Service Desk Analyst Course

Course Curriculum

Section 1: Course Introduction

- Course Introduction and Overview
- Beginner-Friendly Labs
- Course Lecture PDFs
- Student Exercise: Introduce Yourself

Section 2: Overview and Benefits of Computer Networks

- What Is a Computer Network?
- Some Basic Computer Networking Rules
- Types of Networks (by Size)
- Peer-to-Peer vs. Client-Server Architecture
- Why Build a Computer Network?
- Student Exercise: Benefits of Computer Networks

Section 3: Course Primer: How Computer Networks Work

- Section Introduction
- Introduction to Computer Networking Protocols
- Introduction to the OSI Model
- Introduction to the TCP/IP Model
- Introduction to MAC Addresses
- Introduction to IP Addresses
- IP versus MAC Addresses
- Duplex Communication
- Network Transmission Types
- Introduction to Ethernet

Section 4: Network Topologies

- Section Introduction
- Physical vs. Logical Topologies
- Wired Network Topologies
- Wireless Network Topologies

Section 5: Networking Devices

- Section Introduction
- Network Interface Cards (NICs)
- Hubs
- Switches
- Wireless Access Points
- Wireless Range Extenders
- Routers
- Modems
- All-in-One SOHO Devices
- Media Converters
- Firewalls
- DHCP Servers
- VoIP Endpoints

Section 6: Network Cabling

- Section Introduction
- Types of Network Cabling
- Ethernet Standards
- Coaxial Cabling
- Twisted Pair Copper Network Cabling
- Plenum-Rated Cabling
- Fiber Optic Network Cabling
- Networking Cable Selection Criteria

Section 7: The OSI Model

- Section Introduction
- OSI Layer 7 - The Application Layer
- OSI Layer 6 - The Presentation Layer
- OSI Layer 5 - The Session Layer
- OSI Layer 4 - The Transport Layer
- OSI Layer 3 - The Network Layer
- OSI Layer 2 - The Data Link Layer
- OSI Layer 1 - The Physical Layer
- OSI Model Data Encapsulation and De-Encapsulation
- ✓ **OSI Model Quiz**

Section 8: Planning a Network

- Section Introduction
- Why We Plan
- The Overall Process
- Understanding the Business
- Establishing a Business Need
- Defining Specific Areas of Improvement
- Buy-in and Resources
- Hidden Costs
- Other Considerations
- Planning Questions
- The Next Steps
- Q&A Discussion Board Student Exercise

Section 9: Introduction to TCP/IP

- Section Introduction
- What is TCP/IP?
- TCP/IP Protocols
- Network Access Methods
- ✓ **Section Quiz**

Section 10: TCP/IP Network Layer Protocols

- Address Resolution Protocol (ARP)
- **ARP Live Demo:** ARP Command on Windows, Linux, and Mac
- The Internet Protocol (IP)
- Internet Control Message Protocol (ICMP)
- **Ping Live Demo:** Ping Command on Windows and Mac
- **Live Demo**: Wireshark ARP & ICMP Packet Analysis
- ✓ **TCP/IP Network Layer Protocols Quiz**

Section 11: TCP/IP Transport Layer Protocols

- Understanding Protocols, Ports and Sockets
- TCP vs UDP
- Closing TCP Sessions
- ✓ **TCP/IP Transport Layer Protocols Quiz**

Section 13: Understanding IPv4 Addresses & Binary Math

- Section Introduction
- Understanding IPv4 Addresses & Binary Math
- Binary Math Basics
- ✓ **Binary Math Student Exercise Worksheet**

Section 14: A Deeper Dive into IPv4 Addresses and Subnet Masks

- IP Address Classification and Subnet Masks
- The Power of 2's
- Public versus Private IP Addresses
- Public versus Private IP Addresses Visualized
- The Loopback IP Address
- **Lab # 6**: Assigning Static IP Addresses to LAN
- ✓ **IPv4 Addresses and Subnet Masks Quiz**

Section 15: Introduction IPv4 to Subnetting

- Introduction to Subnetting
- Subnetting Reference Tables
- Subnetting a Class C Network #1
- Visualizing Subnetting a Class C Network #1
- Subnetting a Class C Network #2
- Visualizing Subnetting a Class C Network #2
- **Lab # 7**: Create Two LANs on Different Subnets
- ✓ **Subnetting Quiz**

Section 16: IP Addressing Version 6 (IPv6) Fundamentals

- Section Introduction
- Disadvantages of IPv4 and IPv6 Solutions
- IPv6 Addressing
- IPv6 Transmission Types
- Types of Ipv6 Addresses
- IPv4 to IPv6 Translation & Compatibility
- IPv6 Neighbor Discovery Protocol
- ✓ **IPv6 Fundamentals Section Quiz**

Section 17: Assigning IP Addresses

- Section Introduction
- Static vs. Dynamic IP Address Assignment
- IPv4 Dynamic IP Address Assignment
- **Live Demo**: IPv4 DHCP and APIPA
- **Live Demo**: Windows Server 2016 DHCP Server
- ✓ **Assigning IP Addresses Section Quiz**

Section 18: DNS Fundamentals

- Section Introduction
- DNS Overview and Hierarchy
- Common DNS Record Types
- **Live Demo**: NSLookup Command
- **Lab # 9**: DNS and Web Server Configuration
- ✓ **DNS Fundamentals Section Quiz**

Section 19: Network Security

- Section Introduction
- The CIA Triad
- Least Privilege
- Acceptable Use Policy
- Defense in Depth
- Intranet, Extranet and the Internet
- VPN
- Firewalls
- Web Proxy Servers
- Network Intrusion Detection & Prevention
- **Lab # 13**: Configure Server Firewall to Block ICMP Requests
- ✓ **Network Security Section Quiz**

Section 20: Service Now (Live)

- How to create a ticket on Service Now?
- How to work on tickets over Service Now?
- States in Service Now.
- How to resolve P1, P2, P3. P4 and P5 tickets in Service Now?
- Work Notes and Customer Notes.
- How to resolve tickets?
- How to generate reports in Service Now?
- How to meet SLA?
- How to assign and forward to ticket to different group?

Section 20: Active Directory (Live)

- How to create a single account over AD?
- How to reset password?
- How to Change LOB?
- How to Disable account over AD?
- How to Enable account over AD?
- How to search for a user using Employee ID?
- Finding Tempo and OU.
- Assigning user to a Group.
- Changing details of a User.
- Deleting a user.

Section 21: How to Troubleshoot

- Hardware related issues.
- Outlook Related issues.
- Internet Connectivity.
- Web Based application issues.
- Other IT Related Issues.
- VPN Issues.