

**Course Details****Course Code:** AZ-104T00**Duration:** 4 days**Notes:**

- This course syllabus should be used to determine whether the course is appropriate for the students, based on their current skills and technical training needs.
- Course content, prices, and availability are subject to change without notice.
- Terms and Conditions apply

*Elements of this syllabus are subject to change.*

**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.

**Prerequisites**

Successful Azure Administrators start this role with experience in virtualization, networking, identity, and storage.

- Understanding of on-premises virtualization technologies, including: VMs, virtual networking, and virtual hard disks.
- Understanding of network configurations, including TCP/IP, Domain Name System (DNS), virtual private networks (VPNs), firewalls, and encryption technologies.
- Understanding of Active Directory concepts, including users, groups, and role-based access control.
- Understanding of resilience and disaster recovery, including backup and restore operations.

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### Configure Azure Active Directory

Learn how to configure Azure Active Directory, including features like Azure AD join and self-service password reset.

#### Learning objectives

In this module, you learn how to:

- 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.

### Configure user and group accounts

Learn how to configure user and group accounts.

#### Learning objectives

In this module, you learn how to:

- Configure users accounts and user account properties.
- Create new user accounts.
- Import bulk user accounts with a template.
- Configure group accounts and assignment types.

### Configure subscriptions

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

#### Learning objectives

In this module, you learn how to:

- 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.

### Configure Azure Policy

Learn how to configure Azure Policy to implement compliance requirements.

#### Learning objectives

In this module, you learn how to:

- Create management groups to target policies and spending budgets.
- Implement Azure Policy with policy and initiative definitions.
- Scope Azure policies and determine compliance.

### 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.

#### Learning objectives

In this module, you learn how to:

- 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.

### 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.

#### Learning objectives

After completing this module, you will be able to:

- Manage resources with the Azure portal.
- Manage resources with Azure Cloud Shell.
- Manage resources with Azure PowerShell.
- Manage resources with Azure CLI.

### Use Azure Resource Manager

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

### Learning objectives

After completing this module, you'll be able to:

- 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.

### Configure resources with Azure Resource 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.

### Configure virtual networks

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

### Learning objectives

In this module, you learn how to:

- 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.

### Configure network security groups

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

### Learning objectives

In this module, you learn how to:

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

### Configure Azure DNS

Learn how to configure Azure DNS including custom domain names and record sets.

### Learning objectives

In this module, you learn how to:

- 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 Virtual Network peering

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

### Learning objectives

In this module, you learn how to:

- 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.

### Configure network routing and endpoints

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

### Learning objectives

In this module, you learn how to:

- 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.

**Configure Azure Load Balancer**

Learn how to configure an internal or public load balancer.

**Learning objectives**

In this module, you learn how to:

- 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.

**Configure Azure Application Gateway**

Learn how to configure Azure Application Gateway.

**Learning objectives**

In this module, you learn how to:

- 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.

**Configure storage accounts**

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

**Learning objectives**

In this module, you learn how to:

- 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.

**Configure Azure Blob Storage**

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

**Learning objectives**

In this module, you learn how to:

- 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.

**Configure Azure Storage security**

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

**Learning objectives**

In this module, you learn how to:

- 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.

**Configure Azure Files and Azure File Sync**

Learn how to configure Azure Files and Azure File Sync.

**Learning objectives**

In this module, you learn how to:

- Identify storage for file shares and blob data.
- Configure Azure file shares and file share snapshots.
- Identify features and use cases of Azure File Sync.
- Identify Azure File Sync components and configuration steps.

**Configure Azure Storage with tools**

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

**Learning objectives**

In this module, you learn how to:

- 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.

### Configure virtual machines

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

#### Learning objectives

In this module, you learn how to:

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

### Configure virtual machine availability

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

#### Learning objectives

In this module, you learn how to:

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

### Configure Azure App Service plans

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

#### Learning objectives

In this module, you learn how to:

- 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.

### Configure Azure App Service

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

#### Learning objectives

In this module, you learn how to:

- 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.
- Backup and restore your Azure App Service app.
- Configure Azure Application Insights.

### Configure Azure Container Instances

Learn how to configure Azure Container Instances including container groups.

#### Learning objectives

In this module, you learn how to:

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

### Configure file and folder backups

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

#### Learning objectives

In this module, you learn how to:

- 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.

### Configure virtual machine backups

Learn how to configure virtual machine backups including restore operations.

#### Learning objectives

In this module, you learn how to:

- 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.

### Configure Azure Monitor

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

#### Learning objectives

In this module, you learn how to:

- 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.

### Configure Azure alerts

Learn how to configure Azure alerts including action groups.

#### Learning objectives

In this module, you learn how to:

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

### Configure Log Analytics

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

#### Learning objectives

After completing this module, you will be able to:

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

### Configure Network Watcher

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

#### Learning objectives

After completing this module, you'll be able to:

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