



## Training Course AZ-104: Microsoft Azure Administrator

**Overview:** This course teaches IT Professionals how to manage their Azure subscriptions, secure identities, administer the infrastructure, configure virtual networking, connect Azure and on-premises sites, manage network traffic, implement storage solutions, create and scale virtual machines, implement web apps and containers, back up and share data, and monitor your solution.

**Duration:** 4 Days.

**Audience Profile:** This course is for Azure Administrators. The Azure Administrator implements, manages, and monitors identity, governance, storage, compute, and virtual networks in a cloud environment. The Azure Administrator will provision, size, monitor, and adjust resources as appropriate.

**Certification:** This course prepares you for the AZ-104: Microsoft Azure Administrator.

**Course Objectives:** After completing this course, students will be able to:

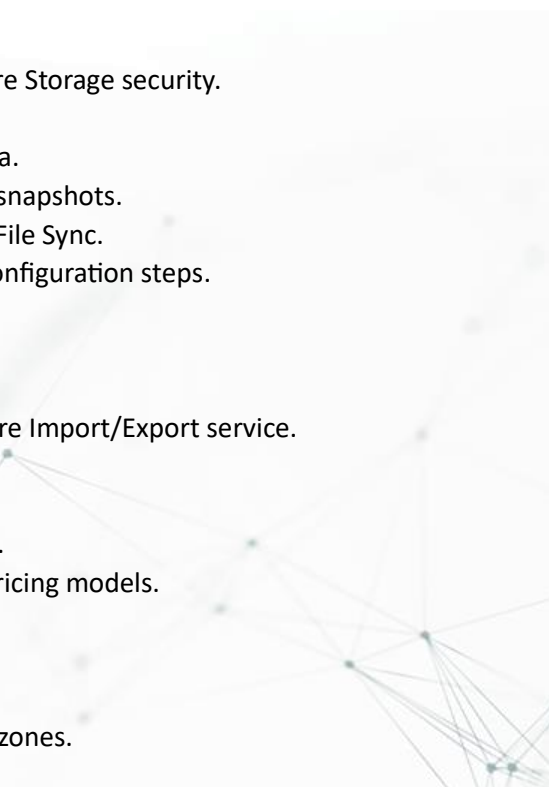
- Configure Azure Active Directory.
- Configure user and group accounts.
- Configure subscriptions.
- Configure Azure Policy.
- Configure role-based access control.
- Configure Azure resources with tools.
- Use Azure Resource Manager.
- Configure resources with Azure Resource Manager templates.
- Configure virtual networks.
- Configure network security groups.
- Configure Azure DNS.
- Configure Azure virtual network peering.
- Configure network routing and endpoints.
- Configure Azure Load Balancer.
- Configure Azure Application Gateway.
- Configure storage accounts.
- Configure Azure Blob Storage.
- Configure Azure Storage security.
- Configure Azure Files and Azure File Sync.
- Configure Azure Storage with tools.
- Configure virtual machines.
- Configure virtual machine availability.
- Configure virtual machine extensions.

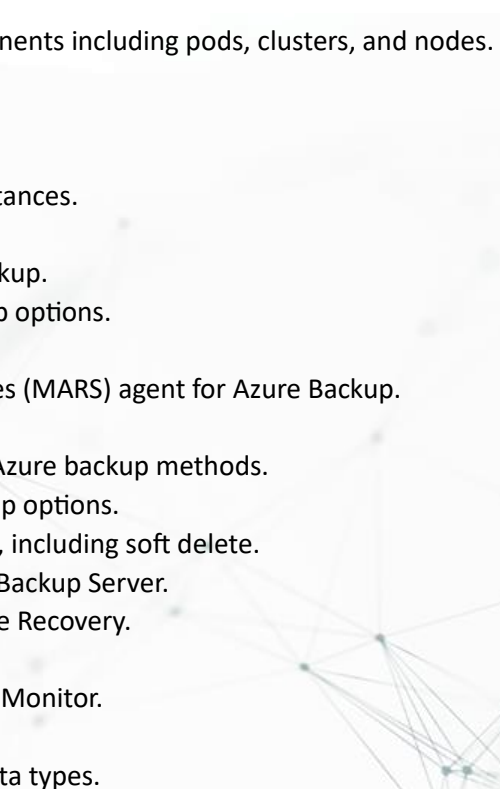
- Configure Azure app service plans.
- Configure Azure App Service.
- Configure Azure Container Instances.
- Configure Azure Kubernetes Service.
- Configure file and folder backups.
- Configure virtual machine backups.
- Configure Azure Monitor.
- Configure Azure alerts.
- Configure Log Analytics.
- Configure Azure Network Watcher.

### **Course Outline:**

- 1- Configure Azure Active Directory.
  - Define Azure AD concepts, including identities, accounts, and tenants.
  - Describe Azure AD features to support different configurations.
  - Understand differences between Azure AD and Active Directory Domain Services (AD DS).
  - Choose between supported editions of Azure AD.
  - Implement the Azure AD join feature.
  - Use the Azure AD self-service password reset feature..
- 2- Configure user and group accounts.
  - Configure users accounts and user account properties.
  - Create new user accounts.
  - Import bulk user accounts with a template.
  - Configure group accounts and assignment types.
- 3- Configure subscriptions.
  - Determine the correct region to locate Azure services.
  - Review features and use cases for Azure subscriptions.
  - Obtain an Azure subscription.
  - Understand billing and features for different Azure subscriptions.
  - Use Microsoft Cost Management for cost analysis.
  - Discover when to use Azure resource tagging.
  - Identify ways to reduce costs.
- 4- Configure Azure Policy.
  - Create management groups to target policies and spending budgets.
  - Implement Azure Policy with policy and initiative definitions.
  - Scope Azure policies and determine compliance.
- 5- Configure role-based access control.
  - Identify features and use cases for role-based access control.
  - List and create role definitions.
  - Create role assignments.
  - Identify differences between Azure RBAC and Azure Active Directory roles.
  - Manage access to subscriptions with RBAC.
  - Review built-in Azure RBAC roles.
- 6- Configure Azure resources with tools.

- Manage resources with the Azure portal.
  - Manage resources with Azure Cloud Shell.
  - Manage resources with Azure PowerShell.
  - Manage resources with Azure CLI.
- 7- Use Azure Resource Manager.
- Identify the features and usage cases for Azure Resource Manager.
  - Describe each Azure Resource Manager component and its usage.
  - Organize your Azure resources with resource groups.
  - Apply Azure Resource Manager locks.
  - Move Azure resources between groups, subscriptions, and regions.
  - Remove resources and resource groups.
  - Apply and track resource limits.
- 8- Configure resources with Azure Resource Manager templates.
- List the advantages of Azure templates.
  - Identify the Azure template schema components.
  - Specify Azure template parameters.
  - Locate and use Azure Quickstart Templates.
- 9- Configure virtual networks.
- Describe Azure virtual network features and components.
  - Identify features and usage cases for subnets and subnetting.
  - Identify usage cases for private and public IP addresses.
  - Create and determine which resources require public IP addresses.
  - Create and determine which resources require private IP addresses.
  - Create virtual networks.
- 10- Configure network security groups.
- Determine when to use network security groups.
  - Implement network security group rules.
  - Evaluate network security group effective rules.
  - Examine advantages of application security groups.
- 11- Configure Azure DNS.
- Identify features and usage cases for domains, custom domains, and private zones.
  - Verify custom domain names using DNS records.
  - Implement DNS zones, DNS delegation, and DNS record sets.
- 12- Configure Azure virtual network peering.
- Identify usage cases and product features of Azure virtual network peering.
  - Configure your network to implement Azure VPN Gateway for transit connectivity.
  - Extend peering by using a hub and spoke network with user-defined routes and service chaining.
- 13- Configure network routing and endpoints.
- Implement system routes and user-defined routes.
  - Configure a custom route.
  - Implement service endpoints.
  - Identify features and usage cases for private links and endpoint services.
- 14- Configure Azure Load Balancer.

- Identify features and usage cases for Azure load balancer.
  - Implement public and internal Azure load balancers.
  - Compare features of load balancer SKUs and configuration differences.
  - Configure back-end pools, load-balancing rules, session persistence, and health probes.
- 15- Configure Azure Application Gateway.
- Identify features and usage cases for Azure Application Gateway.
  - Implement Azure Application Gateway, including selecting a routing method.
  - Configure gateway components, such as listeners, health probes, and routing rules.
- 16- Configure storage accounts.
- Identify features and usage cases for Azure storage accounts.
  - Select between different types of Azure Storage and storage accounts.
  - Select a storage replication strategy.
  - Configure network access to storage accounts.
  - Secure storage endpoints.
- 17- Configure Azure Blob Storage.
- Identify features and usage cases for Azure Blob Storage.
  - Configure Blob Storage and Blob access tiers.
  - Configure Blob lifecycle management rules.
  - Configure Blob object replication.
  - Upload and price Blob Storage.
- 18- Configure Azure Storage security.
- Configure a shared access signature (SAS), including the uniform resource identifier (URI) and SAS parameters.
  - Configure Azure Storage encryption.
  - Implement customer-managed keys.
  - Recommend opportunities to improve Azure Storage security.
- 19- Configure Azure Files and Azure File Sync.
- Identify storage for file shares and blob data.
  - Configure Azure Files shares and file share snapshots.
  - Identify features and usage cases of Azure File Sync.
  - Identify Azure File Sync components and configuration steps.
- 20- Configure Azure Storage with tools.
- Configure and use Azure Storage Explorer.
  - Configure the Azure Import/Export service.
  - Use the WAImportExport tool with the Azure Import/Export service.
  - Configure and use AZCopy.
- 21- Configure virtual machines.
- Create a virtual machine planning checklist.
  - Determine virtual machine locations and pricing models.
  - Determine the correct virtual machine size.
  - Configure virtual machine storage.
- 22- Configure virtual machine availability.
- Implement availability sets and availability zones.
  - Implement update and fault domains.
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- Implement Virtual Machine Scale Sets.
  - Autoscale virtual machines.
  - 23- Configure virtual machine extensions.
    - Identify features and usage cases for virtual machine extensions.
    - Identify features and usage cases for custom script extensions.
    - Identify features and usage cases for desired state configuration.
  - 24- Configure Azure app service plans.
    - Identify features and usage cases of the Azure App Service.
    - Select an appropriate Azure App Service plan pricing tier.
    - Scale the App Service Plan.
    - Scale out the App Service Plan.
  - 25- Configure Azure App Services.
    - Identify features and usage cases for the Azure App Service.
    - Create an app with Azure App Service.
    - Configure deployment settings, specifically deployment slots.
    - Secure your Azure App Service app.
    - Configure custom domain names.
    - Backup and restore your Azure App Service app.
    - Configure Azure Application Insights.
  - 26- Configure Azure Container Instances.
    - Identify when to use containers versus virtual machines.
    - Identify the features and usage cases of Azure Container Instances.
    - Implement Azure Container Groups.
  - 27- Configure Azure Kubernetes Service.
    - Identify Azure Kubernetes Service (AKS) components including pods, clusters, and nodes.
    - Configure network connections for AKS.
    - Configure storage options for AKS.
    - Implement security options for AKS.
    - Scale AKS including adding Azure Container Instances.
  - 28- Configure file and folder backups.
    - Identify features and usage cases for Azure Backup.
    - Configure Azure Recovery Services Vault backup options.
    - Implement on-premises file and folder backup.
    - Configure the Microsoft Azure Recovery Services (MARS) agent for Azure Backup.
  - 29- Configure virtual machine backups.
    - Identify features and usage cases for different Azure backup methods.
    - Configure virtual machine snapshots and backup options.
    - Implement virtual machine backup and restore, including soft delete.
    - Compare the Azure Backup agent to the Azure Backup Server.
    - Perform site-to-site recovery by using Azure Site Recovery.
  - 30- Configure Azure Monitor.
    - Identify the features and usage cases for Azure Monitor.
    - Configure and interpret metrics and logs.
    - Identify the Azure Monitor components and data types.
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- Configure the Azure Monitor Activity Log.
- 31- Configure Azure alerts.
- Identify Azure Monitor alerts, including alert types and alert states.
  - Configure Azure Monitor alerts.
  - Create alert rules and action groups.
- 32- Configure Log Analytics.
- Identify the features and usage cases for Log Analytics.
  - Create a Log Analytics workspace.
  - Structure a Log Analytics query and review results.
- 33- Configure Azure Network Watcher.
- Identify the features and usage cases for Azure Network Watcher.
  - Configure diagnostic capabilities like IP Flow Verify, Next Hop, and Network Topology.

