

Network Fundamentals & Secure Communication

Duration : 1 Day

Module 1: Introduction to Networking

- Overview of Computer Networks
- Understanding the OSI Model (7 Layers)
- Introduction to TCP/IP Model (4 Layers)
- Mapping OSI to TCP/IP

Module 2: IP Addressing & Subnetting

- IPv4 Addressing Format and Classes
- Public vs Private IP Addresses
- Subnetting Basics
- Subnet Masks, CIDR Notation

Module 3: Routing Basics

- What is Routing?
- Static vs Dynamic Routing
- Default Gateway and Routing Tables
- Example: Traceroute and Ping Tools

Module 4: Common Network Services

- DNS – Domain Name System Overview
- DHCP – Dynamic Host Configuration Protocol
- HTTP vs HTTPS – How Web Communication Works

Module 5: Secure Network Communication

- Introduction to Network Security
- VPN Concepts: Site-to-Site, Remote Access
- TLS/SSL – How Secure Communication Works
- Certificates and Public Key Infrastructure (PKI)