



CompTIA: a+ Network

Course ID #: 7000-1147-ZZ-Z

Hours: 35

Delivery Method: Group Internet Based

Course Content

Description:

In this course, you will cover: The CompTIA a+ Network course which serves as an ideal starting point for individuals looking to launch a career in networking, providing the foundational knowledge and skills necessary to succeed. This program prepares learners to understand and manage network configurations, troubleshoot connectivity issues, and secure network environments, laying the groundwork for advanced training courses like CompTIA Network+.

By building a strong baseline in networking concepts, CompTIA a+ Network empowers learners to pursue industry-recognized certifications and unlock opportunities in the dynamic and evolving field of IT networking. CompTIA a+ Network is designed to fast-track learners to a career in IT Networking.

Objectives:

Upon successful completion of this course, students will:

- Identify and support different types of client and local networks.
- Distinguish between various network types and their appropriate applications.
- Understand key concepts of enterprise network application support.
- Perform core network operations and provide end-user support.
- Troubleshoot common network and connectivity issues efficiently.
- Manage basic Linux server functions relevant to application and network environments.
- Apply principles of automation and scripting to streamline network management tasks.
- Demonstrate sound data management fundamentals in networked environments.
- Understand and use industry terminology from the included glossary.

Prerequisites:

Understanding of basic computer terminology.

Recommend taking Comptia A+ Core 1 and A+ Core 2.

Target Audience:

Anyone who wants to be work in IT.



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Topics:

1.0 Network Client Fundamentals

1.1 Manage Windows Computers

- Microsoft Windows Administration Fundamentals
- Managing Windows Computers Overview
- Windows Desktop Interface
- Administrator Tools in a Graphical User Interface
- Administrator Tools in the Command-line Interface
- Update & Security Settings in Administrator Tools
- User Account Settings
- Security Best Practices
- Set Up a Windows Computer
- Manage a Windows Computer
- Secure a Windows Computer

1.2 Manage Windows Apps

- Windows Apps Overview
- Monitoring System Performance
- Monitoring CPU Performance
- Monitoring Memory Performance
- Unpacking Bits and Bytes
- Monitoring Storage Performance
- Installing and Updating Apps
- Monitoring Apps & Services
- Manage Windows Apps

1.3 Describe Network Protocols

- Introduction to Network Protocols
- What is a Network?
- Network Models
- The TCP/IP Model In Practice
- What is a Network Link?
- Internet Protocols and Addressing
- Structure of an IP Address
- IP Addressing
- Data Encapsulation and Ethernet Frames
- Analyze Network Traffic

1.4 Configure Network Clients

- Introduction to Configuring Network Clients
- Network Device Connections
- Configure IP Addresses in Windows
- Testing IP Address Configuration
- Configure a Network Client

1.5 Microsoft Windows Administration Module Assessment

2.0 Local Network Types

2.1 Configure SOHO Networks

- Managing a SOHO Network
- Network Configuration Settings
- Firewall Basics
- Configure a SOHO Router

2.2 Describe Enterprise/Campus Networks

- What is an Enterprise/Campus Network?
- Structured Cabling System Basics
- What is a Switch?
- Switch Operations
- How Does an Access Switch Forward Data?
- Enterprise Access Points
- Enterprise Routers
- IPv6 Addressing
- Practice Quiz: Describe Enterprise/Campus Networks

2.3 Perform Basic Cable Management

- Networking Standards
- Understand Network Media
- Twisted Pair AB Standards
- Installing Twisted Pair Cable
- Understand Coaxial Cable
- Understand Fiber Optic Cable
- Cable Management Basics

2.4 Secure Network Client Fundamentals Module Assessment



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3.0 Other Network Types

3.1 Describe the Role of Data Centers and Virtualization

- What is a Data Center?
- Data Center Features
- High Availability and Redundancy
- Virtualization
- Containerization
- Container Tools
- Practice Quiz: Describe the Role of Data Centers and Virtualization

3.2 Describe the Role of WANs, Cloud, and IoT

- Introducing Applied Networking
- Wide Area Networks
- Virtual Private Networks
- Virtual Private Network Protocols
- Cloud Computing
- The Internet of Things (IoT)
- Deploy an Azure Cloud VM

3.3 Module Assessment

4.0 Enterprise Network Application Support

4.1 Provide Enterprise Network Security

- Defense in Depth Concepts
- Cryptography Basics
- Firewalls
- Proxies
- Intrusion Detection
- Endpoint Security
- Verify Network Firewall Configuration

4.2 Describe Enterprise Authentication and Authorization

- Authentication, Authorization, and Accounting
- Identification and Authentication
- Authentication Factors
- Authorization
- Cryptography in Practice
- Symmetric Encryption
- Asymmetric Encryption
- Digital Certificates
- Accounting
- Validate Network Accounts

4.3 Explain the Use of Application Protocols

- Managing Network Traffic with Protocols
- Web Application Protocols
- File Sharing Protocols
- The File Transfer Protocol (FTP)
- Email Messaging Protocols
- Unified Communications Protocols
- Transport Layer Security Protocols
- Evaluate Application Protocol Security

4.4 Other Network Types Module Assessment

5.0 Network Operations Support Fundamentals

5.1 Explain Network Operational Procedures

- Introduction to Network Operational Procedures
- Asset Management
- Security Tools
- What are Footprinting and Fingerprinting?
- NMap Scan Basics
- NMap Scan Results
- Protocol Analyzing with Wireshark
- Vulnerability Management
- Backup Management
- Identify Network Assets

5.2 Use Performance Monitoring Tools

- Introduction to Network Performance Monitoring
- Understand the Simple Network Management Protocol
- Network Management in Detail
- Log Readers
- Bandwidth and Throughput
- Packet Sniffers and Protocol Analyzers
- Mapping the Network
- Performance Monitoring

5.3 Network Operations Support Fundamentals Module Assessment



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6.0 Network Troubleshooting Fundamentals

6.1 Provide Professional Support

- The Network Support Job Role
- Help Desk Responsibilities
- Help Desk Ticketing Systems
- Professional Support Processes
- The Importance of Documentation
- Asset Management in Network Support
- Network Diagrams
- Change Management
- Provide Professional Support

6.2 Describe Troubleshooting Tools and Techniques

- Introduction to Troubleshooting
- Standardizing the Troubleshooting Process
- The CompTIA Troubleshooting Methodology
- Providing Remote Support
- Describe Troubleshooting Tools and Techniques

6.3 Network Troubleshooting Fundamentals Module Assessment

7.0 Linux App Server Fundamentals

7.1 Operate Linux Computers

- Introduction to Linux
- What is Linux?
- The Linux Command Syntax
- Bash Command Syntax
- Common Syntax Tricks
- Editors
- Privilege Escalation
- Secure Shell (SSH)
- Practice Quiz: Operate Linux Computers
- Use a Linux Computer

7.2 Manage Linux Servers

- Introduction to Managing Linux Servers
- Linux Unified Filesystem
- Working in the Home Directory
- Searching in Linux
- Linux File Management
- Linux Users and Groups
- Security in Linux File Permissions
- Levels of Access in Linux
- Basic Networking with Linux
- Manage Server Connections with Linux
- Practice Quiz: Managing Linux Servers
- Manage the Linux Filesystem
- Manage Linux Network Settings

7.3 Manage Linux Apps

- Introduction to Linux Applications
- Package Management
- Distro Families and Software Management
- Process Management
- Service Management
- Log Files
- What is LAMP?
- Practice Quiz: Manage Linux Apps
- Configure Linux Apps
- Use Linux Editors

7.4 Linux App Server Fundamentals Module Assessment



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8.0 Automation Scripting Fundamentals

8.1 Describe Scripting Fundamentals

- Introduction to Scripting
- Understand Types of Code
- The Development Environment
- The PowerShell Integrated Scripting Environment
- Source Code Logic: Comments, Conditionals, and Branches
- Unpacking Conditionals
- Source Code Logic: Loops
- Unpacking Loops
- Source Code Logic: Functions and Operators
- Containers in Scripts
- Practice Quiz: Scripting Fundamentals

8.2 Develop Scripts

- Introduction to Script Development
- Automation and Orchestration
- Script Use Cases
- Security in Scripting
- Writing a Script
- Develop a Bash Script

8.3 Module Assessment

9.0 Data Management Fundamentals

9.1 Describe Data Storage Fundamentals

- The Value of Data
- Database Structures
- Relational Databases
- Relational Database Management System (RDBMS)
- Database Queries
- Data Analytics
- Analyze a Database

9.2 Describe Data Management Fundamentals

- Understand Data Security
- Use Data Responsibly
- Maintain Data Privacy
- Understand Data Breaches
- Data Backup Concepts
- Decommissioning Data
- Manage Data Security
- Back Up Data

9.3 Data Management Fundamentals Module Assessment

Register for this class by visiting us at:

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NASBA CPE details are provided on the following pages.



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NASBA Information

Level: Intermediate

Advanced Preparation:

Attendance Requirement: To be awarded the full credit hours, you must sign in and attend the entire course.

Recommended Field(s) of Study: Computer Software and Applications

Recommended CPEs: 39.00

Policies: Course Registration, Cancellation, Refund, and Complaint Resolution

For more information regarding administrative policies such as complaint and program cancellation policies, please contact our offices at 800-639-3535 or visit us at: www.tcworkshop.com

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