

Course Outline

Microsoft Azure Administrator

Course AZ-104T00: 4 days Instructor Led

About this course

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.

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.

At course completion

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 Firewall
- Configure Azure DNS
- Configure Azure virtual network peering
- Configure Azure VPN Gateway
- Configure Azure ExpressRoute and Azure Virtual WAN
- 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 Services
- 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

Module 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.

Module 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.

Module 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.

Module 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.

Module 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.

Module 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.

Module 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.

Module 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.

Module 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.

Module 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.

Module 11: Configure Azure Firewall

- Determine when to use Azure Firewall.
- Implement Azure Firewall including firewall rules

Module 12: 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.

Module 13: Configure virtual network peering

- Identify usage cases and product features of virtual network peering.
- Configure gateway transit, connectivity, and service chaining.
- Extend peering by using a hub and spoke network with user-defined routes and service chaining.

Module 14: Configure VPN Gateway

- Identify features and usage cases for Azure VPN gateways.
- Implement high availability scenarios.
- Configure site-to-site VPN connections using a VPN gateway.

Module 15: Configure ExpressRoute and Virtual WAN

- Identify features and usage cases for Azure ExpressRoute.
- Coexist site-to-site and ExpressRoute networks.
- Identify features and usage cases for virtual WAN.

Module 16: 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.

Module 17: Configure Azure Load Balancer

- Identify features and usage cases for Azure load balancer.
- Implement public and internal Azure load balancers.
- Configure load balancer SKUs, backend pools, session persistence, and health probes.
- Configure back-end pools, load-balancing rules, session persistence, and health probes.

Module 18: 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.

Module 19: 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.

Module 20: 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

Module 21: 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.

Module 22: 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.

Module 23: 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.

Module 24: 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.

Module 25: Configure virtual machine availability

- Implement availability sets and availability zones.
- Implement update and fault domains.
- Implement Virtual Machine Scale Sets.
- Autoscale virtual machines.

Module 26: 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.

Module 27: 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.

Module 28: 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.
- Back up and restore your Azure App Service app.
- Configure Azure Application Insights.

Module 29: 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.

Module 30: 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.

Module 31: 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.

Module 32: 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.

Module 33: 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.
- Configure the Azure Monitor Activity Log.

Module 34: Configure Azure alerts

- Identify Azure Monitor alerts, including alert types and alert states.
- Configure Azure Monitor alerts.
- Create alert rules and action groups.

Module 35: 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.

Module 36: Configure Azure Network Watcher

- Identify the features and usage cases for Azure Network Watcher.

Course Outline

- Configure diagnostic capabilities like IP Flow Verify, Next Hop, and Network Topology.