



CompTIA Network+ Certification Course

Overview

This 5-day course is intended for those wishing to qualify with CompTIA Network+ Certification. Network+ is foundation-level certification designed for IT professionals with 1 year's experience whose job role is focused on network administration.

The CompTIA Network+ certification will certify that the successful candidate has the knowledge and skills required to troubleshoot, configure, and manage common network wireless and wired devices, establish basic network design and 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 emerging technologies including unified communications, mobile, cloud, and virtualization technologies.

Target audience and course prerequisites

CompTIA Network+ is aimed at IT professionals with job roles such as network administrator, network technician, network installer, help desk technician and IT cable installer.

Ideally, you should have successfully completed the "CompTIA A+ Support Skills" course, achieved CompTIA A+ certification, and have around 9-12 months' experience of networking support or IT administration. It is not necessary that you pass the A+ exams before completing Network+ certification, but it is recommended.

Regardless of whether you have passed A+, 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.



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+ exam by providing 100% coverage of the objectives and content examples listed on the syllabus. Study of the course can 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 resources and appropriate security countermeasures.
- Install and configure network cabling and appliances.
- Manage, monitor, and troubleshoot networks.

Instructional Method

This course is offered in instructor-led training (ILT)/virtual instructor-led training (vILT) formats with application of concepts through hands-on exercises in a live lab environment.

Course Length

5 days

Registration

Please go to www.experior.ca/calendar.aspx or toll free 877.470.0008

Topic Outline

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, pre-/post-unit assessment tests plus written scenarios to test your ability to select appropriate technologies and configuration options for given tasks.

Module 1 / Topologies and Infrastructure

- Topologies and the OSI Model • Key Features of Networks • Clients and Servers • Network Topologies • The OSI Model • Physical Layer • Data Link Layer • Network Layer • Upper Layers • OSI Model Summary
- Ethernet • Media Types and Modulation • Signaling • Media Access Control • Ethernet Frames • Legacy Ethernet
- Standards • Modern Ethernet Standards • MAC Addressing • Address Resolution Protocol (ARP) • Protocol Analyzers • Labs • Configuring a Network Adapter • Using Hyper-V • ARP and Packet Analysis
- Hubs, Bridges, and Switches • Hubs and Bridges • Switches • Managing a Switch • Switch Interface Configuration • Virtual LANs (VLAN) • Spanning Tree Protocol (STP) • Power over Ethernet (PoE)
- Infrastructure and Design • Network Infrastructure Implementations • Planning an Enterprise Campus Network • Planning a SOHO Network Installation • Planning an Industrial Control System • TCP/IP Protocol Suite

Module 2 / Addressing and Routing

- Internet Protocol • Internet Protocol Basics • Subnet Masks • ipconfig / ifconfig • IP Routing Basics • ICMP and ping • Labs • IP Address Configuration
- IPv4 Addressing • IP Addressing Schemes • Subnetting and Classless Addressing • Planning an IP Addressing Scheme • Public Internet Addressing • Multicast and IGMP • Labs • IP Addressing Schemes
- DHCP and APIPA • Static versus Dynamic IP Addressing • Configuring DHCP • Labs • Configuring DHCP Clients and Servers • Labs • Configuring DHCP in Windows • Configuring DHCP in Linux
- IPv6 Addressing • IPv6 Address Format • IPv6 Addressing Schemes • Configuring IPv6 Addresses • Migrating to IPv6 • Labs • IPv6 Addressing
- Routing • Routing Basics • Routing Algorithms and Metrics • 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

Module 3 / Troubleshooting and Management

- Transport Protocols • Transmission Control Protocol (TCP) • User Datagram Protocol (UDP) • TCP/IP Ports • netstat • Labs • TCP and Port Scanning
- Name Resolution • Host Names and FQDNs • Domain Name System (DNS) • Configuring DNS Servers • nslookup and nbtstat • Labs • Name Resolution • Configuring DNS

- Troubleshooting • Troubleshooting Procedures • Identifying the Problem • Establishing a Probable Cause • Establishing a Plan of Action • Troubleshooting Connectivity Issues • Troubleshooting Configuration Issues • Troubleshooting Internetworking • Troubleshooting Services
- Applications and Services • TCP/IP Services • HTTP and HTTPS • FTP, TFTP, and SMB • Email (SMTP / POP /IMAP) • VoIP and VTC • Real-time Services Protocols • Quality of Service • Packet Shapers • Load Balancers • Multilayer Switches • Labs • Configuring Email Services
- Management and Monitoring • Performance Monitoring • Network Monitoring Utilities • Logs • Analyzing Performance Metrics • Simple Network Management Protocol • Remote Administration Tools • Labs • Performance Testing and Monitoring • Monitoring and Management Tools
- Cloud and Virtualization • Virtualization Technologies • Storage Area Networks • Cloud Computing

Module 4 / Installation

- Network Sites • Wiring Distribution • Rack Systems • Safety and ESD • Power Management • HVAC (Heating, Ventilation, Air Conditioning) • Physical Security Controls • Fire Prevention and Suppression
- Installing Cable • Twisted Pair Cable (UTP / STP / ScTP) • Twisted Pair Connectors • Wiring Tools and Techniques • Cable Testing and Troubleshooting • Other Copper Cable Types • Fiber Optic Cable and Connectors • Media Converters • Troubleshooting Fiber Cable Issues
- Installing Wireless Networks • Wireless Standards (IEEE 802.11) • Wireless Network Topologies • Wireless Site Design • Site Surveys and Antenna Placement • Troubleshooting Wireless Links
- WAN Technologies • WAN Basics • Telecommunications Networks • Modern Telecommunications Networks • Packet-switched WAN Services • Local Loop Services • Wireless WANs
- Remote Access • Remote Access Services (RAS) • Virtual Private Networks (VPN) • PPTP and SSL VPNs • IP Security (IPsec) • Remote Access Servers • Installing Remote Access Links • Troubleshooting WAN Issues

Module 5 / Security

- Vulnerabilities and Threats • Security Basics • Social Engineering • Network Reconnaissance • Wireless Security • Network Attack Strategies • Denial of Service
- Security Appliances • Network Segmentation • Demilitarized Zones (DMZ) • Network Address Translation • Firewalls • Configuring a Firewall • Proxies and Gateways • Anti-malware Software • Intrusion Detection Systems (IDS) • Labs • Configuring Certificate Services, HTTPS, and FTPS • Configuring a NAT Firewall
- Authentication • Authentication Technologies • Cryptographic Hash Functions • NTLM and Kerberos • RADIUS and TACACS+ • PAP, CHAP, and EAP • Wi-Fi Authentication • Endpoint Security • Network Access Control • Mobile Device Management • Troubleshooting Authentication and ACLs • Labs • Authentication Methods and VPNs
- Incident Response • Business Continuity Concepts • Disaster Recovery Planning • IT Contingency Planning • Training • Incident Response Procedures • Forensic Procedures • Collection of Evidence
- Change and Configuration Management • Change and Configuration Management • Documentation • Procedures and Standards • Employee Policies • Patch Management • Backup Plans and Policies