

# CompTIA Network+® (2009 Objectives)

## Course Specifications

Course length: 5.0 day(s)

## 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. CompTIA A+ certification or equivalent skills and knowledge would be helpful.

**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

Networking Terminology  
Network Building Blocks  
Standard Network Models  
Physical Network Topologies  
Logical Network Topologies  
Network Categories

### Lesson 2: Network Communications Methods

Transmission Methods  
Media Access Methods  
Signaling Methods

### Lesson 3: Network Data Delivery

Data Addressing and Delivery  
Delivery Techniques

### Lesson 4: Network Media and Hardware

Bounded Network Media  
Unbounded Network Media  
Noise Control  
Network Connectivity Devices  
Wiring Distribution Components

### Lesson 5: Network Implementations

The OSI Model  
Ethernet Networks  
Token Ring Networks  
Fiber Distributed Data Interface (FDDI) Networks  
Wireless Technologies and Standards

### Lesson 6: Networking with TCP/IP

Families of Protocols  
The TCP/IP Protocol  
IP Address Basics  
Custom IP Addresses  
The IP Version 6 Protocol  
The TCP/IP Protocol Suite

### Lesson 7: TCP/IP Services

IP Address Assignment Methods  
Host Name Resolution  
TCP/IP Utilities  
TCP/IP Upper-Layer Services  
TCP/IP Interoperability Services

### Lesson 8: Local Area Network Infrastructure

Bridges and Switches  
IP Routing  
Static IP Routing  
Dynamic IP Routing  
Control Data Movement with Filters and VLANs

## **Lesson 9: WAN Infrastructure**

WAN Switching Technologies  
WAN Transmission Technologies  
WAN Connectivity Methods  
Voice Over Data Systems

## **Lesson 10: Network Security**

Computer Security Basics  
Authentication  
Data Encryption  
Protect Network Traffic with IP Security (IPsec)  
Internet Security  
Local Security  
Common Threats  
Threat Mitigation Techniques  
Intrusion Detection and Prevention  
Educate Users

## **Lesson 11: Remote Networking**

Remote Network Architectures  
Remote Access Networking Implementations  
Virtual Private Networking  
Remote Control Computing

## **Lesson 12: Disaster Recovery**

Examine Configuration Management Documentation  
Plan for Disaster Recovery  
Fault Tolerance Methods  
Data Backup

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

Enterprise Data Storage  
Network-Attached Storage (NAS)  
Storage Area Network (SAN) Implementations  
Clustering

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

UNIX and Linux Operating Systems  
Apple Mac OS X  
Microsoft Operating Systems  
Novell Open Enterprise Server

## **Lesson 15: Network Management**

Monitoring Tools  
Network Baselining  
Network Optimization

## **Lesson 16: Network Troubleshooting**

Troubleshooting Models  
TCP/IP Troubleshooting Utilities  
Hardware Troubleshooting Tools  
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**