



AZ-104 Study Guide

Microsoft Azure Administrator Exam Resources



PURPOSE

The following resources have been assembled to help you prepare for the AZ-104 Microsoft Azure Administrator learning track during Microsoft Certification Week.

Use this guide to understand what knowledge is needed to complete the exam and as a learning tool to help you understand areas where you feel you need additional training. It is not required that you leverage all the resources in this guide to participate in Microsoft Certification Week.



AUDIENCE

All Pax8 Partners

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AZ-104: Exam Resources

Audience Profile for the Exam

Candidates for this exam should have subject matter expertise implementing, managing, and monitoring an organization's Microsoft Azure environment.

A candidate for this exam should have at least six months of hands-on experience administering Azure, along with a strong understanding of core Azure services, Azure workloads, security, and governance. In addition, this role should have experience using PowerShell, Azure CLI, Azure portal, and Azure Resource Manager templates.

Preparing with an Azure Subscription

It is highly recommended when preparing for a Microsoft exam, that you have had some level of hands-on experience with the services within the objectives. Microsoft courses have a GitHub repository for labs that are recommended and available to the public.

- Azure Free Trial: [Create your Azure free account today | Microsoft Azure](#).
- Suggested Lab Guides: <https://github.com/MicrosoftLearning/AZ-104JA-MicrosoftAzureAdministrator>

All lab guides can be found at this link: <https://github.com/MicrosoftLearning>

Creating an Azure free subscription

[Create your Azure free account today | Microsoft Azure](#)

Exam Objectives

The following are the learning objectives for the exam. In line with each objective are links to Microsoft documentation around the specific concept or service. In addition to the documentation, there are also online courses from Microsoft Learn and the Microsoft Partner virtual training series available for additional learning resources. Access to the exam objectives can be found on Microsoft Learn: <https://docs.microsoft.com/en-us/learn/certifications/exams/az-104>

Objective: Manage Azure Identities and Governance (15-20%)

Manage Azure AD Objects

- [What is Azure Active Directory?](#)
- Create users and groups
 - [Add or delete users using Azure Active Directory](#)
 - [Creating a new user in Azure AD](#)
 - [New-AzureADUser](#)
- Manage user and group properties
 - [Add or update a user's profile information using Azure Active Directory](#)
 - [Edit your group information using Azure Active Directory](#)
- Manage device settings
 - [Manage device identities using the Azure portal](#)
 - [How To: Manage stale devices in Azure AD](#)
- Perform bulk user updates
 - [Bulk import group members \(preview\) in Azure Active Directory](#)
- Manage guest accounts
 - [What is guest user access in Azure Active Directory B2B?](#)
 - [Manage guest access with Azure AD access reviews](#)
 - [Quickstart: Add guest users to your directory in the Azure portal](#)
- Configure Azure AD Join
 - [How to: Plan your Azure AD join implementation](#)
 - [Tutorial: Configure hybrid Azure Active Directory join for managed domains](#)
- Configure self-service password reset

[Plan an Azure Active Directory self-service password reset](#)
[How it works: Azure AD self-service password reset](#)
[Licensing requirements for Azure AD self-service password reset](#)

Manage Role-Based Access Control (RBAC)

- [What is role-based access control \(RBAC\) for Azure resources?](#)
- Create a custom role
[Tutorial: Create a custom role for Azure resources using Azure PowerShell](#)
[Tutorial: Create a custom role for Azure resources using Azure CLI](#)
- Provide access to Azure resources by assigning roles
[Add or remove role assignments using Azure RBAC and the Azure portal](#)
- Interpret access assignments
[List role assignments using Azure RBAC and the Azure portal](#)
[Understand deny assignments for Azure resources](#)
- Manage multiple directories
[Understand how multiple Azure Active Directory tenants interact](#)

Manage Subscriptions and Governance

- [Overview of Management services in Azure](#)
- Configure Azure policies
[What is Azure Policy?](#)
[Quickstart: Create a policy assignment to identify non-compliant resources](#)
[Tutorial: Create and manage policies to enforce compliance](#)
- Configure resource locks
[Lock resources to prevent unexpected changes](#)
[Prevent Azure Resources from unexpected deletion using Locks \(Thomas Maurer\)](#)
- Apply tags
[Use tags to organize your Azure resources](#)
[Use Azure Tags to organize Resources \(Thomas Maurer\)](#)
- Create and manage resource groups
[Manage Azure Resource Manager resource groups by using the Azure portal](#)
[Manage Azure resource groups by using Azure PowerShell](#)
- Move resources
[Move resources to a new resource group or subscription](#)
- Remove RGs
[Delete resource groups](#)
- Manage subscriptions
[Create an additional Azure subscription](#)
[Change your Azure subscription to a different offer](#)
- Configure Cost Management
[What is Azure Cost Management and Billing?](#)
[Quickstart: Explore and analyze costs with cost analysis](#)
- Configure management groups
[Create management groups for resource organization and management](#)
[Manage your resources with management groups](#)

Objective: Implement and Manage Storage (10-15%)

Manage Storage Accounts

- [Introduction to Azure Storage](#)
- Configure network access to storage accounts
[Configure Azure Storage firewalls and virtual networks](#)
- Create and configure storage accounts
[Storage account overview](#)
[Create an Azure Storage account](#)
[Upgrade to a general-purpose v2 storage account](#)
- Generate shared access signature
[Delegate access with a shared access signature](#)

- [Grant limited access to Azure Storage resources using shared access signatures \(SAS\)](#)
- Manage access keys
[Manage storage account access keys](#)
- Implement Azure storage replication
[Azure Storage redundancy](#)
- Configure Azure AD Authentication for a storage account
[Authorize access to blobs and queues using Azure Active Directory](#)

Manage Data in Azure Storage

- Export from Azure job
[Use the Azure Import/Export service to export data from Azure Blob storage](#)
- Import into Azure job
[Use the Azure Import/Export service to import data to Azure Blob Storage](#)
- Install and use Azure Storage Explorer
[Get started with Storage Explorer](#)
- Copy data by using AZCopy
[What is Azure CLI](#)
[Get started with Azure CLI](#)
[Install the Azure CLI \(Thomas Maurer\)](#)

Configure Azure Files and Azure Blob Storage

- [What is Azure? - Files](#)
- Copy data Create an Azure file share
[Quickstart: Create and manage Azure file shares with the Azure portal](#)
[Create an Azure file share](#)
- Create and configure Azure File Sync service
[Planning for an Azure File Sync deployment](#)
[Tutorial: Extend Windows file servers with Azure File Sync](#)
- Configure Azure blob storage
[Quickstart: Upload, download, and list blobs with the Azure portal](#)
- Configure storage tiers for Azure blobs
[Azure Blob storage: hot, cool, and archive access tiers](#)

Objective: Deploy and Manage Azure Compute Resources (25-30%)

Configure VMs for High Availability and Scalability

- Configure high availability
[Availability options for virtual machines in Azure](#)
[Manage the availability of Windows virtual machines in Azure](#)
- Deploy and configure scale sets
[What are virtual machine scale sets?](#)

Automate Deployment and Configuration of VMs

- Modify Azure Resource Manager (ARM) template
[Extend Azure Resource Manager template functionality](#)
[Azure Resource Manager templates overview](#)
[Tutorial: Create and deploy your first Azure Resource Manager template](#)
- Configure VHD template
[Create a VM from a VHD by using the Azure portal](#)
- Deploy from template
[Quickstart: Create and deploy Azure Resource Manager templates by using the Azure portal](#)
- Save a deployment as an ARM template
[Download the template for a VM](#)
- Automate configuration management by using custom script extensions
[Custom Script Extension for Windows](#)
[Use the Azure Custom Script Extension Version 2 with Linux virtual machines](#)

Create and Configure VMs

- Configure Azure Disk Encryption
 - [Azure Disk Encryption for Linux VMs](#)
 - [Azure Disk Encryption for Windows VMs](#)
- Move VMs from one resource group to another
 - [Move a Windows VM to another Azure subscription or resource group](#)
- Manage VM sizes
 - [Resize a Windows VM](#)
- Add data discs
 - [Attach a managed data disk to a Windows VM by using the Azure portal](#)
 - [Attach a data disk to a Windows VM with PowerShell](#)
- Configure networking
 - [Common PowerShell commands for Azure Virtual Networks](#)
 - [How to open ports to a virtual machine with the Azure portal](#)
 - [Create and manage a Windows virtual machine that has multiple NICs](#)
- Redeploy VMs
 - [Redeploy Windows virtual machine to new Azure node](#)

Create and Configure Containers

- Create and configure Azure Kubernetes Service (AKS)
 - [Azure Kubernetes Service \(AKS\)](#)
 - [Quickstart: Deploy an Azure Kubernetes Service \(AKS\) cluster using the Azure portal](#)
- Create and configure Azure Container Instances (ACI)
 - [What is Azure Container Instances?](#)
 - [Quickstart: Deploy a container instance in Azure using the Azure portal](#)
 - [Quickstart: Deploy a container instance in Azure using the Azure CLI](#)

Create and Configure Web Apps

- Create and configure App Service
 - [App Service overview](#)
 - [Create an ASP.NET Core web app in Azure](#)
- Create and configure App Service Plans
 - [Azure App Service plan overview](#)
 - [Manage an App Service plan in Azure](#)

Objective: Configure and Manage Virtual Networking (30-35%)

Implement and Manage Virtual Networking

- Create and configure VNET peering
 - [Virtual network peering overview](#)
 - [Azure Virtual Network frequently asked questions \(FAQ\) VNet Peering](#)
 - [Tutorial: Connect virtual networks with virtual network peering using the Azure portal](#)
 - [Create a virtual network peering – different deployment models, same subscription](#)
 - [Create, change, or delete a virtual network peering](#)
- Configure private and public IP addresses, network routes, network interface, subnets, and virtual network
 - [What is Azure Virtual Network?](#)
 - [Quickstart: Create a virtual network using the Azure portal](#)
 - [Virtual network traffic routing](#)
 - [Networking limits](#)
 - [Create, change, or delete a public IP address](#)
 - [Add, change, or remove IP addresses for an Azure network interface](#)
 - [Associate a public IP address to a virtual machine](#)
 - [Subnet extension](#)
 - [Virtual network traffic routing](#)
 - [Add network interfaces to or remove network interfaces from virtual machines](#)

Configure Name Resolution

- Configure Azure DNS
 - [What is Azure DNS?](#)
 - [What is Azure Private DNS?](#)
 - [Quickstart: Create an Azure DNS zone and record using the Azure portal](#)
 - [Azure DNS FAQ](#)
- Configure custom DNS settings
 - [Name resolution for resources in Azure virtual networks](#)
 - [Use Azure DNS to provide custom domain settings for an Azure service](#)
- Configure a private or public DNS zone
 - [Tutorial: Host your domain in Azure DNS](#)
 - [Quickstart: Create an Azure private DNS zone using the Azure portal](#)

Secure Access to Virtual Networks

- Create security rules
 - [Create, change, or delete a network security group](#)
- Associate an NSG to a subnet or network interface
 - [Create, change, or delete a network security group](#)
- Evaluate effective security rules
 - [Create, change, or delete a network interface](#)
- Deploy and configure Azure Firewall
 - [Tutorial: Deploy and configure Azure Firewall using the Azure portal](#)
- Deploy and configure Azure Bastion Service
 - [Create an Azure Bastion host](#)

Configure Load Balancing

- Configure Application Gateway
 - [Application Gateway configuration overview](#)
- Configure an internal load balancer
 - [Tutorial: Balance internal traffic load with a Basic load balancer in the Azure portal](#)
- Configure load balancing rules
 - [Create an internal load balancer by using the Azure PowerShell module](#)
- Configure a public load balancer
 - [Quickstart: Create a Load Balancer to load balance VMs using the Azure portal](#)
- Troubleshoot load balancing
 - [Troubleshoot Azure Load Balancer](#)

Monitor and Troubleshoot Virtual Networking

- Monitor on-premises connectivity
 - [Diagnose on-premises connectivity via VPN gateways](#)
- Use Network Performance Monitor
 - [Network Performance Monitor solution: Performance monitoring](#)
- Use Network Watcher
 - [What is Azure Network Watcher?](#)
- Troubleshoot external networking
 - [Troubleshoot Virtual Network Gateway and Connections using Azure Network Watcher Azure CLI](#)
- Troubleshoot virtual network connectivity
 - [Troubleshoot connections with Azure Network Watcher using the Azure portal](#)

Integrate an On-Premises Network with an Azure Virtual Network

- Create and configure Azure VPN Gateway
 - [Create a route-based VPN gateway using the Azure portal](#)
- Create and configure VPNs
 - [Create a Site-to-Site connection in the Azure portal](#)
- Configure ExpressRoute
 - [ExpressRoute overview](#)
 - [Tutorial: Create and modify an ExpressRoute circuit](#)
- Configure Azure Virtual WAN

[About Azure Virtual WAN](#)

[Tutorial: Create a Site-to-Site connection using Azure Virtual WAN](#)

Objective: Monitor and Back Up Azure Resources (15-20%)

Monitor Resources by Using Azure Monitor

- Configure and interpret metrics
[Metrics in Azure Monitor](#)
[Quickstart: Monitor an Azure resource with Azure Monitor](#)
- Configure Log Analytics
[Get started with Log Analytics in Azure Monitor](#)
- Query and analyze logs
[Overview of log queries in Azure Monitor](#)
- Set up alerts and actions
[Create, view, and manage metric alerts using Azure Monitor](#)
[Metric Alerts with Dynamic Thresholds in Azure Monitor](#)
[Create Metric Alerts for Logs in Azure Monitor](#)
- Configure Application Insights
[Manage Application Insights resources using PowerShell](#)

Implement Backup and Recovery

- Configure and review backup reports
[Configure Azure Backup reports](#)
- Perform backup and restore operations by using Azure Backup
[Back up a virtual machine in Azure](#)
[Restore a disk and create a recovered VM in Azure](#)
- Create a Recovery Services Vault
[Create a Recovery Services vault](#)
- Use soft delete to recover Azure VMs
[Soft delete for virtual machines](#)
- Create and configure backup policy
[Manage Azure VM backups with Azure Backup service](#)

Perform Site-to-Site Recovery by Using Azure Site Recovery

[About Site Recovery](#)

[Set up disaster recovery of on-premises VMware virtual machines or physical servers to a secondary site](#)

On-Demand Training from Microsoft Learn

New to the cloud? Azure fundamentals is a six-part series that teaches you basic cloud concepts, provides a streamlined overview of many Azure services, and guides you with hands-on exercises to deploy your very first services for free.

- [Azure Fundamentals part 1: Describe core Azure Concepts](#)
- [Azure Fundamentals part 2: Describe core Azure Services](#)
- [Azure Fundamentals part 3: Describe core solutions and management tools on Azure](#)
- [Azure Fundamentals part 4: Describe general security and network security features](#)
- [Azure Fundamentals part 5: Describe identity, governance, privacy, and compliance features](#)
- [Azure Fundamentals part 6: Describe Azure cost management and service level agreements](#)



Resources

- Helpful Links
 - <https://build5nines.com/free-oss-exam-self-assessment-tool/>
 - <https://github.com/MicrosoftLearning/AZ-104-MicrosoftAzureAdministrator>
 - <https://docs.microsoft.com/en-us/learn/certifications/exams/az-104>
 - <https://azure.microsoft.com/en-us/resources/templates/>
 - <https://docs.microsoft.com/en-us/azure/azure-government/compliance/azure-services-in-fedramp-auditscope>
- Practice Exam
 - <https://www.measureup.com/az-104-microsoft-azure-administrator.html>
 - <https://www.whizlabs.com/microsoft-azure-certification-az-104/>

