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COURSE	TITLE	DURATION
CompTIA	Network+ Certification	40 H.

Target Audience:

- Networking professionals employed at corporations, government organizations, and information technology companies.
- Job Responsibilities
- Implementing the installation of a network; maintaining and supporting the network; and troubleshooting the network.

Prerequisites:

- Students should have A+ certification or equivalent experience.

Course Outlines:

Introduction to Networking

- Networking Evolution
- Mainframes
- Client/Server Model
- Web-based Networking
- Networking Categories
- Network Topologies
- Network Operating Systems
- Novell NetWare, Microsoft Windows NT, and UNIX

Networking Protocols

- OSI Reference Model
- Packets
- Application, Transport and Network Protocols
- Major Networking Protocols
- TCP/IP, IPX/SPX, NetBEUI, AppleTalk, Data Link Control (DLC), Systems Network Architecture (SNA)
- Choosing and Combining Protocols
- Directory Services

Network Devices

- Local Area Networks (LAN)
- Wide Area Networks (WAN)
- Network Access Points (NAP)
- Common Network Componentry
- Common Peripheral Ports
- Transmission Media
- Environmental Factors

Connecting Your Network

- Transmission Types
- IEEE LAN Standards
- Additional LAN Standards
- Configuring Network Interface Cards
- Interrupt Requests (IRQ), I/O Address, and DMA
- WAN Methods
- T-Carrier Services

TCP/IP Architecture

- TCP/IP and Interoperability
- The Internet Architecture
- Requests for Comments (RFCs)
- Internet Protocols
- De-multiplexing
- Port Numbers

Internet Addressing

- Address Classes, IP Addressing Rules, and Reserved IP Addressing
- Subnetworks & Custom Subnet Masks
- IP Address Conservation
- Classless Interdomain Routing (CIDR) & Supernetting
- Normal TCP/IP Configuration Parameters

Routing

- Routing Process
- Static vs. Dynamic Routing
- Routing and Packets
- Routing Protocols
- Routing Information Protocol (RIP)
- Open Shortest Path First (OSPF)
- Exterior Gateway Protocol (EGP)
- Border Gateway Protocol (BGP)
- Classless Interdomain Routing (CIDR)

TCP/IP Utilities

- Useful Network Files
- Internet Control Message Protocol (ICMP)
- General Network Commands
- Name and Address Commands

Internetworking Servers

- File and Print Servers
- HTTP Server Essentials
- Proxy, Mail, Mailing List, Media, DNS, FTP, News, Certificate, Directory, Catalog, and Transaction Servers
- The Internet Daemon: inetd
- Choosing the Ideal Server
- Company Needs/Abilities
- Product Advantages and Disadvantages
- Popular Server Products

Name Resolution

- Hosts File
- Domain Name System (DNS)
- DNS Server Types and DNS Records
- Berkeley Internet Name Domain (BIND)
- Implementing DNS
- Windows Internet Naming Service (WINS)

Address and Parameter Allocation for TCP/IP Hosts

- Bootstrap Protocol (BOOTP)
- Dynamic Host Configuration Protocol (DHCP)
- DHCP Implementation

Remote Connectivity

- Remote Access Servers
- Dial-up Protocols
- Common Methods for Accessing a Remote Access Server
- Remote Access Server Software
- Virtual Private Networks (VPNs)

User Management

- Authentication
- Security Models and Authentication
- Peer-level and User-level Access
- Creating User Accounts
- Permissions and Universal Permissions
- Windows NT, UNIX and Novell Permissions
- Additional Login Account Terms
- Administrative Privilege
- Standard Password Practices
- Network Policies
- Standard Operating Procedures (SOPs)

Network Printing

- Flow of a Print Task
- Configuring a Network Printer
- Client Configuration
- Using Forms, Separator Pages, and Printing Pools
- Printer Administration

Data Protection

- Establishing a Baseline
- Fault Tolerance
- Other Types of Data Protection
- Planning a Backup Strategy
- Disaster Recovery

Network Security Essentials

- Defining Security and Assets
- Security Threats and Types of Attacks
- Viruses
- The Robert Morris Internet Worm
- The Hacker Process
- Defeating Attacks
- Security Standards and Key Security Organizations
- Auditing Phases
- Securing a Server

Enterprise Network Security—Encryption and Firewalls

- Encryption and Applied Encryption
- Network-level Protocols and Encryption
- Creating an SSL Session
- Firewalls and Packet Filters
- Proxy Servers
- Firewall Topology

Maintaining Your Network

- Version Control
- Moving or Changing Equipment
- Patches and Fixes
- Supporting Your Network

Troubleshooting the Network and Diagnostic Tools

- Analyzing the Scope of the Problem
- Applying Troubleshooting Methods
- Troubleshooting Name Resolution
- Using Troubleshooting Indicators
- Using Troubleshooting Tools