

# Microsoft Azure Administrator (AZ-104)

## Module 1: Configure Microsoft Entra

This module will teach you how to secure identities with Microsoft Entra and implement users and groups.

### Lessons

- Define Microsoft Entra concepts, including identities, accounts, and tenants
- Describe Microsoft Entra features to support different configurations
- Understand differences between Microsoft Entra and Active Directory Domain Services (AD DS)
- Choose between supported editions of Microsoft Entra
- Implement the Microsoft Entra join feature
- Use the Microsoft Entra self-service password reset feature

## Module 2: Configure user and group Accounts

In this module, you will learn how to:

### Lessons

- 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

Learn how to configure Azure subscriptions, including how to obtain a subscription, implement cost management, and apply Azure resource tags.

### Lessons

- 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

Learn how to configure Azure Policy to implement compliance requirements.

### Lessons

- 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

Learn how to use role-based access control (RBAC) to ensure resources are protected, but users can still access the resources they need.

### Lessons

- Identify features and use cases for role-based access control
- List and create role definitions
- Create role assignments
- Identify differences between Azure RBAC and Microsoft Entra roles
- Manage access to subscriptions with RBAC
- Review built-in Azure RBAC roles

## Module 6: Configure Azure resources with tools

You will learn how to select a tooling option such as Azure portal, Azure PowerShell, Azure CLI, or Azure Cloud Shell.

### Lessons

- 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

You'll learn how to use resource groups to organise your Azure resources.

### Lessons

- Identify the features and usage cases for Azure Resource Manager
- Describe each Azure Resource Manager component and its usage

- Organise 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 Manager templates

You'll learn how to use Azure Resource Manager templates to consistently deploy assets.

### Learning objectives

- 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

Learn to configure virtual networks and subnets, including IP addressing.

### Learning objectives

- 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

Learn how to implement network security groups, and ensure network security group rules are correctly applied.

### Learning objectives

- Determine when to use network security groups
- Implement network security group rules
- Evaluate network security group effective rules
- Examine the advantages of application security groups

## Module 11: Configure Azure DNS

In this module, you will learn about monitoring your Azure infrastructure, including Azure Monitor, alerting, and log analytics.

### Learning objectives

- Identify features and usage cases for domains, custom domains, and private zones
- Verify custom domain names by using DNS records
- Implement DNS zones, DNS delegation, and DNS record sets
- Configure Azure DNS including custom domain names and record sets

## Module 12: Configure Azure Virtual Network peering

Learn to configure an Azure Virtual Network peering connection and address transit and connectivity concerns.

### Learning objectives

- 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

## Module 13: Configure network routing and endpoints

Learn how to configure network routes, including endpoints and private links.

### Learning objectives

- Implement system routes and user-defined routes
- Configure a custom route
- Implement service endpoints
- Identify features and usage cases for Azure Private Link and endpoint services

## Module 14: Configure Azure Load Balancer

Learn how to configure an internal or public load balancer.

### Learning objectives

- 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

## Module 15: Configure Azure Application Gateway

Learn how to configure Azure Application Gateway.

### Learning objectives

- Identify features and usage cases for Azure Application Gateway
- Implement an Azure application gateway, including selecting a routing method
- Configure gateway components, such as listeners, health probes, and routing rules

## Module 16: Configure storage accounts

Learn how to configure storage accounts, including replication and endpoints.

### Learning objectives

- 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 17: Configure Azure Blob Storage

Learn how to configure Azure Blob Storage, including tiers and object replication.

### Learning objectives

- 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 18: Configure Azure Storage security

Learn how to configure common Azure Storage security features like storage access signatures.

### Learning objectives

- 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 19: Configure Azure Files and Azure File Sync

Learn how to configure Azure Files and Azure File Sync.

### Learning objectives

- 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
- Recommend opportunities to improve Azure Storage security

## Module 20: Configure Azure Storage with tools

Learn how to configure Azure Storage with tools like Azure Storage Explorer and AZCopy.

### Learning objectives

- 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 AZCop

## Module 21: Configure virtual machines

Learn how to configure virtual machines including sizing, storage, and connections.

### Learning objectives

- Create a virtual machine planning checklist
- Determine virtual machine locations and pricing model
- Determine the correct virtual machine size
- Configure virtual machine storage

## Module 22: Configure virtual machine availability

Learn how to configure virtual machine availability including vertical and horizontal scaling.

### Learning objectives

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

## Module 23: Configure virtual machine extensions

Learn how to use virtual machine extensions to automate virtual machine deployments.

### Learning objectives

- 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 24: Configure Azure App Service plans

Learn how to configure an Azure App Service plan, including pricing and scaling.

### Learning objectives

- Identify features and usage cases for Azure App Service
- Select an appropriate Azure App Service plan pricing tier
- Scale an Azure App Service plan
- Scale-out an Azure App Service plan

## Module 25: Configure Azure App Service

Learn how to configure and monitor Azure App Service instances, including deployment slots.

### Learning objectives

- Identify features and usage cases for 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 26: Configure Azure App Container Instances

Learn how to configure Azure Container Instances including container groups.

### Learning objectives

- Identify when to use containers versus virtual machines
- Identify the features and usage cases of Azure Container Instances
- Implement Azure container groups

## Module 27: Configure Azure Kubernetes Service

Learn how to configure Azure Kubernetes Service including networking, storage, and scaling.

### Learning objectives

- 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 28: Configure file and folder backups

Learn how to configure backup and restore policies that meet your company's regulatory needs.

### Learning objectives

- Identify features and usage cases for Azure Backup
- Configure Azure Recovery Services vault backup options
- Configure the Microsoft Azure Recovery Services (MARS) agent for Azure Backup
- Implement on-premises file and folder backups

## Module 29: Configure virtual machine backups

Learn how to configure virtual machine backups including restore operations.

### Learning objectives

- 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
- Perform site-to-site recovery by using Azure Site Recovery
- Compare the Azure Backup agent to the Microsoft Azure Backup Server

## Module 30: Configure Azure Monitor

Learn how to configure Azure Monitor, including querying the Azure Monitor activity log.

### Learning objectives

- 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 31: Configure Azure alerts

Learn how to configure Azure alerts including action groups.

### Learning objectives

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

## Module 32: Configure Log Analytics

You will learn how to configure Log Analytics including structuring queries.

### Learning objectives

- Identify the features and usage cases for Log Analytics
- Create a Log Analytics workspace
- Structure a Log Analytics query and review results

## Module 33: Configure Network Watcher

You'll learn how to configure Network Watcher and troubleshoot common networking problems.

### Learning objectives

- Identify the features and usage cases for Azure Network Watcher
- Configure diagnostic capabilities like IP Flow Verify, Next Hop, and Network Topology

