

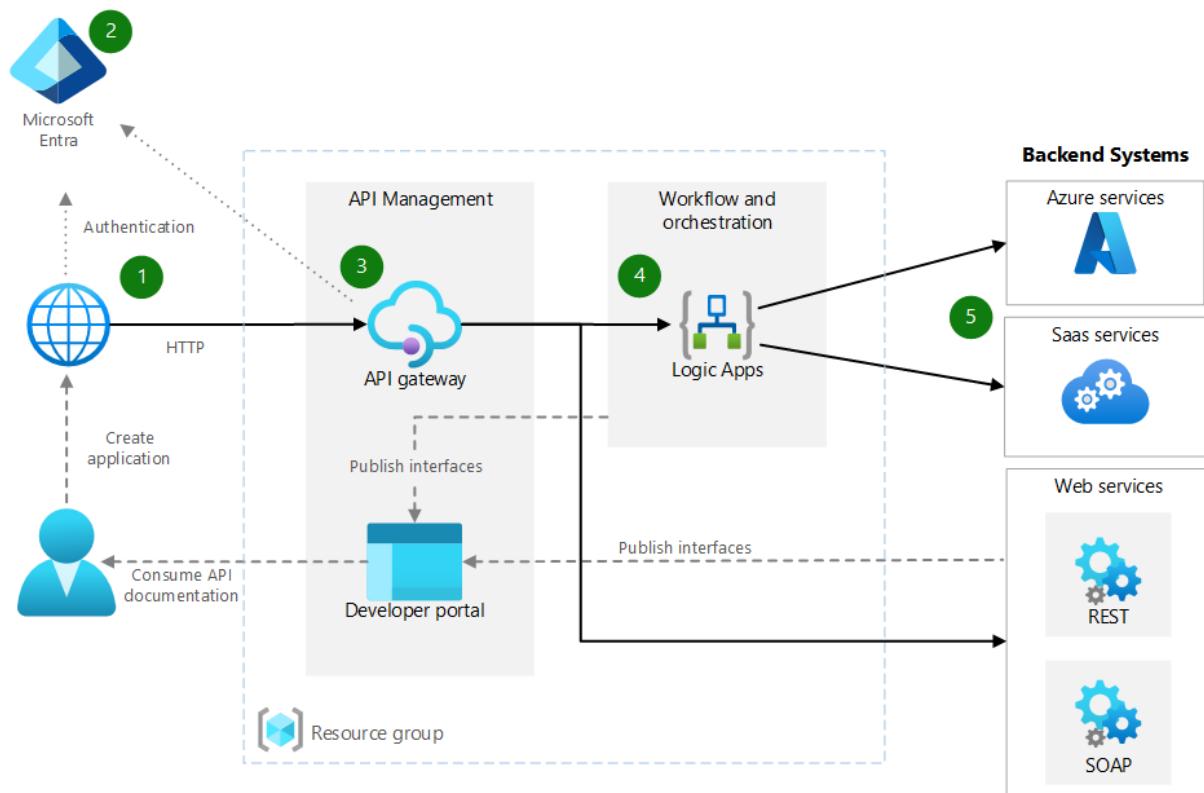
Azure

Azure is a comprehensive cloud computing platform that offers a wide range of service and solutions to help businesses and developers build, deploy, and manage applications through a global network of data centres.

Azure supports various programming languages, tools, and frameworks, making it a versatile choice for different industries and use cases.

Key uses:

- Application development and hosting
- Virtual machines and storage
- Networking and content delivery
- Data management
- IoT



Workflow

1. **Application.** The application is a client that calls the API gateway after authenticating with Microsoft Entra. The application can be a web app, mobile app, or any other client that can make HTTP requests.
2. **Microsoft Entra ID.** Is used to authenticate the client application. The client application obtains an access token from Microsoft Entra ID and includes it in the request to the API gateway.
3. **Azure API Management.** API Management consists of two related components:
 - **API gateway:** The API gateway accepts HTTP call from the client application, validates the token from Microsoft Entra ID, and forwards the request to the backend service. The API gateway can also transform requests and responses, and cache responses.
 - **Developer portal** is used by developers to discover and interact with the APIs. The developer portal can be customized to match your organization's branding.
4. **Azure Logic Apps.** Logic apps are used to orchestrate the calls to the backend services. Logic apps can be triggered by a variety of events and can call a variety of services. In this solution, Logic Apps is used to call the backend services and provide easy connectivity through connectors reducing the need for custom code.
5. **Backend services.** The backend services can be any service or line of business application, such as a database, a web service, or a SaaS application. The backend services can be hosted in Azure or on-premises.

Region

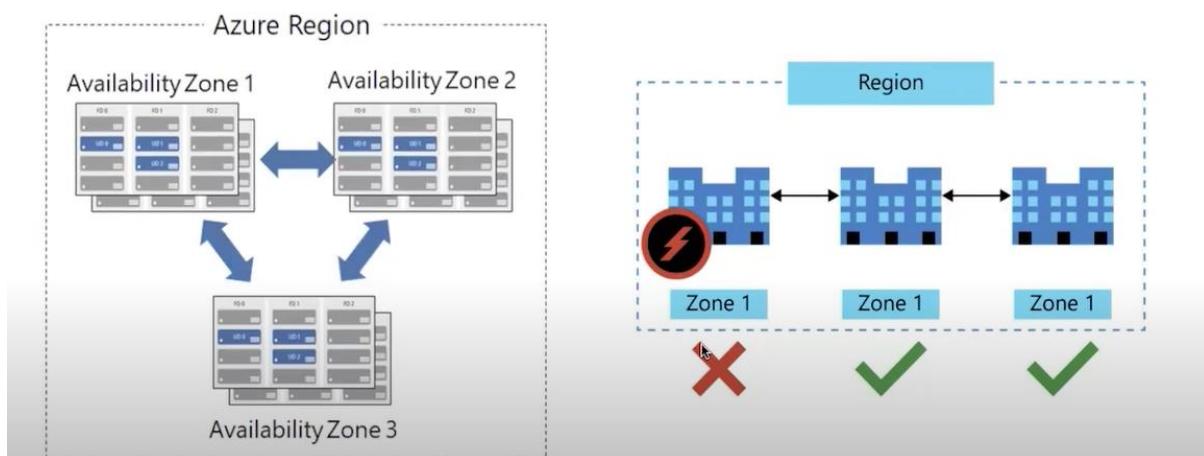
1. A region is a geographical area containing at least one, but potentially multiple datacenter that are nearby and networked together with a **low-latency network**.
2. When one deploys a resource in Azure, one needs to choose the region where you want your resources deployed.
3. **Examples of regions** are West US, Canada Central, West Europe, Australia East, and Japan West.
4. To minimize network latency, put API Management and Logic Apps in the same region. In general, choose the region that's closest to your users.
5. Azure regions are made to provide both localized disaster protection with availability zones and regional or big geographic catastrophe protection with disaster recovery by utilizing another region.

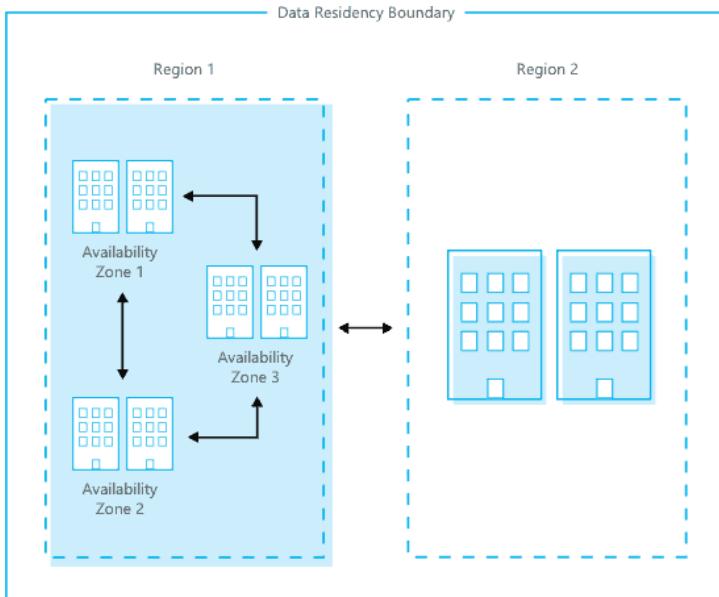
Region Selection Criteria

- Customer base location to avoid latency.
- Service availability – preview, GA
- Compliance
- Pricing
- Redundancy

Availability Zone

1. Availability Zones are physically separate datacentres within an Azure region.
2. Each Availability Zone is made up of one or more data centres equipped with independent power, cooling, and networking. It is set up to be an *isolation boundary*.
3. Azure creates a duplicate of your data and resources so that the information is safe, in case of failure. If one zone goes down, the other continues working.
4. Resources are highly available through Availability Zones.
5. **Not every region has support for Availability Zones.** The examples of **Availability Zones** are Central US, East US 2, West US 2, West Europe, France Central, North Europe & Southeast Asia.





Resources:

Resources are instances of services that you create, like virtual machines, storage, or SQL databases.

Resource groups: (are like a folder)

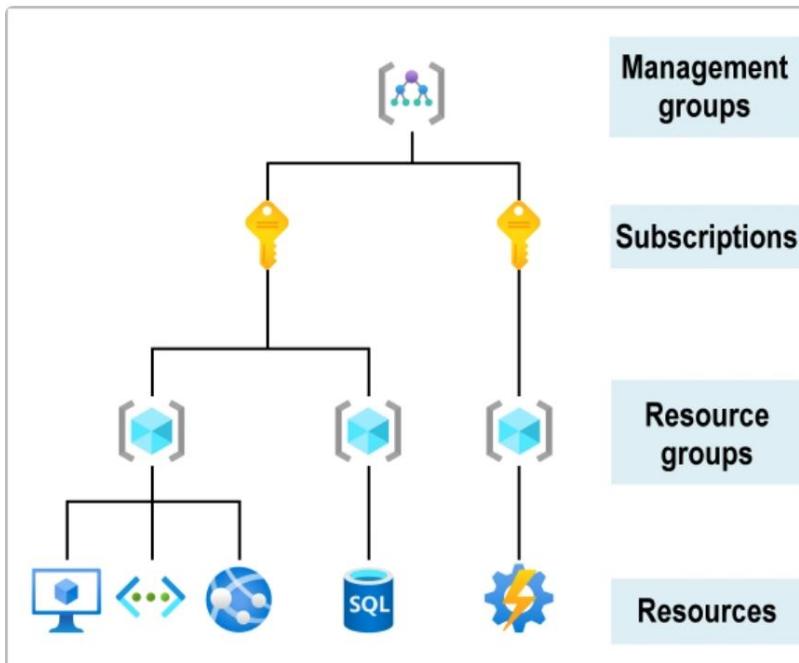
Resources are combined into resource groups. Resource groups act as a logical container into which Azure resources like web apps, databases, and storage accounts are deployed and managed.

Subscriptions:

A subscription groups together user accounts and the resources that have been created by those user accounts. For each subscription, there are limits or quotas on the amount of resources that you can create and use. Organizations can use subscriptions to manage costs and the resources that are created by users, teams, or projects.

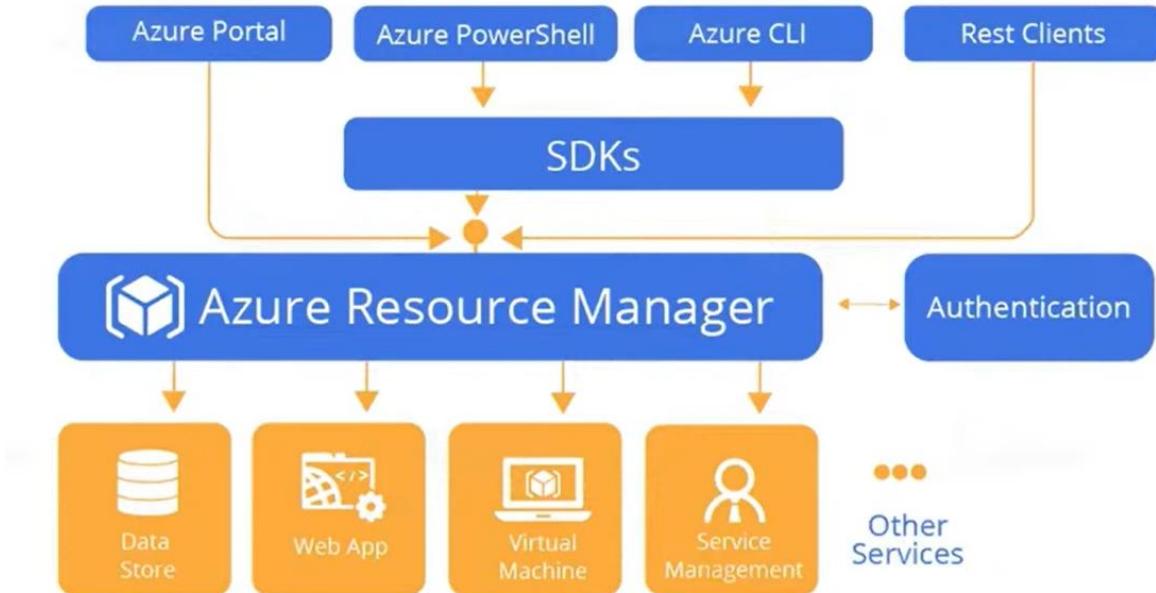
Management groups:

These groups help you manage access, policy, and compliance for multiple subscriptions. All subscriptions in a management group automatically inherit the conditions applied to the management group.



Azure Resource Manager

ARM is the deployment and management service for Azure. It allows you to organize and manage resources like virtual machines, storage, and database in a unified, structured way.



Resource Grouping: Organize related resources into resource groups.

Consistent management: Manage resources via portal, CLI, PowerShell, or template.

Role-based access control: Secure access with permissions for team members.

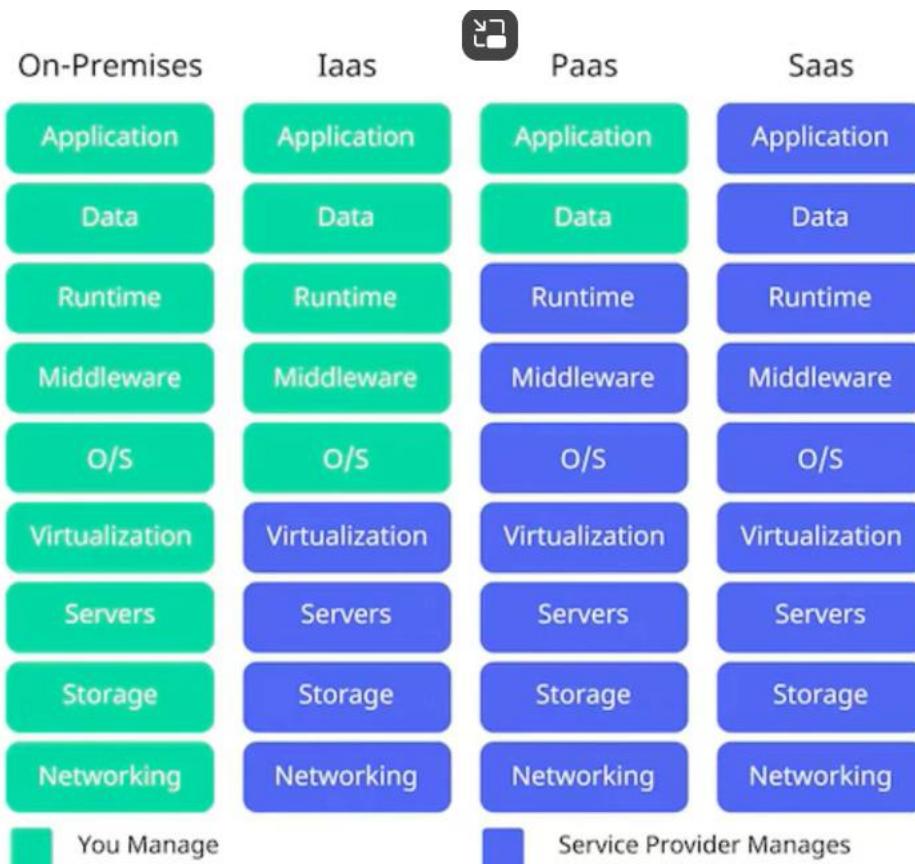
Centralized control: manage all resources in one place.

Cost management: monitor and control costs by resource group.

Scalability: automate large-scale deployments easily.

Cloud

Cloud services are offered in different models depending on how much control and management responsibility the customer vs. provider has.



IaaS – (like a Virtual machine) Azure will provide an infrastructure

Infrastructure as a Service (IaaS)

- Provides **virtualized computing resources** over the internet.
- Customer manages: OS, applications, middleware, runtime, data.
- Provider manages: hardware, storage, networking, virtualization.
- **Examples:**
 - Virtual Machines (Azure VMs)
 - Networking (Virtual Network, Load Balancer, VPN Gateway)

PaaS – platform as a service

- Provides a **development and deployment environment** in the cloud.
- Customer manages only apps and data.
- Provider manages OS, runtime, scaling, infrastructure.
- **Examples:**
 - Azure App Services
 - Azure SQL Database
 - Azure Functions

SaaS – software as a service

- Provides **ready-to-use applications** delivered over the internet.
- Everything is managed by the provider.
- Customers just use the software.
- **Examples:**
 - Microsoft 365
 - Dynamics 365
 - Salesforce

Feature	IaaS (Infrastructure)	PaaS (Platform)	SaaS (Software)
What you manage	Apps, Data, Runtime, OS	Apps, Data	Just use the app
What provider manages	Hardware, Networking, Virtualization	Hardware, Networking, OS, Runtime	Everything (infra + app)
Use case	Migration of workloads, custom apps	Build, test, deploy apps quickly	Ready-to-use business apps
Examples	Azure VMs, Networking	Azure App Service, Azure SQL	Microsoft 365, Dynamics 365

Azure Storage service

Azure Storage is a cloud-based service from Microsoft that securely stores and manages different types of data such as files, blobs, queues, and tables, with high availability and scalability.

The following are the main storage types in Azure:

- **Blob Storage:** Non-relational object storage service for unstructured data.
- **File Storage:** SMB-based (Server Message Block) file storage service for cloud or on-premises applications.
- **Queue Storage:** A service for storing and retrieving large numbers of messages for communication between components.

Message storage for asynchronous communication between app components.

- Each message can be up to 64 KB.
 - Messages are retrieved via REST APIs
-
- **Table Storage:** NoSQL key-attribute store for structured, non-relational data.
 - **Disk Storage:** Managed disk storage for virtual machines.
 - **Data Lake Storage Gen2 (built on Blob):**

Purpose: combines hierarchical namespace with blob scalability for big data analytics.

Features:

- Optimized for analytics frameworks like Hadoop, Spark.
- Directory and file-level ACLs.

Use cases: Data warehousing, machine learning pipelines, real-time analytics.

Storage Access tier

Tier	Use Case	Cost Model
Hot	Frequently accessed data	Higher storage cost, lower access cost
Cool	Infrequent access (30+ days)	Lower storage cost, higher access cost
Archive	Rarely accessed (180+ days)	Lowest storage cost, highest retrieval cost

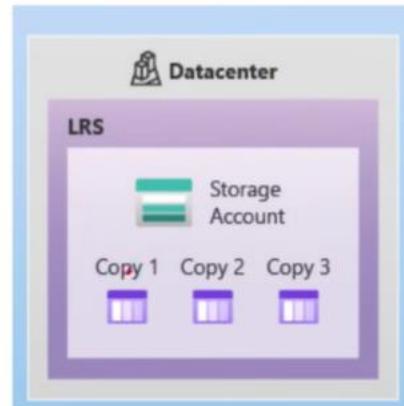
Redundancy Options

- **LRS: Local Redundant (3 copies within a single datacenter)**
- **ZRS: Zone Redundant (copies across multiple availability zones)**
- **GRS: Geo Redundant (copies to another region)**
- **RA-GRS: Read-access Geo Redundant**
- **GZRS/RA-GZRS: Combines zone + geo redundancy.**

LRS – Locally Redundant Storage

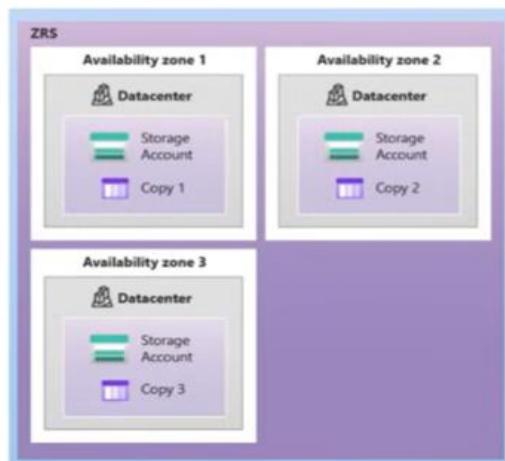
Is a cheap policy

LRS – Locally Redundant Storage



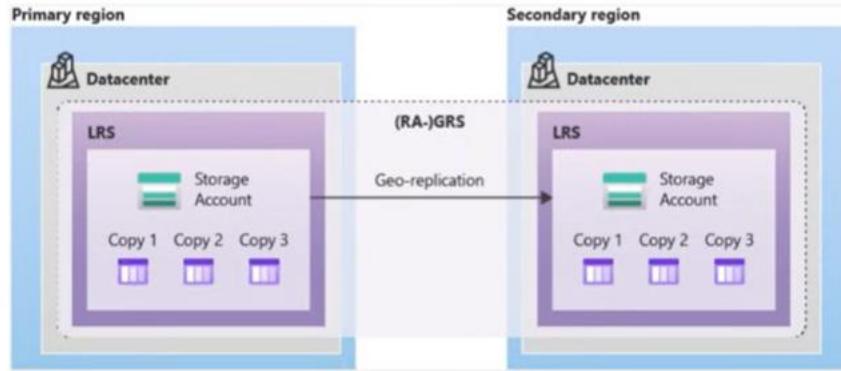
ZRS - Zone Redundant Storage

ZRS – Zone Redundant Storage

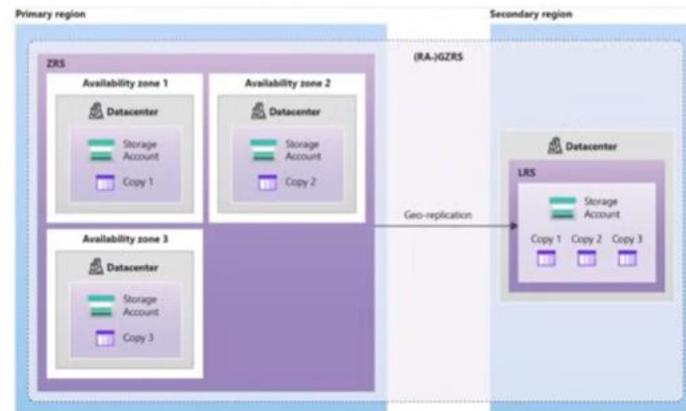


GRS

GRS – Geo Redundant Storage



GZRS – Geo Zone Redundant Storage



Azure services:

Azure Compute Services

Azure Compute services power your applications and workloads in the cloud. This includes Virtual Machines for scalable compute resources, Virtual Machine Scale Sets for automatic scaling, and Availability Sets for enhanced reliability.

- Virtual Machines
 - Single
 - Scale Set
 - Availability Set
- App Services
- Azure Container Service
- Azure Kubernetes Service
- Azure Functions (Serverless)
- Azure Virtual Desktop

Compute service:



Virtual machine:

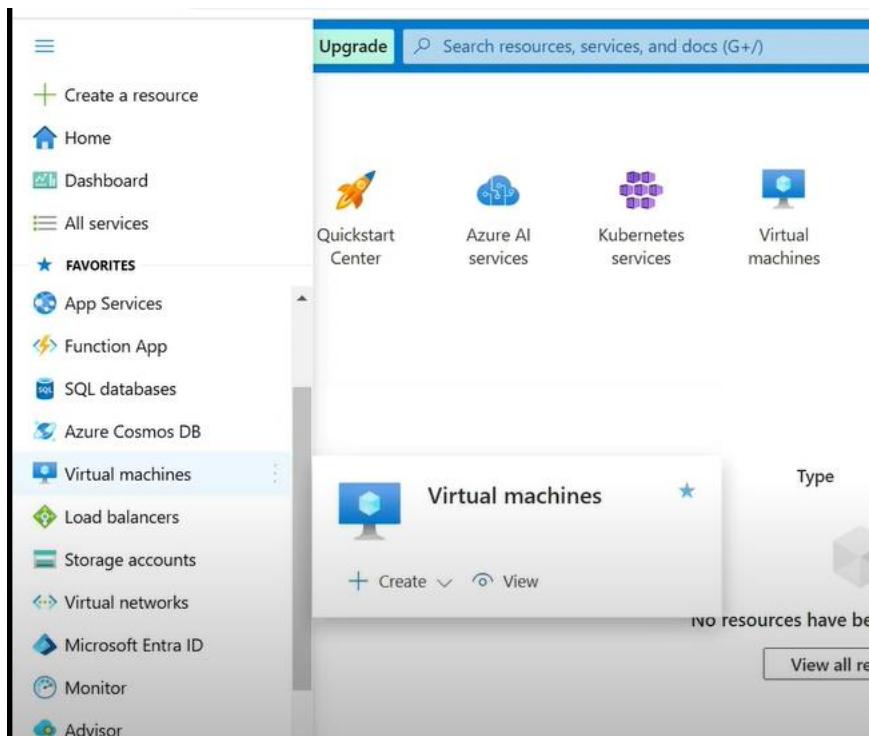
VM Is a scalable, on-demand computing resource that runs applications and operating system in the cloud. It functions like a physical computer but is managed virtually. VMS are commonly used for hosting websites, running applications, or testing environments without maintaining physical hardware.

VMs are used to create and configure virtualized operating systems and applications, making it possible to run multiple copies of multiple operating systems and applications on a single physical server.

VMs are used to host websites, applications, and databases, or to provide secure storage and remote access to corporate data.

Horizontal Scaling: - increasing the no. of server.

Vertical scaling: - increasing the configuration of your system (use are using the i3 service, traffic increases use i5 service).



Home > Virtual machines >

Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ Free Trial

Resource group * ⓘ (New) Demo-Veptech

Create new

Instance details

Virtual machine name * ⓘ Veptech1

Region * ⓘ (Europe) North Europe

Availability options ⓘ Availability zone

Zone options ⓘ Self-selected zone

< Previous Next : Disks > Review + create

Home > Virtual machines >

Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my needs

Size * ⓘ Standard_B1s - 1 vcpu, 1 GiB memory (₹680.20/month) (free services eligible) ▾ See all sizes

Enable Hibernation ⓘ ⓘ Hibernation is not supported by the size that you have selected. Choose a size that is compatible with Hibernation to enable this feature. [Learn more](#)

Administrator account

Username * ⓘ veptechacademy ✓

Password * ⓘ ✓

Confirm password * ⓘ ✓

Home >

Veptechacademy

Virtual machine

Search Connect Start Restart Stop Hibernate Capture Delete Refresh Open in mobile Feedback

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Connect

Networking

Settings

Availability + scale

Security

Backup + disaster recovery

Operations

Essentials

Resource group ([move](#)) Demo-Veptech

Status Running

Location Central India (Zone 1)

Subscription ([move](#)) [Free Trial](#)

Subscription ID 4a7752ca-6439-4385-bf09-b2486bea4403

Availability zone 1

Operating system Windows (Windows 10 Pro)

Size Standard B1s (1 vcpu, 1 GiB memory)

Public IP address 20.193.152.162

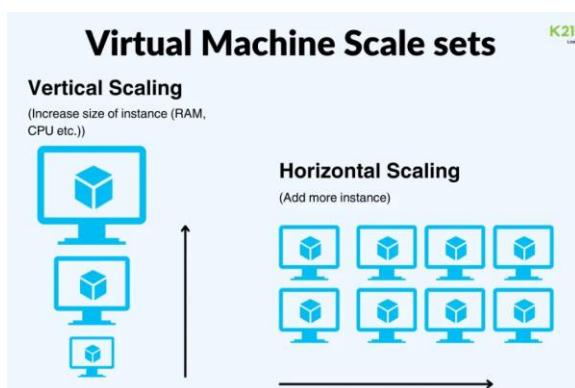
Virtual network/subnet Veptechacademy-vnet/default

DNS name Not configured

Health state -

Time created 26/10/2024, 18:01 UTC

JSON View



Type of VM:

General-purpose VMs:

- Balanced cpu-to-memory ratio.
- Ideal for web servers, small database, and development/testing.

Compute-optimized VMs:

- Higher cpu performance.
- Best for high-performance computing and batch processing.

Memory-optimized VMs:

- Higher memory-to-cpu ratio.
- Ideal for relational database, large caches, and in-memory analytics.

Storage-optimized VMs:

- High disk throughput and IOPS.
- Suited for big data, NoSQL databases, and data warehousing.

GPU-optimized vms:

- Equipped with GPUs for heavy graphics processing
- Best for AI, ML and 3D visualization.

High-performance computing VMs:

- Optimized for high-speed networking and low latency.
- Designed for scientific modelling, simulations.

[Azure function is serverless compute service offered by Microsoft azure, means you can write code and run it in a cloud without having manage server yourself.

With serverless function you can write code for your application logic azure takes care of provisioning and manage the server need to run. You can only pay for resources for the code consumes when it runs, it helps you to optimize cost.

You can azure function code in various programming languages.

Is a powerful tool in building Event-driven functions.]

Function app:

A function app in azure is a serverless compute service that lets you run small piece of code, called functions, “without needing to manage infrastructure. It automatically scales based on demand and you only pay for the resources used while the code is running. Great for event-driven task.

Azure Functions is a serverless computing service offered by Microsoft Azure.

App service:

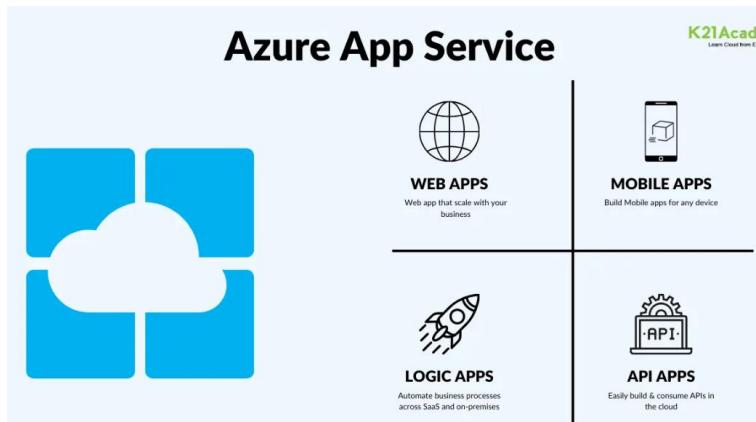
- Azure App Service is a Platform-as-a-Service (PaaS) offering from Microsoft Azure that allows developers to quickly create, deploy and manage web, mobile and API apps.
- It provides a fully managed, highly scalable, secure, and reliable cloud-based environment for creating and running modern web, mobile, and API applications.

- With App Service, developers can quickly create and deploy applications to the cloud without having to worry about managing the underlying infrastructure.
- App Service also provides built-in features such as auto-scaling, backup, security, and encryption, making it an ideal platform for developing applications.
- Additionally, App Service provides an integrated development experience with Visual Studio, GitHub, and Azure DevOps, making it easy for developers to create and deploy applications in the cloud.

[You focus on development of applications without worrying about the infrastructure.]

(Is a platform that lets you easily build, host and scale web apps, apis or mobile backends, it supports different programming languages and handles task like security. Scaling and update, so you can focus on creating your app without worrying about managing server).

Azure App Service supports a variety of programming languages and frameworks, including .NET, Java, Node.js, and PHP, to meet a wide range of application development needs.



Kubernetes service:

AKS is a fully managed service that simplifies deploying, managing, and scaling containerized applications using Kubernetes.

Aks automates tasks like health monitoring, scaling and upgrades, allowing developers to focus on their applications.

It helps manage containers efficiently, making it easier to run complex applicates in the cloud.

Azure Storage Service

- **Blob Storage – store any kind of data (like image, video)**
- **File Storage**
- **Tables - store large amount of structured data.**
- **Queues**
- **Data Lake storage**
- **Data box**

Blob Storage:

Blob storage is a cloud service designed for storing large amounts of unstructured data, such as text, images and videos. It allows you to easily upload, manage, and access your data from anywhere in the world.

Blob storage is highly scalable, secure, and offers different tiers to optimize costs based on access frequency. With features like redundancy and automatic backups, it ensures data durability and availability.

Create a resource ...  Help me build a new Azure OpenAI app

Get Started

Recently created

Categories

- AI + Machine Learning
- Analytics
- Blockchain
- Compute
- Containers
- Databases
- Developer Tools
- DevOps

Search services and marketplace

 Create

 Key Vault [Create](#)

 Virtual machine [Create](#)

 Storage account [Create](#)

 Data Factory [Create](#)

 Logic App

Microsoft Azure  Search resources, services, and docs (G+) Copilot

Home > Create a resource >

Create a storage account ...

Subscription *

Resource group * [Create new](#)

Instance details

Storage account name *

Region * [Deploy to an Azure Extended Zone](#)

Primary service Select a primary service

Performance * Standard: Recommended for most scenarios (general-purpose v2 account)

[Previous](#) [Next](#) [Review + create](#)

Instance details

Storage account name *	<input type="text"/>
Region *	(US) East US Deploy to an Azure Extended Zone
Primary service	Select a primary service
Performance *	<input checked="" type="radio"/> Standard: Recommended for most scenarios (general-purpose v2 account) <input type="radio"/> Premium: Recommended for scenarios that require low latency.
Redundancy *	Geo-redundant storage (GRS) <input checked="" type="checkbox"/> Make read access to data available in the event of regional unavailability.

Locally-redundant storage (LRS):
Lowest-cost option with basic protection against server rack and drive failures.
Recommended for non-critical scenarios.

Geo-redundant storage (GRS):
Intermediate option with failover capabilities in a secondary region.
Recommended for backup scenarios.

Zone-redundant storage (ZRS):
Intermediate option with protection against datacenter-level failures.
Recommended for high availability scenarios.

Geo-zone-redundant storage (GZRS):
Optimal data protection solution that includes the offerings of both GRS and ZRS. Recommended for critical data scenarios.

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... Deployment is in progress

 Deployment name: veptech_1730994981... Start time: 07/11/2024, 21:26:34
 Subscription: Free Trial Correlation ID: 06524211-4f4b-4f5b-a90c-0e0e5ef27d78 

 Resource group: demo

Deployment details

Resource	Type	Status	Operation details
 veptech	Microsoft Storage/stor...	Accepted	Operation details

Give feedback

 Tell us about your experience with deployment

veptech_1730994981196 | Overview 

 Deployment

Search     Refresh

 Overview  Inputs  Outputs 

 Your deployment is complete

Deployment name: veptech_1730994981... Start time: 07/11/2024, 21:26:34
 Subscription: Free Trial Correlation ID: 06524211-4f4b-4f5b-a90c-0e0e5ef27d78 

 Deployment details  Next steps [Go to resource](#)

Give feedback  Tell us about your experience with deployment

 Deployment succeeded
Deployment 'veptech_1730994981196' to resource group 'demo' was successful.

[Go to resource](#) 

 Cost Management
Get notified to stay within your budget and prevent unexpected charges on your bill.
[Set up cost alerts >](#)

 Microsoft Defender for Cloud
Secure your apps and infrastructure

Three types of Blobs:

Block Blobs: Store text or binary files (videos, archives etc)

Append Blobs: Store log files (ideal for append operations)

Page blobs: foundation for azure disks (512-byte pages up to 8 TB)

Azure Data Lake storage Gen2: Azure Blob Storage Enhanced

- Designed for enterprise big data analytics.
- Low-cost, tiered storage, with high availability/disaster recovery.

After created blob storage: If we want to upload

Microsoft Azure Search resources, services, and docs (G+) Copilot Home > bigdata stbigdata Storage account Overview

Upload Open in Explorer Delete Move Refresh Open in mobile CLI / PS Feedback JSON View

Resource group (move) bigdata Performance Standard

Location eastus Replication Locally-redundant storage (LRS)

Subscription (move) Azure for Students Account kind StorageV2 (general purpose v2)

Subscription ID b279b1f8-3e6d-4236-af0e-0dd64e534656 Provisioning state Succeeded

Disk state Available Created 22/08/2025, 15:31:09

Tags (edit) Add tags

Upload blob

Drag and drop files here or Browse for files

Select an existing container

Create new

Overwrite if files already exist

Advanced

Upload Give feedback

Create container:

Upload blob

X

New container

Name

Anonymous access level ⓘ

Private (no anonymous access) ▾

Private (no anonymous access)

Blob (anonymous read access for blobs only)

Container (anonymous read access for containers and blobs)

Overwrite if files already exist

▼ Advanced

Upload

Give feedback

Private – accessed only inside the azure portal

review >

Upload blob

X

Upload Open in Explorer Delete Move ▾

Essentials

Resource group (move)
demo

Location
centralindia

Primary/Secondary Location
Primary: Central India, Secondary: South India

Subscription (move)
Free Trial

Subscription ID
4a7752ca-6439-4385-bf09-b2486bea4403

Disk state
Primary: Available, Secondary: Available

Tags (edit)
Add tags

Upload blob

1 file(s) selected: CLASS 4.png

Drag and drop files here or [Browse for files](#)

Select an existing container

demovep ▾

Create new

Overwrite if files already exist

▼ Advanced

Upload

Give feedback

After uploaded file

Home > bigdata > stbigdata

stbigdata | Storage browser Storage account

Search: < > Help me save costs by tiering unused blobs

- Overview
- Activity log
- Tags
- Diagnose and solve problems
- Access Control (IAM)
- Data migration
- Events
- Storage browser**
- Storage Mover
- Partner solutions
- Resource visualizer

large objects, it may be over a day between updates.

Blob containers

Number of containers	0
Number of blobs	0
Total data stored	0

File shares

Number of file shares	0
Number of files	0
Total data stored	0

veptech | Storage browser Storage account

Search: < > Add container Upload Refresh Delete Change access level ...

- Overview
- Activity log
- Tags
- Diagnose and solve problems
- Access Control (IAM)
- Data migration
- Events
- Storage browser**
- Storage Mover
- Partner solutions
- Data storage**
- Containers
- File shares

Blob containers

Name	Last modified	Anonymous access level	Lease state
\$logs	11/7/2024, 9:27:05 PM	Private	Available
demovep	11/7/2024, 9:28:50 PM	Private	Available

Inside demoevp

veptech

Favorites

Recently viewed

Blob containers

- \$logs
- demovep**

View all

File shares

Queues

Tables

Add Directory Upload Change access level Refresh Delete Copy ...

Authentication method: Access key (Switch to Microsoft Entra user account)

Search blobs by prefix (case-sensitive) Only show active blobs

Showing all 1 items

Name	Last modified	Access tier	Blob type	Size
CLASS 4.png	11/7/2024, 9:29:01 PM	Hot (Inferred)	Block blob	174

The screenshot shows the Microsoft Azure Storage Overview page for a blob named 'CLASS 4.png' in the storage account 'veptech_173'. The left sidebar lists various services like Overview, Activity log, Tags, Diagnose and solve, Access Control (IAM), Data migration, Events, Storage browser (which is selected), Storage Mover, Partner solutions, Data storage (Containers, File shares, Queues, Tables), and Tables. The main panel displays the blob's properties:

Properties	Value
URL	https://veptech.blob.cor...
LAST MODIFIED	07/11/2024, 9:29:01 pm
CREATION TIME	07/11/2024, 9:29:01 pm
VERSION ID	-
TYPE	Block blob
SIZE	174.12 KiB
ACCESS TIER	Hot (Inferred)
ACCESS TIER LAST MODIFIED	N/A
ARCHIVE STATUS	-
REHYDRATE PRIORITY	-
SERVER ENCRYPTED	true
ETAG	0x8DCFF4518AAB1A0
VERSION-LEVEL IMMUTABILITY POLICY	Disabled
CACHE-CONTROL	[redacted]
CONTENT-TYPE	image/png
CONTENT-MD5	TLCRDHiAEt6xKLpqpU0FLw==
CONTENT-ENCODING	[redacted]

File Storage:

Is a managed file service in the cloud that allows you to store and access files using the SMB (server message block) protocol.

It enables seamless integration with on-premises applications and supports scenarios like lift-and-shift migrations and shared access. You can easily scale storage capacity and manage file shares through the Axure portal or REST APIs. Additionally, it offers features like snapshots and redundancy to ensure data protection and availability.

Queues: (for processing some time need that time it struck in one line that is queue)

Is a service that helps different parts of an app communicate by sending and receiving messages in a queue.

It stores messages in line so that one part of an app can pick them up and process them later. This is useful for managing tasks that don't need to be handled right away, making the app run more smoothly.

Data Lake Storage:

For big data. It lets you store massive amounts of structured, semi-structured, and unstructured data. With features like hierarchical file system and high-performance access, it's ideal for processing data from multiple sources.

This service helps organizations analyse data at scale, making it easier to gain insights and make data-driven decisions.

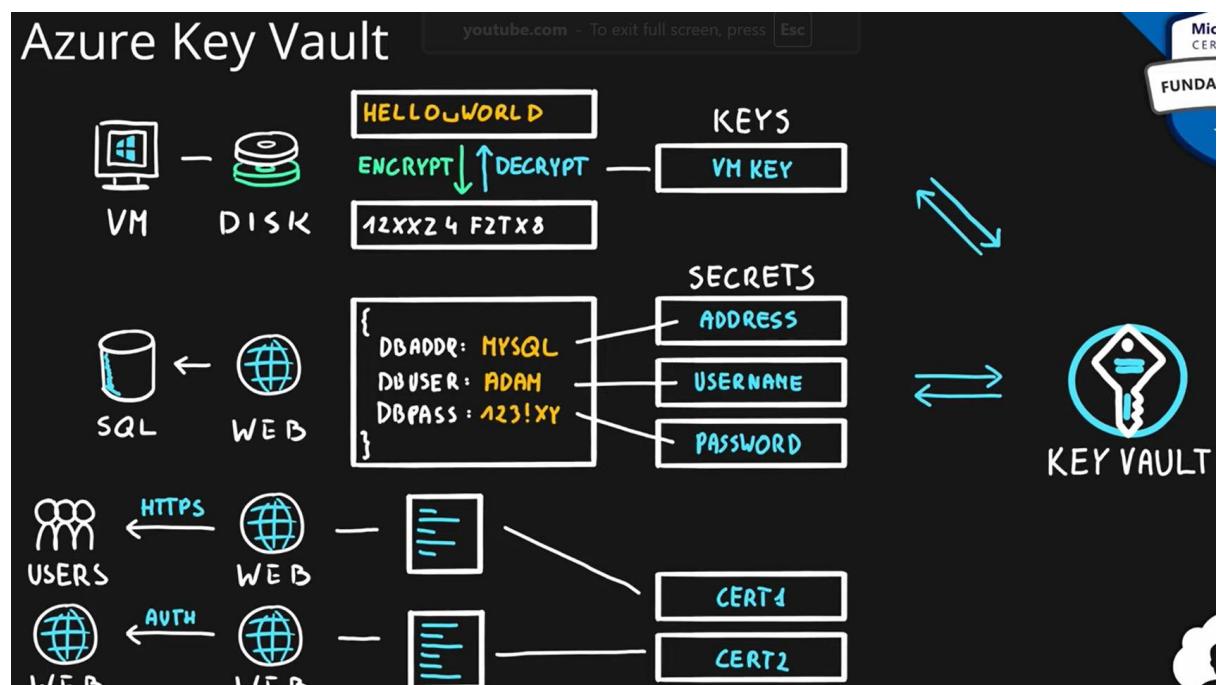
Data Box:

Azure Data Box is a physical device provided by Microsoft to help transfer large amounts of data to Azure when online transfers are too slow or costly. It comes in various sizes: data box (like 80TB or heavy 1PB).

After data is copied onto the device, it's shipped back to Microsoft for uploading to Azure. This is ideal for migrating large datasets or for backup solutions.

Azure Key Vault

The main purpose of using Azure key Vault in Microsoft Azure is to encrypt the data of any applications.



1. Securely store secrets and keys:

- Azure Key Vault is highly secure when it comes to data protection of applications such as keys and secrets.
- It is protected from users who don't have access to the vaults, and also it protects the other resources which are from Azure accessing the data of your application without sufficient permissions.

2. Centralize application secrets:

- Azure Key Vault will help you to manage the same data of different applications in a centralized manner where it makes easier for multiple applications to manage the data.

3. Monitor:

- You can monitor the data of the application which is encrypted also you can set up alerts based on the operations performed on the data.

4. Scalability:

- Azure Key vaults are highly scalable without human intervention. The Azure key vaults will be scaled depending on the data of the application size.

The main purpose of the Azure key vault is to encrypt the data which is stored in Azure resource.

1. Key Vault: The key vault in Azure is used to store the keys, secrets, and certificates provided are created by Microsoft Azure.
2. Key: With the help of keys, you are going to perform certain operations like encryption, decryption, and signing, and the keys are stored in the key vault.
3. Vault Owner: The owner of the vault will have all the control of the vaults he can manage the keys and secrets or certificates which are stored in that vault. He can perform the tasks like auditing and monitoring and some other tasks which are useful to the vault. You can Assign a Dedicated Key Vault Administrator Role to a User in Azure.
4. Certificates: You can store the certificates like SSL and TSL which are used for web applications.

Features Of Azure Key Vaults

- High secure
- Monitor and audit
- Integrate with resource
- Restore and backup
- High availability

Azure function

- You write small pieces of code (called *functions*).
- They run only when triggered (event-driven).
- You don't manage servers, scaling, or runtime — Azure handles it.
- You pay only for execution time (per ms and per execution).

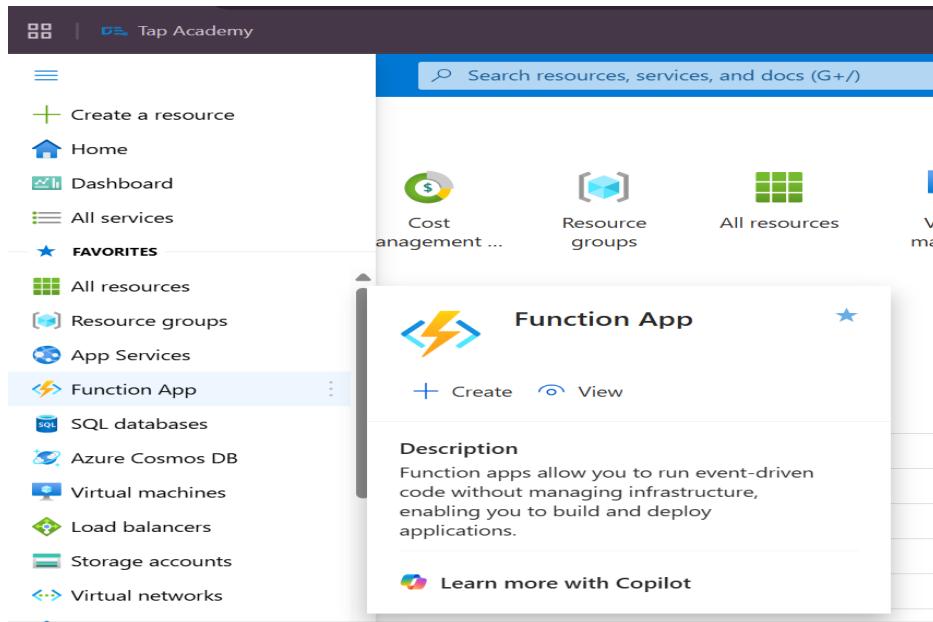
Azure functions is a serverless computing service provided by azure to help us run tasks on a schedule like processing data, working with the IoT, and integrating systems.

There are many more integration and automation services that can be used to automate the process and define inputs, conditions, actions, and output.

Example use cases:

- Run a function when a file is uploaded to Blob Storage.

- Execute code when a queue/message arrives.
- Timer-based jobs.



Azure Logic Apps

A cloud service called Azure Logic Apps makes it easier to automate and orchestrate workflows, business processes, and tasks. It facilitates enterprise-wide app, data, system, and service integration by defining processes with a visual designer.

Azure Logic Apps is a cloud-based service from Microsoft designed to automate workflows and integrate applications, data, and systems across organizations with minimal coding required.

What is Azure Logic Apps?

Azure Logic Apps is part of Microsoft's App Service offering that provides a platform to develop, execute, and manage integrations for applications and data deployed in the cloud, on-premises, or both. It is designed to simplify and implement scalable integrations and workflows in the cloud.

Comparison Table

Feature	Azure Functions	Azure Logic Apps
Purpose	Execute custom code in response to events	Automate and orchestrate workflows
Development Approach	Requires coding	No/low code visual designer
Execution Model	Event-driven	Workflow-driven
Use Cases	Microservices, background tasks, data processing	Business process data integration
Integration	Limited built-in connectors	Extensive library of connectors
Pricing	Based on execution time and number of executions	Based on number of actions in the workflow
Best For	Developers	Business analysts, IT pros

Microsoft Azure SQL Database

Azure SQL Database is a relational database (RDBMS) service provided by **Microsoft Azure** that is widely used by developers when creating new applications in the cloud.

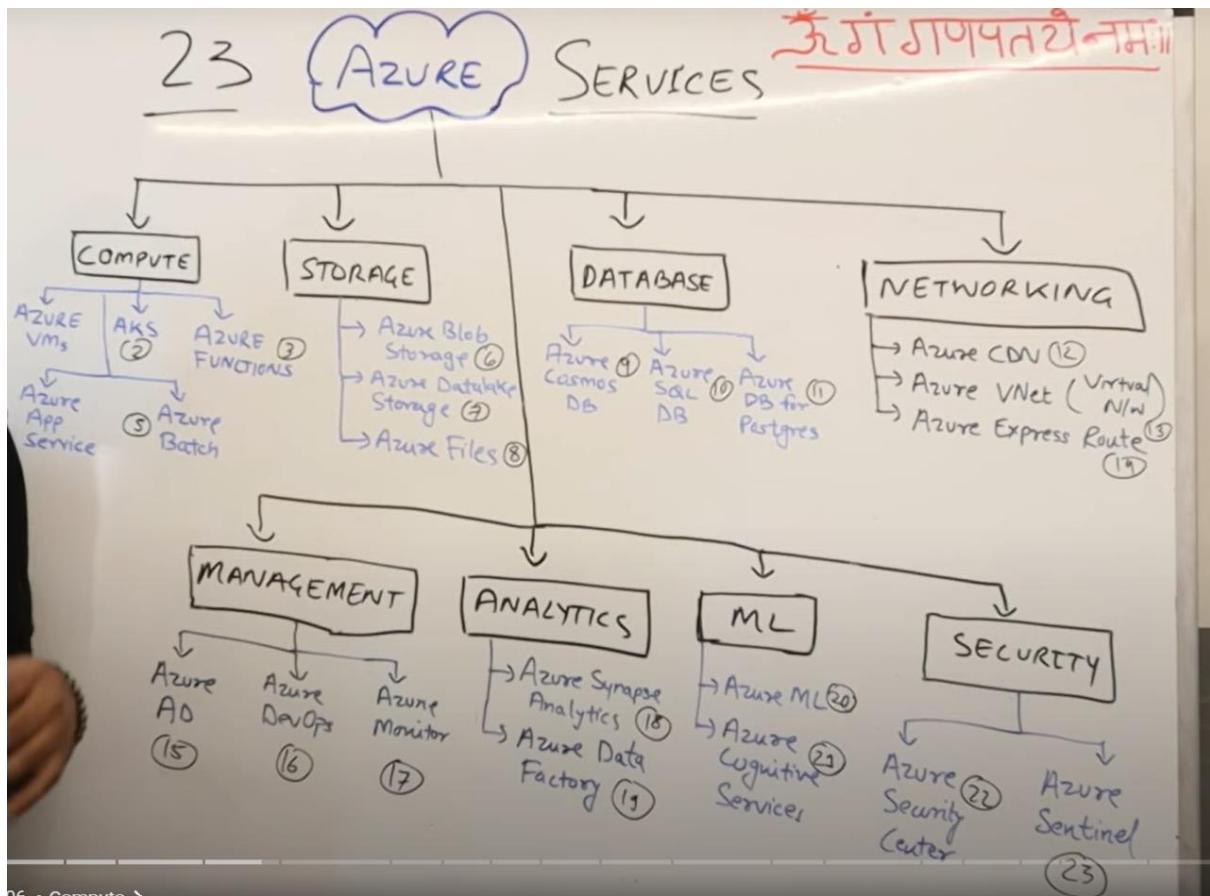
It is managed completely by Microsoft and is a highly scalable platform-as-a-service (PaaS) designed especially for cloud applications.

It offers a managed environment, handling tasks like backups and security. Users can create databases, organize data into tables, and run queries.

The server is a logical construct that acts as the central administration point for pooled databases or multiple logins, auditing rules, threat detection policy, and failover groups.

Azure SQL vs. SQL Server

Feature	Azure SQL Database	SQL Server
Deployment	Cloud-based, managed by Microsoft	Typically on-premises or in private data centers
Management	Managed service, Microsoft handles maintenance	Requires self-management, updates, and backups
Scalability	Easily scalable, with options for auto-scaling	Scalability is limited by hardware and resources
Availability	High availability with built-in redundancy	Availability depends on local infrastructure
Cost	Pay-as-you-go pricing model	Requires upfront investment and ongoing costs
Maintenance	Microsoft handles updates, patches, and backups	Requires manual management and administration
Security	Built-in security features, compliance options	Security configuration managed by the user



Azure Storage service:

BLOB Storage: Binary large object – storing unstructured data (text, image, video)

Unlimited storage.

File storage: file share service, we access file from anywhere, Hybrid file share

Table storage:

No SQL key-value storage – No fixed schema

(in normal sql if there is 5 columns, we can able store only that particular 5 value, here we no structure).

Less cost compared to traditional SQL table

High access speed.

Queue storage:

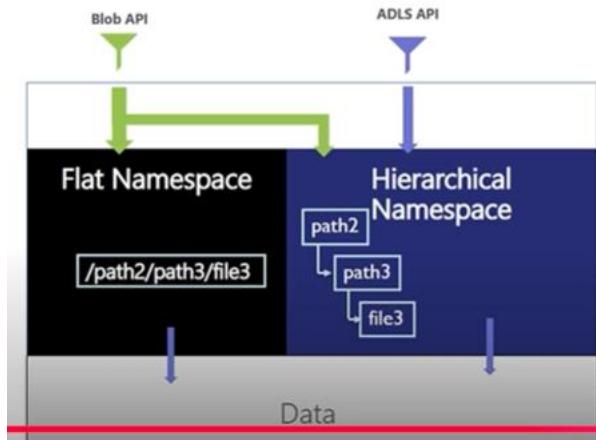
Stores data in First-In First-out rule

Helps in storing large number of messages

Can access the messages from anywhere

Supports rest API

Blob storage + Hierarchical Namespace ➔ ADLS



Feature	Blob Storage	ADLS Gen1	ADLS Gen2
Namespace	Flat	Hierarchical	Hierarchical
Storage Type	Object	Big data optimized	Big data + object
HDFS Compatible	No	Yes	Yes
Hot/Cold/Archive Tiers	Yes	No	Yes
Analytics Optimized	Limited	Yes	Yes
Cost	Low	High	Moderate
Status	Current	Legacy (deprecated)	Current/ Recommended

Gen1: was dedicated Hadoop style data lake