

Convergence Technologies Professional (CTP) – Course 1: Data Networking

Data Networking is designed to teach you the fundamentals of networking. Through hands-on training, you will learn the vendor-independent networking skills and concepts required for entry-level professionals seeking employment in the information technology or telecommunications industry. This course will also help to prepare you for the Telecommunications Industry Association (TIA) CTP exam.

Topics

Introduction to Data Networking

- Networks Defined
- Networking Evolution
- Client/Server Model
- Web-Based Networking
- Networking Categories and Topologies
- Network Operating Systems

Networking Protocols

- The Need for Protocols
- OSI Reference Model
- Packets
- OSI/RM Protocol Examples
- Major Networking Protocols
- TCP/IP
- IPX/SPX, NetBEUI, AppleTalk
- Data Link Control (DLC)
- Systems Network Architecture (SNA)
- Choosing and Combining Protocols

LANs and WANs

- Basics of LANs and WANs
- Local Area Networks (LANs)
- Wide Area Networks (WANs)
- Network Access Points (NAPs)
- Common Network Components
- Common Peripheral Ports
- Transmission Media
- Transmission Types
- IEEE LAN Standards
- Additional LAN Standards
- WAN Standards
- T-Carrier System
- E-Carrier System
- SONET/SDH

TCP/IP Suite and Internet Addressing

- Introduction to TCP/IP
- Internet Architecture
- Requests for Comments (RFCs)
- Internet Protocols
- Introduction to Routing
- Port Numbers
- Internet Address Classes
- IP Addressing Rules
- Reserved IP Addressing
- Subnetworks and Custom Subnet Masks
- IP Address Conservation
- Normal TCP/IP Desktop Configurations
- Internet Protocol Version 6 (IPv6)

TCP/IP Troubleshooting

- TCP/IP Troubleshooting Tools
- Useful Network Files
- Internet Control Message Protocol (ICMP)
- General Network Commands
- Name and Address Commands
- Network Analyzers

Target Audience

Field technicians, voice and telephony technicians, networking administrators, systems engineers, data-communications technicians, technical sales and marketing professionals, telephony professionals who need data, and any individual interested in pursuing or advancing a data or convergence technologies career.

Prerequisites

No prior networking experience is required. However, students should be familiar with the Microsoft Windows operating system prior to taking this course.

Duration

12 hours

Job Responsibilities

Implement products and services in accordance with industry standards, apply basic troubleshooting practices, verify interoperability, identify components of a converged network and the challenges of integrating circuit-switched and packet-switched networks, properly implement IP addressing plans, and establish Voice-over IP (VoIP) requirements.