Denial of Service

20. Security Tools
- Authentication Tools
- Defensive Tools and Design

- Countering Spam and Phishing
- Encryption
- Virtual Private Networks

21. Managing Networks
- Network Documentation
- Network Processes and Lifecycle
- Management Challenges

- Connecting to Manage
- Management Systems

22. Troubleshooting
Failure Terminology
- Troubleshooting Tools and Techniques
- Packet Captures
- Advice to Troubleshooters

23. Configuring a Network
- Initial Access
- Configuring IPv4
- Configuring Routing
- Configuring Remote Access and Security
- Adding IPv6
- Adding a Switch

ASSOCIATED CERTIFICATIONS & EXAM

The CCST Networking certification exam# 100-150 will test an individual's skills and knowledge of entry-level networking concepts and topics.

The certification demonstrates foundational knowledge and skills needed to show how networks operate, including the devices, media, and protocols that enable network communications. The CCST Networking exam is 50 minutes long and tests your knowledge of: Standards and Concepts, Addressing and Subnet Formats, Endpoints and Media Types, Infrastructure, and Diagnosing Problems.

The CCST Networking exam will be delivered by Certiport, via Certiport's OnVUE platform, their online testing platform, which offers online proctoring for individual candidates.