



Network+® Certification: Fourth Edition Course Specifications

Course length: 5.0 days
Certification: Network+

Course Description

The CompTIA Network+ Certification course builds on your existing user-level knowledge and experience with personal computer operating systems and networks to present fundamental skills and concepts that you will use on the job in any type of networking career. If you are pursuing a CompTIA technical certification path, the CompTIA A+ certification is an excellent first step to take before preparing for the CompTIA Network+ certification.

Course Objective: You will identify and describe all the major networking technologies, systems, skills, and tools in use in modern PC-based computer networks, and learn information and skills that will be helpful as you prepare for the CompTIA Network+ certification examination, 2005 objectives (exam number N10-003).

Target Student: Entry-level computer support professionals with basic knowledge of computer hardware, software and operating systems, who wish to increase their knowledge and understanding of networking concepts and skills to prepare for a career in network support or administration, or to prepare for the CompTIA Network+ certification, 2005 objectives (exam number N10-003). A typical student in the CompTIA Network+ certification course should have 9 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.

Prerequisites: An introductory course in a Windows operating system, or equivalent skills and knowledge, is required. Students can take any one of the following Element K courses: *Windows 98: Introduction*, *Windows Millennium Edition: Introduction*, *Windows 2000: Introduction*, or *Windows XP: Introduction*.

CompTIA A+ certification, or the equivalent skills and knowledge, is helpful but not required. Students may wish to take both of the following Element K courses: *A+™ Certification: Core Hardware Third Edition - A CompTIA Certification* and *A+™ Certification: Operating Systems Third Edition - A CompTIA Certification*.

Delivery Method: Instructor led, group-paced, classroom-delivery learning model with structured hands-on activities.

Performance-Based Objectives

Upon successful completion of this course, students will be able to:

- * Identify the basic components of network theory.
- * Identify the major network communications methods.
- * Identify network data delivery methods.
- * List and describe network media and hardware components.
- * Identify the major types of network implementations.
- * Identify the components of a TCP/IP network implementation.
- * Identify the major services deployed on TCP/IP networks.
- * Identify characteristics of a variety of network protocols.
- * Identify the components of a LAN implementation.
- * Identify the components of a WAN implementation.
- * Identify major issues and technologies in network security.
- * Identify the components of a remote network implementation.
- * Identify major issues and technologies in disaster recovery.

- * Identify major data storage technologies and implementations.
- * Identify the primary network operating systems.
- * Identify major issues, models, tools, and techniques in network troubleshooting.

Course Content

Lesson 1: Network Theory

- Topic 1A: Networking Terminology
- Topic 1B: Network Building Blocks
- Topic 1C: Standard Network Models
- Topic 1D: Network Topologies
- Topic 1E: Network Categories

Lesson 2: Network Communications Methods

- Topic 2A: Transmission Methods
- Topic 2B: Media Access Methods
- Topic 2C: Signaling Methods

Lesson 3: Network Data Delivery

- Topic 3A: Data Addressing and Delivery
- Topic 3B: Network Connection Mechanisms
- Topic 3C: Reliable Delivery Techniques

Lesson 4: Network Media and Hardware

- Topic 4A: Bounded Network Media
- Topic 4B: Unbounded Network Media
- Topic 4C: Noise Control
- Topic 4D: Network Connectivity Devices

Lesson 5: Network Implementations

- Topic 5A: The OSI Model
- Topic 5B: Client Network Resource Access
- Topic 5C: Ethernet Networks
- Topic 5D: Token Ring Networks
- Topic 5E: Fiber Distributed Data Interface (FDDI) Networks
- Topic 5F: Wireless Technologies and Standards

Lesson 6: Networking with TCP/IP

- Topic 6A: Families of Protocols
- Topic 6B: The TCP/IP Protocol
- Topic 6C: Default IP Addresses
- Topic 6D: Custom IP Addresses
- Topic 6E: The TCP/IP Protocol Suite

Lesson 7: TCP/IP Services

- Topic 7A: IP Address Assignment Methods
- Topic 7B: Host Name Resolution
- Topic 7C: NetBIOS Name Resolution
- Topic 7D: TCP/IP Utilities
- Topic 7E: TCP/IP Upper-layer Services
- Topic 7F: TCP/IP Interoperability Services

Lesson 8: Other Network Protocols

- Topic 8A: The NetBEUI Protocol
- Topic 8B: The IPX/SPX Protocol
- Topic 8C: The AppleTalk Protocol
- Topic 8D: The IP Version 6 (IPv6) Protocol

Lesson 9: Local Area Network (LAN) Infrastructure

- Topic 9A: Bridges and Switches
- Topic 9B: IP Routing Topology
- Topic 9C: Static IP Routing

Topic 9D: Dynamic IP Routing
Topic 9E: Controlling Data Movement with Filters and VLANs
Lesson 10: Wide Area Network (WAN) Infrastructure
Topic 10A: WAN Switching Technologies
Topic 10B: WAN Transmission Technologies
Topic 10C: WAN Connectivity Methods
Topic 10D: Voice Over Data Systems
Lesson 11: Network Security
Topic 11A: Network Threats
Topic 11B: Virus Protection
Topic 11C: Local Security
Topic 11D: Network Authentication Methods
Topic 11E: Data Encryption
Topic 11F: Internet Security
Lesson 12: Remote Networking
Topic 12A: Remote Network Architectures
Topic 12B: Terminal Services Implementations
Topic 12C: Remote Access Networking Implementations
Topic 12D: Virtual Private Networking (VPN)
Lesson 13: Disaster Recovery
Topic 13A: Planning for Disaster Recovery
Topic 13B: Data Backup
Topic 13C: Fault Tolerance Methods
Lesson 14: Network Data Storage
Topic 14A: Enterprise Data Storage Techniques
Topic 14B: Clustering
Topic 14C: Network Attached Storage (NAS)
Topic 14D: Storage Area Network (SAN) Implementations
Lesson 15: Network Operating Systems
Topic 15A: Microsoft Operating Systems
Topic 15B: Novell NetWare
Topic 15C: UNIX and Linux Operating Systems
Topic 15D: Macintosh Networking
Lesson 16: Network Troubleshooting
Topic 16A: Troubleshooting Models
Topic 16B: TCP/IP Troubleshooting Utilities
Topic 16C: Hardware Troubleshooting Tools
Topic 16D: System Monitoring Tools
Topic 16E: Network Baselineing
Appendix A: Mapping Element K Course Content to the CompTIA Network+ Exam Objectives
Appendix B: OSPF Route Discovery and Maintenance
Appendix C: Additional IP Addressing and Subnetting Practice
Supplemental Lesson Additional IP Addressing and Subnetting Practice