

Business Networking

Course Length	4 days
Course Code	7200
Prerequisites	None, however an Introduction to Data technologies course is extremely helpful.
Course Overview:	This course introduces the student to Business and Enterprise Networking concepts. The majority of the course is hands-on working with both common hardware and software used in business environments.

**This course can be customized or combined to meet specific system requirements*

Course Outline

Networking Overview

- What is a Network?
- Why Set up a Network?
- LAN Architecture
- WAN Architecture
- LAN vs. WAN
- Physical Hardware
- Logical Network/Protocols

WAN Interfaces and Transports

- DS1, DS3, xDSL, Fiber, ATM, Frame Relay, Microwave, Wireless

Benefits of Networking

- Sharing Resources
- Centralized Network Management

Sharing Data between Computers

- Logical Topologies
- Ethernet
- Network Types
- Client/Server
- Peer-to-Peer



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Business Networking

Cabling

- CAT 3,5,5e,6
- Cross-over
- Straight-Thru
- Cable Length Requirements

Wireless Networking Overview

- Wi-Fi/802-11
- How it works
- Benefits
- Wireless LAN technologies
- Wireless WAN technologies

OSI Model Review

- The Seven Layers
- Implementation by Layers
- Using the OSI to test the network

Networking Hardware

- Cabling/Wireless
- PCs/NIC cards
- Hubs
- Switches
- Routers
- Gateways
- Servers
- DNS
- DHCP

Network Protocols

- TCP/IP suite of Protocols
- IP Basics
- TCP/UDP

Network Addressing Overview

- IP Addressing (Static, Dynamic)
- DHCP Servers
- Subnetting

Setting up the Network

- Installing the Hardware
- Cabling
- Configuring the Software

Business Networking

Network Administration

- Administering the Network
- Network Security Design
- Backup and Data Storage
- Networking Software

Quality of Service

- What is QoS?
- Bandwidth Provisioning and Prioritization
- Network Parameters
 - Latency/Delay
 - Packet Loss
 - Jitter
- Provisioning QoS

Network Security

- Potential Network Risks
- Viruses, Spyware, SPAM
- Malicious and Non-malicious attacks
- Setting up network defenses
- Traffic Based Security
- User Based Security
- Network Address Translation (NAT)
- Firewalls
- Authentication, Authorization and Accounting (AAA)
- Access Lists

Network Applications

- Email
- Group Calendaring
- Shared resources and servers

Remote Networking

- Remote Access
- RAS
- Authentication and Security
- VPN

Business Networking

Network Troubleshooting and Maintenance

- Mechanics of Network troubleshooting
- Troubleshooting Host IP configurations
- Network Traffic Monitoring
- Network Base Lining
- Protocol Analyzers
- Congestion Avoidance and management
- Packet Shaping
- Network Growth and Upgrades

Router Overview

- How Routers work
- Routers and the Internet
- Routing Tables

Routing Protocols

- RIP
- OSPF
- BGP, IGRP, EGRP

Communicating with a Router

- Console Port
- Auxiliary Port
- Telnet
- HTTP Server User Interface

Configuring a Router

- Using command Line IOS (Cisco)
- Using a Graphical User Interface (GUI)

Future of Networking

***Extensive* Hands-on Exercises**