TRENDS® Academy
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Administering Windows Server Hybrid Core Infrastructure

Duration: 4 Days

Course Description:

This course teaches IT Professionals how to manage core Windows Server workloads and services using on-premises, hybrid, and cloud technologies. The course teaches IT Professionals how to implement and manage on-premises and hybrid solutions such as identity, management, compute, networking, and storage in a Windows Server hybrid environment.

Intended Audience:

This four-day course is intended for Windows Server Hybrid Administrators who have experience working with Windows Server and want to extend the capabilities of their on-premises environments by combining on-premises and hybrid technologies. Windows Server Hybrid Administrators implement and manage on-premises and hybrid solutions such as identity, management, compute, networking, and storage in a Windows Server hybrid environment.

Course Outline:

Introduction to AD DS

➢ Introduction
➢ Define AD DS
➢ Define users, groups, and computers
➢ Define AD DS forests and domains
➢ Define OUs
➢ Manage objects and their properties in AD DS

Manage AD DS domain controllers and FSMO roles

➢ Introduction
➢ Deploy AD DS domain controllers
➢ Maintain AD DS domain controllers
➢ Manage the AD DS Global Catalog role
➢ Manage AD DS operations masters
➢ Manage AD DS schema

Implement Group Policy Objects

➢ Introduction
➢ Define GPOs
➢ Implement GPO scope and inheritance
➢ Define domain-based GPOs
➢ Create and configure a domain-based GPO
➢ Define GPO storage
➢ Define administrative template

Manage advanced features of AD DS

➢ Introduction
➢ Create trust relationships
➢ Implement ESAE forests
➢ Monitor and troubleshoot AD DS

Implement hybrid identity with Windows Server

➢ Introduction
➢ Select a Microsoft Entra integration model
➢ Plan for Microsoft Entra integration
➢ Prepare on-premises Active Directory for directory synchronization
➢ Install and configure directory synchronization with Microsoft Entra Connect
➢ Implement Seamless Single Sign-On
➢ Enable Microsoft Entra login in for Windows VM in Azure
➢ Describe Microsoft Entra Domain Services
➢ Implement and configure Microsoft Entra Domain Services
➢ Manage Windows Server 2019 in a Microsoft Entra Domain Services environment
➢ Create and configure a Microsoft Entra Domain Services instance
➢ Join a Windows Server VM to a managed domain

Deploy and manage Azure IaaS Active Directory domain controllers in Azure

➢ Introduction
➢ Select an option to implement directory and identity services using Active Directory Domain Services in Azure
➢ Deploy and configure Active Directory Domain Services domain controllers in Azure VMs
➢ Install a replica Active Directory domain controller in an Azure VM
➢ Install a new Active Directory Forest on an Azure VNet

Perform Windows Server secure administration

➢ Introduction
➢ Define least privilege administration
➢ Implement delegated privileges
➢ Use privileged access workstations
➢ Use jump servers

Describe Windows Server administration tools

➢ Introduction
➢ Explore Windows Admin Center
➢ Use Server Manager
➢ List Remote Server Administration Tools
➢ Use Windows PowerShell
➢ Use Windows PowerShell to remotely administer a server

Customize Windows Server IaaS Virtual Machine images

➢ Introduction
➢ Create a generalized image
➢ Create a new Virtual Machine from a managed image
➢ Create a managed image of a generalized virtual machine in Azure
➢ Create a Virtual Machine from a managed image
➢ Implement Azure Image Builder
➢ Create a windows Virtual Machine using Azure Image Builder template
➢ Create a Windows Virtual Machine with Azure Image Builder using PowerShell

Perform post-installation configuration of Windows Server

➢ Introduction
➢ List the available post-installation configuration tools
➢ Configure Server Core using Sconfig
➢ Use DSC to configure Windows Server
➢ Perform post-installation configuration with Windows Admin Center
➢ Configure a server with answer files

Just Enough Administration in Windows Server

➢ Introduction
➢ Explain the concept of Just Enough Administration (JEA)
➢ Define role capabilities for a JEA endpoint
➢ Create a session configuration file to register a JEA endpoint
➢ Describe how JEA endpoints work to limit access to a PowerShell session
➢ Create and connect to a JEA endpoint
➢ Demonstration: Connect to a JEA endpoint

Administer and manage Windows Server IaaS Virtual Machine remotely

➢ Introduction
➢ Select the appropriate remote administration tool
➢ Manage Windows Virtual Machines with Azure Bastion
➢ Create an Azure Bastion host
➢ Configure just-in-time administration

Manage hybrid workloads with Azure Arc

➢ Introduction
➢ Describe Azure Arc
➢ Onboard Windows Server instances
➢ Connect hybrid machines to Azure from the Azure portal
➢ Use Azure Arc to manage Windows Server instances
➢ Restrict access with RBAC

Configure and manage Hyper-V

➢ Introduction
➢ Define Hyper-V
➢ Define Hyper-V Manager
➢ Configure Hyper-V hosts using best practices
➢ Configure Hyper-V networking
➢ Assess advanced Hyper-V networking features
➢ Define nested virtualization

Implement hybrid network infrastructure

➢ Introduction
➢ Describe Azure network topologies
➢ Implement Azure VPN options
➢ Create a route-based VPN gateway using the Azure portal
➢ Implement Azure ExpressRoute
➢ Configure Azure Virtual WAN
➢ Implement DNS in hybrid environments

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Configure and manage Hyper-V virtual machines

- Introduction
- List the virtual machine configuration versions
- List the virtual machine generation versions
- List available VHD formats and types
- Create and configure VMs
- Determine storage options for VMs
- Define shared VHDs and VHD Sets
- Implement guest clusters using shared VHDX

Secure Hyper-V workloads

- Introduction
- Define guarded fabric
- Define the Host Guardian Service
- Explore TPM-trusted attestation
- Define KPS
- Determine key features of shielded VMs
- Compare encryption-supported and shielded VMs in a guarded fabric
- Implement a shielded VM

Run containers on Windows Server

- Introduction
- Define containers
- List the differences between containers and VMs
- Define Windows Server and Hyper-V containers and isolation modes
- Explore Docker
- Prepare a Windows Server 2019 host for container deployment
- Security, Storage, and Networking with Windows containers

Orchestrate containers on Windows Server using Kubernetes

- Introduction
- Define orchestration
- Define Kubernetes
- Deploy Kubernetes resources
- Create a Kubernetes cluster on Windows
- Define Azure Arc
- Connect an Azure Arc-enabled Kubernetes cluster to Azure Arc

Plan and deploy Windows Server IaaS Virtual Machines

- Introduction
- Describe Azure compute
- Describe Virtual Machine storage
- Deploy Azure Virtual Machines
- Create a windows Virtual Machine using the portal
- Create a windows Virtual Machine using Azure CLI
- Deploy Azure Virtual Machines using templates
- Describe additional management optimization options

Implement Windows Server iSCSI

- Introduction
- List the functionalities, components, and use cases of iSCSI
- List the considerations for implementing iSCSI
- Implement iSCSI
- Configure high availability for iSCSI

Implement Windows Server Storage Replica

- Introduction
- List the functionalities and components of Storage Replica
- Examine the prerequisites for implementing Storage Replica
- Implement Storage Replica by using Windows Admin Center
- Implement Storage Replica by using Windows PowerShell

Implement a hybrid file server infrastructure

- Introduction
- Describe Azure File services
- Configure Azure Files
- Configure connectivity to Azure Files
- Describe Azure File Sync
- Implement Azure File Sync
- Deploy Azure File Sync
- Deploy Azure File Sync 2
- Manage cloud tiering
- Migrate from DFSR to Azure File Sync

Automate the configuration of Windows Server IaaS Virtual Machines

- Introduction
- Describe Azure Automation
- Implement Azure Automation with DSC
- Remediate noncompliant servers
- Describe Custom Script Extensions
- Configure a Virtual Machine by using DSC

Deploy and manage DHCP

- Introduction
- Use DHCP to simplify IP configuration
- Install and configure the DHCP role
- Configure DHCP options
- Configure DHCP scopes
- Select DHCP high availability options
- Implement DHCP Failover

Implement Windows Server DNS

- Introduction
- Explore the DNS architecture
- Work with DNS zones and records
- Install and configure the DNS role
- Implement DNS forwarding

Implement IP Address Management

- Introduction
- Define IP Address Management
- Deploy IP Address Management
- Administer IP Address Management
- Configure IP Address Management options
- Manage DNS zones with IP Address Management
- Manage DHCP servers with IP Address Management
- Use IP Address Management to manage IP addressing

Implement remote access

- Introduction
- Examine the remote access options in Windows Server
- Select and set up VPNs
- Use NPS to create and enforce network access policies
- Plan and implement NPS
- Deploy a PKI for remote access
- Use WAP as a reverse web proxy

Implement DNS for Windows Server IaaS VMs

- Introduction
- Understand Azure DNS
- Implement Azure DNS
- Create an Azure DNS zone and record using the Azure portal
- Implement DNS with Azure IaaS virtual machines
- Implement split-horizon DNS in Azure
- Troubleshoot DNS

Implement Windows Server IaaS VM IP addressing and routing

- Introduction
- Implement a virtual network
- Implement IaaS VM IP addressing
- Assign and manage IP addresses
- Configure a private IP address for a virtual machine using the Azure portal
- Create a virtual machine with a static public IP address using the Azure portal
- Implement IaaS virtual machine IP routing
- Implement IPv6 for Windows Server IaaS virtual machines

Manage Windows Server file servers

- Introduction
- Define the Windows Server file system
- List the benefits and uses of File Server Resource Manager
- Define SMB and its security considerations
- Configure SMB protocol
- Define Volume Shadow Copy Service

Implement Storage Spaces and Storage Spaces Direct

- Introduction
- Define the Storage Spaces architecture and its components
- List the functionalities, benefits, and use cases of Storage Spaces
- Implement Storage Spaces
- List the functionalities, components, benefits, and use cases of Storage Spaces Direct
- Implement Storage Spaces Direct

Implement Windows Server Data Deduplication

- Introduction
- Define the architecture, components, and functionality of Data Deduplication
- Define the use cases and interoperability of Data Deduplication
- Implement Data Deduplication
- Manage and maintain Data Deduplication

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