1001-02: CompTIA A+ Certification, Part 7 of 13: Networking Technologies

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Meet the expert: A lifelong fascination with technology led a varied career in technology. I have over 20 years of experience supporting end users, and small businesses. On top of that, I have been an Information Technology instructor for Edmonds Community College, where I instructed on CompTIA’s A+, and Network+ material. During that time I created curriculum for not only those courses, but also for CompTIA’s Security+ certification. I currently hold the following certifications: A+, Network+, Server+, Cloud+, and Project+.

Chuck Nailen has been providing classroom training for more than 16 years. He does training for in department-supported CompTIA curriculums, Microsoft curriculums, and Department of State (DoS) proprietary platforms in support of SAIT and DoS programs. He holds many certifications including National Career Readiness Certificate-Gold Level, MCSA, MCT, MCITP, MCTS, and others.

Prerequisites: This course assumes the user has little to experience with computer hardware or software.

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Course description: In this course for the CompTIA A+ 1001-1002 exam you will learn about various types of Network Media, Network Cables, and Network Connectors. In addition, you will learn about Wireless Networks and what is used to connect them. After learning about types of Networks, you will be introduced to how machines communicate with each other using TCP/IP, which is the standard communication protocol suite used today. Then you will learn about different types of Networks: Workgroup, HomeGroup, and Domains. For domains we will cover how to add a user to the domain, as well as pre-staging a computer that is going to be added to the domain. Finally, you will learn about different tools that will be needed for helping with Networks during their career as an A+ technician.

Course outline:

Physical Network Connections
- Introduction
- Networking Technologies
- Networks
- Network Models
- NIC Characteristics
- Twisted Pair Cables
- PVC Cable vs. Plenum Cabling
- Twisted Pair Connectors
- Coaxial Cables
- Coaxial Cable & Connector Type
- Fiber Optic Cables
- Fiber Optic Cable Types
- Fiber Optic Connector Types
- Wireless Connections
- Additional Connection Methods
- Summary

TCP/IP
- Introduction
- TCP/IP
- IPv4 Addresses
- Subnet Masks
- Virtual Local Area Network
- Gateways
- IP Address Classes
- IPv6 Addresses
- The IPv6 Address Format
- IPv4 vs. IPv6
- Addressing Schemes
- Static vs. Dynamic Addressing
- DHCP
- DNS
- Client-Side DNS
- Demo: DHCP and DNS
- Summary

Network Connectivity
- Introduction
- LANs
- WANs
- PANs
- MANs
- VPNs
- Ethernet
- Network Topologies
- Device Types & Features
- ISPs
- Broadband Communications
- Connection Types & Features
- Summary

Ports and Protocols
- Introduction
- Ports
- TCP vs. UDP
- Port Ranges
- Common Ports
- LDAP
- SNMP
- SSH
- SFTP
- SMB
- Summary

Setup & Config Windows Network
- Introduction
- Directory Services
- Windows Networking Options
- Network Shares
- Network Connection Types
- Proxy Settings
- Remote Desktop
- Network Locations Settings
- Firewall Settings
- Alt IP Address Config Methods
- Network Card Properties
- Demo: Features and Functionality
- Demo: Add to Domain
- Summary

Networking Tools
- Introduction
- Cable Testers
- Crimpers
- Multimeter
- Toner Probe
- Loopback Plug
- Punch Down Tool
- Summary