Windows Server 2019 Course Outline

Prerequisites

This course assumes you have skills and experience with the following technologies and concepts:
● Active Directory Domain Services (AD DS) in Windows Server 2012 or Windows Server 2016.
● Microsoft Hyper-V and basic server virtualization.
● Windows client operating systems such as Windows 8, Windows 8.1, or Windows 10.
● Windows PowerShell.
● Windows Server 2012 or Windows Server 2016 configuration and maintenance.
● Basic security best practices.
● Core networking technologies such as IP addressing, name resolution, and Dynamic Host Configuration Protocol (DHCP)

Course outline

Module 1: Windows Server Administration Overview

This module describes how to distinguish different Windows Server 2019 editions and techniques for deployment, servicing and activation. The module also introduces Windows Server Core and compares it with the Desktop Experience version. The module describes tools and concepts for administering Windows Server, such as Windows Admin Center, PowerShell, and delegation of privileges.

Lessons

- Overview of Windows Server administration principles and tools

- Introducing Windows Server 2019

- Windows Server Core Overview

Module 2: Identity Services in Windows Server

This module introduces identity services and describes Active Directory Domain Services (AD DS) in a Windows Server environment. The module describes how to deploy domain controllers in AD DS, as well as the Azure Active Directory (AD) and the benefits of integrating Azure AD with AD DS. The module also covers Group Policy basics and how to configure group policy objects (GPOs) in a domain environment. Finally, the modules describe the role of Active Directory certificate services and certificate usage.

Lessons

- Overview of AD DS

- Deploying Windows Server domain controllers

- Overview of Azure AD

- Implementing Group Policy

- Overview of Active Directory Certificate Services

Module 3: Network Infrastructure services in Windows Server

This module describes how to implement core network infrastructure services in Windows Server. The modules covers how to deploy, configure and manage DNS and IPAM. The modules also describes how to use Remote Access Services.

Lessons

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

Module 4: File Servers and Storage management in Windows Server

This modules describes how to configure file servers and storage in Windows Server. The module covers file sharing and deployment of Storage Spaces technology. The module describes how to implement data deduplication, iSCSI based storage in Windows Server, and finally, how to deploy DFS.

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 Distributed File System

Module 5: Hyper-V virtualization and containers in Windows Server

This modules describes how to implement and configure Hyper-V VMs and containers. The module covers key features of Hyper-V in Windows Server, describes VM settings, and how to configure VMs in Hyper-V. The module also covers security technologies used with virtualization, such as shielded VMs, Host Guardian Service, admin-trusted and TPM-trusted attestation, and KPS.

Lessons

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

Module 6: High Availability in Windows Server

This module describes current high availability technologies in Windows Server. The module describes failover clustering and considerations for implementing it, and how to create and configure failover clustering. The module also explains stretch clusters and options for achieving high availability with Hyper-V VMs.

Lessons

- Planning for failover clustering implementation

- Creating and configuring failover cluster

- Overview of stretch clusters

- High availability and disaster recovery solutions with Hyper-V VMs

Module 7: Disaster recovery in Windows Server

This module describes disaster recovery technologies in Windows Server and how to implement them. The module covers how to configure and use Hyper-V Replica and describes Azure Site Recovery. The module also covers how to implement Windows Server backup and describes the Azure Backup service.

Lessons

- Hyper-V Replica

- Backup and restore infrastructure in Windows Server

Module 8: Windows Server security

This module describes Windows Server security features and how to implement them. The module covers credentials used in Windows Server and explains how to implement privileged access protection. In addition to describing methods and technologies for hardening Windows Server security, the module explains how to configure Just Enough Administration (JEA) and how to secure SMB traffic. Finally, the module covers Windows Update, its deployment and management options.

Lessons

- Credentials and privileged access protection in Windows Server

- Hardening Windows Server
- Just Enough Administration in Windows Server

- Securing and analyzing SMB traffic

- Windows Server update management

Module 9: Remote Desktop Services in Windows Server

This module describes key Remote Desktop Protocol (RDP) and Virtual Desktop Infrastructure (VDI) features in Windows Server. The modules covers how to deploy session-based desktops and describes personal and poled virtual desktops.

Lessons

- Remote Desktop Services Overview
- Configuring a session-based desktop deployment
- Overview of personal and pooled virtual desktops

Module 10: Remote access and web services in Windows Server

This module describes how to implement virtual private networks (VPNs), Network Policy Server (NPS), and Microsoft Internet Information Services (IIS). The module provides an overview of remote access services and describes Always On VPN functionality, as well as how to configure NPS and Web Server (IIS) in Windows Server.

Lessons

- Overview of RAS in Windows Server
- Implementing VPNs
- Implementing NPS
- Implementing Always On VPN
- Implementing Web Server in Windows Server

Module 11: Monitoring, performance, and troubleshooting

This module describes how to implement service and performance monitoring, and apply troubleshooting in Windows Server. The module highlights monitoring tools and describes how to monitor performance, including event logging and how to perform event logging monitoring for troubleshooting purposes.

Lessons

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

Module 12: Upgrade and migration in Windows Server

This module describes how to perform upgrades and migrations for AD DS, Storage, and Windows Server. The module covers tools to use for AD DS migration. The module also covers the Storage Migration Service, and finally, Windows Server migration tools and usage scenarios.

Lessons

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