

# CompTIA Network+ 2009 Objectives

Course length: 5 days

## Course Description

The CompTIA Network+® (2009 Objectives) 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, 2009 objectives (exam number N10-004).

**Target Student:** This course is intended for 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+® (2009 Objectives) exam (exam number N10-004). A typical student in the CompTIA Network+® (2009 Objectives) course 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.

**Prerequisites:** Basic Windows skills and a fundamental understanding of computer concepts are required. Students can obtain this level of skill and knowledge by taking the following courses: Introduction to Personal Computers: Using Windows XP, Windows XP: Introduction, Introduction to Personal Computers: Using Windows Vista or Microsoft Windows Vista: Level 1 and Level 2.

CompTIA A+ certification, or the equivalent skills and knowledge, is helpful but not required. Students may wish to take the following course: CompTIA A+ Certification: A Comprehensive Approach for all Exam Objectives.

**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 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.
- Explore tools, methods, and techniques used in managing a network.
- Describe how to troubleshoot network issues.



### Course Content

#### Lesson 1: Network Theory

- Topic 1A: Networking Terminology
- Topic 1B: Network Building Blocks
- Topic 1C: Standard Network Models
- Topic 1D: Physical Network Topologies
- Topic 1E: Logical Network Topologies
- Topic 1F: 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: 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
- Topic 4E: Wiring Distribution Components

#### Lesson 5: Network Implementations

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

#### Lesson 6: Networking with TCP/IP

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

#### Lesson 7: TCP/IP Services

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

#### Lesson 8: Local Area Network Infrastructure

- Topic 8A: Bridges and Switches
- Topic 8B: IP Routing
- Topic 8C: Static IP Routing



Topic 8D: Dynamic IP Routing  
Topic 8E: Control Data Movement with Filters and VLANs

### **Lesson 9: WAN Infrastructure**

Topic 9A: WAN Switching Technologies  
Topic 9B: WAN Transmission Technologies  
Topic 9C: WAN Connectivity Methods  
Topic 9D: Voice Over Data Systems

### **Lesson 10: Network Security**

Topic 10A: Computer Security Basics  
Topic 10B: Authentication  
Topic 10C: Data Encryption  
Topic 10D: Protect Network Traffic with IP Security (IPsec)  
Topic 10E: Internet Security  
Topic 10F: Local Security  
Topic 10G: Common Threats  
Topic 10H: Threat Mitigation Techniques  
Topic 10I: Intrusion Detection and Prevention  
Topic 10J: Educate Users

### **Lesson 11: Remote Networking**

Topic 11A: Remote Network Architectures  
Topic 11B: Remote Access Networking Implementations  
Topic 11C: Virtual Private Networking  
Topic 11D: Remote Control Computing

### **Lesson 12: Disaster Recovery**

Topic 12A: Examine Configuration Management Documentation  
Topic 12B: Plan for Disaster Recovery  
Topic 12C: Fault Tolerance Methods  
Topic 12D: Data Backup

### **Lesson 13: Network Data Storage**

Topic 13A: Enterprise Data Storage  
Topic 13B: Network-Attached Storage (NAS)  
Topic 13C: Storage Area Network (SAN) Implementations  
Topic 13D: Clustering

### **Lesson 14: Network Operating Systems**

Topic 14A: UNIX and Linux Operating Systems  
Topic 14B: Apple Mac OS X  
Topic 14C: Microsoft Operating Systems  
Topic 14D: Novell Open Enterprise Server

### **Lesson 15: Network Management**

Topic 15A: Monitoring Tools  
Topic 15B: Network Baselining  
Topic 15C: Network Optimization

### **Lesson 16: Network Troubleshooting**

Topic 16A: Troubleshooting Models



Topic 16B: TCP/IP Troubleshooting Utilities  
Topic 16C: Hardware Troubleshooting Tools  
Topic 16D: Common Connectivity Issues

**Appendix A:** Mapping Network+ Course Content to the CompTIA Network+ Exam Objectives

**Appendix B:** Additional IP Addressing and Subnetting Practice

**Appendix C:** CompTIA Network+ Acronyms

