



Windows 2019/2022 – Networking and Server Administration

Who should attend:

IT technicians who perform installation, configuration and general management and maintenance of Windows Server core services together with both first- and second-line support technicians working in a networking environment. Delegates may also be familiar with setting security and access to file and folder resources in a domain-based environment.

Learn how to:

This course will teach you about the core concepts of networking and network architecture as well as how to configure TCP/IP on a client PC to work within a networked server 2019/2022 environment. Describe Windows Server 2019/2022 versions and Hardware requirements. Configure interoperability with earlier versions of Server 2012/2008. Install and Configure Active Directory. Manage access to resources using Groups. You will also learn how to secure the Server Operating System OS and protect the data stored on the device. Configure core TCP/IP Networking Components and install and Configure DHCP Servers, DNS servers etc. Configure Disk Management for both security and disaster recovery, creating mirrored, RAID and virtual hard disks. Monitor and Troubleshoot 2019/2022 Servers, install and configure Remote Desktop Services to allow remote configuration and troubleshooting. This course also shows the fundamental features of Hyper-V enabling the creation of virtual machines within your environment.

Pre-Requisites:

Delegates should have a basic working knowledge of Windows. This course assumes no knowledge of Server 2019/2022.

Duration:

5 Days

Introducing to Networking

What is a Network?

Why Network?

LANs, WANs, and MANs

Introduction to Networking Standards

OSI 7 Layer Model

Networking Access Methods

Ethernet

Network Topologies

Wireless Networking



Introduction to TCP/IP

What is TCP/IP?
History of TCP/IP
An Introduction to the Internet
The TCP/IP 5 Layer Model
TCP/IP Frame Structure

IP Addressing

IP Addressing
Class Based IP Addressing
IP Addresses and the Internet
Special Addresses
Broadcast Addresses
Subnet Masks
What Packets Will a Host Read?
Introducing IP Version 6

Installation and Deployment

Pre-Installation Tasks
Standard vs Datacenter
Core Installation vs Desktop Experience
Installing Windows 2019/2022 Server
Disk Partitioning Recommendations
Changing the Installation Type
Installation Troubleshooting

Overview – Using Core Edition

Initial Core Server Configuration
Running the Server Config Utility
Initial Configuration Settings
Configuring Remote Access to Core Edition
Performing Initial Configuration Tasks

Server Manager Utility

- Server Manager Dashboard
Using the Windows Admin Centre
Accessing Server Manager
Adding/Removing Roles
Adding/Removing Features



Introducing Active Directory

Workgroups vs Domains
Member Servers vs Domain Controllers
Introducing Trees and Forests
Active Directory Physical Structure
Installing Active Directory on Windows 2019/2022 Servers
Domain and Forest Functional Levels
Troubleshooting the Installation of Active Directory

Active Directory Recycle Bin

Overview – The Active Directory Recycle Bin
Enabling the AD Recycle Bin
Recovering Objects with the AD Recycle Bin

Introduction to TCP/IP

Introduction to TCP/IP
The History of TCP/IP
IP Address Classes – A, B and C
Subnetting

Configuring IPv6

TCP/IP Overview of IPv6
Coexistence with IPv4
Transitioning from IPv4 to IPv6
Configuring a New IPv6 Network and Client
Describe the benefits and considerations of IPv6
Troubleshoot IPv6 connectivity

Configuring and Troubleshooting DNS

Installing the DNS Server Role
Configuring the DNS Server Role
Configuring a DNS Infrastructure
Troubleshooting DNS

Creating and Managing User Accounts

Introduction to User Accounts
Guidelines for New User Accounts
Creating Local User Accounts
Creating and Configuring User Accounts
Setting Properties for Domain User Accounts
Customizing User Settings with User Profiles
User Accounts - Best Practices



Managing Resource Access by Using Groups

- Introduction to Groups
- Configuring Universal Groups
- Configuring Global Groups
- Domain Local Groups
- Security v Distribution Groups
- Implementing Groups in a Workgroup
- Implementing Groups in a Domain

NTFS Security and Permissions

- NTFS Permissions
- Setting NTFS permissions on files and folders
- Sharing Resources
- Setting Share Level Security Permissions
- Combining NTFS and Share Level Permissions

BitLocker Volume Encryption

- What is BitLocker?
- Disk Partitioning for BitLocker
- Trusted Platform Module (TPM)
- Installing and Configuring BitLocker
- Using Bit Locker-To-Go

Managing Distributed File System (DFS)

- Describe DFS
- Installing the DFS Service
- Creating a DFS Namespace
- Configuring Folder Targets and Replication

Dynamic Host Configuration Protocol (DHCP)

- The DHCP Server Role
- The 4-way Handshake Process
- Installing and Authorizing the DHCP Server Role
- Configuring DHCP Scopes and Options
- Managing a DHCP Database
- Monitoring and Troubleshooting DHCP
- Securing DHCP

Disk Management

- Server 2019/2022 Disk Management Overview
- Filing systems supported
- Basic V Dynamic Storage
- Creating Simple Storage Volumes
- Creating Spanned, Striped, Mirrored and RAID 5 Volumes



Disaster Protection

Introduction to Disaster Protection
Using Windows Server Backup
Backing Up and Restoring Data
PowerShell WBADMIN Commands
Using Disaster Recovery Tools
Repair Mode Boot Options
Repairing Server 2019/2022

Remote Administration

Using Remote Desktop
Overview - Remote Desktop Services (RDS)
Server Manager Remote Management
Remote Desktop for Administration
Installing/Configuring RDS
Introduction to Remote Administration
Remote Administration Options

Installing and configuring Hyper-V

Overview of Hyper-V and virtualisation
Install and configure Hyper-V
Create and manage Virtual Machines
Hyper-V network configuration
Overview Stand Alone Hyper-V
Using the Physical to Virtual (P2V) application

Monitoring and Optimizing Performance

Monitoring Event Logs
Using Task Manager to Monitor System Resources
Using System Monitor to Monitor System Performance
Using System Alerts
Identify counters to monitor
Optimizing Performance
Resolving Performance Bottlenecks
Performance Logging

Implementing Security Auditing

Auditing Windows Server 2019/2022
Configuring Auditing
Auditing File and Folder Access
Auditing Logon Events
Auditing Printers
Viewing/Examining Audit Logs