

Level 1 – Basics of Networking

- Introduction to Networking
 - Types of Networks: LAN, WAN, MAN, PAN
 - Networking Devices: Hub, Switch, Router, Modem
 - IP Addressing: IPv4, IPv6
 - MAC Address
 - Network Topologies: Star, Bus, Ring, Mesh
 - OSI Model – Overview
 - Network Cables & Connectors: UTP, Fiber Optic, Coaxial
 - Basics of Wireless Networking: Wi-Fi, Bluetooth
 - Introduction to Internet & Web
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Level 2 – Network Protocols & Communication

- TCP/IP Model vs OSI Model
 - Protocols Overview: TCP, UDP, IP, ICMP, HTTP, HTTPS
 - Ports and Sockets
 - DNS and DHCP
 - Ping, Traceroute, and basic network testing tools
 - Network Address Translation (NAT)
 - Subnetting basics
 - Introduction to VPN
 - Firewalls: Basic concept
 - Client-Server Architecture
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Level 3 – IP Addressing & Routing

- IP Addressing in detail: IPv4 & IPv6
 - Subnetting and CIDR
 - Default Gateway and Routing Basics
 - Routing Protocols Overview: RIP, OSPF, EIGRP, BGP
 - Static vs Dynamic Routing
 - NAT in detail
 - Introduction to VLAN
 - Introduction to DHCP Server Configuration
 - Basic Network Troubleshooting Commands
 - Basics of Wireless Access Points
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Level 4 – Network Security & Services

- Network Security Fundamentals
- Authentication and Authorization
- Firewalls, Proxy Servers

- VPN Configuration and Types
 - IDS and IPS Basics
 - Security Protocols: SSL/TLS, HTTPS, SSH
 - Introduction to Wireless Security: WPA/WPA2/WPA3
 - Common Network Attacks: DoS, DDoS, Man-in-the-Middle
 - Network Monitoring Tools
 - Introduction to Network Policies
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Level 5 – Advanced Networking & Cloud Integration

- Advanced Routing & Switching
 - Load Balancing and Failover
 - QoS (Quality of Service)
 - Network Virtualization & SDN (Software Defined Networking)
 - Cloud Networking: AWS, Azure, Google Cloud basics
 - MPLS & VPNs for Enterprises
 - IPv6 Addressing and Transition
 - Network Automation basics
 - Network Performance Optimization
 - IoT Networking Basics
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Level 6 – Network Management & Emerging Technologies

- Network Management Tools & SNMP
- Network Troubleshooting and Diagnostics
- Advanced VPN and Security Measures
- Firewalls & Intrusion Detection Systems
- Cloud Networking Advanced Concepts
- Data Center Networking
- Network Design & Architecture
- Wireless Mesh & 5G Networks
- Network Monitoring & Analytics
- Future Trends in Networking (AIoT, SD-WAN, Network Automation)