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# Databases on Azure – what's new?

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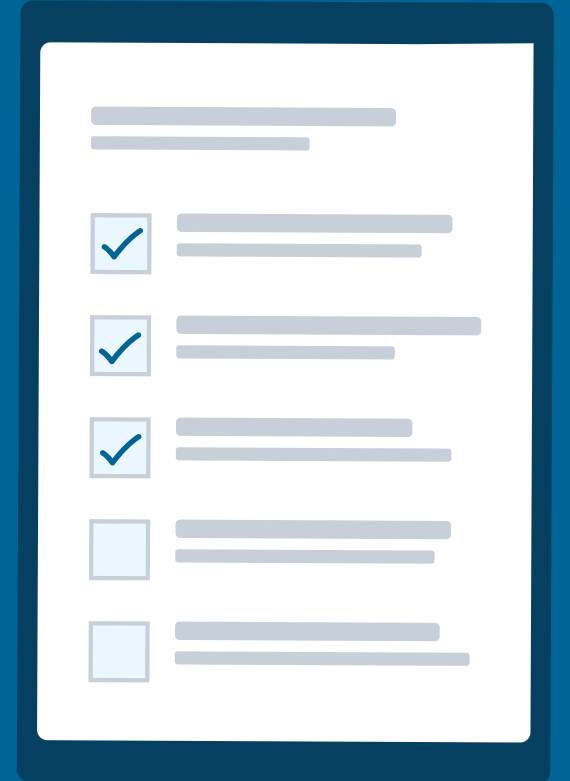
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# AGENDA

- 01** Azure Database for Postgres
- 02** Azure SQL Database / Managed Instance
- 03** Azure SQL Server VMs





01

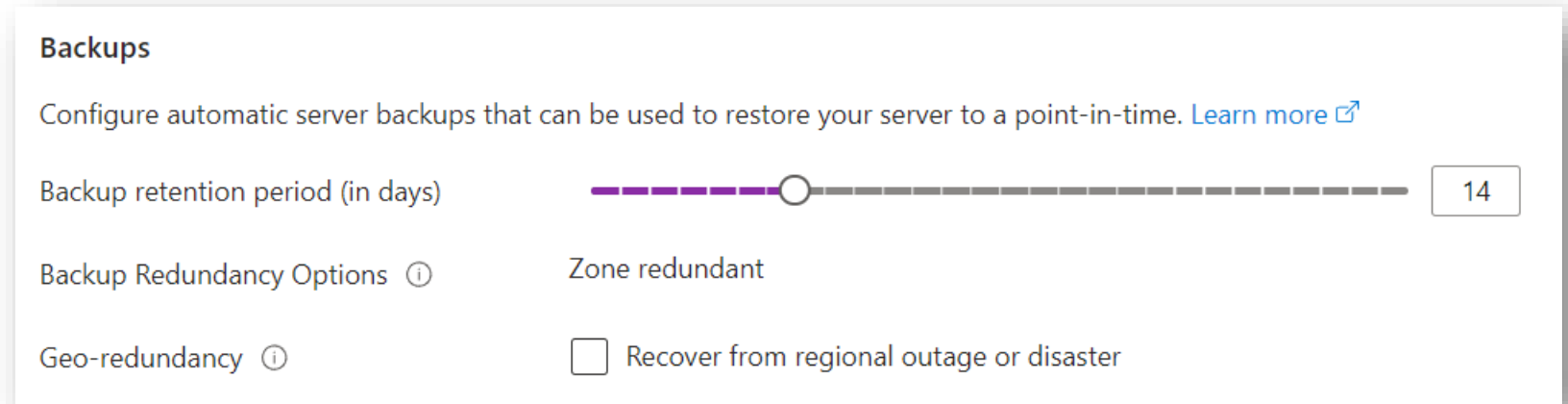
# Azure Database for Postgres

# Azure Database for PostgreSQL

Feature / Capability	Single Server	Flexible Server
Supported versions	10, 11	11, 12, 13, 14
Underlying O/S	Windows	Linux
AZ selection for application colocation	No	Yes
<b>Compute &amp; Storage</b>		
Compute tiers	Basic, General Purpose, Memory Optimized	Burstable, General Purpose, Memory Optimized
Burstable SKUs	No	Yes
Stop/Start	No	Yes (for all compute SKUs). Only compute is stopped/started
Max. Storage size	1 TB (Basic), 4 TB or 16 TB (GP, MO). Note: Not all regions support 16 TB.	16 TB
Min storage size	5 GB (Basic), 100 GB (GP, MO)	32 GB
Storage auto-grow	Yes (1-GB increments)	No
Max IOPS	Basic - Variable. GP/MO: up to 20 K	Up to 20 K
<b>Networking/Security</b>		
Supported networking	Virtual network, private link, public access	Private access (VNET injection in a delegated subnet), public access)
Private link support	Yes	No
Private VNET injection support	No	Yes
Private DNS Zone support	No	Yes
Ability to move between private and public access	No	No
SCRAM authentication	No	Yes
<b>High Availability</b>		
Zone-redundant HA	No	Yes (a synchronous standby is established in another zone within a region)
Same-zone HA	No	Yes (a synchronous standby is established in the same zone as the primary)
HA Configuration	Built-in with storage pinned to a zone. Compute can float across regions.	Physically separate compute & storage provisioned

# Azure Database for PostgreSQL

- GA: Backup and Restore (including geo-redundant storage) for Azure Database for PostgreSQL – Flexible Server ([General availability: Backup and restore in Azure Database for PostgreSQL – Flexible Server](#)) – one Backup per day, max. 35d retention



The screenshot shows the 'Backups' configuration panel in the Azure portal. It includes a title 'Backups', a description 'Configure automatic server backups that can be used to restore your server to a point-in-time. [Learn more](#)', and a 'Backup retention period (in days)' slider set to 14. Below this, 'Backup Redundancy Options' are shown as 'Zone redundant'. At the bottom, 'Geo-redundancy' is set to 'Recover from regional outage or disaster' with an unchecked checkbox.

**Backups**

Configure automatic server backups that can be used to restore your server to a point-in-time. [Learn more](#)

Backup retention period (in days) 14

Backup Redundancy Options ⓘ Zone redundant

Geo-redundancy ⓘ ☐ Recover from regional outage or disaster

- GA: Read replicas for Azure Database for PostgreSQL Flexible Server ([General availability: Read replicas for Azure Database for PostgreSQL Flexible Server](#)) – asynchronous, up to five replicas

# Azure Database for PostgreSQL

- GA: Encryption using CMK (second encryption layer) ([General availability: Encryption using CMK for Azure Database for PostgreSQL – Flexible Server](#))
- GA: Azure Cosmos DB for PostgreSQL ([Introduction/Overview - Azure Cosmos DB for PostgreSQL](#))
- GA: Burstable compute for single node configurations for Azure Cosmos DB for PostgreSQL (1 vCore, 2GiB RAM as lowest option) ([Generally available: Burstable compute for single node configurations for Azure Cosmos DB for PostgreSQL](#))
- Azure Cosmos DB for PostgreSQL cluster compute start and stop ([Generally available: Azure Cosmos DB for PostgreSQL cluster compute start and stop](#)) – Saving money in off-hours

# Azure Database for PostgreSQL

- Retirement: PostgreSQL Single Server will be retired by 28<sup>th</sup> March 2025 ([Azure Database for PostgreSQL Single Server will be retired—migrate to Flexible Server by 28 March 2025](#))
  - Since 31 March 2023, you can no longer create new Single Server instances for PostgreSQL versions 10 and older through the Azure portal
  - Beginning 9 November 2023, you'll no longer be able to create new Single Server instances for PostgreSQL version 11 through the Azure portal
- GA: Migration feature to migrate from Single Server to Flexible Server ([General availability: Migration feature with Azure Database for PostgreSQL – Flexible Server](#))  
(Offline migration only!)



02

# Azure SQL Database / Managed Instance

# Azure SQL Managed Instance

- GA: Azure SQL Managed Instance link for SQL Server 2022 ([Generally available: Azure SQL Managed Instance link for SQL Server 2022](#)) – to offload or scale-out workloads
- GA: Azure SQL Managed Instance backup portability to SQL Server 2022 ([Generally available: Azure SQL Managed Instance backup portability to SQL Server 2022](#)) – taking SQL MI copy-only full backup to SQL Server 2022 anywhere
- GA: Transactional Replication for SQL MI ([Transactional Replication GA for Azure SQL Managed Instance](#))
- GA: Database Copy and Move ([Database copy and move for Azure SQL Managed Instance](#)) – copying and moving data across managed instances within same subscription to consolidate databases or move out “noisy neighbors”

# Azure SQL Managed Instance

- GA: Support for Restoring AWS S3 to Azure SQL Managed Instance ([Restore from AWS S3 to Azure SQL \(microsoft.com\)](#))
- PP: Using SQL MI Private Endpoints from PaaS services ([https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/private-endpoint-overview?view=azuresql](#))

# Azure SQL Database

- GA: Azure Synapse Link for SQL ([Generally available: Azure Synapse Link for SQL](#)) – data is replicated in near-real-time from from SQL Server 2022 or Azure SQL Database to Synapse Analytics Dedicated SQL Pools
- PP: Premium-series hardware for Azure SQL DB Hyperscale ([Public preview: Premium series hardware for Azure SQL Database Hyperscale](#)) – based on Intel Ice Lake and AMD Milan CPUs
- GA: Up to 128 vCores for Standard-Series hardware (Azure SQL Database and Azure SQL Managed Instance) ([Azure SQL—Public preview updates for late November 2022](#))
- Optimized Locking (<https://learn.microsoft.com/en-us/sql/relational-databases/performance/optimized-locking>) – reduces lock memory

# Azure SQL Database

- Automatic Key Rotation for Customer Managed Keys (CMK) in Azure SQL Database and Azure SQL Managed Instance ([Automated key rotation for TDE BYOK is now generally available for Azure SQL!](#)) – enables end-to-end zero-touch key rotation
- PP: Serverless for Azure SQL Database Hyperscale ([Automatic compute scaling with serverless for Hyperscale in Azure SQL Database](#)) – Scaling compute and storage according to current needs – no Auto-Pause yet!
- PP: Zone-redundancy for Serverless Hyperscale (<https://techcommunity.microsoft.com/t5/azure-sql-blog/increase-high-availability-of-serverless-for-hyperscale-with/ba-p/3799653>)

# Azure SQL Database

- GA: Use user-assigned Managed Identity to write Azure SQL audit logs to storage accounts ([User Managed Identity support for Auditing Azure SQL Database is Generally Available Now](#))
- PP: Database-level and cross-tenant transparent data encryption (TDE) with customer-managed keys (CMK) ([Azure SQL—Public preview updates for mid-April 2023](#))
- PP: Hyperscale SQL Elastic Pools (up to 25 DBs per pool) (<https://techcommunity.microsoft.com/t5/azure-sql-blog/elastic-pools-for-azure-sql-database-hyperscale-now-in-preview/ba-p/3827327>)
- PP: Data migration support for Oracle extension for Azure Data Studio ([Public Preview – Data Migration for Oracle](#))

# Azure SQL Database

- Retirement: Azure SQL Server connector v1 actions and triggers on Logic Apps will be retired on 31st March 2024 – move to v2. ([SQL Server connector's V1 actions and triggers will be retired on 31 March 2024 – transition to SQL Server connector's V2 actions and triggers](#))
- Support ended for Gen4 hardware 31st March 2023 ([Support has ended for Gen 4 hardware on Azure SQL Database](#)) – existing Gen4-based databases will continue to run, new ones can't be created
- GA: Support for XML compression to reduce storage and memory footprint ([General availability: Azure SQL updates for early-August 2023](#))

# Azure SQL Database

- PP: Always Encrypted (aka „Confidential Computing“) for Azure SQL through DC-series hardware and Intel SGX (<https://techcommunity.microsoft.com/t5/azure-sql-blog/always-encrypted-with-secure-enclaves-dc-series-databases-with/ba-p/3872338>)
- PP: Azure Portal experience for Azure Database Migration Service (so you don't need to use ADS or PS/CLI anymore) ([Public Preview – Azure Portal experience for Azure Database Migration Service](#))



# Azure SQL Database

- PP: Azure SQL Database Free Offer (One 32GB General Purpose serverless database with 100.000 vCore seconds free for each Subscription) ([Public Preview: Azure SQL Database free offer](#))
  - You have two options you can set in the Behavior when free limit reached setting:
    - Once the monthly limits on vCore activity or storage are met, the database can be auto-paused until the beginning of the next calendar month. This is the **Auto-pause the database until next month** option.
    - Keep the database online, with vCore usage and storage amount over the free limits charged to your subscription's billing method, at the standard General Purpose tier serverless rates. This is the **Continue using database for additional charges** option.
  - Regardless, the free amount renews at the start of the next calendar month.

# Azure SQL Database

## Service and compute tier

Select from the available tiers based on the needs of your workload. The vCore model provides a wide range of configuration controls and offers Hyperscale and Serverless to automatically scale your database based on your workload needs. Alternately, the DTU model provides set price/performance packages to choose from for easy configuration. [Learn more](#)

Free database offer (Preview) ⓘ

Behavior when free offer limit reached



Applied



Auto-pause the database until next month

When free offer limit is reached, the database will not be accessible until the beginning of next calendar month when free amount is renewed. There will be no additional charges.



Continue using database for additional charges

Database continues to be accessible after free offer limit is reached. Additional usage beyond the free offer amount for that month will be charged at general purpose serverless tier rates. The free amount will be renewed at the beginning of the next calendar month.

Max vCores



1

Min vCores



0.5 vCores

2,02 GB MIN MEMORY

3 GB MAX MEMORY



## Cost summary

### General Purpose (GP\_S\_Gen5\_1)

Cost per GB (in EUR) 0.00

Max storage selected (in GB) x 41.6

First 32 GB storage free

First 100,000 vCore seconds free

Overage billing<sup>1</sup> Disabled

ESTIMATED STORAGE COST / MONTH 0.00 EUR

COMPUTE COST / VCORE SECOND<sup>2</sup> 0.000000 EUR

<sup>1</sup> There will be no charges for usage within the free limits. The database will be paused automatically when the free limits are reached.

<sup>2</sup> Serverless databases are billed in vCore seconds based on a combination of CPU and memory utilization. [Learn more about serverless billing](#)

## ⓘ Important

Once you have chosen **Continue using database for additional charges**, it's not possible to go back to the free amount with auto-pause.

A photograph of a server room with rows of server racks. The racks are filled with various electronic components and cables. The room has a high ceiling with exposed metal trusses and lighting fixtures. The perspective is looking down a long aisle between the racks.

03

# Azure SQL Server

# Azure SQL Server

- GA: Free license for up to two passive secondaries for SQL Server on Azure VM ([General availability: DR secondary free with SQL Server on Azure Virtual Machines](#)) – license only needed for primary node!
- PP: Viewing SQL Server Databases via Azure Arc ([Public Preview of Viewing SQL Server Databases via Azure Arc](#)) – Allows to create unified view of all SQL databases
- GA: Azure Active Directory / Entra ID authentication for SQL Server 2022 ([Generally available: Azure Active Directory authentication for SQL Server 2022](#))
- GA: Hybrid Benefit for SQL Server in Azure VMWare Solution (AVS) ([General Availability of Azure Hybrid Benefit for SQL Server on Azure VMware Solution](#))

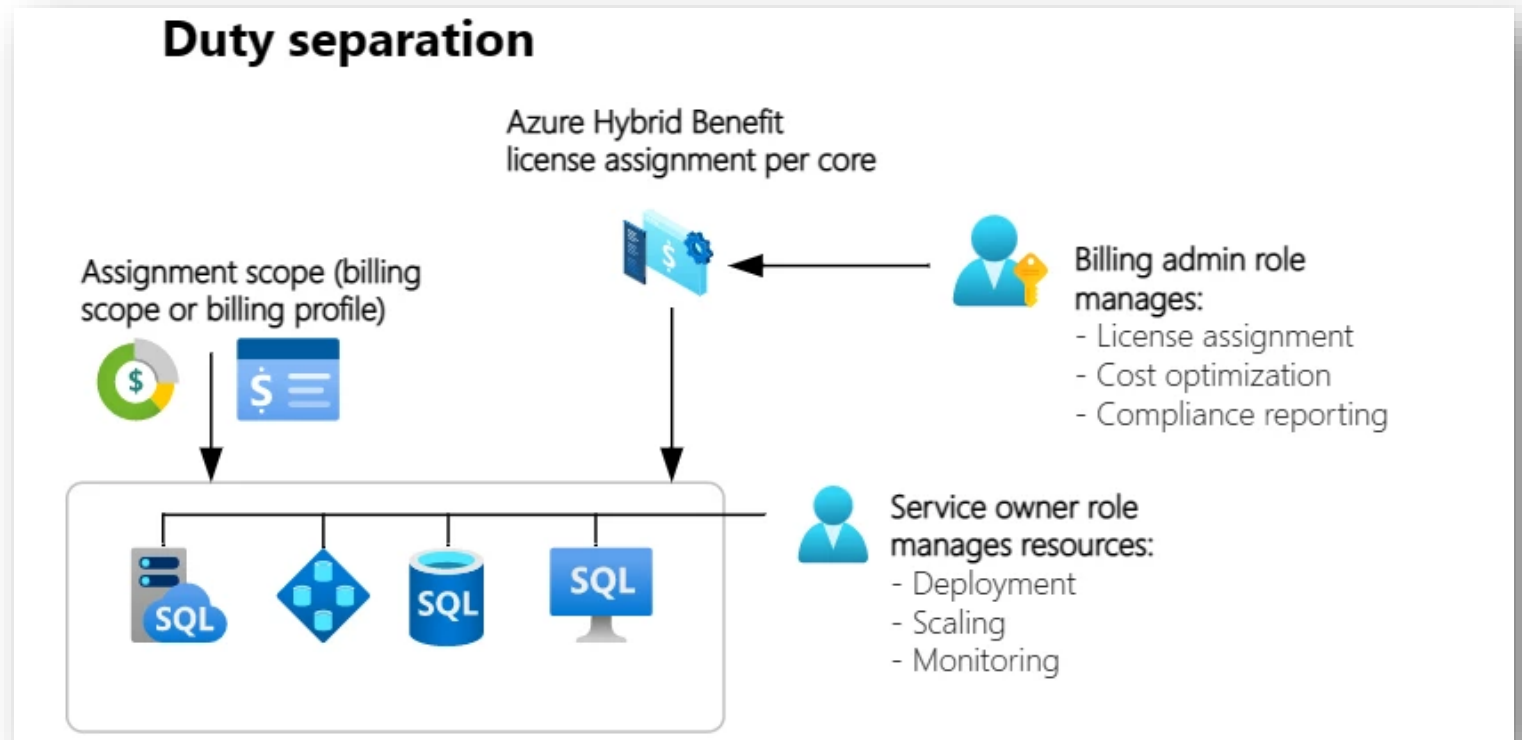


# Azure SQL Server

- GA: Azure SQL Migration Extension for Azure Data Studio provides end-to-end experience for Azure SQL Migration ([Generally available: Azure SQL Database offline migrations in Azure SQL Migration extension](#))
- Retirement: Azure Database Migration Service (classic) for SQL Server scenarios ([Retirement: Azure Database Migration Service \(classic\) - SQL Server scenarios deprecation](#)) – retires March 2026!
- PP: Azure VMs using Ultra Disks supported in Azure Backup ([Public Preview: Support for Azure VMs using Ultra disks in Azure Backup](#))

# Azure SQL Server

- GA: Central management for Hybrid Benefit for SQL Server licenses ([General Availability: Centrally Managed Azure Hybrid Benefit for SQL Server](#))



# Azure SQL Server

- Default outbound access for VMs in Azure will be retired— transition to a new method of internet access (30 Sept 2025)

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**Thank You!**  
**Questions?**

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