

Course overview

CompTIA Network+ Certification Support Skills (2009 Objectives)

(G520eng)



Overview and objectives

CompTIA Network+ validates the knowledge and skills of networking professionals. It is an international, vendor-neutral certification that recognizes a technician's ability to describe the features and functions of networking components and to install, configure and troubleshoot basic networking hardware, protocols and services. This practical "hands-on" 5-day course will teach students the fundamental principles of installing and supporting networks.

On course completion, students will be able to:

- Describe the features of different network protocols and products for LANs, WANs, and wireless networks.
- Understand the functions and features of TCP/IP addressing and protocols.
- Identify threats to network resources and appropriate security countermeasures.
- Install and configure network cabling and appliances.
- Manage, monitor, and troubleshoot networks.

Certification track

This course will prepare students to take the N10-004 CompTIA Network+ Certification exam, for the objectives released in January 2009.

CompTIA Network+ Certification has been created as a benchmark for local area networking installation and support. The qualification is endorsed by Microsoft, Novell, Cisco, Compaq, and Lotus, among other leading vendors. This qualification is particularly recommended for students who wish to progress to the Cisco Certified Network Associate (CCNA) or Microsoft MCSE / MCSA / MCITP qualifications.



Target audience

This course is intended for new or intending network support technicians wishing to qualify with CompTIA Network+ Certification. It is also suitable for experienced technicians who require an industry-backed credential that validates their skills and knowledge. This course will particularly benefit students pursuing a career in network administration, as a Network Support Technician, Network Engineer, Network Administrator, or in Help Desk support.

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Course prerequisites

Students should meet the following criteria prior to attending the course:

- Taken and passed both CompTIA A+ Certification exams or have equivalent knowledge and experience.
- Six months to one year of post-A+ Certification support experience.
- Extensive experience of supporting end-users and PC-based systems.

Course contents

The course consists of two volumes, with a study volume, containing indexed notes and review questions, and a companion volume, containing exam objectives mapping, exam information, practical labs, answers to review questions, and a comprehensive glossary. The course also comes with two online practice exams and a prerequisites test.

An instructor edition of the course is available with margin notes and tips for the trainer. Access to course resources on gtslearning's trainer portal (www.gtstrainer.com) is also available, subject to meeting minimum order requirements. gtstrainer hosts setup guides and data, PowerPoint slides, timetables, and extra exam information.

Module 1 - Network Fundamentals

- **Network Topologies and the OSI Model** • Network Basics • Network Topologies • The OSI Model • Network Protocols and TCP/IP
- **LAN and WLAN Technologies** • IEEE 802 Standards • Characteristics of Transmission Media • Ethernet (IEEE 802.3) • Ethernet Media Specifications • Wi-Fi (IEEE 802.11)
- **Cabling and Connectors** • Selecting Network Cable • Twisted Pair Cable (UTP / STP / ScTP) • Coaxial Cable • Fiber Optic Cable • Serial Cable
- **WAN Technologies** • WAN Basics • Switched Networks • Telecommunications Networks • Packet-switched Services • Local Loop Services • Wireless WANs

Module 2 – Addressing and Protocols

- **Addressing** • TCP/IP Protocol Suite • MAC Address • Internet Protocol Basics • IP Routing Basics • Automatic Address Assignment • ICMP • IP Version 6
- **Routing Protocols** • IP Routing • Routing Protocol Characteristics • Routing Protocols
- **Transport Protocols** • Transmission Control Protocol (TCP) • User Datagram Protocol (UDP) • TCP/IP Ports • Name Resolution
- **Application Protocols** • TCP/IP Services • Email (SMTP / POP3 / IMAP) • World Wide Web (HTTP) • File Transfer Protocol (FTP) • Telnet and Secure Shell (SSH) • Conferencing and VoIP Protocols • Simple Network Management Protocol (SNMP) • Network Time Protocol (NTP)

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www.gtslearning.com
sales@gtslearning.com

Module 3 – Security and Authentication

- **Security Threats and Mitigation Techniques** • Security Basics • Social Engineering • Malware • Network Attack Strategies • Policies and Procedures • Device Security • Training
- **Network Security Appliances** • Secure Network Topologies • Firewalls and Proxy Servers • Intrusion Detection Systems
- **Network Access Security and Authentication** • Encryption and PKI • Remote Connectivity Protocols • Wireless Security • Authentication • Network Access Control • Remote Administration Tools

Module 4 – Installation and Implementation

- **Installing Network Infrastructure** • Wiring Standards • Wiring Distribution • Cable Testing Tools
- **Installing Basic Network Devices** • Network Adapters • Intranetwork and Internetwork Devices
- **Installing Wireless and Remote Networks** • Setting up a Wireless Network • Remote Links
- **Advanced Network Infrastructure** • Advanced Features of Switches • Performance Management Appliances • Configuring DHCP • Configuring DNS • Security Appliances

Module 5 - Management, Monitoring, Troubleshooting

- **Configuration Management** • Configuration Management Concepts • Documentation
- **Network Monitoring** • Network Performance Optimization • Monitoring Systems and Performance • Network Monitoring Utilities • Logs
- **Network Troubleshooting** • Troubleshooting Procedures • Command Line Interface Tools • Troubleshooting Reference Model • Troubleshooting Connectivity Scenarios