Course overview

CompTIA Network+ Certification (Exam N10-007) Study Guide
(G525eng v038)

Overview

This course is intended for those wishing to qualify with CompTIA Network+ certification. CompTIA’s Network+ Certification is a foundation-level certification designed for IT professionals with around 1 year’s experience whose job role is focused on network administration.

This exam will certify the successful candidate has the knowledge and skills required to troubleshoot, configure, and manage common network devices; establish basic network connectivity; understand and maintain network documentation; identify network limitations and weaknesses; and implement network security, standards, and protocols. The candidate will have a basic understanding of enterprise technologies, including cloud and virtualization technologies.

CompTIA Network+ Syllabus

Courseware with Integrated Learning from Professor Messer

Professor Messer has long been a web hero for CompTIA certification students. For many years, Professor Messer has provided video-based training courses for CompTIA certifications. With professionally-produced lessons covering the full exam objectives and online forums, Professor Messer is a trusted online source for exam information.

Now, gtslearning has partnered with Professor Messer to take this learning to a new level. You will be able to study from the gtslearning courseware and link to the appropriate training video (by QR code, hyperlink or typing short URL) for further explanation. Equally, a student studying from the Professor Messer video course will be able to easily follow his video presentations using the same CompTIA CAQC Official courseware.

Certification track

This courseware bears the seal of CompTIA Approved Quality Content. This seal signifies this content covers 100% of the exam objectives and implements important instructional design principles. CompTIA recommends multiple learning tools to help increase coverage of the learning objectives. The contents of this training material were created for the CompTIA Network+ Certification N10-007 exam covering the 2018 Edition certification exam objectives.

Target audience

CompTIA Network+ is the first certification IT professionals specializing in network administration and support should earn. Network+ is aimed at IT professionals with job roles such as network administrator, network technician, network installer, help desk technician and IT cable installer.
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Course outcomes
This course will teach you the fundamental principles of installing, configuring, and troubleshooting network technologies and help you to progress a career in network administration. It will prepare you to take the CompTIA Network+ N10-007 exam by providing 100% coverage of the objectives and content examples listed on the syllabus. Study of the course can also help to prepare you for vendor-specific technical support qualifications and act as groundwork for more advanced training.

On course completion, you 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 security and appropriate countermeasures and controls.
- Install and configure network cabling and appliances.
- Manage, monitor, and troubleshoot networks.

What's new?
Network+ N10-007 ensures that the exam keeps pace with the evolving requirements for IT networking. Network+ is developed by leading IT experts and industry-wide survey feedback. The update incorporates the latest trends and techniques in use of cloud services and virtualization plus support for Internet of Things technologies and protocols.

Exam format
The N10-007 exam, delivered through the Pearson VUE Test Center Network, contains up to 90 multiple-choice and performance-based test items and has a duration of 90 minutes. The passing score is 720 on a scale of 100-900.

Course prerequisites
To get started with this course, you should have successfully completed gtslearning's "CompTIA A+ Study Guide" courses (gtsgo.to/f74xi) and obtained A+ certification, and / or have around 9-12 months' experience of IT administration. It is not necessary that you pass the A+ exams before attempting Network+ certification, but it is recommended. Specifically, it is recommended that you have the following skills and knowledge before starting this course:

- Configure and support PC, laptop, mobile (smartphone / tablet), and print devices.
- Know basic network terminology and functions (such as Ethernet, TCP/IP, switches, routers).
- Configure and manage users, groups, and shared resources in a simple SOHO network.
- Understand the use of basic access control measures, such as authentication, security policy, encryption, and firewalls.
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Instructor resources and lab options

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

Three types of labs are available to give students the practical experience critical to a successful training experience:

- gtslearning’s classroom labs provide in-depth practical coverage of the syllabus objectives by challenging the student to complete configuration and troubleshooting tasks on a fully functional VM network. The classroom labs require one Windows 10 / Hyper-V host PC (8-16 GB RAM) per student and licenses for Windows 10, Windows Server 2016, and Windows 7.

- Hosted classroom labs from our partner Learn on Demand systems save you site setup time and costs. LOD hosted classroom labs are accessed via a browser but follow the same general sequence, steps, and timings as the classroom lab book. You can check system requirements and setup tasks at gtsgo.to/rb0uf.

- Online Labs from our partner Practice Labs provide a different lab option for self-study and can also be used in the classroom. You can check system requirements and setup tasks at gtsgo.to/nf1rc.

Course contents

The course consists of a study volume, containing indexed notes and review questions, plus exam objectives mapping, exam information, and a comprehensive glossary. The course also comes with an online practice exam, pre-requisites test, and pre-/post-unit assessment tests.

Module 1 / Local Area Networks

- **Topologies and the OSI Model** • Key Features of Networks • Network Topologies • The OSI Model Summary • Labs • VM Orientation

- **Ethernet** • Transmission Media • Media Access Control • Broadcast Domains • Ethernet Frames • Ethernet Deployment Standards • MAC Addressing • Address Resolution Protocol (ARP) • Packet Sniffers • Labs • Configuring Ethernet Networking

- **Hubs, Bridges, and Switches** • Hubs and Bridges • Switches • Switch Interface Configuration • Spanning Tree Protocol (STP) • Power over Ethernet (PoE)

- **Infrastructure and Design** • Network Infrastructure Implementations • Planning an Enterprise Campus Network • Network Hierarchy and Distributed Switching • Software Defined Networking • Planning a SOHO Network • TCP/IP Protocol Suite

- **Policies and Best Practices** • Procedures and Standards • Safety Procedures • Incident Response Policies • Security and Data Policies • Password Policy • Employee Policies
Module 2 / IP Addressing

- Internet Protocol • IPv4 • IPv4 Address Structure • Subnet Masks • IP Routing Basics • ipconfig / ifconfig • ICMP and ping • Labs • Configuring IPv4 Networking

- IPv4 Addressing • IPv4 Addressing Schemes • Classful Addressing • Public versus Private Addressing • Subnetting and Classless Addressing • Planning an IPv4 Addressing Scheme • Public Internet Addressing • Variable Length Subnet Masks (VLSM) • Labs • Configuring IPv4 Subnets

- IPv6 Addressing • IPv6 Address Format • IPv6 Addressing Schemes • IPv6 Address Autoconfiguration • Migrating to IPv6 • Labs • Configuring IPv6 Networking

- DHCP and APIPA • IPv4 Address Autoconfiguration • Configuring DHCP • DHCPv6 • Labs • Configuring Address Autoconfiguration

Module 3 / Internetworking

- Routing • Routing Basics • Routing Algorithms and Metrics • Dynamic Routing Protocols • Administrative Distance and Route Redistribution • IPv4 and IPv6 Internet Routing • High Availability Routing • Installing and Configuring Routers • Routing Troubleshooting Tools • Labs • Configuring Routing

- TCP and UDP • Transmission Control Protocol (TCP) • User Datagram Protocol (UDP) • TCP and UDP Ports • Port Scanners • Protocol Analyzers • Labs • TCP and Port Scanning

- Name Resolution and IPAM • Host Names and FQDNs • Domain Name System • Configuring DNS Servers • Resource Records • Name Resolution Tools • IP Address Management (IPAM) • Labs • Configuring Name Resolution and IPAM

- Monitoring and Scanning • Performance Monitoring • Network Monitoring Utilities • Logs and Event Management • Simple Network Management Protocol • Analyzing Performance Metrics • Patch Management • Vulnerability Scanning • Labs • Performance Testing and Monitoring

- Network Troubleshooting • Troubleshooting Procedures • Identifying the Problem • Establishing a Probable Cause • Establishing a Plan of Action • Troubleshooting Hardware Failure Issues • Troubleshooting Addressing Issues • Troubleshooting DHCP Issues • Troubleshooting Name Resolution • Troubleshooting Services
Module 4 / Applications and Security

- **Applications and Services** • TCP/IP Services • HTTP and Web Servers • SSL / TLS and HTTPS • Email (SMTP / POP / IMAP) • Voice Services (VoIP and VTC) • Real-time Services Protocols • Quality of Service • Traffic Shaping • Bottlenecks and Load Balancing • Multilayer Switches • Labs • Configuring Application Protocols

- **Virtualization, SAN, and Cloud Services** • Virtualization Technologies • Network Storage Types • Fibre Channel and InfiniBand • iSCSI • Cloud Computing • Configuring Cloud Connectivity

- **Network Security Design** • Security Basics • Common Networking Attacks • Network Segmentation and DMZ • Virtual LANs (VLAN) • VLAN Trunks • Network Address Translation (NAT) • Device and Service Hardening • Honeypots and Penetration Tests

- **Network Security Appliances** • Basic Firewalls • Stateful Firewalls • Deploying a Firewall • Configuring a Firewall • Deploying a Proxy • Intrusion Detection Systems (IDS) • Denial of Service • Labs • Configuring a NAT Firewall

- **Authentication and Endpoint Security** • Authentication and Access Controls • Social Engineering • Authentication Technologies • PKI and Digital Certificates • Local Authentication • RADIUS and TACACS+ • Directory Services • Endpoint Security • Network Access Control • Labs • Secure Appliance Administration

Module 5 / Operations and Infrastructure

- **Network Site Management** • Network Cabling Solutions • Distribution Frames • Change and Configuration Management • Network Documentation and Diagrams • Labeling • Physical Security Devices • Business Continuity and Disaster Recovery • Network Link Management • Power Management • Backup Management • Labs • Network Inventory Management

- **Installing Cabled Networks** • Twisted Pair Cable (UTP / STP / ScTP) • Twisted Pair Connectors • Wiring Tools and Techniques • Cable Testing Tools • Troubleshooting Wired Connectivity • Other Copper Cable Types • Fiber Optic Cable and Connectors • Transceivers and Media Converters

- **Installing Wireless Networks** • Wireless Standards (IEEE 802.11) • Wireless Network Topologies • Wireless Site Design • Troubleshooting Wireless Connectivity • Wireless Security • Wi-Fi Authentication • Extensible Authentication Protocol • Troubleshooting Wireless Security • Wireless Controllers

- **Installing WAN Links** • Wide Area Networks (WAN) • Telecommunications Networks • Modern Telecommunications Networks • Local Loop Services • Installing WAN Links • Wireless WAN Services • Internet of Things

- **Configuring Remote Access** • Remote Access Services (RAS) • MPLS and PPP • SIP Trunks • Virtual Private Networks (VPN) • SSL / TLS / DTLS VPNs • IPsec • Internet Key Exchange / ISAKMP • Remote Access Servers • Remote Administration Tools • Managing Network Appliances • Remote File Access • Labs • Configuring Secure Access Channels • Configuring a Virtual Private Network
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Why choose gtslearning?

Established 1998, gtslearning is an award-winning developer and supplier of printed and digitally-delivered courseware and learning support materials for CompTIA certifications.

Here are just a few of the reasons why you should choose gtslearning:

**Instructor and student manuals**
- CAQC-approved printed books for delivery in the classroom
- Fully integrated Professor Messer videos

**Skillpipe eBooks**
- Browser-based app for reading CAQC-approved content as an eBook
- Online and offline access with Windows desktop app, plus iOS and Android
- Fully integrated Professor Messer videos

**Online learning**
- Complete access to CAQC-approved content
- Fully integrated practice exams (linking to revision topics if answered incorrectly) and Professor Messer videos
- Optional LTI integration for SSO (Single Sign-On)

**Free practice exams and review questions**
- Practice exam for each certification exam with 200+ questions per title
- Free access through online learning site

**Free instructor resources**
- PowerPoint slides, setup guides, class timetable and much more, for ALL titles – instructor edition includes annotations for trainer
- Lab manual with comprehensive exercises, loved by trainers worldwide!

**Options**
- Online Practice Labs for self-study or classroom-based browser access to real, live equipment – over-the-shoulder tools available for trainers
- Transcender Practice Exams with performance-based question simulation

**And finally, doing business with gtslearning**
- 20 years experience as CompTIA award-winning content developer
- Offices in US, UK and South Africa
- Fantastic customer service!