Linux Networking

Course outline

DAY 1

Linux Networking Training Course

Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

Session 1: NETWORKING FUNDAMENTALS

- Network Hardware
- Data Bandwidth and Speed
- Attenuation and Noise
- Network Types and Topologies
- Network Ports and Sockets
- MAC Addresses
- Exercise

Session 2: NETWORKING MODELS AND STANDARDS

- OSI Model
- Institute of Electrical and Electronic Engineers
- Internet Society and Internet Engineering Task Force
- Exercise

Session 3: IP ADDRESSING

- Internet Protocol Addressing
- Classful IP Addressing
- Reserved IP Address Ranges
- Classless Inter-Domain Routing (CIDR)
- Subnetting Considerations
- Extended Network Prefix
- Exercise

Session 4: PRACTICAL TCP/IP

- Origins of TCP/IP

- TCP/IP and the OSI Model

- TCP and UDP Headers

- TCP Data Flow

- The Address Resolution Protocol

- Installing Wireshark and Viewing Frames

- Exercise

Session 5: IP CONFIGURATION

- Microsoft Windows

- Linux Graphical Configuration

- Network Manager Configuration

- Network Testing Commands

- Exercise

DAY 2

Linux Networking Training Course

Session 6: IPV6

- IPv6 Address Format and Allocation

- IPv6 Auto Configuration

- IPv6 Configuration

- Exercise

Session 7: ROUTING

- Routing Principles

- Default Gateway

- Static Routing

- Routing Protocols

- Routing Protocols and Software

- Viewing the Routing Table

- Exercise

Session 8: FURTHER WIRESHARK OPERATIONS

- Filtering with Wireshark

- Further Wireshark Filters

- Filtering IPv6 Traffic

- Exercise

Session 9: APPLICATION LAYER PROTOCOLS

- Secure Shell(SSH)

- Domain Name System(DNS)

- Dynamic Host Configuration Protocol(DHCP)

- Network Time Protocol(NTP)

- Internet Control Message Protocol(ICMP)

- Hypertext Transfer Protocol(HTTP)

- File Transfer Protocol(FTP)

- Simple Mail Transfer Protocol(SMTP)

- Simple Network Management Protocol(SNMP)

- Network File Sharing Programs(NFS & Samba)

- Remote Desktop Programs

- Exercise

Session 10: NETWORK MONITORING AND TROUBLESHOOTING

- Network Troubleshooting

- Performance Analysis

- Detecting Network Errors with Wireshark

- Wireshark Expert Information

- Retransmission and Connection Resets