uCertify

Course Outline

Network+ (N10-009) Cert Guide

04 Aug 2025

1. Pre-Assessment
2. Exercises, Quizzes, Flashcards & Glossary

   Number of Questions
3. Expert Instructor-Led Training
4. ADA Compliant & JAWS Compatible Platform
5. State of the Art Educator Tools
6. Award Winning Learning Platform (LMS)
7. Chapter & Lessons

   Syllabus

   Chapter 1: Introduction

   Chapter 2: The OSI Model and Encapsulation

   Chapter 3: Networking Appliances, Applications, and Functions

   Chapter 4: Cloud Concepts

   Chapter 5: Networking Ports, Protocols, Services, and Traffic Types

   Chapter 6: Transmission Media and Transceivers

   Chapter 7: Network Topologies, Architectures, and Types

   Chapter 8: IPv4 Addressing

   Chapter 9: Evolving Use Cases

   Chapter 10: Routing Technologies

   Chapter 11: Ethernet Switching Technologies

   Chapter 12: Configure Wireless Devices and Technologies

   Chapter 13: Physical Installations

   Chapter 14: Organizational Processes and Procedures

   Chapter 15: Network Monitoring

   Chapter 16: Disaster Recovery

   Chapter 17: IPv4 and IPv6 Network Services

   Chapter 18: Network Access and Management Methods

   Chapter 19: Network Security Concepts

1. 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.

2. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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

10.  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

- Who Should Read This Course?
- CompTIA Network+ Exam Topics
- How This Course Is Organized

Chapter 2: The OSI Model and Encapsulation

- The Purpose of Reference Models
- The OSI Model
- The TCP/IP Stack
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 3: Networking Appliances, Applications, and Functions

- Physical and Virtual Appliances
- Applications and Functions

- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 4: Cloud Concepts

- Network Functions Virtualization (NFV)
- Cloud Networking Components
- Deployment Models
- Service Models
- Key Cloud Concepts
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 5: Networking Ports, Protocols, Services, and Traffic Types

- Ports and Protocols

- Internet Protocol (IP) Types
- Traffic Types
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 6: Transmission Media and Transceivers

- Wireless
- Copper and Fiber Media and Connectors
- Multiplexing in Fiber-Optic Networks
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 7: Network Topologies, Architectures, and Types

- Defining a Network
- Network Types and Characteristics
- Networks Defined Based on Resource Location

- Networks Defined by Topology
- The Three-Tier Hierarchical Model
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 8: IPv4 Addressing

- Binary Numbering
- IPv4 Addressing
- Assigning IPv4 Addresses
- Subnetting
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 9: Evolving Use Cases

- SDN and SD-WAN
- Virtual Extensible Local Area Network (VXLAN)
- Zero Trust Architecture (ZTA)
- SASE and SSE
- Infrastructure as Code (IaC)
- IP Version 6
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 10: Routing Technologies

- Routing
- Sources of Routing Information
- Routing Protocol Characteristics
- Routing Protocol Examples
- Address Translation
- First Hop Redundancy Protocol (FHRP)

- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 11: Ethernet Switching Technologies

- Principles of Ethernet
- Ethernet Switch Features
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 12: Configure Wireless Devices and Technologies

- Introducing Wireless LANs
- Deploying Wireless LANs
- Securing Wireless LANs
- Real-World Case Study
- Summary

- Review All the Key Topics
- Additional Resources

Chapter 13: Physical Installations

- Important Installation Implications
- Power
- Environmental Factors
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 14: Organizational Processes and Procedures

- Documentation
- Processes and Procedures
- Real-World Case Study
- Summary
- Review All the Key Topics

- Additional Resources

Chapter 15: Network Monitoring

- Network Monitoring Methods
- Monitoring Solutions
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 16: Disaster Recovery

- High Availability
- Real-World Case Study: Network Design
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 17: IPv4 and IPv6 Network Services

- Dynamic Addressing

- Name Resolution
- Time Protocols
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 18: Network Access and Management Methods

- Virtual Private Networks (VPNs)
- Other Network Access Technologies
- Authentication and Authorization Considerations
- In-Band vs. Out-of-Band Management
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 19: Network Security Concepts

- Core Security Concepts

- Authentication Methods
- Risk Management and SIEM
- Physical Security
- Audits and Regulatory Compliance
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 20: Types of Network Attacks

- Technology-Based Attacks
- Social Engineering Attacks
- Other Miscellaneous Attacks
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 21: Network Security Features

- Device Hardening
- Network Access Control (NAC)
- Other Network Security Features
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 22: A Network Troubleshooting Methodology

- Troubleshooting Basics
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resource

Chapter 23: Troubleshoot Common Cabling Problems

- Specifications and Limitations
- Common Cable Issues

- Common Interface Issues
- Common Hardware Issues
- Common Tools
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 24: Troubleshoot Common Issues with Network Services

- Considerations for General Network Troubleshooting
- Common Network Service Issues
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 25: Troubleshoot Common Performance Issues

- Network Performance Considerations
- Wireless Performance Considerations

- Other Wireless Considerations
- Common Wireless Issues
- Wireless Network Troubleshooting
- Real-World Case Study
- Summary
- Review All the Key Topics

Chapter 26: Network Troubleshooting Tools

- Software Tools
- Command-Line Tools
- Basic Networking Device Commands
- Hardware Tools
- Real-World Case Study
- Summary
- Review All the Key Topics
- Additional Resources

Chapter 27: Final Preparation

- Strategies for Taking the Exam
- Summary

11. Practice Test

Here's what you get

90	2	90
PRE-ASSESSMENTS QUESTIONS	FULL LENGTH TESTS	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.

12. 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

The OSI Model and Encapsulation

- Viewing the IPv4 Header
- Analyzing the Structure of TCP and UDP Segments

Networking Appliances, Applications, and Functions

- Connecting Systems to the Internet Through a Firewall Router
- Implementing Intrusion Detection and Prevention
- Configuring a Basic Switch
- Configuring a Firewall
- Configuring a Proxy Server
- Creating an ALB in AWS
- Configuring a Router

Cloud Concepts

- Creating a Virtual Switch
- Creating a Virtual Network in Azure
- Creating a VPC in AWS

- Creating a Network Firewall in AWS
- ?Creating a Network ACL
- ?Creating a NAT Gateway
- Creating an Internet Gateway in AWS
- Creating a VPN Connection

Networking Ports, Protocols, Services, and Traffic Types

- Understanding HTTP/HTTPS
- Exploiting SMTP
- Connecting to a Remote Computer Using the Remote Desktop Connection
- Understanding ICMP
- Configuring GRE Tunnels
- Configuring IPSec

Transmission Media and Transceivers

- Working with a Mobile Hotspot
- Connecting to an Ethernet Network
- Reconnecting to an Ethernet Network
- Providing Remote Internet Access Using Analog Modem
- Connecting Fiber Optic Cables
- Establishing an Internet Connection Between Two Switches Using a Media Converter

Network Topologies, Architectures, and Types

- Exploring a Single Location in a Lab
- Connecting Devices in a Peer-To-Peer Architecture
- Connecting Devices in a Mesh Topology

IPv4 Addressing

- Exploring APIPA and Loopback Addresses
- ?Configuring an IPv4 Address
- Configuring an IP Address in Linux

Evolving Use Cases

- Configuring IPv6 on a Router
- Configuring an IPv6 Address
- Configuring Stateless and Stateful DHCPv6

Routing Technologies

- Configuring Static Routing
- Configuring EIGRP
- Configuring OSPF
- Configuring BGP
- Configuring Network Address Translation
- Configuring HSRP

Ethernet Switching Technologies

- Configuring the Speed and Duplex Settings of a Network Interface
- Enabling Jumbo Frame Support
- Configuring Speed, Duplex, and Description on a Switch
- Configuring an Access Port
- Viewing the Default Status of the Interfaces on a Switch
- Connecting to a VoIP
- Observing the STP Modes
- Configuring VLAN and Trunking
- Investigating STP Loop Prevention
- Powering a VoIP Phone Using PoE Injector
- Configuring PortFast and Rapid Spanning Tree
- Configuring a BPDU Guard on a Switch Port
- Creating a VLAN and Placing a Switch Port into It
- Configuring a Loop Guard on a Switch Port
- Configuring NIC Teaming
- Configuring EtherChannel

Configure Wireless Devices and Technologies

- Connecting to a Cable Modem
- Creating a Home Wireless Network
- Configuring Autonomous Access Points
- Implementing a SOHO Network
- Connecting an iPhone to a Laptop via Bluetooth

Physical Installations

- Mounting and Stacking Switches in a Server Rack
- Providing Cooling and Ventilation to a Motherboard

Organizational Processes and Procedures

- Installing the IPAM Feature

Network Monitoring

- Viewing and Exporting Event Logs
- Configuring Syslog and Observing the Log Settings
- Monitoring the System's Performance Using Performance Monitor

Disaster Recovery

- Backing Up Files
- Creating a Restore Point
- Creating Redundant Storage
- Creating a Local Backup
- Restoring Files

IPv4 and IPv6 Network Services

- Configuring DHCP on a Router
- Configuring SLAAC
- Configuring a DNS Server
- Configuring Zone Transfers
- Viewing and Creating a Record Type

- Connecting to a DSL Network
- Examining DNS Entries
- Configuring Multi-stratum NTP

Network Access and Management Methods

- Configuring a VPN Connection on an iPad
- Creating a Site-to-Site VPN Connection
- Configuring an SSH Server on a Linux System

Network Security Concepts

- Examining PKI Certificates
- Examining a Self-Signed Certificate
- Adding a Digital Certificate
- Creating Asymmetric Key Pairs
- Understanding Symmetric Encryption
- Creating a Demilitarized Zone
- Using Honeypot
- Configuring the RADIUS Server
- Implementing Physical Security

Types of Network Attacks

- Spoofing a MAC Address
- Defending Against IP Spoofing
- Cracking Passwords Using Cain and Abel
- Configuring DHCP Snooping
- Performing ARP Spoofing
- Simulating a DoS Attack
- Using Anti-phishing Tools
- Using the SET Tool

Network Security Features

- Disabling Unnecessary Services in Windows

- Setting Up a Password Policy
- Strengthening iPad Security

Troubleshoot Common Cabling Problems

- Connecting Patch Panel Cables

Troubleshoot Common Issues with Network Services

- Troubleshooting IP Addressing Issues
- Troubleshooting Switching Issues

Network Troubleshooting Tools

- Using the Protocol Analyzer Tool
- Using Command Line Tools
- Understanding Networking and Network Diagnostics Command Line Tools
- Generating and Examining the ARP Packets
- Using the ping and tracert Commands
- Examining Port Numbers
- Using Networking Device Commands
- Testing an RJ-45 Cable Using a Cable Tester
- Using a Visual Fault Locator
- Using a Network Tap

Here's what you get

120	120	03:45
LIVE LABS	VIDEO TUTORIALS	HOURS

13. 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.

You can’t stay away! Get

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