CompTIA Network+ N10-007

Modality: Self-Paced Learning

Duration: 17 Hours

SUBSCRIPTION: Learn, Master, Master Plus

This course prepares you for the N10-007 Exam leading to N10-007 Certification. This course does not include the Official Exam Voucher, however, you can request to purchase the Official Exam Voucher separately.

About this course:

This CompTIA Network+ online training course will teach the candidates about networking communications, networking standards, network devices, using TCP/IP, remote access, wide area networks, network security, the process of developing highly available as well as scalable networks along with monitoring, maintenance, and troubleshooting networks.

On average, an individual who has obtained the CompTIA Network+ certification can earn up to $74,000/- per year.

Course Objective:

By enrolling in this CompTIA Network+ Certification, the candidate will be able to

- Explain what bounded network media is
- Explain what unbounded network media is
- Identify and explain the major kinds of network deployments
- Identify and explain data delivery and TCP/IP addressing methods
- Analyze switching and routing technologies
- Analyze network security
- Identity the components used for deploying TCP/IP
- Deploy network security

Audience:

CompTIA Network+ online training course is intended to be undertaken by those computer support professional who occupy entry level positions, and possess basic knowledge of operating systems along with computer software and hardware. Additionally, those who wish to attempt the CompTIA® Network+® (Exam N10-005) can also enroll in this course, along with anybody who wishes to upgrade their skill set while increasing their knowledge of concepts used in networking. In addition, those intending to opt for this course should have a minimum of 9 months experience in a computer support role such as a help desk or PC technician. While having experience in networking will be an added benefit, it is not mandatory. Similar having CompTIA A+ certification will be a plus, however, it is not mandatory.

Prerequisite:

Prior to enrolling in this course, candidate should have;

- Basic understanding and knowledge of networks
- CompTIA A+ Certification or must possess knowledge of the concepts and topic of A+

Course Outline:

Course Introduction

- Instructor Bio
- Course Introduction

Chapter 01: Introduction to Networking

- **Topic A: Networking Fundamentals**
- Networking Fundamentals - Part 1
- Networking Fundamentals - Part 2
- What is a Network?
- Network Building Blocks
- Types of Networks
- Host Requirements
- Numbering Systems
- Demo - Working with Numbering Systems
- Communication Types
- Communication Concepts
- Other Communication Methods
- **Topic B: Network Models and Topologies**
- Networking Models
- Workgroup vs. Domain
- Network Topologies
- Physical Bus
- Physical Star
- Physical Ring
- Physical Mesh
- Demo - Identifying Network Topology
- Logical Topologies
- Wireless Topologies
- **Topic C: Network Components and Services**
- Network Components and Services - Part 1
- Network Components and Services - Part 2
- **Topic D: Becoming a Network Professional**
- Technical Challenges
- Knowledge Specialization
- Developing Soft Skills
- Achieving the Certification
- Planning for Certification

- Chapter 01 Review
- Review

Chapter 02: Network Standards

- **Topic A: Introducing Networking Standards**
- Introducing Networking Standards - Part 1
- Introducing Networking Standards - Part 2
- What is a Standard?
- Why Use Standards?
- Standards Organizations
- **Topic B: Open Interconnection Systems / Reference Model**
- What is OSI/RM
- Upper Layers
- Lower Layers
- **Topic C: IEEE Network Standards**
- IEEE Networking Standards
- Ethernet
- Ethernet Frames
- MAC Addresses
- Access Methods
- 10Base Standards
- Demo - Ethernet Standards
- Chapter 02 Review
- Review

Chapter 03: Network Communications

- **Topic A: Fundamentals of Network Transmission**
- Fundamentals of Network Transmission - Part 1
- Fundamentals of Network Transmission - Part 2
- Transmission Methods
- Network Performance Factors
- Serial vs. Parallel
- Baseband vs. Broadband
- Data Access Methods
- Communication Domains
- Data Access Methods (Cont.)
- Digital Signals
- Units of Measurement
- **Topic B: Copper Media**
- Transmission Media
- Twisted Pair Cabling
- Cable Media Categories
- Twisted Pair Connectors
- Copper Media Types
- Wiring Differences
- Coaxial Cabling

- Demo - Media Types
- **Topic C: Optical Media**
- Fiber Optic Cabling
- Connection Options
- Fiber Optic Connectors
- Demo - Optical Cables and Connectors
- **Topic D: Specialty Cables and Connectors**
- Specialty Connectors and Cabling
- Media Converters
- **Topic E: LAN Infrastructure Wiring**
- Demarcation Point
- Other LAN Components
- Wiring Individual Workstations
- Connecting Cables
- Punchdown Blocks
- **Topic F: Wireless Networking**
- Introduction to Wireless LANs
- Wireless Networking Fundamentals
- Types of Wireless
- Wireless Networking Components
- Demo - Configuring an Access Point
- Wireless Modes
- Wireless Devices
- Wireless Networking Standards
- 802.11 Standards
- Enhancing Wireless Performance
- Wired Equivalent Privacy
- Wi-Fi Protected Access
- 802.1x
- Demo - Examining Wireless Security
- Planning Wireless Networks
- Choosing Antennas
- Antenna Types
- Wireless Channels
- Site Surveys
- Other Considerations
- Chapter 03 Review
- Review

Chapter 04: Working with TCP/IP

- **Topic A: Understanding TCP/IP**
- Understanding TCP/IP - Part 1
- Understanding TCP/IP - Part 2
- Overview of TCP/IP
- TCP/IP Layers
- Core Protocols
- Transport Protocols

- Transmission Control Protocol
- User Datagram Protocol
- What is a Socket?
- Internet Layer
- Core Internet Layer Protocols
- IP Datagrams
- Application Layer
- Application Layer Protocols
- Well Known Ports
- **Topic B: Working with IPv4 Addresses**
- Introduction to IP Addresses
- Subnet Masks
- Demo - Working with Binary IP Addresses
- IPv4 Address Rules
- Valid Masks
- Default Gateway
- Demo - Configuring IP Addresses
- Address Categories
- Public vs. Private Addresses
- Classful Addressing
- Classless Addressing
- Demo - CIDR Notation
- Create IPv4 Subnets
- Simple Subnetting
- Complex Subnetting
- Demo - Creating Subnets
- **Topic C: Working With IPv6 Addresses**
- Introduction to IPv6
- IPv6 Advantages
- IPv6 Addresses
- IPv6 Addressing
- Global Unicast
- Unique Local Unicast
- Link Local Address
- Special Addresses
- Autoconfiguration in IPv6
- Demo - Viewing and Configuring IPV6
- **Topic D: Assigning Addresses with DHCP**
- Introducing DHCP
- DHCP Leases
- Lease Renewal
- DHCP Server Placement
- DHCP Implementations
- DHCP Servers
- **Topic E: Resolving Names Using DNS**
- What is Name Resolution
- Types of Names
- Introduction to DNS

- DNS Components
- Resource Records
- DNS Zones and Domains
- Name Resolution Process
- Types of Queries
- Chapter 04 Review
- Review

Chapter 05: Network Devices

- **Topic A: Introduction to Network Devices**
- Introduction to Network Devices - Part 1
- Introduction to Network Devices - Part 2
- Common Network Devices
- Device Capabilities
- OSI / RM Layers and Devices
- **Topic B: Physical Layer Devices**
- Introduction to Physical Devices
- Network Interface Cards
- Repeaters
- Repeater Types
- Hubs
- **Topic C: Data Link Layer Devices**
- Data Link Filtering
- What is a Bridge?
- Network Switches
- Introduction to the Layer 2 Switch
- Switch Categories
- Switch Characteristics
- Power Over Ethernet
- Virtual Capabilities
- Virtual LAN (VLAN)
- Initial Switch Configuration
- Interface Configuration
- Introduction to STP
- STP Port States
- RSTP Differences
- Understanding Trunking
- Trunking Protocols
- Additional Management for Switches
- **Topic D: Network Layer Devices**
- The Layer 3 Job
- Routing Tables
- Demo - Reading a Routing Table
- Network Segmentation Benefits
- Hardware vs. Software Routers
- Static vs. Dynamic Routing
- Routing Protocols

- Dynamic Routing
- What is a Metric?
- Distance Vector vs. Link State
- Path Vector
- Interior Routing Protocols
- Exterior Routing Protocols
- Routing Problems
- Router Redundancy
- **Topic E: Additional Network Devices**
- Additional Network Devices
- Load Balancers
- Traffic Shapers
- Chapter 05 Review
- Review

Chapter 06: Wide Area Networks

- **Topic A: WAN Fundamentals**
- WAN Fundamentals - Part 1
- WAN Fundamentals - Part 2
- What is a Wide Area Network (WAN)?
- WAN Options
- WAN Categories
- **Topic B: Wired WAN Connections**
- Public Switched Telephone Network
- Integrated Services Digital Network
- Digital Subscriber Line
- Cable Modems
- MPLS
- ATM
- Frame Relay
- Leased Lines
- Metropolitan Ethernet
- **Topic C: Wireless WAN Connections**
- Satellite WANs
- Wireless Local Loop
- WiMAX
- Cellular Connections
- GSM vs. CDMA
- 3G Technologies
- 4G Technology
- **Topic D: Fiber WAN Connections**
- Fiber WAN Connections
- OC Levels
- Demo - Choosing a WAN Provider
- Chapter 06 Review
- Review

Chapter 07: Remote Access

- **Topic A: Introduction to Remote Networking**
- Introduction to Remote Networking - Part 1
- Introduction to Remote Networking - Part 2
- Introduction to Remote Networking
- Remote Node
- Remote Desktop Control
- Remote Control Concepts
- Demo - Configuring Remote Control
- **Topic B: Authenticating Remote Connections**
- Understanding Authentication
- Authentication, Authorization, and Accounting (AAA)
- CHAP and MS-CHAP
- EAP and Other Authentication Protocols
- RADIUS
- TACACS+
- **Topic C: Understanding Virtual Private Networks**
- What is a VPN?
- VPN Tunnel Types
- What is Encapsulation?
- VPN Components
- Encryption Types
- VPN Concentrators
- VPN Protocols
- Demo - Create and Configure a VPN
- Chapter 07 Review
- Review

Chapter 08: Network Security

- **Topic A: Network Security Fundamentals**
- Network Security Fundamentals - Part 1
- Network Security Fundamentals - Part 2
- Introduction to Network Security
- The CIA Triad
- Network Threats
- Network Vulnerabilities
- Understanding Risk
- What is AAAA?
- Cryptography
- Algorithms and Keys
- Digital Signatures
- Best Practices for Permissions
- Best Practices for Employees
- **Topic B: Planning for Network Security**
- Planning for Network Security
- Types of Threats

- Threat-Vulnerability Pairs
- Identifying Vulnerabilities
- Types of Vulnerabilities
- Mitigating Risks
- User Awareness
- Understanding Compliance
- Business Continuity
- Change Management
- Network Documentation
- **Topic C: Identifying Threats and Vulnerabilities**
- Threat Categories
- Introduction to Software Attacks
- Malicious Code Attacks
- Types of Malicious Code
- Network Threats
- Port Scanning and Eavesdropping
- IP Spoofing
- Denial of Service (DoS)
- Man-in-the-Middle Attacks
- Human Attacks
- Wireless Vulnerabilities and Threats
- **Topic D: Protecting the Network**
- Protecting the Network
- Implementing Physical Protection
- Physical Security Options
- Demo - Examining Physical Security Devices
- Anti-Malware
- Demo - Anti-malware Options
- Network Hardening
- Securing Network Communications
- Introduction to Firewalls
- Types of Firewalls
- Demo - Using Firewalls
- Authentication
- Authentication Factors
- Network Access Control
- Chapter 08 Review
- Review

Chapter 09: Building Highly Available and Scalable Networks

- **Topic A: Maintaining Business Continuity**
- Maintaining Business Continuity - Part 1
- Maintaining Business Continuity - Part 2
- Maintaining Business Continuity - Part 3
- Understanding High Availability
- High Availability Options
- Disaster Recovery

- Monitoring Network Devices
- Patch Management
- **Topic B: Virtualization and Cloud Computing**
- What is Virtualization?
- Virtualization Benefits
- Virtualization and Cloud Computing
- Virtual Machine Hosts
- Virtualization Components
- The Importance of Storage
- Storage Options
- Storage Area Networks
- Virtual Devices and Networks
- What is Cloud Computing?
- The Cloud Advantage
- Cloud Models
- Cloud Services Models
- Demo - Working in the Cloud
- **Topic C: Unified Communications**
- Unified Communications
- Unified Communication Components
- Unified Communication Technologies
- Chapter 09 Review
- Review

Chapter 10: Maintenance, Monitoring, and Troubleshooting

- **Topic A: Network Safety Fundamentals**
- Network Safety Fundamentals - Part 1
- Network Safety Fundamentals - Part 2
- The Importance of Safety
- Electrical Safety
- Static Electricity
- Preventing Static Electricity
- Fire Suppression Systems
- **Topic B: Network Operations**
- Implementing Network Policies
- **Topic C: Maintaining and Monitoring Networks**
- Types of Monitoring
- Performance Baselines
- Monitoring Tools
- Network Monitoring Tools
- Introduction to Network Tools
- Analyzing Traffic
- Environmental Monitoring
- Using SYSLOG
- Using SIEM
- Using SNMP
- SNMP Components

- SNMP Packet Types
- Monitoring Operating Systems
- Using Task Manager
- Using Event Viewer
- Maintaining and Monitoring Networks
- Using Performance Monitor
- Additional Monitoring Types
- Introduction to Patch Management
- Operating System Updates
- Updating Windows Systems
- Managing Network Devices
- **Topic D: Troubleshooting Methodology**
- Introduction to Troubleshooting
- Identifying the Issue
- Establish a Theory of Probable Cause
- Create an Action Plan
- Putting it All Together
- **Topic E: Troubleshooting Tools**
- Hardware Troubleshooting Tools
- Network Tool Kit
- Software Toolkits
- OS Troubleshooting Tools
- Demo - OS Troubleshooting Tools
- **Topic F: Troubleshooting Network Issues**
- Introduction to Wireless Issues
- Wireless Signal Issues
- Troubleshooting Hardware and Configuration
- Wireless Security Issues
- Troubleshooting Wired Connectivity Issues
- Troubleshooting Fiber Cable Issues
- Troubleshooting Network Service Issues
- Troubleshooting Security Issues
- Chapter 10 Review
- Review

Course Summary

- Course Closure
- Course Summary