

Core Azure Resources and Solutions



Shailendra Chauhan

Microsoft MVP, Technical Consultant and Corporate Trainer

Agenda

- Microsoft Azure Services
- Compute Services
- Networking Services
- Storage Services
- Database Services
- Web Services
- BigData Services
- IoT Services
- ML/AI Services
- DevOps Services

Microsoft Azure Services

Platform Services



Infrastructure Services



Compute Services

- Used for hosting applications and services.

Service name	Service function
Azure Virtual Machines	Windows or Linux virtual machines (VMs) hosted in Azure
Azure Virtual Machine Scale Sets	Scaling for Windows or Linux VMs hosted in Azure
Azure Kubernetes Service	Cluster management for VMs that run containerized services
Azure Service Fabric	Distributed systems platform that runs in Azure or on-premises
Azure Batch	Managed service for parallel and high-performance computing applications
Azure Container Instances	Containerized apps run on Azure without provisioning servers or VMs
Azure Functions	An event-driven, serverless compute service

Networking Services

- Link compute resources and providing access to applications.
- Enables resources to connect the outside world.

Service name	Service function
Azure Virtual Network	Connects VMs to incoming virtual private network (VPN) connections
Azure Load Balancer	Balances inbound and outbound connections to applications or service endpoints
Azure Application Gateway	Optimizes app server farm delivery while increasing application security
Azure VPN Gateway	Accesses Azure Virtual Networks through high-performance VPN gateways
Azure DNS	Provides ultra-fast DNS responses and ultra-high domain availability
Azure Content Delivery Network	Delivers high-bandwidth content to customers globally
Azure DDoS Protection	Protects Azure-hosted applications from distributed denial of service (DDoS) attacks
Azure Traffic Manager	Distributes network traffic across Azure regions worldwide
Azure ExpressRoute	Connects to Azure over high-bandwidth dedicated secure connections
Azure Network Watcher	Monitors and diagnoses network issues by using scenario-based analysis
Azure Firewall	Implements high-security, high-availability firewall with unlimited scalability
Azure Virtual WAN	Creates a unified wide area network (WAN) that connects local and remote sites

Storage Services

- Used for storing data, services to transfer, share, and back up data for your applications

Service name	Service function
Azure Blob storage	Storage service for very large objects, such as video files or bitmaps
Azure File storage	File shares that can be accessed and managed like a file server
Azure Queue storage	A data store for queuing and reliably delivering messages between applications
Azure Table storage	A NoSQL store that hosts unstructured data independent of any schema

Database Services

- Used to store a wide variety of data types and volumes that is available to users instantly with global connectivity.

Service name	Service function
Azure Cosmos DB	Globally distributed database that supports NoSQL options
Azure SQL Database	Fully managed relational database with auto-scale, integral intelligence, and robust security
Azure Database for MySQL	Fully managed and scalable MySQL relational database with high availability and security
Azure Database for PostgreSQL	Fully managed and scalable PostgreSQL relational database with high availability and security
SQL Server on Azure Virtual Machines	Service that hosts enterprise SQL Server apps in the cloud
Azure Synapse Analytics	Fully managed data warehouse with integral security at every level of scale at no extra cost
Azure Database Migration Service	Service that migrates databases to the cloud with no application code changes
Azure Cache for Redis	Fully managed service caches frequently used and static data to reduce data and application latency
Azure Database for MariaDB	Fully managed and scalable MariaDB relational database with high availability and security

Web: HTTP-based Services

- Used to build and host web apps and HTTP-based web services

Service name	Description
Azure App Service	Quickly create powerful cloud web-based apps.
Azure Notification Hubs	Send push notifications to any platform from any back end.
Azure API Management	Publish APIs to developers, partners, and employees securely and at scale.
Azure Cognitive Search	Deploy this fully managed search as a service.
Web Apps feature of Azure App Service	Create and deploy mission-critical web apps at scale.
Azure SignalR Service	Add real-time web functionalities easily.

Big Data Services

- Big data refers to large volumes of data. Data from weather systems, communications systems, imaging platforms, and many other scenarios generate hundreds of gigabytes of data.
- This amount of data makes it hard to analyze and make decisions. It's often so large that traditional forms of processing and analysis are no longer appropriate.

Service name	Description
Azure Synapse Analytics	Run analytics at a massive scale by using a cloud-based enterprise data warehouse that takes advantage of massively parallel processing to run complex queries quickly across petabytes of data.
Azure HDInsight	Process massive amounts of data with managed clusters of Hadoop clusters in the cloud.
Azure Databricks	Integrate this collaborative Apache Spark-based analytics service with other big data services in Azure.

IoT Services

- IoT enables personal digital assistants to smartphones, smart watches, smart thermostats, and smart homes etc.

Service name	Description
IoT Central	Fully managed global IoT software as a service (SaaS) solution that makes it easy to connect, monitor, and manage IoT assets at scale
Azure IoT Hub	Messaging hub that provides secure communications between and monitoring of millions of IoT devices
IoT Edge	Fully managed service that allows data analysis models to be pushed directly onto IoT devices, which allows them to react quickly to state changes without needing to consult cloud-based AI models

AI/ML Services

- ML is a data science technique that allows computers to use existing data to forecast future behaviors, outcomes, and trends.
- Using ML, computers learn without being explicitly programmed.

Service name	Description
Azure Machine Learning Service	Cloud-based environment you can use to develop, train, test, deploy, manage, and track machine learning models. It can auto-generate a model and auto-tune it for you. It will let you start training on your local machine, and then scale out to the cloud.
Azure Machine Learning Studio	Collaborative visual workspace where you can build, test, and deploy machine learning solutions by using prebuilt machine learning algorithms and data-handling modules.

DevOps Services

- A software development and delivery method which focuses on communication, integration, and collaboration between Dev and Operation Teams.

Service Name	Description
Azure DevOps	Use development collaboration tools such as high-performance pipelines, free private Git repositories, configurable Kanban boards, and extensive automated and cloud-based load testing. Formerly known as Visual Studio Team Services.
Azure DevTest Labs	Quickly create on-demand Windows and Linux environments to test or demo applications directly from deployment pipelines.