



CompTIA Network+ - Fundamentals of Networking

Course No. CT-02F 5 Days Instructor-led, Hands-on

Introduction

Gain the skills to design, manage, and troubleshoot wired and wireless networks with expert-led CompTIA Network+ training. With the U.S. tech industry expected to grow from 6 million jobs in 2024 to 7.1 million by 2034, demand for skilled IT professionals is on the rise.

CompTIA Network+ is a foundational certification for IT professionals with around one year of experience in network administration. This course covers networking fundamentals, infrastructure, security, and operations, equipping you for the CompTIA Network+ (N10-009) exam and real-world IT challenges. Get certified and take your career to the next level!

At Course Completion

Upon successful completion of this course, students will learn to design, configure, and manage both wired and wireless networks while developing the skills necessary to troubleshoot common network issues and ensure optimal performance. Ultimately, the course is designed to prepare learners for success in the CompTIA Network+ (N10-008) certification exam.

Prerequisites

A typical student should have nine months or more of professional computer support experience as a PC technician or help desk technician. Network experience is helpful but not required; A+ certification or the equivalent skills and knowledge is helpful but not required.

Course Materials

The student kit includes a book and other necessary materials for this class.

Follow-On Course

CompTIA Security+ - Fundamentals of Security

Contact ISInc for more information at 916.920.1700 or by visiting our website at <http://www.isinc.com>

Course Outline

Module 1: Understanding Network Models & Architecture

- Compare the OSI and TCP/IP models to understand how data flows across networks.
- Identify the role of each network layer in communication and troubleshooting.

Module 2: Deploying and Managing Ethernet Networks

- Install, terminate, and test Ethernet cabling for reliable connectivity.
- Configure and deploy Ethernet switches for optimal network performance.
- Diagnose and troubleshoot common Ethernet network issues such as collisions, speed mismatches, and faulty cables.

Module 3: Configuring IP Addressing & Routing

- Explain the fundamentals of IPv4 addressing, subnetting, and private/public addressing.
- Compare IPv4 vs. IPv6 and their role in modern networking.
- Configure and troubleshoot routers to optimize data flow between networks.

Module 4: Network Topologies & Communication Protocols

- Understand different network topology types (star, mesh, hybrid) and their use cases.
- Explain transport layer protocols (TCP, UDP) and their role in data transmission.

Module 5: Network Services & Applications

- Explore common network services like DHCP, DNS, and NAT and their impact on connectivity.
- Learn how network applications such as VoIP, web servers, and cloud services function.

Module 6: Ensuring Network Performance & Availability

- Implement redundancy and failover mechanisms to maintain high availability.
- Monitor and optimize network performance using tools and best practices.

Module 7: Network Security Essentials

- Explain fundamental security concepts like authentication, encryption, and firewalls.
- Support and troubleshoot secure network environments to prevent vulnerabilities.

Module 8: Wireless Networking: Deployment & Troubleshooting

- Deploy and configure Wi-Fi networks for different environments.

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- Identify and troubleshoot common wireless connectivity issues like interference and signal loss.

Module 9: Wide Area Networks (WANs) & Remote Access Solutions

- Compare different WAN technologies (MPLS, SD-WAN, VPNs) and their business applications.
- Configure and troubleshoot remote access methods for secure connectivity.

Module 10: Organizational & Physical Security Best Practices

- Implement physical security controls such as access restrictions and surveillance.
- Understand the importance of network security policies in an enterprise setting.

Module 11: Disaster Recovery & Business Continuity Planning

- Learn the fundamentals of disaster recovery planning and high availability solutions.
- Implement backup strategies to prevent data loss and downtime.

Module 12: Network Hardening & Security Implementation

- Apply network hardening techniques to secure devices, applications, and infrastructure.
- Understand how firewalls, intrusion prevention systems (IPS), and endpoint security protect against cyber threats.

Module 13: Introduction to Cloud & Data Center Networking

- Summarize cloud computing models (IaaS, PaaS, SaaS) and their networking requirements.
- Explore virtualization, containers, and data center architecture for modern IT environments.