

Administering Windows Server Hybrid Core Infrastructure (AZ-800)

Overview

This AZ-800T00: Administering Windows Server Hybrid Core Infrastructure 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.

Course Objectives

By the end of this course, participants will be able to:

- Use administrative techniques and tools in Windows Server
- Identify tools used to implement hybrid solutions, including Windows Admin Center and PowerShell
- Implement identity services in Windows Server
- Implement identity in hybrid scenarios, including Azure AD DS on Azure IaaS and managed AD DS
- Integrate Azure AD DS with Azure AD
- Manage network infrastructure services
- Deploy Azure VMs running Windows Server and configure networking and storage
- Administer and manage Windows Server IaaS Virtual Machine remotely
- Manage and maintain Azure VMs running Windows Server
- Configure file servers and storage

Duration

4 Days

Who Should Attend

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.

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Prerequisites

Before attending this course, students must have:

- Experience with managing Windows Server operating system and Windows Server workloads in on-premises scenarios, including AD DS, DNS, DFS, Hyper-V, and File and Storage Services
- Experience with common Windows Server management tools (implied in the first prerequisite)
- Basic knowledge of core Microsoft compute, storage, networking, and virtualization technologies (implied in the first prerequisite)
- Experience and an understanding of core networking technologies such as IP addressing, name resolution, and Dynamic Host Configuration Protocol (DHCP)
- Experience working with and an understanding of Microsoft Hyper-V and basic server virtualization concepts
- Basic experience with implementing and managing IaaS services in Microsoft Azure
- Basic knowledge of Azure Active Directory
- Experience working hands-on with Windows client operating systems such as Windows 10 or Windows 11
- Basic experience with Windows PowerShell

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Course Topics

Module 1	Introduction to AD DS - Describe AD DS - Describe users, groups, and computers - Identify and describe AD DS forests and domains - Describe OUs - Manage objects and their properties in AD DS
Module 2	Manage AD DS Domain Controllers and FSMO Roles - Deploy AD DS domain controllers - Maintain AD DS domain controllers - Describe the AD DS global catalogue role and its placement considerations - Describe AD DS operations master roles, their placement considerations, and their management tasks - Describe AD DS schema and its management tasks
Module 3	Implement Group Policy Objects - Describe GPOs - Describe GPO scope and inheritance - Describe domain-based GPOs - Create and configure GPOs - Explain GPO storage - Describe administrative templates and the Central Store
Module 4	Manage Advanced Features of AD DS - Identify the purpose, types, and the process of creating trust relationships - Describe the purpose and the process of implementing ESAE forests - Monitor and troubleshoot AD DS replication - Identify the purpose and the process of creating custom AD DS partitions

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Module 5	Implement Hybrid Identity with Window Server • Select an Azure AD integration model • Plan for Azure AD integration • Prepare on-premises AD DS for directory synchronization • Install and configure directory synchronization using Azure AD Connect • Implement Seamless Single Sign-on (SSO) • Enable Azure AD login for an Azure Windows virtual machine (VM) • Describe Azure AD DS • Implement and configure Azure AD DS • Manage Windows Server 2019 in an Azure AD DS instance • Join a Windows Server VM to a managed domain
Module 6	Deploy and Manage Azure IaaS Active Directory Domain Controllers in Azure • Select an option to implement directory and identity services by using Active Directory Domain Services (AD DS) in Azure • Deploy and configure AD DS domain controllers in Azure VMs • Install a replica AD DS domain controller in an Azure VM • Install a new AD DS forest on an Azure VNet
Module 7	Perform Windows Server Secure Administration • Explain least privilege administrative models • Implement delegated privilege • Describe privileged access workstations • Describe jump servers
Module 8	Describe Windows Server Administration Tools • Describe Windows Admin Center • Describe how to use Remote Server Administration Tools (RSAT) to manage servers • Describe Server Manager • Describe how to use Windows PowerShell to manage servers • Explain how to use Windows PowerShell to remotely administer a server

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Module 9	Perform Post-installation Configuration of Windows Server • Explain post-installation configuration and describe the available post-installation configuration tools • Use Sconfig to configure Windows Server • Describe Desired State Configuration (DSC) and explain how to use it to configure Windows Server • Use Windows Admin Center to perform post-installation configuration • Implement answer files to complete the configuration
Module 10	Just Enough Administration in Windows Server • Explain the concept of Just Enough Administration (JEA) • Define role group capabilities and session configurations for a JEA session • Create and connect to a JEA endpoint
Module 11	Administer and Manage Windows Server IaaS Virtual Machine Remotely • Select appropriate remote administration tools • Secure management connections to Windows Azure IaaS VMs with Azure Bastion • Configure JIT VM access
Module 12	Manage Hybrid Workloads with Azure Arc • Describe Azure Arc • Explain how to onboard on-premises Windows Server instances in Azure Arc • Connect hybrid machines to Azure from the Azure portal • Use Azure Arc to manage devices • Restrict access using RBAC
Module 13	Configure and Manage Hyper-V • Describe the functionality and features of Hyper-V on Windows Server • Install Hyper-V on Windows Server • Describe the options for managing Hyper-V virtual machines (VMs) on Windows Server • Describe networking features and functionality in Hyper-V on Windows Server • Create virtual switches (vSwitches) for use with Hyper-V • Describe using nested virtualization in Hyper-V

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Module 14	Configure and Manage Hyper-V Virtual Machines - Describe settings, configuration, and generation versions available for VMs in Windows Server 2019 - Identify virtual hard disk (VHD) formats and types - Create and configure a VM - Determine storage options for VMs - Describe shared VHDs and VHD Sets - Describe host and guest clustering with shared VHDs
Module 15	Secure Hyper-V Workloads - Describe the features and functionality of the HGS in Windows Server - Describe the attestation options available with the HGS - Describe shielded VMs, their creation, and their deployment
Module 16	Run Containers on Windows Server - Describe containers and how they work - Explain the difference between containers and virtual machines (VMs) - Describe the difference between process isolation and Hyper-V isolation modes - Describe Docker and how it's used to manage Windows containers - Identify the container-based images available from the Microsoft Container Registry - Understand the process for running a Windows container - Explain how to manage containers using Windows Admin Center (WAC)
Module 17	Orchestrate Containers on Windows Server using Kubernetes - Describe container orchestration - Describe Kubernetes - Describe how to create a Kubernetes cluster - Describe Azure Arc for Kubernetes

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Module 18	Plan and Deploy Windows Server IaaS Virtual Machines - Describe Azure compute - Describe Azure storage - Deploy Azure VMs - Create a VM from the Azure portal - Create a VM from Azure Cloud Shell - Deploy Azure VMs by using templates
Module 19	Customize Windows Server IaaS Virtual Machines Images - Create a generalized image - Create a new VM from a generalized image - Create a managed image of a generalized VM in Azure - Create a VM from a managed image - Describe Azure Image Builder - Use Azure Image Builder to create a Windows image
Module 20	Automate The Configuration of Windows Server IaaS Virtual Machines - Describe Azure automation - Implement Azure automation with DSC - Remediate noncompliant servers - Describe custom script extension - Configure a VM by using DSC extensions
Module 21	Deploy and Manage DHCP - Describe the DHCP Server role - Install and configure the DHCP Server role - Configure DHCP options - Create and configure a DHCP scope - Describe high availability options for DHCP - Describe DHCP Failover and explain how to configure it
Module 22	Implement Windows Server DNS - Describe Windows Server DNS - Describe DNS zones and records - Install and configure the DNS role and DNS zones - Describe how to implement DNS forwarding

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Module 23	Implement IP Address Management - Describe IPAM - Deploy IPAM - Describe how to administer IPAM - Configure IPAM options - Manage DNS zones with IPAM - Manage DHCP servers with IPAM - Use IPAM to manage IP addressing
Module 24	Implement Remote Access - Describe the remote access options available in Windows Server - Select VPN options and set up VPN servers - Describe the NPS server role - Plan and implement NPS - Determine when to deploy PKI for remote access - Identify the authentication options for Web Application Proxy and explain how to use it to publish applications
Module 25	Implement Hybrid Network Infrastructure - Describe Azure network topologies - Implement an Azure VPN - Explain how to create a route-based VPN gateway using the Azure portal - Implement Azure ExpressRoute - Implement an Azure WAN - Implement DNS resolution in hybrid environments
Module 26	Implement DNS for Windows Server IaaS VMs - Implement DNS in Azure - Describe DNS options for Azure IaaS VMs - Implement split-horizon DNS in Azure - Troubleshoot DNS in Azure - Create and configure an Azure DNS zone

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Module 27	Implement Windows Server IaaS VM IP Addressing and Routing • Implement an Azure virtual network • Implement IP Address Allocation in Azure • Assign and manage IP addresses • Configure a private IP address for an Azure virtual machine • Create a virtual machine with a static IP address • Implement IaaS VM IP routing • Implement IPv6 for Windows IaaS Virtual Machines
Module 28	Manage Windows Server File Servers • Describe the Windows Server file system • Describe the benefits and use of File Server Resource Manager • Describe SMB and its security considerations • Manage SMB configuration • Describe Volume Shadow Copy Service
Module 29	Implement Storage Spaces and Storage Spaces Direct • Describe the architecture and components of Storage Spaces • Describe the functionality, benefits, and use cases of Storage Spaces • Implement Storage Spaces • Describe the functionality, components, and use cases of Storage Spaces Direct • Implement Storage Spaces Direct
Module 30	Implement Windows Server Data Deduplication • Describe the architecture, components, and Data Deduplication functionality, components, and use cases of Data Deduplication • Describe the use cases and interoperability of Data Deduplication • Implement Data Deduplication • Manage and maintain Data Deduplication

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Module 31	Implement Windows Server iSCSI - Describe iSCSI functionality, components, and use cases - Describe the considerations for implementing iSCSI - Implement iSCSI - Describe implementing high-availability iSCSI configurations
Module 32	Implement Windows Server Storage Replica - Describe the functionality and components of Storage Replica - Describe the prerequisites for implementing Storage Replica - Implement Storage Replica
Module 33	Implement a Hybrid File Server Infrastructure - Describe Azure file services - Configure Azure file services - Configure connectivity to Azure file services - Describe Azure File Sync - Implement Azure File Sync - Deploy Azure File Sync - Manage cloud tiering - Migrate from DFSR to Azure File Sync