

# uCertify

## Course Outline

**Cisco Certified Support Technician CCST Networking  
(100-150)**



06 Aug 2024

1. Course Objective
2. Pre-Assessment
3. Exercises, Quizzes, Flashcards & Glossary  
Number of Questions
4. Expert Instructor-Led Training
5. ADA Compliant & JAWS Compatible Platform
6. State of the Art Educator Tools
7. Award Winning Learning Platform (LMS)
8. Chapter & Lessons  
Syllabus  
Chapter 1: Introduction  
Chapter 2: Shipping Things  
Chapter 3: Addresses  
Chapter 4: Routing and Switching  
Chapter 5: Wired Host Networking Configuration  
Chapter 6: What's in a Network?  
Chapter 7: Network Models  
Chapter 8: Wired Networks  
Chapter 9: Wireless Networks  
Chapter 10: Bandwidth, Delay, and Jitter  
Chapter 11: Basic Network Hardware  
Chapter 12: Local Area Networks  
Chapter 13: Wide Area Networks  
Chapter 14: Data Centers and Fabrics  
Chapter 15: Network Transport  
Chapter 16: Application Transport  
Chapter 17: Names and Time  
Chapter 18: Cloud Computing

Chapter 19: Security and Privacy Concepts

Chapter 20: Attacks and Threats

Chapter 21: Security Tools

Chapter 22: Managing Networks

Chapter 23: Troubleshooting

Chapter 24: Configuring a Network

Chapter 25: Final Preparation

Videos and How To

9. Practice Test

Here's what you get

Features

10. Live labs

Lab Tasks

Here's what you get

11. Post-Assessment

## 1. Course Objective

The Cisco Certified Support Technician (CCST) Networking course is designed to equip you with the essential skills and knowledge required to excel in network support roles. This course focuses on mastering network troubleshooting, maintenance, and support techniques using Cisco technologies. The course covers the key areas such as Introduction to Network Support, Networking Fundamentals, Cisco Networking Technologies, Network Troubleshooting, Network Security, Remote Support and Monitoring.

## 2. Pre-Assessment

Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

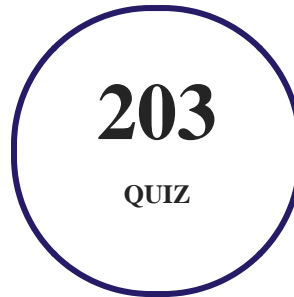
## 3. Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.

**350**  
EXERCISES

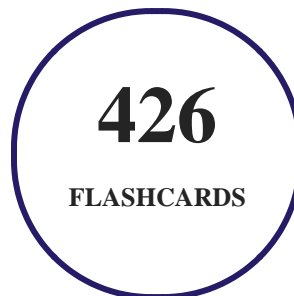
## 4. Quiz

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.



## 5. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



## 6. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.



## 7. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

## 8. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

## 9. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

## 10. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been

recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**

1. Best Postsecondary Learning Solution

- **2015**

1. Best Education Solution
2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

- **2016**

1. Best Virtual Learning Solution
2. Best Education Cloud-based Solution
3. Best College and Career Readiness Solution
4. Best Corporate / Workforce Learning Solution
5. Best Postsecondary Learning Content Solution
6. Best Postsecondary LMS or Learning Platform
7. Best Learning Relationship Management Solution

- **2017**

1. Best Overall Education Solution
2. Best Student Assessment Solution
3. Best Corporate/Workforce Learning Solution
4. Best Higher Education LMS or Learning Platform

- **2018**

1. Best Higher Education LMS or Learning Platform

2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- **2019**

1. Best Virtual Learning Solution
2. Best Content Authoring Development or Curation Solution
3. Best Higher Education Learning Management Solution (LMS)

- **2020**

1. Best College and Career Readiness Solution
2. Best Cross-Curricular Solution
3. Best Virtual Learning Solution

## 11. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

### Syllabus

Chapter 1: Introduction

Chapter 2: Shipping Things

- The Purpose of Packaging



- Addressing
- Packaging Data
- Tunnels
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

### Chapter 3: 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
- Lesson Review

- Review All the Key Topics
- Concepts and Actions

## Chapter 4: 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
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 5: Wired Host Networking Configuration

- Windows
- macOS
- Linux
- Verifying Connectivity
- Finding Your Public IP Address

- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 6: What's in a Network?

- Hosts and Virtual Hosts
- Mobile Devices
- Things
- Middleboxes
- The Global Internet
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 7: Network Models

- Why Are Models Important?
- The OSI Seven-Layer Model
- The TCP/IP Model

- The Recursive Internet Architecture
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 8: Wired Networks

- Electrical Transmission and Interference
- The Maximum Transmission Unit
- Ethernet over Copper
- Fiber
- Pluggable Interfaces
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 9: Wireless Networks

- Free Space Concepts
- Wi-Fi
- Cellular

- Satellite
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 10: Bandwidth, Delay, and Jitter

- Bandwidth and Throughput
- Bandwidth and Delay
- Jitter
- Measuring Network Performance
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 11: Basic Network Hardware

- Hardware, Ports, and Lights
- Network Diagrams
- Network Wiring

- Handling the Heat
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 12: Local Area Networks

- Building and Campus Networks
- The Home Network
- Configuring the Home Network
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 13: 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
- Lesson Review

- Review All the Key Topics
- Concepts and Actions

## Chapter 14: Data Centers and Fabrics

- Web Applications
- Internet Exchange Points
- Spine-and-Leaf Fabrics
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 15: Network Transport

- Internet Protocol Version 4
- Internet Protocol Version 6
- User Datagram Protocol
- Transmission Control Protocol
- Quick UDP Internet Connections (QUIC)
- Identifying Flows

- Path MTU Discovery
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 16: Application Transport

- Marshaling Systems
- Secure Shell
- Hypertext Transfer Protocol
- File Transfer Protocol
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 17: Names and Time

- The Domain Name Space
- The Life of a DNS Query
- DNS Architecture and Operations
- DNS Security and Privacy



- Diagnosing DNS
- The Network Time Protocol
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 18: Cloud Computing

- Cloud Computing
- Public versus Private Cloud
- The Impact of Cloud Computing on Network Engineering
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 19: Security and Privacy Concepts

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

- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 20: Attacks and Threats

- Defining Attacks and Threats
- Gaining Access
- Lateral Movement
- Attack Actions
- Denial of Service
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 21: Security Tools

- Authentication Tools
- Defensive Tools and Design
- Countering Spam and Phishing
- Encryption

- Virtual Private Networks
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 22: Managing Networks

- Network Documentation
- Network Processes and Lifecycle
- Management Challenges
- Connecting to Manage
- Management Systems
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 23: Troubleshooting

- Failure Terminology
- Troubleshooting Tools and Techniques

- Packet Captures
- Advice to Troubleshooters
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 24: Configuring a Network

- Foundation Topics
- Initial Access
- Configuring IPv4
- Configuring Routing
- Configuring Remote Access and Security
- Adding IPv6
- Adding a Switch
- Lesson Review
- Review All the Key Topics
- Concepts and Actions

## Chapter 25: Final Preparation

- Advice to Future Engineers
- Learning Consolidation Activities

## Videos and How To

uCertify course includes videos to help understand concepts. It also includes How Tos that help learners in accomplishing certain tasks.

**35**

VIDEOS

**05:42**

HOURS

## 12. Practice Test

Here's what you get

**50**

PRE-ASSESSMENTS  
QUESTIONS

**4**

FULL LENGTH TESTS

**50**

POST-ASSESSMENTS  
QUESTIONS

## Features

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

### **Unlimited Practice**

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

## **13.** **Live Labs**

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations
- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

## **Lab Tasks**

### **Addresses**

- Viewing the MAC Address on Different Interfaces
- Configuring an IPv6 Address
- Configuring PAT
- Configuring NAT

## **Routing and Switching**

- Implementing DHCPv4 - Packet Tracer
- Configuring SLAAC - Packet Tracer
- Configuring a Router with IPv4 and IPv6 Addresses - Packet Tracer
- Configuring a DHCP Server
- Investigating STP Loop Prevention - Packet Tracer
- Configuring EIGRP
- Configuring OSPF
- Configuring a Router
- Configuring BGP

## **Wired Host Networking Configuration**

- Using the arp and netstat Utilities
- Using the net Command
- Using Command Line Tools

## **What's in a Network?**

- Using Windows Firewall
- Performing Intrusion Detection

## **Wired Networks**

- Connecting Devices in a Bus Topology
- Powering the Device Using PoE
- Preparing a Temporary Server for the Network or Internet Connection

## **Basic Network Hardware**

- Mounting the Switch in the Rack

## **Local Area Networks**

- Connecting an Analog Modem to a Laptop

- Configuring a SOHO Network - Packet Tracer
- Connecting an iPhone to a Wi-Fi Network
- Disabling Mobile Data on an iPhone
- Enabling Cellular Data on an Android Phone
- Checking the Network Connectivity Using an Ethernet Loopback Plug
- Configuring WAP - Packet Tracer
- Connecting a Wireless Router to a Laptop

### **Network Transport**

- Understanding the IPv4 Header
- Displaying the Structure of the UDP Segment
- Displaying the Structure of the TCP Segment

### **Application Transport**

- Configuring an SSH Server
- Configuring an FTP Server

### **Names and Time**

- Adding a DNS Server
- Configuring DNS Resource Records
- Using the dig and nslookup Commands
- Configuring Multi-stratum NTP

### **Security and Privacy Concepts**

- Examining AD Objects
- Configuring OpenLDAP Utilities

### **Attacks and Threats**

- Searching Exploits Using searchsploit
- Using Social Engineering Techniques to Plan an Attack
- Performing the MITM Attack
- Simulating a DDoS Attack



- Simulating a DoS Attack

### **Security Tools**

- Setting Up a DMZ
- Configuring Stateless and Stateful DHCPv6 - Packet Tracer
- Exploiting SMTP
- Using an Asymmetric Encryption Algorithm
- Using a Symmetric Encryption Algorithm
- Installing the Proxy Server Feature
- Configuring a VPN

### **Managing Networks**

- Enforcing a Security Template
- Creating a Security Template
- Connecting to a Remote Computer Using RDP
- Exploiting SNMP

### **Troubleshooting**

- Capturing a Packet Using Wireshark

### **Configuring a Network**

- Performing a Router on a Stick - Packet Tracer
- Configuring Static Routing
- Using the show ip route Command
- Configuring SSH on a Router - Packet Tracer
- Securing Switches - Packet Tracer
- Configuring VLAN and Trunking - Packet Tracer

**Here's what you get**

**64**

LIVE LABS

**64**

VIDEO TUTORIALS

**02:41**

HOURS

## 14. Post-Assessment

After completion of the uCertify course Post-Assessments are given to students and often used in conjunction with a Pre-Assessment to measure their achievement and the effectiveness of the exam.

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