

CompTIA Network+



Online Course

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Course Modules

1. Networking Fundamentals

- Introduction to Networking
- Common Terminology
- OSI Model
- DoD Model
- TCP, UDP, IP
- ICMP, IGMP, ARP
- Network Topologies
- Network Types
- Network Characteristics



2. Internet Protocol (IP)

- IPv4 Basics
- IP Packet and Interface Types
- Configuring Client IP Settings
- Binary Numbering System
- Classful and Classless Addressing
- Understanding CIDR Notation
- IPv4 Subnetting Method
- Verifying with Binary
- Finding Subnet IDs
- Subnetting
- Supernetting
- IPv6
- IPv4 - IPv6 Transition Mechanisms

3. Cables and Connectors

- Ethernet Standards
- Copper Cable Types
- Fiber Optic Cable Types
- Connector Types
- Media Converters and Transceivers
- Cable Management



4. Layer 7 Protocols

- Remote Control Protocols
- File Sharing Protocols
- Web Protocols
- Email Protocols
- Database Protocols
- Voice Protocols
- Security Protocols
- Management Protocols

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5. Network Services

- DHCP
- Configuring DHCP
- Configuring a DHCP Relay Agent
- DNS
- Configuring DNS
- NTP
- Corporate and Datacentre Network Architecture





6. Networking Devices

- Repeaters and Hubs
- Connecting Devices with a Hub
- Bridges and Switches
- Connecting Devices with a Switch
- Routers and Multilayer Switches
- Security Devices
- Modems

7. Networked Devices

- IP Devices
- IoT
- Programming IoT Devices
- ICS/SCADA

8. Wireless Technologies

- Wireless Overview
- Radio Basics
- Modulation
- Wi-Fi Standards
- Antennas
- Wi-Fi Service Sets
- Wi-Fi Security
- Cellular



9. Routing and Bandwidth Management

- Routing Basics
- Configuring Static Routes
- Packet Delivery on the Same Network
- IP Routing Across a Single Router
- IP Routing Across Multiple Hops
- Static Routes – CHALLENGE
- Route Selection
- RIP
- Configuring RIP – CHALLENGE
- OSPF
- EIGRP
- BGP
- NAT/PAT



10. Ethernet Switching

- Ethernet Basics
- Switching Overview
- Examining a MAC Table
- VLANs
- Creating VLANs
- VLAN Trunking
- Configuring VLAN Trunking
- VLAN Routing
- Configuring VLAN Routing
- Contention Management

11. Network Performance

- Monitoring Performance
- Common Metrics
- Examining Interface Statistics
- SNMP
- Netflow
- Network Security Monitoring



12. High Availability and Disaster Recovery

- HA and DR Concepts
- High Availability Mechanisms
- Disaster Recovery Mechanisms
- Facility and Infrastructure Support

13. Organizational Documents

- Plans and Procedures
- Security Policies
- Loss Prevention
- Common Agreements
- Common Documentation
- Structured Cabling - MDF and IDF
- Horizontal and Vertical Cabling
- Implementing Cable Management
- Labeling
- Surveys and Assessments

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14. Network Security

- Common Security Concepts
- Common Attack Types
- Spoofing-based Attacks
- Hijacking and MITM
- Social Engineering
- Network Segmentation
- Private VLANs
- Single Organization Authentication
- Extending Authentication
- Authorization
- Network Device Hardening
- Wireless Security
- Remote Access Security
- IoT Security
- Physical Security



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15. Network Troubleshooting

- Troubleshooting Methodology
- Physical Connectivity Issues
- Hardware Testing Tools
- Testing an Ethernet Cable
- Crimping on an RJ-45 Connector
- Punching Down Twisted Pair
- Using a Telephone Toner
- Understanding Electricity
- Checking Cable Continuity
- Testing DC Voltage
- Testing AC Voltage
- Twisted Pair Pinout Problems
- Twisted Pair Termination Problems
- Repairing Damaged Twisted Pair Cable
- Fiber Optic Connectivity Issues
- Testing a Fiber Optic Cable
- Common Port Problems
- Working with Ports and Their Devices
- Common Software Testing Tools
- Scanning for Open Ports
- Common Command Line Utilities
- Troubleshooting Basic IP Networking Issues
- Common Switching Issues
- Switching Test Tools and Techniques
- Common IP Routing Issues





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