# Windows Server 2022 Administration

## Duration: 40 Hours (5 Days)

## Course Overview

The Windows Server 2022 Administration course is a comprehensive program designed to equip learners with the knowledge and skills necessary to manage and maintain the latest Windows Server infrastructure. Covering a variety of topics, from basic administration to advanced features, this course is structured to provide a deep dive into the capabilities of Windows Server 2022.Starting with Module 1, students are introduced to the essentials of Windows Server Administration, setting the stage for more specialized topics. Modules 2 and 3 focus on Identity Services, which are crucial for managing and securing user identities within a network. Module 4 tackles File Servers and Storage Management, while Module 5 delves into Hyper-V virtualization and Containers, highlighting modern virtualization options. Module 6 explores High Availability configurations, ensuring business continuity. Module 7 addresses Disaster Recovery strategies, an essential part of maintaining operational resilience. In Module 8, students learn about the robust security features of Windows Server 2022.Module 9 is dedicated to Remote Desktop Services (RDS), Module 10 covers Remote Access and Web Services, and Module 11 teaches Server and Performance Monitoring techniques. Lastly, Module 12 provides insights into Upgrade and Migration strategies for seamless transitions to Windows Server 2022.Overall, this Windows Server 2022 Administration course is designed to provide IT professionals with the expertise to efficiently manage and secure a Windows Server 2022 environment, contributing to the operational excellence of their organizations.

## Audience Profile

Koenig Solutions' Windows Server 2022 Administration course provides in-depth training for IT professionals to manage modern server environments.

- System Administrators and IT Administrators
- Network Administrators and Engineers
- IT Systems Engineers
- Windows Server Technicians
- Infrastructure Architects
- IT Professionals aiming to upgrade their skills in server management
- Professionals preparing for Microsoft certification exams related to Windows Server
- Helpdesk Technicians looking to advance their careers in server support
- IT Managers overseeing Windows Server environments
- Cloud Services Administrators managing Windows-based environments
- IT Professionals transitioning from other platforms to Windows Server

## Course Syllabus

### Module 1: Windows Server Administration

This module covers administration tools for Windows Server and introduces the different versions of Windows Server 2022.

**Lessons:**

- Overview of Windows Server administration principles and tools
- Introduction to Windows Server 2022
- Overview of Windows Server Core

## Lab 1: Deploying and configuring Windows Server Core

- Exercise 1: Deploying and configuring Server Core
- Exercise 2: Implementing and using remote server administration

After completing this module, students will be able to:

- Describe and use administration tools in Windows Server
- Describe the key features of Windows Server 2022
- Implement and use Server Core

# Module 2: Identity Services in Windows Server

This module covers key identity roles in Windows Server, including Active Directory Domain Services (AD DS), Certificate Services, and Azure AD, the cloud-based identity service.

## Lessons:

- Overview of AD DS
- Deploying Windows Server domain controllers
- Overview of Azure AD
- Implementing Group Policy
- Overview of AD CS

## Lab 1: Implementing identity services and Group Policy

- Exercise 1: Deploying a new domain controller on Server Core
- Exercise 2: Configuring Group Policy
- Exercise 3: Deploying and using Certificate Services

After completing this module, students will be able to:

- Describe AD DS and explain how it works
- Deploy Windows Server domain controllers
- Describe Azure AD
- Use Group Policy to manage a Windows Server-based environment
- Describe and use AD CS

# Module 3: Network Infrastructure Services in Windows Server

This module covers core networking services in Windows Server, including DHCP, DNS, and IPAM.

## Lessons:

- Deploying and managing DHCP
- Deploying and managing DNS services
- Deploying and managing IPAM

## Lab 1: Implementing and configuring network infrastructure services in Windows Server

- Exercise 1: Deploying and configuring DHCP

- Exercise 2: Deploying and configuring DNS
- Exercise 3: Implementing IPAM

After completing this module, students will be able to:

- Describe, configure, and use DHCP services in Windows Server
- Describe, configure, and use DNS
- Describe, configure, and use IPAM to manage networking services

# Module 4: File Servers and Storage Management in Windows Server

This module covers file systems, volumes, and storage management. It includes topics such as data deduplication, sharing, iSCSI, and DFS services.

## Lessons:

- Volumes and file systems in Windows Server
- Implementing sharing in Windows Server
- Implementing Storage Spaces in Windows Server
- Implementing Data Deduplication
- Implementing iSCSI
- Deploying DFS

## Lab 1: Implementing storage solutions in Windows Server

- Exercise 1: Implementing Data Deduplication
- Exercise 2: Configuring iSCSI storage
- Exercise 3: Configuring redundant storage spaces
- Exercise 4: Implementing Storage Spaces Direct

After completing this module, students will be able to:

- Describe volumes and file systems in Windows Server
- Implement sharing in Windows Server
- Describe and implement Storage Spaces
- Describe and configure the Data Deduplication service
- Describe iSCSI
- Deploy DFS

# Module 5: Hyper-V Virtualization and Containers in Windows Server

This module focuses on virtualization services in Windows Server, covering Hyper-V, securing virtual environments, containers, and Kubernetes.

## Lessons:

- Hyper-V in Windows Server
- Configuring VMs
- Securing virtualization in Windows Server
- Containers in Windows Server
- Overview of Kubernetes

**Lab 1: Implementing and configuring virtualization in Windows Server**

- Exercise 1: Creating and configuring VMs
- Exercise 2: Installing and configuring containers

After completing this module, students will be able to:

- Describe and use the Hyper-V platform in Windows Server
- Configure VMs on the Hyper-V platform
- Secure virtualization environments in Windows Server
- Describe containers
- Describe Kubernetes

# Module 6: High Availability in Windows Server

This module is focused on high availability in Windows Server, with a primary emphasis on Failover Clustering.

## Lessons:

- Planning for failover clustering implementation
- Creating and configuring failover clusters
- Overview of stretch clusters
- High availability and disaster recovery solutions with Hyper-V VMs

## Lab 1: Implementing failover clustering

- Exercise 1: Configuring iSCSI storage
- Exercise 2: Configuring a failover cluster
- Exercise 3: Deploying and configuring a highly available file server
- Exercise 4: Validating the deployment of the highly available file server

After completing this module, students will be able to:

- Plan a failover clustering implementation
- Create failover clusters
- Describe stretch clusters
- Use failover clustering to achieve high availability with the Hyper-V platform

# Module 7: Disaster Recovery in Windows Server

This module covers technologies to implement disaster recovery in a Windows Server environment.

## Lessons:

- Hyper-V Replica
- Backup and restore infrastructure in Windows Server

## Lab 1: Implementing Hyper-V Replica and Windows Server Backup

- Exercise 1: Implementing Hyper-V Replica
- Exercise 2: Implementing backup and restore with Windows Server Backup

After completing this module, students will be able to:

- Describe and implement Hyper-V Replica
- Implement backup and restore with Windows Server Backup

# Module 8: Windows Server Security

This module focuses on security technologies that address critical components of the Windows Server environment.

## Lessons:

- Credentials and privileged access protection in Windows Server
- Hardening Windows Server
- Just Enough Administration (JEA) in Windows Server
- Securing and analyzing SMB traffic
- Windows Server update management

## Lab 1: Configuring security in Windows Server

- Exercise 1: Configuring Windows Defender Credential Guard
- Exercise 2: Locating problematic accounts
- Exercise 3: Implementing Local Administrator Password Solution (LAPS)

After completing this module, students will be able to:

- Describe credentials and privileged access protection
- Harden a Windows Server environment
- Describe and implement JEA in Windows Server
- Secure and analyze SMB traffic
- Implement Windows Server update management

# Module 9: Remote Desktop Services (RDS) in Windows Server

This module focuses on Remote Desktop Services in Windows Server, including VDI implementations.

## Lessons:

- Overview of RDS
- Configuring a session-based desktop deployment
- Overview of personal and pooled virtual desktops

## Lab 1: Implementing RDS in Windows Server

- Exercise 1: Implementing RDS
- Exercise 2: Configuring RemoteApp collection settings
- Exercise 3: Configuring a virtual desktop template

After completing this module, students will be able to:

- Describe and configure RDS
- Configure a session-based desktop deployment
- Implement personal and pooled virtual desktops

# Module 10: Remote Access and Web Services in Windows Server

This module covers remote access technologies and Internet Information Services (IIS) deployment and usage.

## Lessons:

- Overview of Remote Access Services (RAS) in Windows Server
- Implementing VPNs
- Implementing Network Policy Server (NPS)
- Implementing Always On VPN
- Implementing a Web Server in Windows Server

## Lab 1: Deploying network workloads

- Exercise 1: Implementing Web Application Proxy
- Exercise 2: Implementing VPN in Windows Server
- Exercise 3: Deploying and configuring a Web Server

After completing this module, students will be able to:

- Describe and implement RAS in Windows Server
- Describe and implement VPNs
- Describe and implement NPS
- Describe and implement Always On VPN
- Describe and implement the Web Server role in Windows Server

# Module 11: Server and Performance Monitoring in Windows Server

This module covers monitoring tools and technologies available in Windows Server.

## Lessons:

- Overview of Windows Server monitoring tools
- Using Performance Monitor
- Monitoring event logs for troubleshooting

### Lab 1: Monitoring and troubleshooting Windows Server

- Exercise 1: Establishing a performance baseline
- Exercise 2: Identifying the source of a performance problem
- Exercise 3: Viewing and configuring centralized event logs

After completing this module, students will be able to:

- Describe and use performance monitoring tools
- Describe and use server monitoring tools
- Use event logs for troubleshooting

# Module 12: Upgrade and Migration in Windows Server

This module covers the tools available in Windows Server for server upgrades and migrations, including the AD DS migration and upgrade process.

### Lessons:

- AD DS Migration
- Storage Migration Service
- Windows Server migration tools

### Lab 1: Migrating server workloads

- Exercise 1: Selecting a process to migrate server workloads
- Exercise 2: Planning how to migrate files using the Storage Migration Service

After completing this module, students will be able to:

- Describe and perform an AD DS migration and upgrade
- Describe and perform storage migration
- Describe and use Windows Server migration tools