

CompTIA Network+ Certification

5 Days

Description

This 5-day practical "hands-on" course is the essential foundation for newcomers to network support. The course has been developed to produce competent network support engineers that are capable of taking and passing CompTIA's Network+ Certification exam.

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.

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Module 1 - Networking Fundamentals

Networking Elements • LANs, WANs, and the Internet • Network Components • Uses and Benefits of a LAN • Server-Based Networks • Peer-to-Peer Networks
Physical Topologies • Introduction to Topologies • Star Topology • Bus Topology • Ring Topology • Other Topologies
Physical Media • Transmission Media • Media Bandwidth • Media Types • Twisted Pair Cable (TP) • Coaxial Cable • Fiber Optic Cable • Firewire (IEEE 1394) • USB

Module 2 - The OSI Model

Introducing the OSI Model • The OSI Model • OSI Model Summary

OSI Model Lower Layers • Physical Layer • Data Link Layer • 802 Standards • Media Access • Ethernet (IEEE 802.3) • Token Ring (IEEE 802.5) • VGLAN • AppleTalk

Network Components • Intranetwork and Internetwork Devices • Structured Wiring Systems • Network Adapters

OSI Model Middle Layers • Network Layer • Transport Layer • Routers • Layer 3 Switches • Overview of Transport Protocols • Characteristics of Transport Protocols • Adding and Removing Protocols

OSI Model Upper Layers • Upper Layers of the OSI Model • Client/Server Protocols

Module 3 - Major Network Operating Systems

Features of Network Operating Systems • Server Network Operating Systems • Workstation Software • Identifying a Machine on the Network • Connecting to Network Resources • Using Network Printers • Network Applications • Shared Network Applications

Novell NetWare • Novell NetWare

Microsoft Windows • Windows NT • The Windows 2000 Family • The Windows 2003 Family • Client Software • Combining Windows and NetWare • Windows Administration Tools

UNIX, Linux, and Mac OS X • UNIX • Linux • Apple Mac OS X

Module 4 - TCP/IP Fundamentals

Introducing TCP/IP • Development of TCP/IP • Why is TCP/IP so Popular? • TCP/IP as an Open Standard • The TCP/IP Protocol Suite

The Internet and Transport Protocols • Address Resolution Protocol (ARP) • Internet Protocol • ICMP • Transmission Control Protocol (TCP) • User Datagram Protocol (UDP)

Application Protocols • TCP/IP Services • Email (SMTP Protocol) • The World Wide Web (HTTP) • Other TCP/IP Services • TCP/IP Ports

Understanding IP Addressing • IP Addresses • Subnet Mask • Creating Subnets • Planning an IP Addressing Scheme • Applying for an Internet Address • Default Gateway • Supernetting • IP Version 6 • Zeroconf Networks

Configuring TCP/IP on Windows Workstations • TCP/IP Configuration Parameters • Dynamic Host Configuration Protocol

Name Resolution Methods • Host Names and FQDNs • Name Resolution Using the HOSTS File • Name Resolution Using DNS • Microsoft Networking Host Names

TCP/IP Utilities • ARP Utility • PING • TRACERT / TRACEROUTE • NETSTAT • ROUTE • NBTSTAT • IPCONFIG / IFCONFIG • Troubleshooting DNS • FTP • Other Utilities

Module 5 - Network Remote Access

Wireless Communications • Wireless Networks • Microwave • Infrared • Radio (Single Frequency / Spread Spectrum) • Bluetooth • Setting up a Wireless Network

WAN Technologies • WAN Overview • Dedicated/Leased Lines • Switched Networks • X.25 • ISDN • Fiber Distributed Data Interface (FDDI) • Synchronous Optical Network

Remote Connectivity • Public Networks • The Internet • Remote Connection Protocols • Tunneling/Encapsulation • Requirements for Remote Connectivity • Virtual Private Networks (VPN) • Remote Desktop Protocol (RDP) • Intranets and Extranets • VLANs • Troubleshooting Remote Connectivity for Small Offices

Module 6 - Network Administration and Security

Administering the Operating System • Network Operating System Security • Administrative / Supervisory Account • Creating and Managing User Accounts • Groups • File Security in Windows • Securing a Linux File System • NetWare File Security

Building a Secure Network • What Makes an Operating System Secure? • Types of Attack • Types of Defense • Password Principles • Authenticating User Logon Requests • Encryption • IPSec • Firewalls • Proxy Servers • NAT and ICS

Fault Tolerance and Disaster Recovery • Fault Tolerance and Redundancy • Backup Strategies • Virus Prevention • Uninterruptible Power Supplies (UPS) • Disk Fault Tolerance

Module 7 - Troubleshooting

Troubleshooting Equipment • Cable Testing Equipment • Product Indicators • Test Frame and Packet Generators

Troubleshooting Procedures • Overview of Troubleshooting Procedures • Troubleshooting Networks • Troubleshooting Cabling • Troubleshooting Infrastructure • Routing Issues • Troubleshooting Name Resolution • Establishing a Session • Troubleshooting Services • User Problems • Service Packs and Driver Updates

Monitoring Network Performance • Performance Monitor • Network Monitor • Protocol Analyzer • SNMP