

# Networking With Windows Server

**Course Duration: 24 Hours**

**Course code: NWS**

## 1. Course Overview

This course provides participants with a comprehensive understanding of networking concepts and their implementation using Windows Server. Participants will learn to configure network services, manage IP addressing, implement security measures, and optimize network performance. The course covers Active Directory integration, DNS, DHCP, VPNs, firewalls, monitoring, and troubleshooting to ensure reliable and secure networking infrastructure.

## 2. What you'll learn?

- Understand Windows Server networking architecture and components.
- Configure IP addressing, DNS, DHCP, and routing.
- Implement Active Directory and Group Policy for network management.
- Configure VPNs, remote access, and network security.
- Monitor, troubleshoot, and optimize network performance.
- Apply best practices for secure and efficient network administration.

## 3. Target Audience

- Network Administrators and System Administrators
- IT Professionals managing Windows Server environments
- Students and professionals preparing for Windows Server certification
- Anyone responsible for designing or managing enterprise networks

## 4. Pre-Requisites

- Basic knowledge of Windows Server administration
- Understanding of networking fundamentals (TCP/IP, LAN, WAN)
- Familiarity with Active Directory and basic security concepts

## 5. Course content

### Module 1: Introduction to Windows Server Networking

- Overview of networking concepts in Windows Server
- Key networking services and their roles
- Network architecture and protocols
- Understanding server roles and features

### Module 2: IP Addressing and Subnetting

- IPv4 and IPv6 addressing concepts
- Configuring static and dynamic IP addresses
- Subnetting and IP range planning
- Troubleshooting IP connectivity issues

### Module 3: Configuring DNS and DHCP

- Setting up DNS zones, records, and name resolution
- Configuring DHCP scopes, leases, and reservations
- Integrating DHCP with DNS for dynamic updates
- Monitoring and troubleshooting DNS/DHCP services

### Module 4: Active Directory Networking Services

- Implementing Active Directory Domain Services (AD DS)
- Domain controllers and replication
- Group Policy Objects (GPOs) for network management
- Integrating DNS with Active Directory

### Module 5: Routing and Remote Access

- Configuring static and dynamic routing
- Setting up VPNs and remote access services
- Network Address Translation (NAT) and port forwarding

- Troubleshooting connectivity issues for remote users

### **Module 6: Network Security and Firewalls**

- Implementing Windows Firewall and security policies
- Configuring network access control and authentication
- Securing network services and monitoring traffic
- Best practices for securing Windows Server networks

### **Module 7: Monitoring and Troubleshooting**

- Using built-in Windows Server monitoring tools
- Diagnosing network performance and connectivity issues
- Event logs, performance counters, and network traces
- Troubleshooting real-world network problems

### **Module 8: Advanced Networking Features**

- Implementing DHCP failover and high availability
- Configuring Network Load Balancing (NLB)
- Integrating Windows Server with cloud networking services
- Case studies and practical lab exercises