Course Ou

CompTIA Network+ (



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1. Course Objective

Gain hands-on experience to pass the CompTIA Network+ exam with the CompTIA Network+ N10-007 course and lab. The lab provides a hands-on learning experience in a safe, online environment. The CompTIA Network+ study guide covers the N10-007 exam objectives and includes topics such as network policies; network components; Ethernet technology; routing IP packets; IPv4 and IPv6 addresses, and more.

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. Quizzes

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.

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QUIZZES

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

Chapter 2: Introduction to Networks

- First Things First: What's a Network?
- Physical Network Topologies
- Topology Selection, Backbones, and Segments
- Summary
- Exam Essentials
- Written Lab

Chapter 3: The Open Systems Interconnection Specifications

- Internetworking Models
- The OSI Reference Model
- Introduction to Encapsulation
- Modulation Techniques
- Summary
- Exam Essentials
- Written Lab

Chapter 4: Networking Topologies, Connectors, and Wiring Standards

- Physical Media
- Cable Properties
- Wiring Standards
- Installing Wiring Distributions
- Summary
- Exam Essentials
- Written Lab

Chapter 5: The Current Ethernet Specifications

- Network Basics
- Ethernet Basics
- Ethernet at the Data Link Layer
- Ethernet at the Physical Layer
- Ethernet over Other Standards (IEEE 1905.1-2013)
- Summary
- Exam Essentials
- Written Lab

Chapter 6: Networking Devices

- Common Network Connectivity Devices
- Other Specialized Devices
- Planning and Implementing a Basic SOHO Network Using Network Segmentation
- Summary
- Exam Essentials
- Written Lab

Chapter 7: Introduction to the Internet Protocol

- Introducing TCP/IP
- Data Encapsulation
- Summary
- Exam Essentials
- Written Lab

Chapter 8: IP Addressing

- IP Terminology
- The Hierarchical IP Addressing Scheme
- IPv4 Address Types
- Internet Protocol Version 6 (IPv6)
- Summary
- Exam Essentials
- Written Lab

Chapter 9: IP Subnetting, Troubleshooting IP, and Introduction to NAT

- Subnetting Basics
- Troubleshooting IP Addressing
- Introduction to Network Address Translation (NAT)

- Summary
- Exam Essentials
- Written Lab

Chapter 10: Introduction to IP Routing

- Routing Basics
- The IP Routing Process
- Testing Your IP Routing Understanding
- Static and Dynamic Routing
- Summary
- Exam Essentials
- Written Lab

Chapter 11: Routing Protocols

- Routing Protocol Basics
- Distance Vector Routing Protocols
- Link State Routing Protocols
- High Availability

- Advanced IPv6 Concepts
- IPv6 Routing Protocols
- Summary
- Exam Essentials
- Written Lab

Chapter 12: Switching and Virtual LANs

- Networking Before Layer 2 Switching
- Switching Services
- Spanning Tree Protocol
- Virtual LANs
- VLAN Trunking Protocol
- Two Additional Advanced Features of Switches
- Summary
- Exam Essentials
- Written Lab

Chapter 13: Wireless Networking

- Introduction to Wireless Technology

- Cellular
- The 802.11 Standards
- Comparing 802.11 Standards
- Wireless Network Components
- Installing a Wireless Network
- Site Survey
- Wireless Security
- Summary
- Exam Essentials
- Written Lab

Chapter 14: Authentication and Access Control

- Security Filtering
- Managing User Account and Password Security
- User-Authentication Methods
- Summary
- Exam Essentials
- Written Lab

Chapter 15: Network Threats and Mitigation

- Recognizing Security Threats
- Vulnerabilities
- Understanding Mitigation Techniques
- Policies and Procedures
- Anti-malware Software
- Summary
- Exam Essentials
- Written Lab

Chapter 16: Physical Security and Risk

- Using Hardware and Software Security Devices
- Defining Firewalls
- Firewall Technologies
- Firewalls at the Application Layer vs. the Network Layer
- Scanning Services and Other Firewall Features
- Intrusion Detection and Prevention Systems

- VPN Concentrators
- Understanding Problems Affecting Device Security
- Summary
- Exam Essentials
- Written Lab

Chapter 17: Wide Area Networks

- What's a WAN?
- T-Series Connections
- Transmission Media
- Broadband Services
- Wireless WAN Technologies
- WAN Protocols
- WAN Troubleshooting
- Summary
- Exam Essentials
- Written Lab

Chapter 18: Troubleshooting Tools

- Protocol Analyzers
- Throughput Testers
- Connectivity Software
- Using traceroute
- Using the ping Utility
- Using the Address Resolution Protocol
- Using the nslookup Utility
- Resolving Names with the Hosts Table
- Using the Mtr Command (pathping)
- Using the route Command
- Using the nbtstat Utility
- Using the netstat Utility
- Using tcpdump
- Using the File Transfer Protocol
- Using the Telnet Utility
- Summary
- Exam Essentials

- Written Lab

Chapter 19: Software and Hardware Tools

- Understanding Network Scanners
- Baseline
- Network Monitoring and Logging
- Identifying Hardware Tools
- Summary
- Exam Essentials
- Written Lab

Chapter 20: Network Troubleshooting

- Narrowing Down the Problem
- Troubleshooting Steps
- Troubleshooting Tips
- Summary
- Exam Essentials
- Written Lab

Chapter 21: Management, Monitoring, and Optimization

- Managing Network Documentation
- Network Monitoring
- Network Optimization
- Summary
- Exam Essentials
- Written Lab

Chapter 22: Appendix A: Subnetting Class A

- Subnetting Practice Examples: Class A Addresses
- Subnetting in Your Head: Class A Addresses
- Written Lab 1
- Written Lab 2
- Video

Videos and How To

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

68	13:49
VIDEOS	HOURS

11. Practice Test

Here's what you get

62	3	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. Performance Based Labs

uCertify's performance-based labs are simulators that provides virtual environment. Labs deliver hands on experience with minimal risk and thus replace expensive physical labs. uCertify Labs are cloud-based, device-enabled and can be easily integrated with an LMS. Features of uCertify labs:

- Provide hands-on experience in a safe, online environment
- Labs simulate real world, hardware, software & CLI environment
- Flexible and inexpensive alternative to physical Labs
- Comes with well-organized component library for every task
- Highly interactive - learn by doing
- Explanations and remediation available
- Videos on how to perform

Lab Tasks

- Connecting Devices in a Peer- To- Peer Architecture
- Identifying Clients and Servers
- Connecting Devices in Bus Topology
- Identifying network topologies
- Identifying factors while choosing topology
- Identifying OSI layers
- Identifying OSI layer functions
- Identifying steps in data-encapsulation method
- Connecting a New Workstation to the Internet
- Preparing a Temporary Server for the Network or Internet Connection
- Identifying types of cable and connector
- Identifying twisted-pair cable connectors
- Preparing a Temporary Server for the Network or Internet Connection
- Identifying cable configuration types
- Connecting a Workstation to the Ethernet and to the Internet
- Converting a Decimal Number to Binary

- Creating IPv6 scope
- Configuring a new server
- Connecting a hub to a switch
- Connecting the hub with different devices using USB cables
- Connecting the DHCP server and laptop to the VLAN
- Adding DNS server
- Creating DNS domains
- Connecting systems to the Internet through a router
- Identifying protocols used for TCP and UDP
- Identifying features of TCP and UDP
- Identifying DHCP client four-step process
- Identifying TCP/IP protocol layers
- Identifying TCP/IP layers
- Identifying abbreviations for various Internet layer protocols
- Configuring Automatic Private IP Addressing
- Understanding types of addresses
- Connecting a Workstation to the LAN and Configuring IPv4 Properties
- Configuring IPv4 address
- Understanding IPv6 address type
- Adding and removing an IPv6 address
- Configuring and testing IPv6 addresses
- Using a Subnet Calculator
- Understanding NAT terminologies
- Understanding types of NAT
- Describing Dynamic Routing
- Displaying ARP entries
- Understanding difference between static and dynamic routing
- Understanding classes of routing protocols
- Understanding RIPv1 and RIPv2
- Identifying routing protocols
- Understanding VRRP
- Identifying process of forward/filter table
- Identifying functions of Layer 2 switching
- Identifying Spanning Tree Protocol states
- Describing Quality of Service (QoS)

- Connecting patch cables between the patch panel and switch ports
- Understanding cellular and mobile wireless technologies
- Identifying 802.11 standards
- Installing a NIC
- Creating a network manually
- Turning on bluetooth
- Connecting a system to a wireless network
- Configuring a Wireless Client
- Identifying factors that affect signal strength
- Turning on the Personal Hotspot of an iPhone
- Connecting a Wireless Router to a Laptop
- Configuring SSID
- Connecting to a Password Protected Network
- Configuring Windows 10 Wireless Settings
- Changing Passwords for the Router
- Configuring VPN client in Windows 10
- Identifying VPN protocols
- Connecting to a server using Remote Desktop Connection
- Creating a remote access VPN connection
- Configuring password policy
- Identifying types of Denial of Service attacks
- Installing wireshark
- Enabling Windows Update
- Updating a Driver
- Identifying steps of antivirus program
- Running Antivirus
- Turning on Windows Firewall
- Configuring Windows firewall settings
- Setting Up a DMZ on a SOHO Router
- Configuring security level
- Adding a trusted site
- Customizing security level
- Understanding recovery sites
- Understanding strategies of penetration testing
- Running the Nessus vulnerability scan

- Identifying WAN connection types
- Understanding T-series connections
- Connecting Cable Internet Access for your Network
- Understanding components of PPP
- Understanding ifconfig commands
- Analyzing network paths with tracert
- Understanding ipconfig commands
- Understanding ping commands
- Understanding the arp command
- Using the nslookup command
- Analyzing network paths with pathping
- Adding the route
- Deleting the route
- Using the nbtstat command
- Using the netstat command
- Using the tcpdump command
- Enabling Telnet in Windows
- Capturing packet using Wireshark
- Scanning using nmap
- Checking the Internet speed
- Viewing the logs
- Filtering entries in Event Viewer
- Identifying network cabling tools
- Identifying troubleshooting steps
- Obtaining Automatic Private IP Addressing
- Understanding standard business documents
- Understanding classes of service
- Creating a virtual switch

Here's what you get

114	104	01:44
PERFORMANCE BASED LAB	VIDEO TUTORIALS	HOURS

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

The Open Systems Interconnection Specifications

- Obtaining Hardware Information of a Network Adapter
- Obtaining the ARP Cache
- Obtaining Information about Different IP versions
- Obtaining the IP Version of a Network Adapter
- Obtaining the IP Route Information from the IP Routing Table
- Obtaining Information about the Net Firewall Profile

- Getting the TCP Settings
- Getting Information about the Current Connection Statistics of TCP
- Getting Information about the TCP Ports
- Getting the UDP Settings
- Getting Information about the Current Connection Statistics of UDP
- Getting Information about the UDP Ports
- Getting Information about DNS

The Current Ethernet Specifications

- Changing Duplex Settings
- Finding the Logical Address of a LAN Adapter
- Finding the Physical Address of a LAN Adapter
- Finding the Host Name of a Machine
- Installing a Loopback Adapter Driver

Networking Devices

- Creating a New Scope
- Installing the IPAM Feature
- Creating a New Host

Introduction to the Internet Protocol

- Using the netstat Command

IP Addressing

- Configuring Network Address Translation
- Configuring a Class A IP Address
- Configuring a Class B IP Address
- Configuring a Class C IP Address
- Adding an IPv6 Address

IP Subnetting, Troubleshooting IP, and Introduction to NAT

- Configuring a CIDR Based IP network

- Testing Connectivity Using the ping Command

Routing Protocols

- Configuring a RIP

Authentication and Access Control

- Applying Symmetric Key Encryption
- Setting Security Policies
- Using the MD5 Hash Algorithm

Network Threats and Mitigation

- Performing a DDoS Attack Using cmd
- Performing Session Hijacking Using Burp Suite
- Performing a DoS Attack with the SYN Flood
- Understanding Credentials Based Brute-Force Attack

Physical Security and Risk

- Creating a New Inbound Rule

Troubleshooting Tools

- Using Different Troubleshooting Tools

Here's what you get

39	104	01:44
LIVE LABS	VIDEO TUTORIALS	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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