

AZ-802T00: Administer Windows Server

Course ID #: 7000-1218-ZZ-Z

Hours: 35

Delivery Method: Group Internet Based

Course Content

Description:

In this course, you will cover: This course teaches IT professionals how to deploy, manage, secure, and troubleshoot Windows Server workloads across on-premises, hybrid, and cloud environments. The course covers Active Directory Domain Services, Hyper-V and Azure virtual machines, on-premises and hybrid networking, storage and file services, Windows Server security hardening, and monitoring and troubleshooting. It highlights administrative tools and technologies including Windows Admin Center, PowerShell, Azure Arc, Azure Monitor, Azure Update Manager, and Microsoft Defender for Cloud.

Objectives:

Upon successful completion of this course, students will:

- Deploy and manage Active Directory Domain Services (AD DS)
- Implement and manage hybrid identity solutions
- Administer Windows Server workloads in hybrid environments
- Manage Hyper-V and Azure virtual machines
- Implement on-premises and hybrid networking infrastructure
- Configure storage and file services
- Secure Windows Server and Active Directory environments
- Monitor and troubleshoot Windows Server workloads
- Use Azure Arc, Azure Monitor, Azure Update Manager, and Microsoft Defender technologies

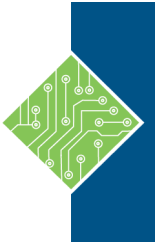
Prerequisites:

- Experience administering Windows Server operating systems
- Familiarity with Active Directory Domain Services (AD DS)
- Familiarity with Azure administration concepts
- Basic knowledge of PowerShell
- Familiarity with Hyper-V and virtualization concepts

Target Audience:

Designed for Windows Server administrators who:

- Deploy, implement, manage, and troubleshoot Windows Server environments
- Work in on-premises, cloud, or hybrid environments
- Manage identity, security, networking, storage, and monitoring workloads



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Topics:

Lesson 1: Deploy and Manage Active Directory

Domain Services

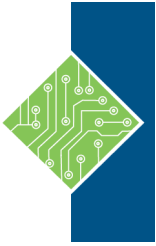
- Deploy and manage Active Directory Domain Services domain controllers
- Define Active Directory Domain Services
- Define Active Directory Domain Services forests and domains
- Deploy Active Directory Domain Services domain controllers
- Migrate a domain controller to a new site
- Manage Active Directory Domain Services operations masters
- Deploy and manage Azure IaaS Active Directory domain controllers in Azure
- 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
- Manage AD DS domain controllers and FSMO roles
- Create and manage Active Directory objects
- Manage objects and their properties in Active Directory
- Maintain Active Directory Domain Services domain controllers
- Implement hybrid identity with Windows Server
- Prepare on-premises Active Directory for directory synchronization
- Install and configure directory synchronization with Microsoft Entra Connect
- Enable Microsoft Entra login for Windows VMs in Azure
- Implement and configure Microsoft Entra Domain Services
- Manage Windows Server in a Microsoft Entra

Domain Services environment

- Create and configure a Microsoft Entra Domain Services instance
- Create and configure Group Policy Objects in Active Directory
- Implement Group Policy Object scope and inheritance
- Create and configure a domain-based Group Policy Object
- Implement Group Policy Objects
- Manage advanced features of AD DS
- Create trust relationships
- Implement Enhanced Security Administrative Environment (ESAE) forests
- Monitor and troubleshoot AD DS replication
- Create custom AD DS partitions

Lesson 2: Manage Windows Server Instances and Workloads in a Hybrid Environment

- Administer and manage Windows Server IaaS Virtual Machine remotely
- Select the appropriate remote administration tool
- Manage Windows Virtual Machines with Azure Bastion
- Create an Azure Bastion host
- Configure just-in-time administration
- Describe Windows Server administration tools
- Explore Windows Admin Center
- Use Server Manager
- List Remote Server Administration Tools
- Use Windows PowerShell
- Use Windows PowerShell to remotely administer a server
- Just Enough Administration in Windows Server
- 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



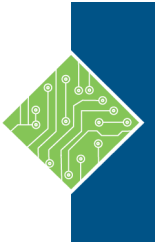
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- Create and connect to a JEA endpoint
 - Demonstration: Connect to a JEA endpoint
 - Perform Windows Server secure administration
 - Define least privilege administration
 - Implement delegated privileges
 - Use privileged access workstations
 - Use jump servers
 - Use advanced Windows PowerShell remoting techniques
 - Review common remoting techniques of Windows PowerShell
 - Send parameters to remote computers in Windows PowerShell
 - Set access protection to variables, aliases, and functions by using the scope modifier
 - Enable multi-hop remoting in Windows PowerShell
 - Manage single and multiple computers by using Windows PowerShell remoting
 - Review the remoting feature of Windows PowerShell
 - Compare remoting with remote connectivity
 - Review the remoting security feature of Windows PowerShell
 - Enable remoting by using Windows PowerShell
 - Use one-to-one remoting by using Windows PowerShell
 - Use one-to-many remoting by using Windows PowerShell
 - Compare remoting output with local output
 - Manage hybrid workloads with Azure Arc
 - 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
 - Manage Azure updates
 - Describe Azure Update Manager
 - Prepare machines for Azure Update Manager
 - Deploy updates
 - Assess updates
 - Manage updates at scale
 - Automate the configuration of Windows Server IaaS Virtual Machines
 - Describe Azure Automation
 - Implement Azure Automation with DSC
 - Remediate noncompliant servers
 - Describe Custom Script Extensions
 - Configure a Virtual Machine by using DSC
 - Enforce VM security configuration with Azure Machine Configuration
 - Explore Azure Machine Configuration extension capabilities and modes
 - Apply built-in security baseline policies
 - Author and assign custom machine configurations
 - Explore Azure Automation with DevOps
 - Create automation accounts
 - What is a runbook?
 - Understand automation shared resources
 - Explore runbook gallery
 - Examine webhooks
 - Explore source control integration
 - Explore PowerShell workflows
 - Create a workflow
 - Explore hybrid management
 - Examine checkpoint and parallel processing
- ### Lesson 3: Manage Virtual Machines
- Configure and manage Hyper-V virtual machines
 - 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
 - Configure and manage Hyper-V
 - 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
 - Secure Hyper-V workloads



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- 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
 - Implement high availability of Windows Server VMs
 - Select high-availability options for Hyper-V
 - Consider network load balancing for Hyper-V VMs
 - Implement Hyper-V VM live migration
 - Implement Hyper-V VMs storage migration
 - Run containers on Windows Server
 - 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
 - Plan and deploy Windows Server IaaS Virtual Machines
 - 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 mgmt optimization options
 - Implement scale and high availability with Windows Server VM
 - Describe virtual machine scale sets
 - Implement scaling
 - Implement load-balancing VMs
 - Create a virtual machine scale set in the Azure portal
 - Describe Azure Site Recovery
 - Implement Azure Site Recovery
 - Implement Windows Server IaaS VM IP addressing and routing
 - 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
 - Implement Windows Server IaaS VM network security
 - Implement network security groups and Windows IaaS VMs
 - Implement Azure Firewall & Windows IaaS VMs
 - Implement Windows Firewall with Windows Server IaaS VMs
 - Choose the appropriate filtering solution
 - Deploy and configure Azure Firewall using the Azure portal
 - Capture network traffic with Network Watcher
 - Log network traffic to and from a VM using the Azure portal
 - Administer and manage Windows Server IaaS Virtual Machine remotely
 - Select the appropriate remote admin. tool
 - Manage Windows Virtual Machines with Azure Bastion
 - Create an Azure Bastion host
 - Configure just-in-time administration
- Lesson 4: Implement and Manage an On-Premises and Hybrid Networking Infrastructure**
- Implement Windows Server DNS
 - Implement DNS for Windows Server IaaS VMs
 - Understand Azure DNS
 - Secure Windows Server DNS
 - Deploy and manage DHCP
 - Implement IP Address Management
 - Implement Windows Server IaaS VM IP addressing and routing



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Lesson 5: Manage Storage and File Services

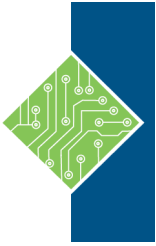
- Implement a hybrid file server infrastructure
- Describe Azure File services
- Configure Azure Files
- Configure connectivity to Azure Files
- Describe Azure File Sync
- Implement Azure File Sync
- Deploy Azure File Sync
- Deploy Azure File Sync 2
- Manage cloud tiering
- Migrate from DFSR to Azure File Sync
- Manage Windows Server file servers
- 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
- 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
- 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
- Implement Windows Server iSCSI
- 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
- 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

Lesson 6: Secure Windows Server Infrastructure

- Hardening Windows Server
- Describe Local Password Administrator Solution
- Configure Privileged Access Workstations
- Secure domain controllers
- Analyze security configuration with Security Compliance Toolkit
- Secure SMB traffic
- Manage Microsoft Defender for Endpoint
- Examine key capabilities of Microsoft Defender for Endpoint
- Explore Windows Defender Application Control and Device Guard
- Manage Microsoft Defender in Windows client
- Explore Windows Defender Firewall with Advanced Security
- Understand Active Directory Group Policy security settings
- Design, deploy, and manage security settings at scale
- Manage security in Active Directory
- Protect User Accounts with the Protected Users group
- Understand Windows Server service accounts
- Secure Windows Server user accounts
- Protect user accounts with the Protected Users group
- Manage security controls for identity and access
- Microsoft cloud security benchmark: Identity management and privileged access
- Authentication options and Password hash synchronization with Microsoft Entra ID
- Passwordless authentication options for Microsoft Entra ID
- Integrate single sign-on (SSO) and identity



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- providers
- Recommend and enforce modern authentication protocols
- Configure Azure role permissions for management groups, subscriptions, resource groups, and resources
- Assign Azure role permissions for management groups, subscriptions, resource groups, and resources
- Create and assign a custom role in Microsoft Entra ID
- Configure role management and access reviews by using Microsoft Entra ID governance
- Implement Conditional Access policies for Cloud Resources in Azure
- Security monitoring and governance
- Examine Microsoft Defender for Cloud usage scenarios
- Explore Azure Policy
- Integrate GitHub Advanced Security with Microsoft Defender for Cloud
- Configure GitHub Advanced Security for GitHub and Azure DevOps

Lesson 7: Monitor and Troubleshoot Windows Server Environments

- Monitor Windows Server IaaS Virtual Machines and hybrid instances
- Enable Azure Monitor for Virtual Machines
- Monitor an Azure Virtual Machine with Azure Monitor
- Enable Azure Monitor in hybrid scenarios
- Collect data from a Windows computer in a hybrid environment
- Integrate Azure Monitor with Microsoft Operations Manager
- Monitor your Azure virtual machines with Azure Monitor
- Monitoring for Azure VMs
- Monitor VM host data
- Use Metrics Explorer to view detailed host metrics
- Collect client performance counters by using VM insights

- Collect VM client event logs
- Monitor Windows Server performance
- Use Performance Monitor to identify performance problems
- Use Resource Monitor to review current resource usage
- Review reliability with Reliability Monitor
- Implement a performance monitoring methodology
- Use Data Collector Sets to analyze server performance
- Monitor network infrastructure services
- Monitor virtual machines running Windows Server
- Monitor performance with Windows Admin Center
- Use System Insights to help predict future capacity issues
- Optimize the performance of Windows Server
- Manage and monitor Windows Server event logs
- Describe Windows Server event logs
- Use Windows Admin Center to review logs
- Use Server Manager to review logs
- Use custom views
- Implement event log subscriptions
- Implement Windows Server auditing and diagnostics
- Describe basic auditing categories
- Describe advanced categories
- Log user access
- Enable setup and boot event collection
- Troubleshoot on-premises and hybrid networking
- Diagnose DHCP problems
- Diagnose DNS problems
- Diagnose IP configuration issues
- Diagnose routing problems
- Use Packet Monitor to help diagnose network problems
- Use Azure Network Watcher to help diagnose network problems
- Troubleshoot Windows Server Virtual Machines in Azure



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- Troubleshoot VM deployment
- Troubleshoot VM startup
- Troubleshoot VM extensions
- Troubleshoot VM connectivity
- Troubleshoot VM performance
- Troubleshoot VM storage
- Windows Server update management
- Explore Windows Update
- Outline Windows Server Update Services server deployment options
- Define Windows Server Update Services update management process
- Describe the process of Update Management
- Troubleshoot Active Directory
- Recover objects from the AD Recycle Bin
- Recover the AD DS database
- Recover SYSVOL
- Troubleshoot AD DS replication
- Troubleshoot hybrid authentication issues

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NASBA CPE details are provided on the following pages.



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NASBA Information

Level: Intermediate

Advanced Preparation: Have some experience with: Windows Server administration; Active Directory Domain Services (AD DS); PowerShell; Hyper-V; Azure administration tools such as Azure Arc, Azure Monitor, and Azure Update Manager

Attendance Requirement: To be awarded the full credit hours, you must sign in and attend the entire course.

Recommended Field(s) of Study: Computer Software & Applications

Recommended CPEs: 39.00

Policies: Course Registration, Cancellation, Refund, and Complaint Resolution

For more information regarding administrative policies such as complaint and program cancellation policies, please contact our offices at 800-639-3535 or visit us at: www.tcworkshop.com

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