Microsoft

Azure SQL in a Day

Lessons

- Introduction to Azure SQL
- SQL Database vs Managed Instance
- Creating an Azure SQL Database
- Scaling, Service Tiers, and Purchasing Models
- Client and Monitoring Tools
- Business Continuity and Disaster Recovery
- Maintenance Automation

Lesson 1: Introduction to Azure SQL

What is Microsoft Azure?

Microsoft Azure is Microsoft's public cloud computing platform

Over 140 countries across 60 regions worldwide

Windows and Linux

Scale globally

- Reach more locations, faster, with the performance and reliability of a vast global infrastructure.

Safeguard data

- Rely on industry-leading data security in the region and across our network.

Promote sustainability

- Help build a clean-energy future and accelerate progress toward your sustainability goals.

What is Microsoft Azure?

https://azure.microsoft.com/en-us/global-infrastructure/regions/

Cloud Hosting Models

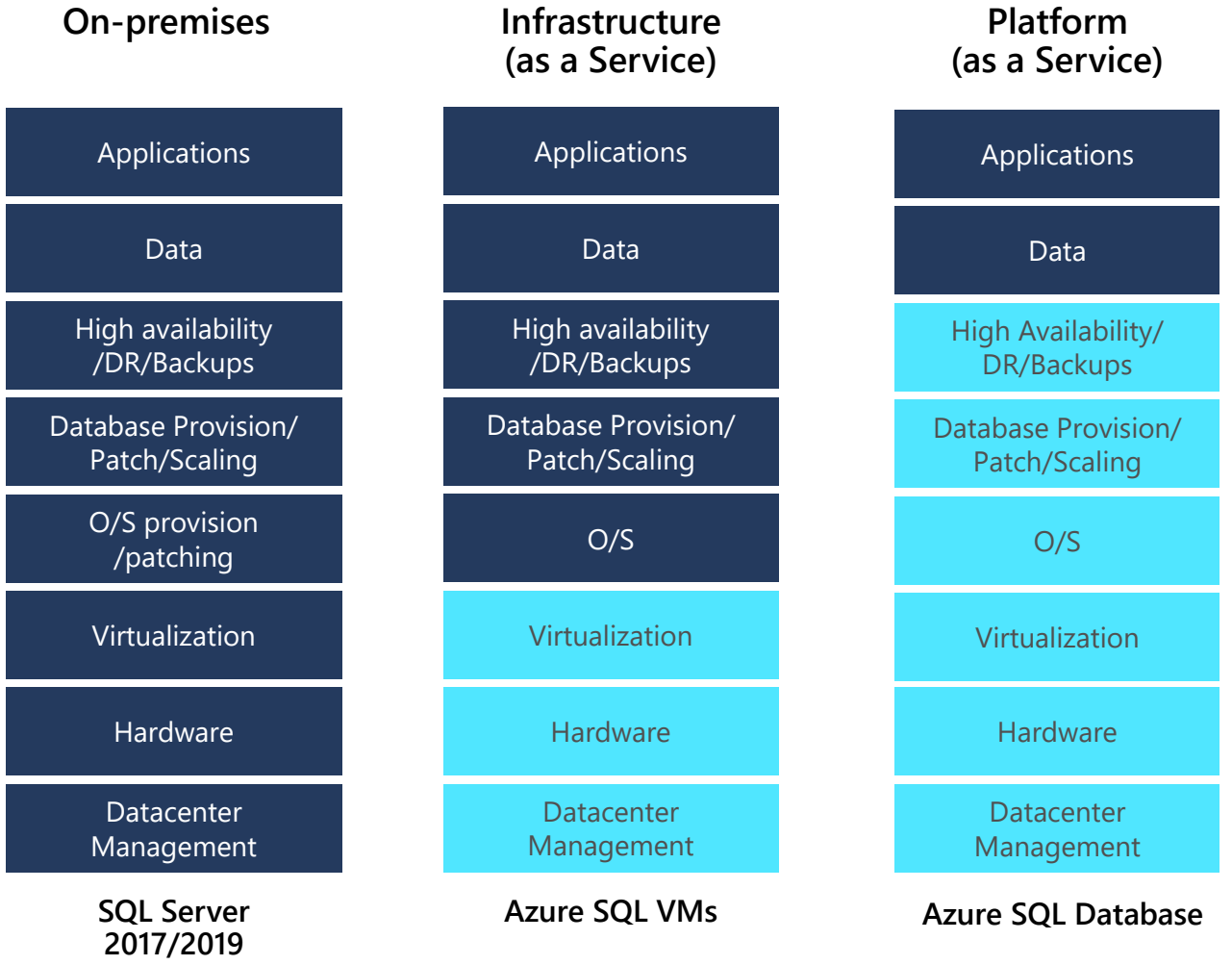
Managed by customer | Managed by Microsoft

On-premises costs tend to be driven by hardware and data center management costs

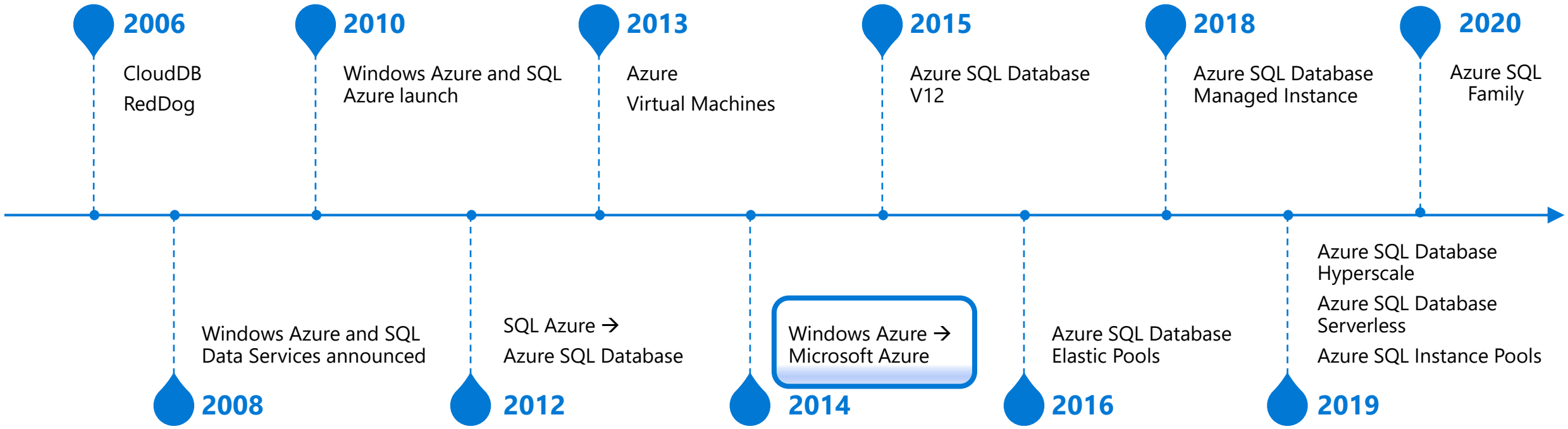
Infrastructure-as-a-Service reduces cost categories related to data center and compute

Platform-as-a-Service off-loads customers' most administrative tasks to Azure, further improving efficiency with machine-learning capabilities for performance and security

- **Managed Instance**: instance-level deployment for lift-shift existing apps to Azure, fully backward compatible
- **Single database**: database-level deployment for new apps



Azure SQL has come a long way



Azure SQL Family

Explore Azure SQL database services

SQL Server on Azure Virtual Machines

Migrate your SQL workloads to Azure with ease while maintaining complete SQL Server compatibility and operating system-level access

Learn more >

Azure SQL Managed Instance

Modernize your existing SQL Server applications at scale with an intelligent, fully managed service

Learn more >

Azure SQL Database

Support modern cloud applications on an intelligent, fully managed service that includes serverless compute

Learn more >

Questions?

Lesson 2: Azure SQL Database vs Managed Instance

What are my options?

IaaS

PaaS

I want a Virtual Machine

- Azure manages the hardware
- You own the OS and SQL Server
- You own monitoring and HADR

I want a SQL Server

- Azure manages the hardware and OS
- You get a SQL Server, but we help you manage it
- You need SQL Server feature compatibility and low friction move

I want a database

- Azure manages the hardware, OS, and SQL Server
- Azure gives you predicable performance
- Azure provides HADR, monitoring, and intelligence

SQL Server in Azure Virtual Machine

Managed Instance

Single Instance Pool

Azure SQL Database

Single Elastic Pool

Which Azure SQL offering is right for you?

Control	Capabilities
Microsoft Managed	**Managed SQL Server as a service** Native restore and log shipping DTC and Linked Servers Service Broker and Event Notifications SQL Agent and Transactional Replication .NET CLR integration and ML Services
	No
	Managed SQL database as a service A database scoped programming model
	No
Customer Managed	**Full control of SQL Server instance** OS level access SQL Server versions 2008 - 2019 Ful control over upgrades and patching App and other services colocation

Yes → Azure SQL Managed Instance

Yes → Azure SQL Database

Yes → SQL Server on Azure VMs

Azure SQL PaaS deployment options

Azure SQL Database

Managed instances

Best for most lift-and-shift migrations to the cloud

Single instance	Instance pool*
• SQL Server surface area (vast majority). • Native virtual network support. • Fully managed service.	• Resource sharing between multiple instances to price optimize. • Simplified performance management for multiple databases. • Fully managed service.

*Instance pool is currently in public preview, more details here

Databases

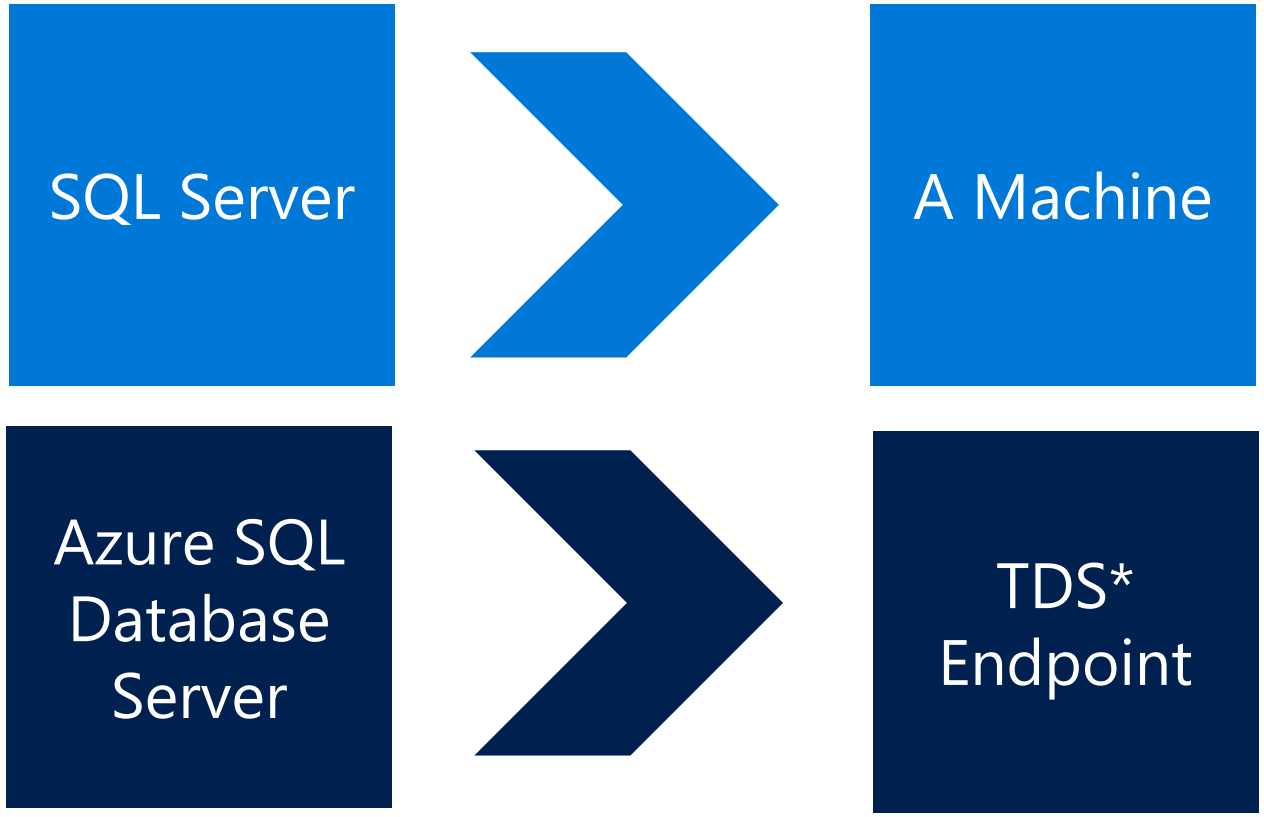
Best for modern cloud applications. Hyperscale and serverless options are available

Single database	Elastic pool
• Hyperscale storage (up to 100TB). • Serverless compute. • Fully managed service.	• Resource sharing between multiple databases to price optimize. • Simplified performance management for multiple databases. • Fully managed service.

Questions?

Lesson 3: Creating an Azure SQL Database

Azure SQL Database Server is not a machine...



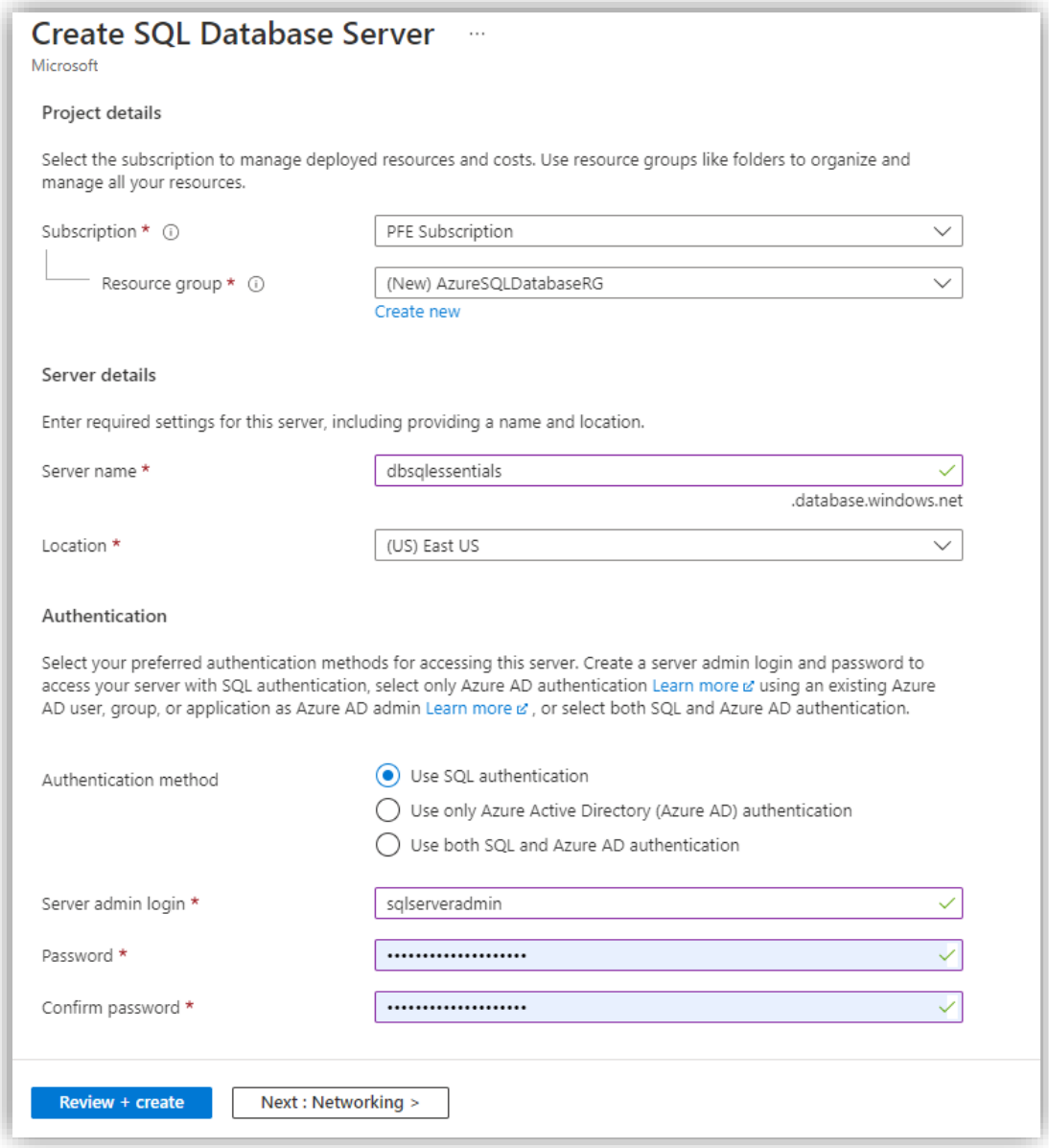
*TDS = Tabular Data Stream

Server Provisioning

Service head that contains databases

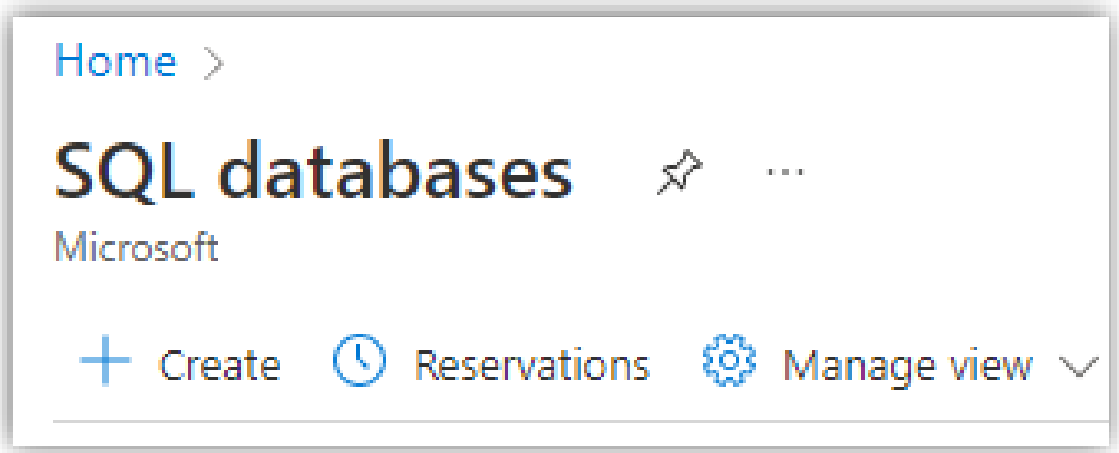
Connect via Fully Qualified Domain Name

Initially contains only a **master** database



Create the database

Portal



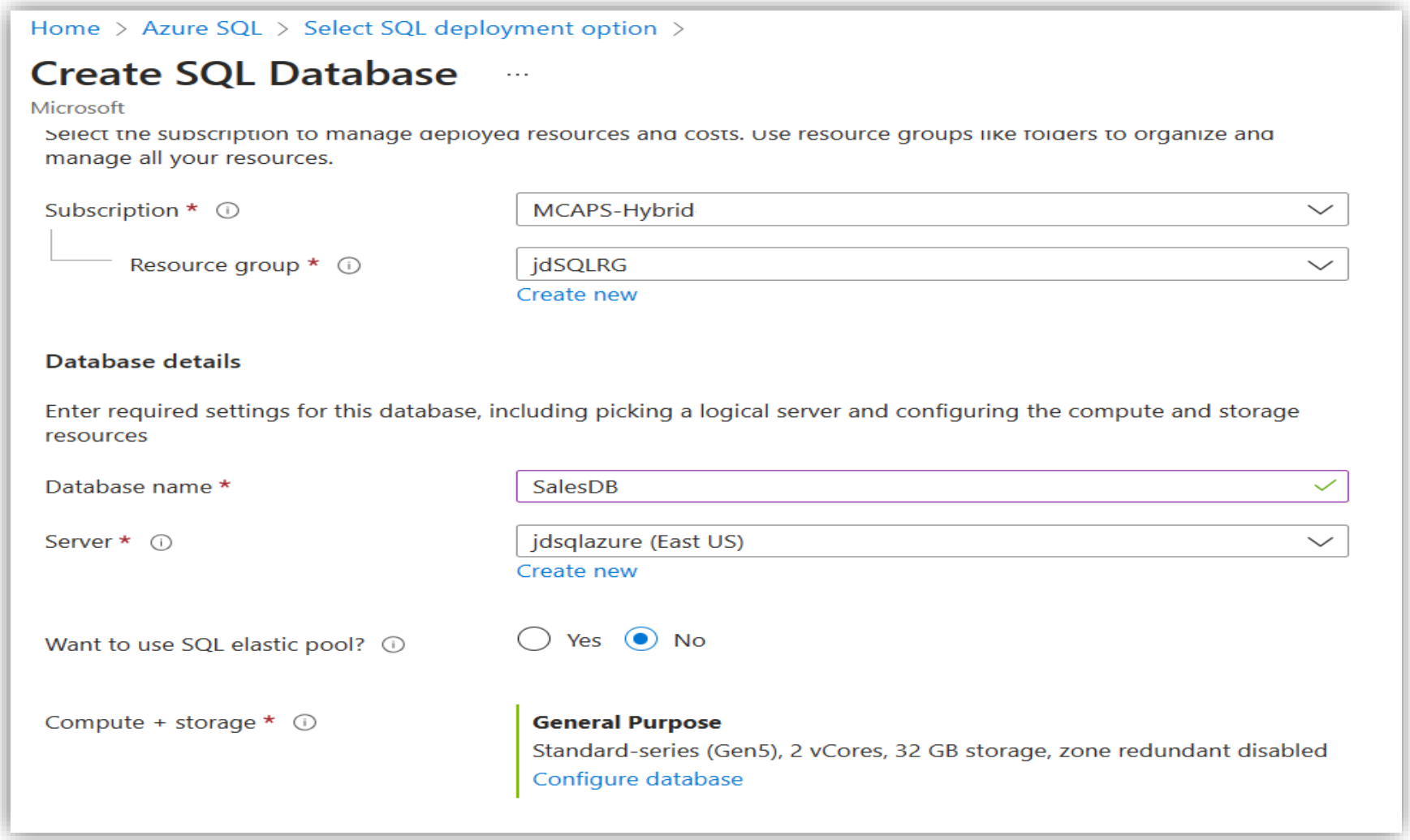
PowerShell:

```
New-AzSqlDatabase -ResourceGroupName "reurcegroupsqlgsps"
-ServerName "server1" -DatabaseName "database1"
-Edition "Standard" -RequestedServiceObjectiveName "S1"
```

Transact-SQL:

```
CREATE DATABASE MyFirstAzureSQLDatabase
(MAXSIZE = 500 MB, EDITION = 'standard', SERVICE_OBJECTIVE = 'S1');
```

Create SQL database



Questions?

What is an Azure SQL elastic pool?

Managing and scaling multiple databases that have varying and unpredictable usage demands.

A pool is shared by multiple databases to accommodate unpredictable periods of usage by individual databases.

Provisioning resources for the entire pool. It is a cost-effective solution for running multiple data bases with a fixed Budget.

Simply add and remove databases with downtime.

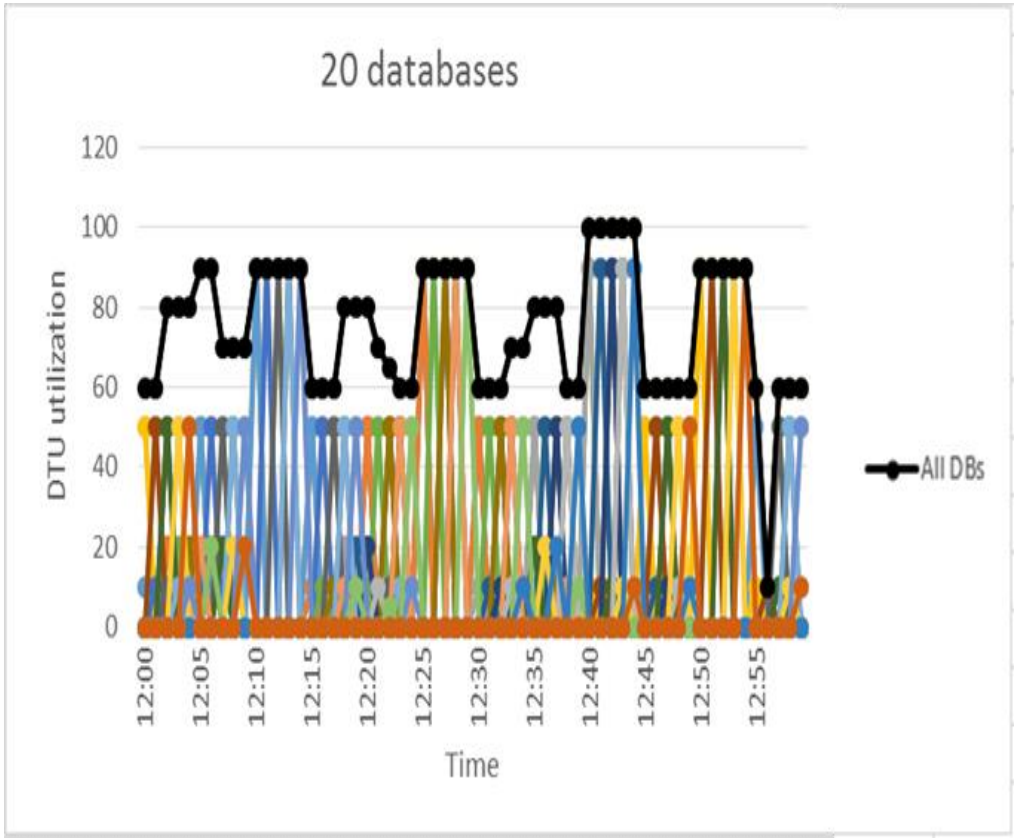
When to consider a pool?

Assessing database utilization patterns.

There are large differences between peak utilization and average utilization per database.

The peak utilization for each database occurs at different points in time.

eDTUs are shared between many databases.



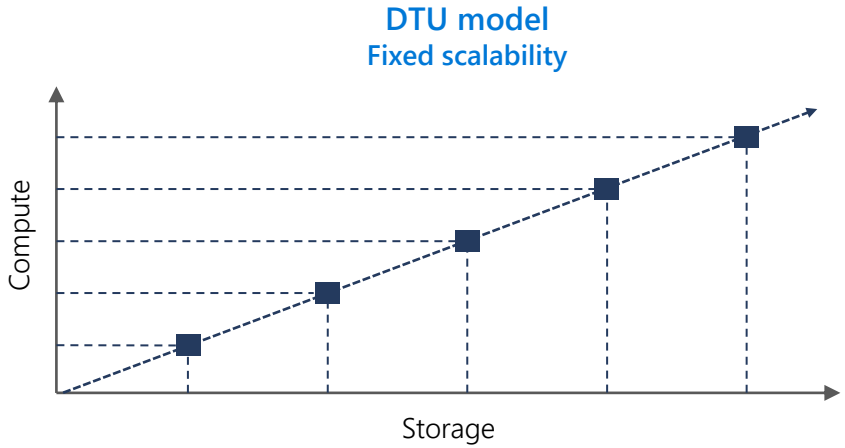
Questions?

Lesson 4: Scaling, Service Tiers, and Purchasing Models

Azure SQL Database Purchasing models and resources

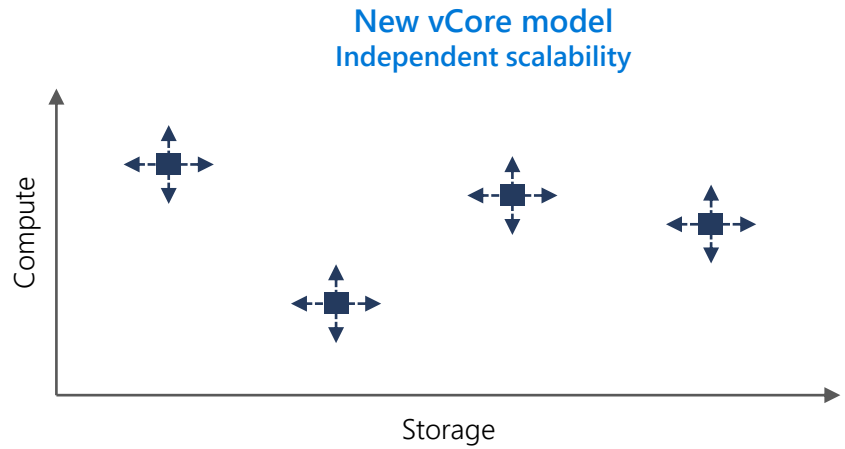
Database Transaction Unit (DTU) model

- Pre-packaged, bundled unit that represents the database power.
- Designed for **predictable performance**, but somewhat inflexible and limited in options.
- DTU sizing offers simplicity of choice.
- Blended measure of CPU, memory, and read-write rates.



vCore model

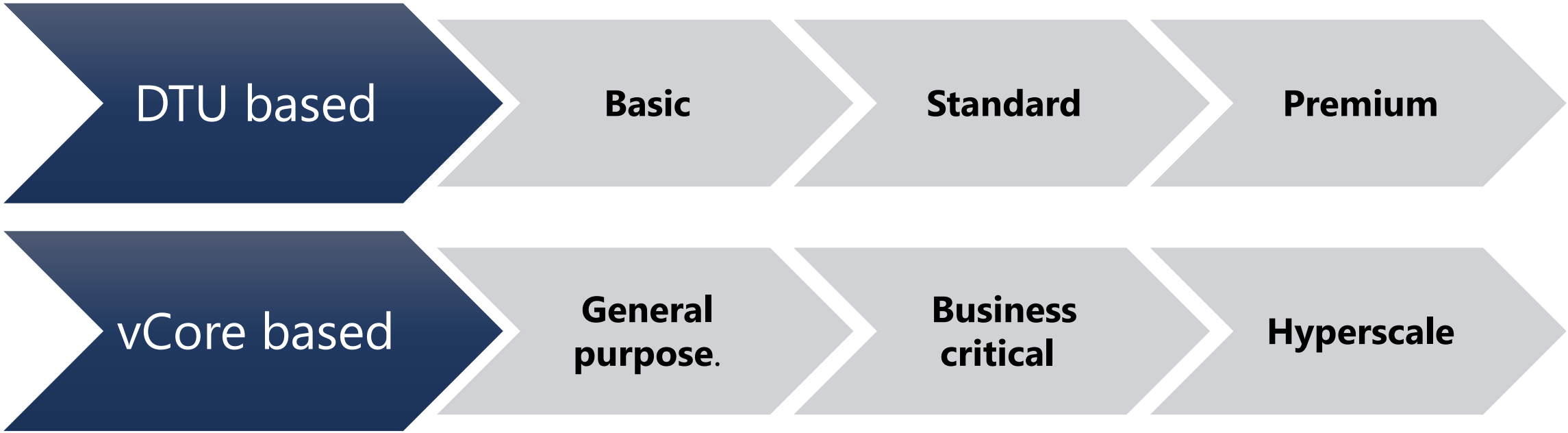
- À La carte approach deconstructs the DTU model into separate parts.
- Customers can select compute and storage independently.
- Allows customers to right-size their compute requirements in the cloud.
- vCore sizing offers flexibility of choice.
- Provides a choice between a **provisioned compute tier** and a **serverless compute tier**.



Purchasing models available for Azure SQL Database deployment:

Purchasing model/ Deployment model	DTU based	vCore based
Single Database	✓	✓
Elastic Pool	✓	✓
Managed Instance	✗	✓
Hyperscale service tier (single databases)	✗	✓

Overview Service Tiers



Standard 100DTUs = 1vCore
Premium 125DTUs = 1vCore

Changing Performance Levels (DTU)

PowerShell

- Set-AzSqlDatabase

REST

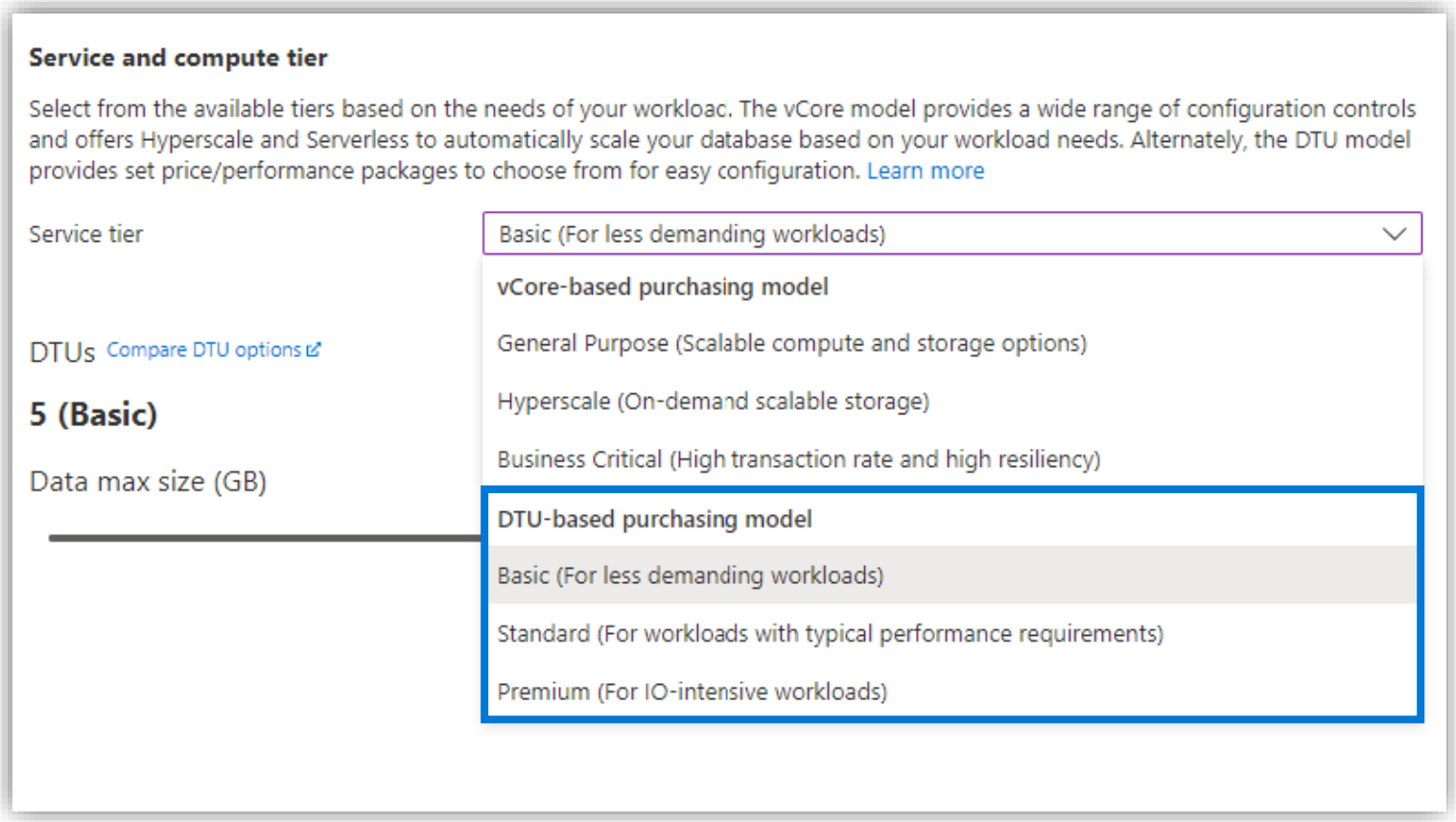
- Update database

Azure CLI

- az sql db update

T-SQL

- ALTER DATABASE … MODIFY (EDITION = …)



Changing Performance Levels (vCore)

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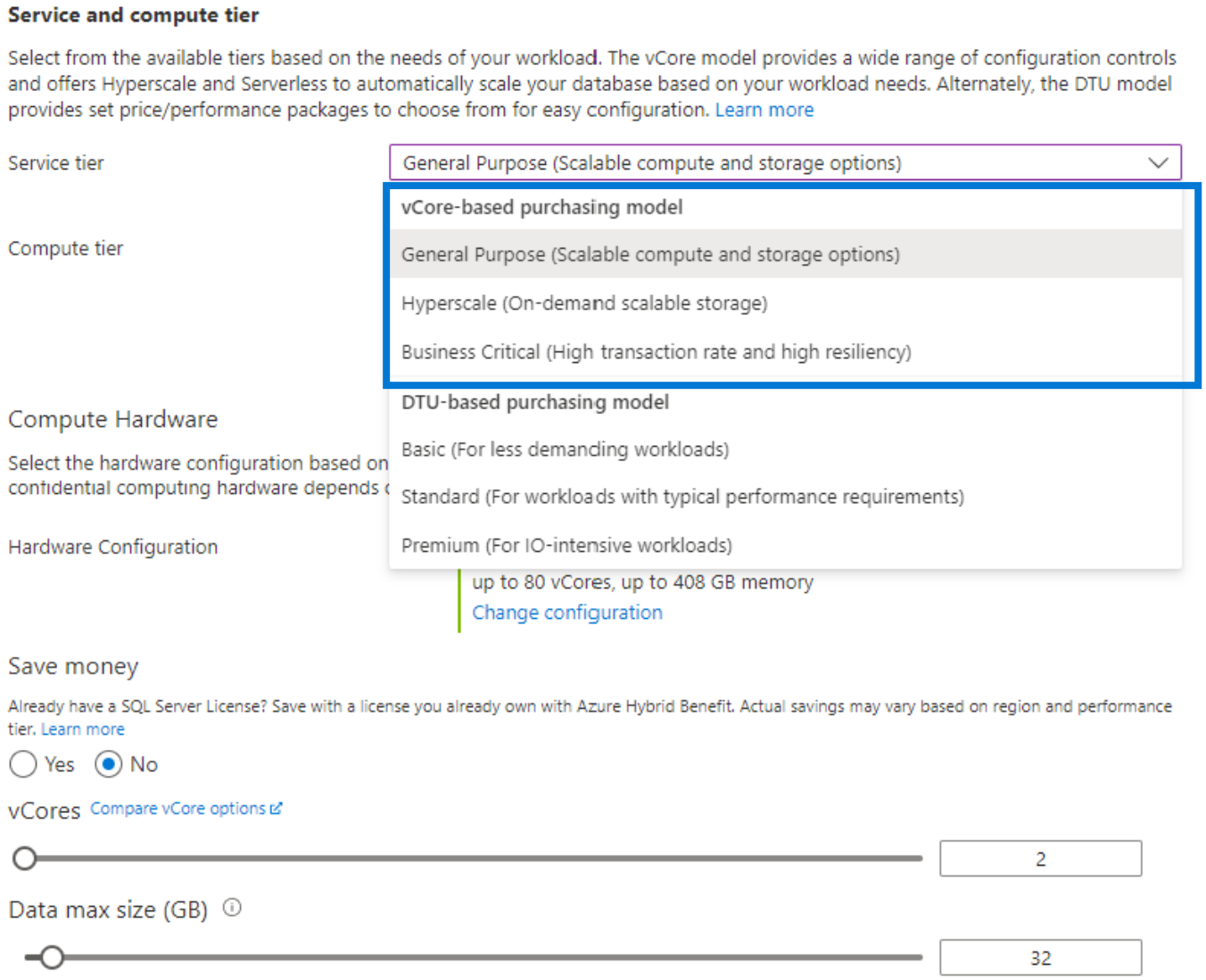
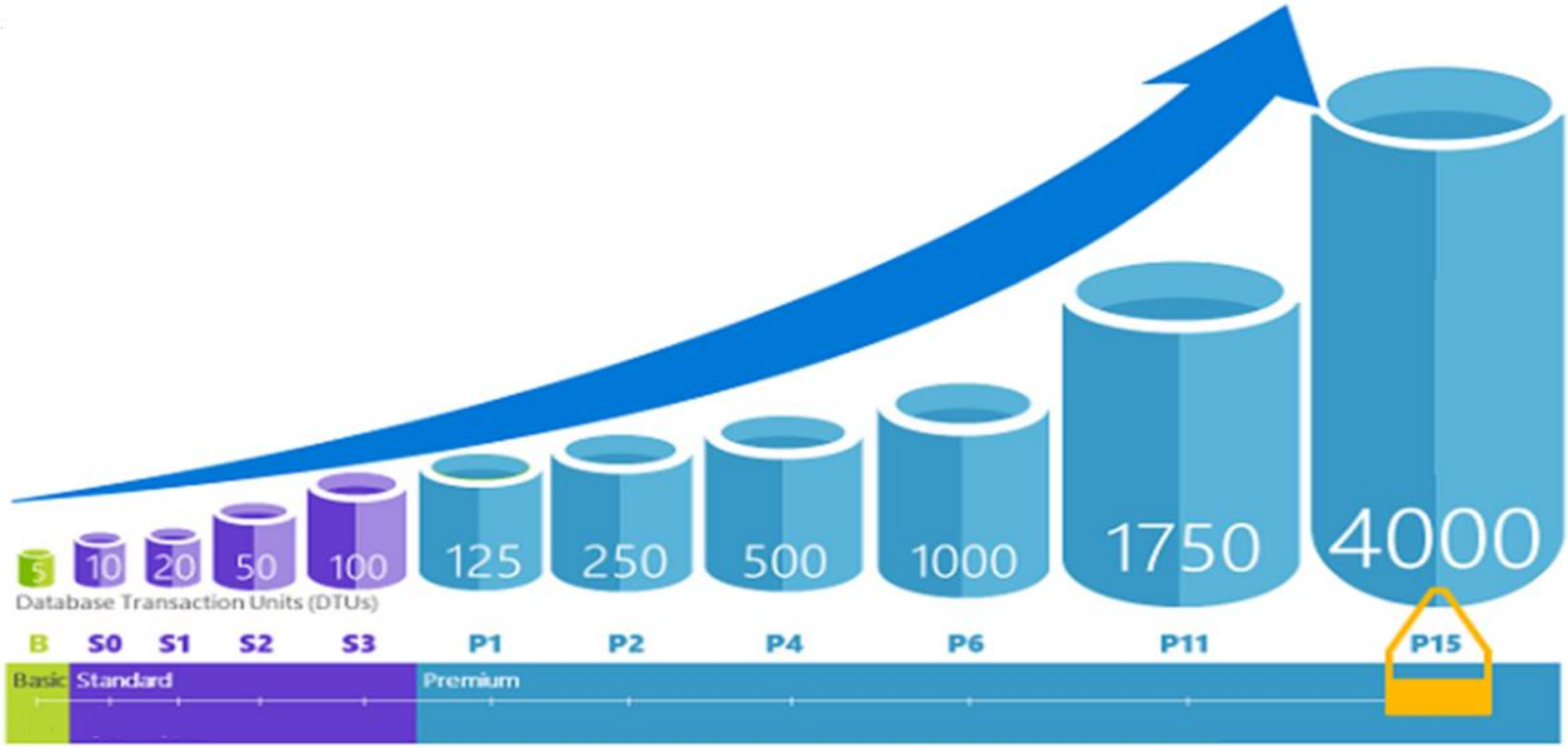


Demonstration

Overview of Service Tiers available for Azure SQL Database

- Review the different Service Tiers, Compute and Hardware options available while creating an Azure SQL Database.

Database Transaction Units (DTUs)



DTU-based model: Service Tiers

	Basic	Standard								Premium					
		S0	S1	S2	S3	S4	S6	S7	S9	S12	P1	P2	P4	P6	P11	P15
Built for	Light transactional workloads	Medium transactional workloads									Heavy transactional workloads					
Available SLA	99.99%															
Database max. size	2 GB	250 GB			1 TB										4 TB	
Point-in-time restore ("oops" recovery)	Any point within 7 days	7-35 days (7 days by default)														
Business continuity	Active geo-replication, up to four readable secondary backups															
Security	Auditing, row-level security, dynamic data masking, Advanced Threat Protection															
Performance objectives	Transactions per hour	Transactions per minute									Transactions per second					
Database transaction units (DTUs)	5	10	20	50	100	200	400	800	1,600	3,000	125	250	500	1,000	1,750	4,000

$ $$$

[Resource limits for single databases using the DTU-based purchasing model]

vCore-based purchasing model: Provisioned compute tier

Simplicity:

- We remain committed to the DTU-based model and the simplicity it offers customers who want a pre-configured solution.

Flexibility:

- The vCore-based model reflects our commitment to customer choice and to simplify the hybrid benefit for customers migrating from on-premises.

Customers pay for:

- Service tier + number of vCores.
- Type and amount of data storage.
- Number of IO.
- Backup storage (RA-GRS).

vCore-based purchasing model: Provisioned compute tier

Service tier	 General purpose		 Business critical		 Hyperscale
Best for	Most budget-oriented workloads		Critical business applications with high IO requirements.		VLDB OLTP and HTAP workloads with highly scalable storage and read-scale requirements.
Deployment option	Single / Elastic Pools	Managed Instance	Single / Elastic Pools	Managed Instance	Single
Compute tiers	Gen5: 2 to 80 vCore Fsv2-series*: 72 vCore Serverless: 0.5 to 16 vCore	Gen5: 4 to 80 vCore	Gen5: 2 to 80 vCore M-series*: 128 vCore	Gen5: 4 to 80 vCore	Gen5: 2 to 80 vCore
Storage	Premium remote		Local SSD		Local SSD Cache
	5GB – 4TB per instance	32GB – 16TB per instance	5GB – 4TB per instance	32GB – 16TB per instance	Scale from 5GB to 100TB of storage in 1GB increments
In-Memory	Not supported		Supported		Not supported
Read-write IO	~2ms for all data access		<0.5ms for all data access		<0.5ms for hot data access ~2ms otherwise
Availability	1 replica, no read-scale replicas		3 read replicas, zone-redundant HA	3 replicas, 1 read-scale replica, zone-redundant HA	Primary read/write replica + up to 4 read replicas
Backups	RA-GRS, 7-35 days (7 days by default)		RA-GRS, 7-35 days (7 days by default)		LRS, ZRS, RA-GRS, 7-35 days (7 days by default)

For latest information reference: https://azure.microsoft.com/en-us/pricing/details/sql-database/

* Fsv2-series and M-series are currently in preview.

Choose from hardware generations

	Gen 5	Fsv2-series	M-series	DC-Series
Hardware	Intel E5-2673 v4 (Broadwell) 2.3 GHz processors, fast eNVM SSD vCore=1 LP (hyper-thread)	Intel Xeon Platinum 8168 (SkyLake) processors	Intel Xeon E7-8890 v3 2.5 GHz processors	Intel® XEON E-2288G processors. Featuring Intel Software Guard Extension (Intel SGX))
Performance levels	1 to 80 vCores	72 vCores (1 vCore = 1 hyper-thread)	128 vCores (1 vCore = 1 hyper-thread)	Provision up to 8 vCores (physical)
Memory	5.1 GB per vCore for provisioned compute Up to 24 GB per vCore for serverless compute	1.9 GB per vCore	29 GB per vCore	4.5 GB per vCore
Storage	Up to 4TB remote SSD storage Up to 4TB local SSD storage	Up to 4TB remote SSD storage	Up to 4TB local SSD storage	Up to 4TB remote SSD storage

- Balance performance requirements and price with two hardware generations
- Match your on-premises application behavior
- Fsv2, M, and DC series are Generally available but in limited regions

Questions?

vCore-based purchasing model: Serverless compute tier

On-demand flexible scale

Operate at the true rhythm of your business.

Adapts compute resources to the workload without sacrificing performance.

Automatically pauses and resumes.

Cost-effective

Pay for performance. Period.

Pay only for compute resources you consume, on a per-second basis.

Further optimize costs with configurable compute thresholds.

Fully managed & intelligent

Focus on your applications, not your infrastructure

Fully-managed and intelligent database service.

Built-in 99.99% availability.

Best for unpredictable and intermittent workloads on single databases, such as:

Dev/test

Line of Business

E-commerce

Provisioned compute and serverless meet different needs

Optimize compute provisioning and billing for your workload

Databases with provisioned compute...

Provision compute resources upfront.

Bill on an hourly basis.

Common scenarios

Workloads with regular and substantial compute utilization.

Multiple databases with bursty usage patterns that can be consolidated into a single server and use *elastic pools* for better price optimization.

Serverless databases...

Scale up or down to meet workload requirements, instead of pre-provisioning.

Bill on a per-second basis.

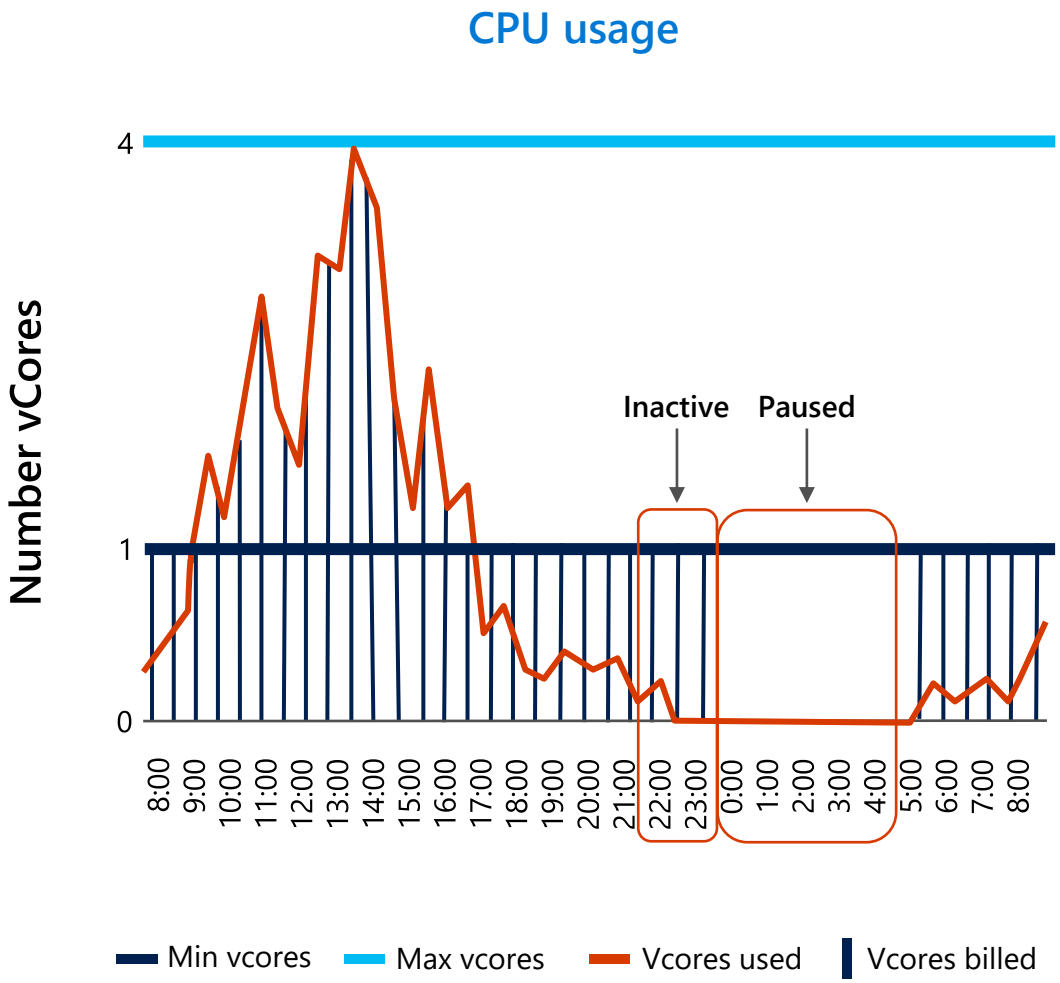
Common scenarios

Workloads with unpredictable and intermittent usage patterns or performance requirements .

Workloads where the requirements are unknown, and you can delegate compute sizing to the service.

Serverless price to performance with per-second billing

- Compute resources scale dynamically up or down based on workload requirements.
- Configure minimum and maximum vCores to define the range of available compute capacity.
- Use auto-pause delay to define the time period the dataset must be inactive before pausing.
- The database is automatically resumed when the next login or other activity occurs.
- Pay for compute based on the vCores and memory used per second, with lowest billing based on configured vCore minimum.
- When the database is paused, the compute cost is zero and only storage costs are incurred.



Pay only for what you need

DTUs			vCores		
Basic	**Standard**	**Premium**	**General Purpose**	**Business Critical**	**Hyperscale**
Small databases particularly those in development phases.	General purpose databases with moderate performance requirements.	Mission-critical databases with high performance and high-availability requirements.	Data applications with basic IO and basic availability requirements.	Business critical data applications with fast IO and high availability requirements.	VLDB OLTP and HTAP workloads with highly scalable storage and read-scale requirements.

Elastic scale and performance: Three service tiers within DTU-based model, and two tiers within vCore-based model let you scale up and down based on throughput needs and offer better resource isolation and an improved billing experience.

Business continuity and data protection: A spectrum of business-continuity features across tiers lets you dial up control over data recovery and failover.

Familiar and fully-managed: Near-complete SQL Server compatibility and unprecedented efficiencies as your applications scale with a near-zero maintenance service and a variety of familiar management tools and programmatic APIs.

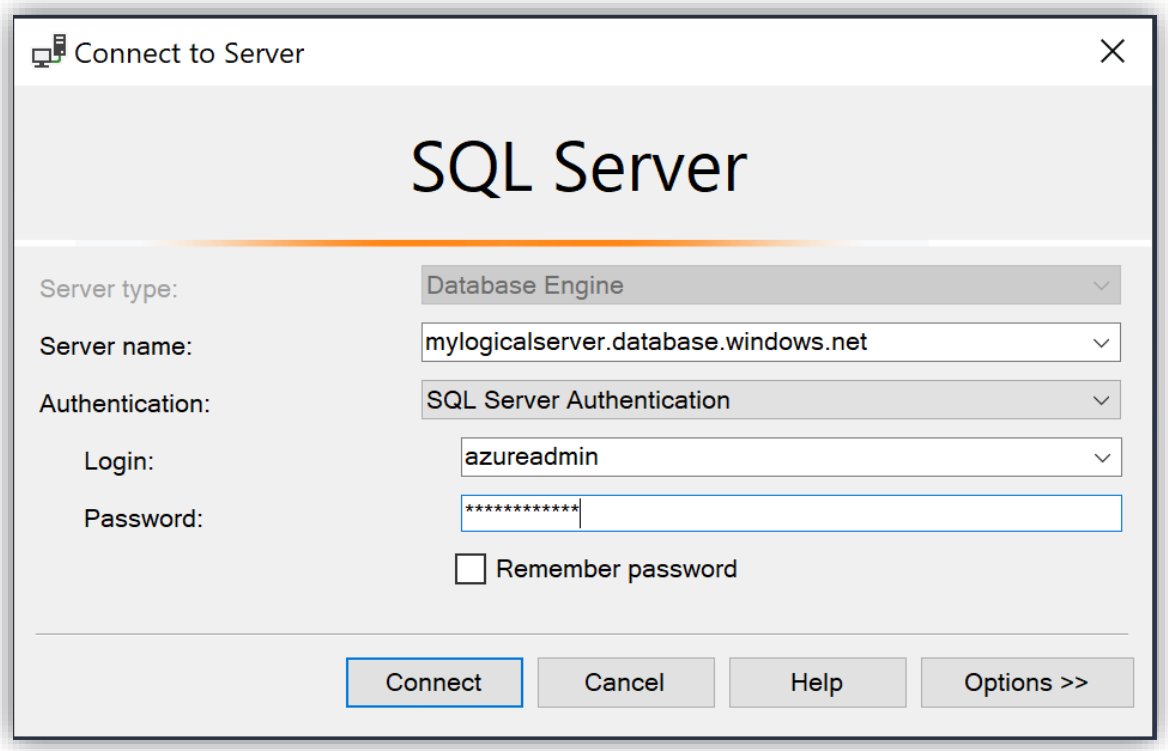
Lesson 5: Client and Monitoring Tools

SQL Server Management Studio

Download the latest version of SSMS.

Get the fully qualified domain name of your Azure SQL Server.

Connect to your SQL Database.



SQL Server Data Tools

Download the latest version of SSDT.

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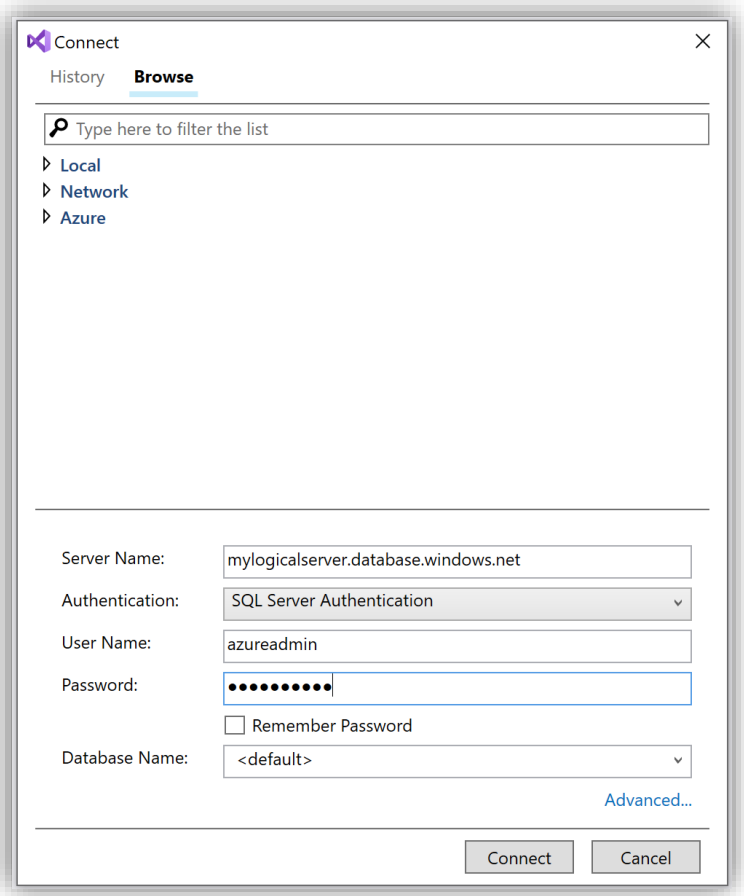

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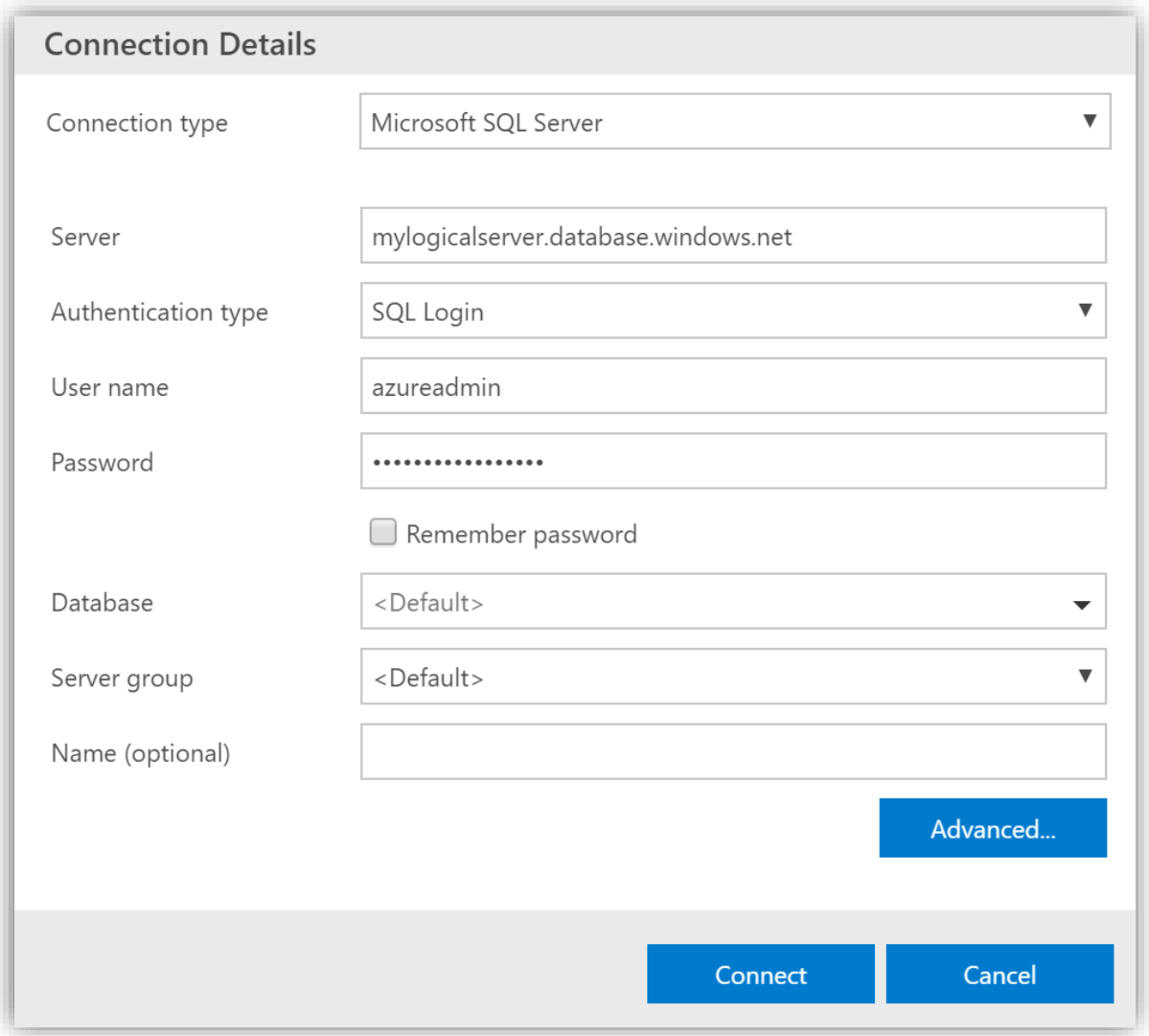


Management APIs

PowerShell

- New-AzSqlDatabase
- Get-AzSqlDatabase
- Set-AzSqlDatabase
- Remove-AzSqlDatabase
- New-AzResourceGroup
- New-AzSqlServer
- Get-AzSqlServer
- Set-AzSqlServer
- Remove-AzSqlServer
- New-AzSqlServerFirewallRule
- Get-AzSqlServerFirewallRule
- Set-AzSqlServerFirewallRule
- Remove-AzSqlServerFirewallRule
- New-AzSqlServerVirtualNetworkRule

Azure CLI

- az sql db create
- az sql db list
- az sql db list-editions
- az sql db list-usages
- az sql db show
- az sql db update
- az sql db delete
- az group create
- az sql server create
- az sql server list
- az sql server list-usages
- az sql server show
- az sql server update
- az sql server delete
- az sql server firewall-rule create
- az sql server firewall-rule list
- az sql server firewall-rule show
- az sql server firewall-rule update
- az sql server firewall-rule delete

Management APIs

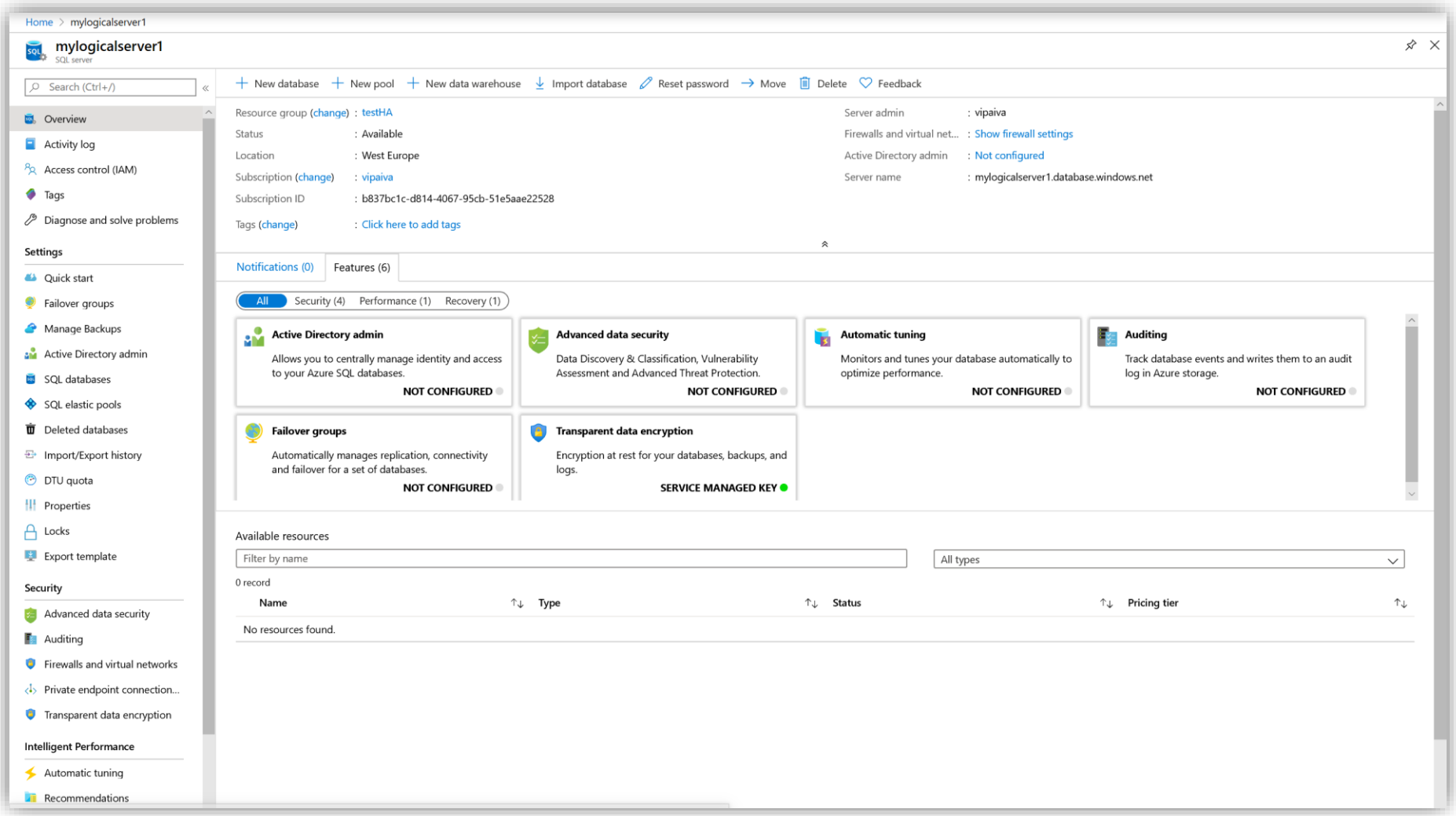
Transact-SQL

- CREATE DATABASE
- ALTER DATABASE
- DROP DATABASE
- sys.database_service_objectives
- sys.dm_db_resource_stats
- sys.resource_stats
- sys.database_connection_stats
- sys.event_log
- sp_set_firewall_rule
- sys.firewall_rules
- sp_delete_firewall_rule
- sp_set_database_firewall_rule
- sys.database_firewall_rules
- sp_delete_database_firewall_rule

REST API

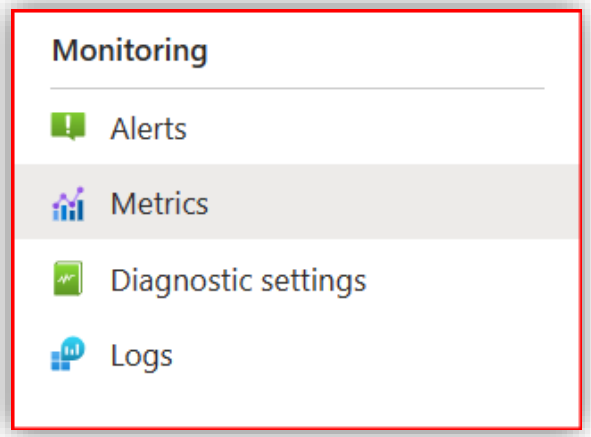
- Servers - Create or update
- Servers - Delete
- Servers - Get
- Servers - List
- Servers - List by resource group
- Servers - Update
- Databases - Create or update
- Databases - Delete
- Databases - Get
- Databases - List by elastic pool
- Databases - List by server
- Databases - Update
- Firewall rules - Create or update
- Firewall rules - Delete
- Firewall rules - Get
- Firewall rules - List by server

Azure Portal

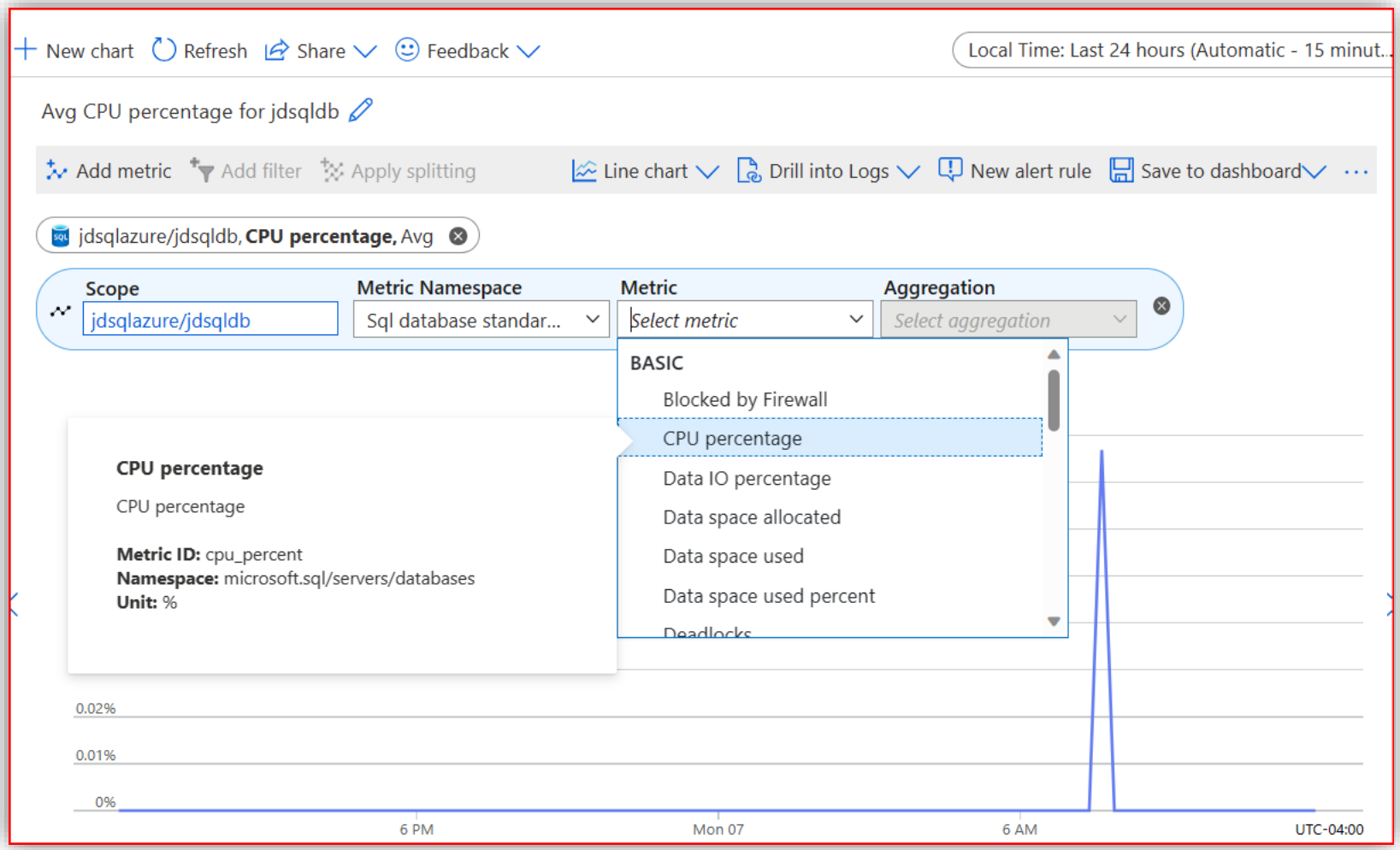


Questions?

Metrics and Alerts



- Metrics enable you to see if a database is approaching the limits of CPU, memory, IO, or storage resources.
- High DTU, CPU or IO utilization may indicate that your workload needs more resources.



Purpose of Alerts for Azure SQL Database

Database alerts can help to proactively trigger various events related to database connectivity, high DTU usage or deadlocks, etc.

It helps to proactively resolve underlying issues to avoid application outages and improve user experience.

Metric values

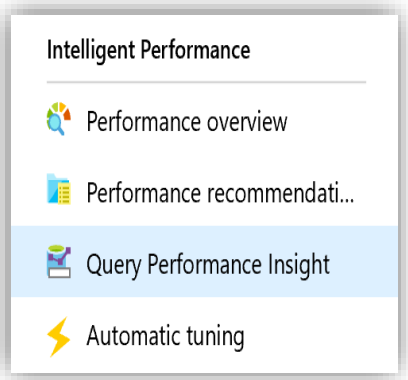
- The alert triggers when the value of a specified metric crosses a threshold you assigned in either direction. It triggers when the condition is first met and then when that condition is no

SQL Database alert values

Metric Name	Aggregation Type	Minimum Alert Time Window
CPU percentage	Average	5 minutes
Data IO percentage	Average	5 minutes
Log IO percentage	Average	5 minutes
DTU percentage	Average	5 minutes
Total database size	Maximum	30 minutes
Successful Connections	Total	10 minutes
Failed Connections	Total	10 minutes
Blocked by Firewall	Total	10 minutes
Deadlocks	Total	10 minutes
Database size percentage	Maximum	30 minutes
In-Memory OLTP storage percent(Preview)	Average	5 minutes
Workers percentage	Average	5 minutes
Sessions percent	Average	5 minutes
DTU limit	Average	5 minutes
DTU used	Average	5 minutes

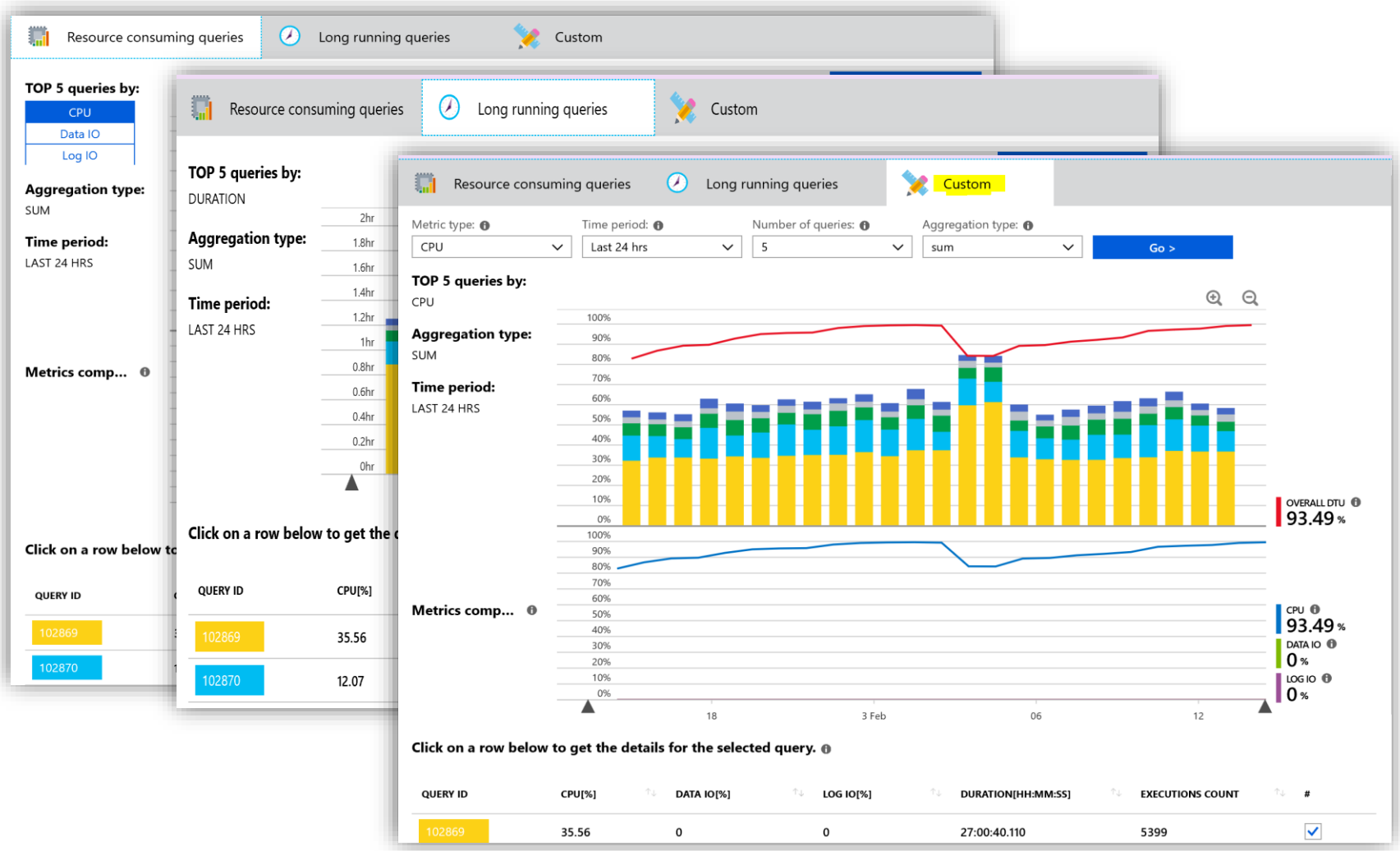
Questions?

Query Performance Insight



Query Performance Insight

- Shows top performance degrading queries by showing most resource consuming queries, long running queries and custom configuration.
- Can drill through the queries to see Query text, CPU, data IO and Log IO utilization %, Duration and Execution count.

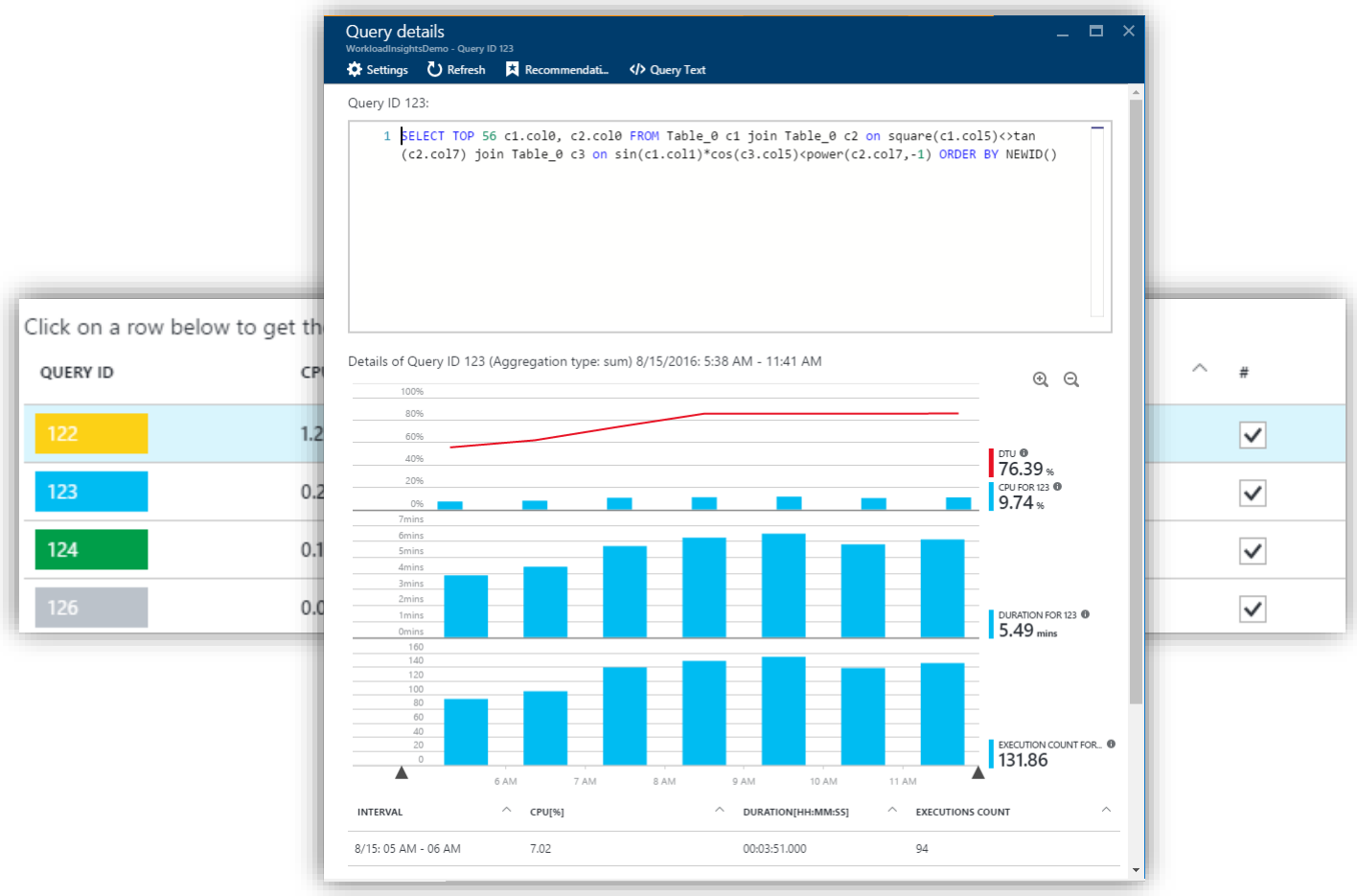


Viewing individual query details

Get details for the individual queries

- CPU Consumption
- Duration
- Execution Count

It does not capture DDL queries



Questions?

Lesson 6: Business Continuity and Disaster Recovery

Business Continuity Problems

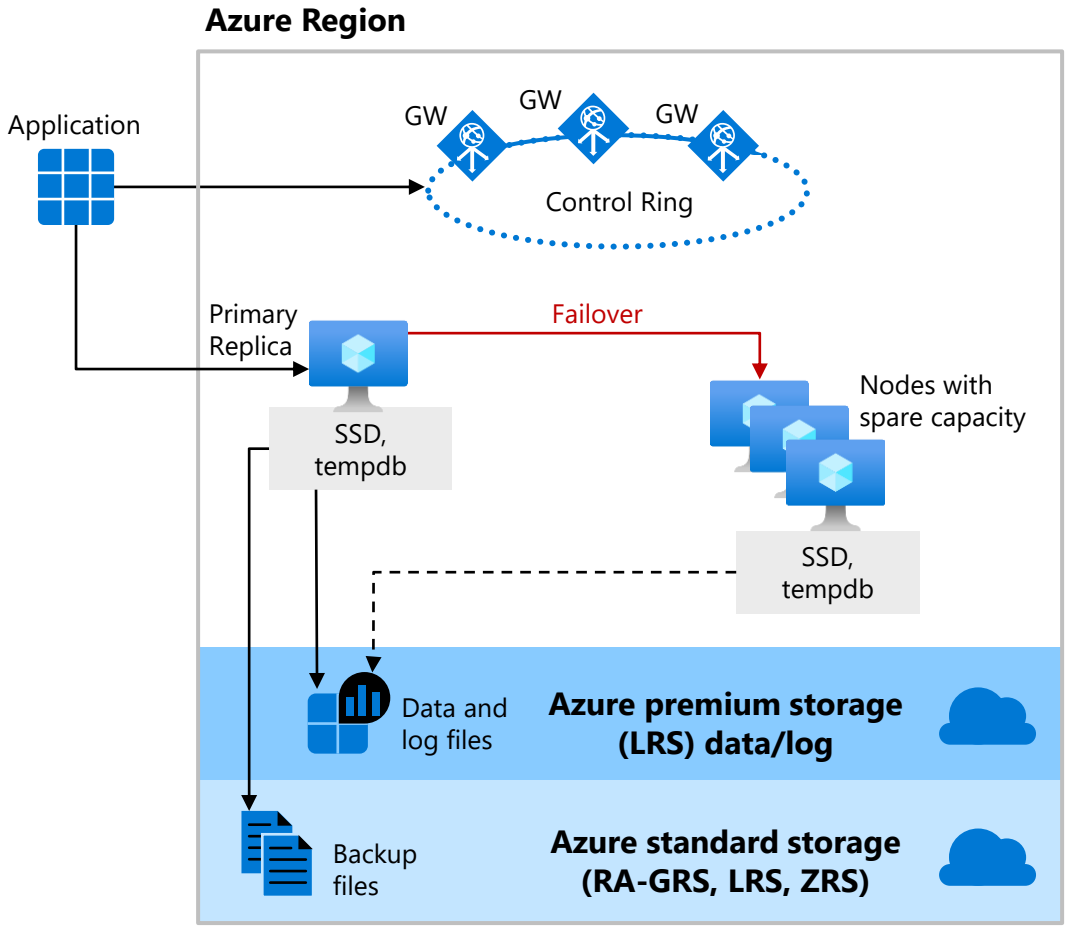
Enabling the application to continuously operate during unplanned and planned disruptive events.

Disruption scenarios in general:

- Local hardware or software failures
- Data corruption or deletion typically caused by an application bug or human error.
- Datacenter outage, possibly caused by a natural disaster.
- Upgrade or maintenance errors.

Basic (DTU), Standard (DTU), General Purpose (vCore) High Availability

- Behaves like Failover Cluster Instance
- Remote storage provides data redundancy within a datacenter
- Backup files are in a different location with geo-redundancy
- Failover decisions based on SQL and Service Fabric
- Recovery time depends on spare capacity
- Connectivity redirection built-in



Premium (DTU) and Business Critical (vCore) High Availability

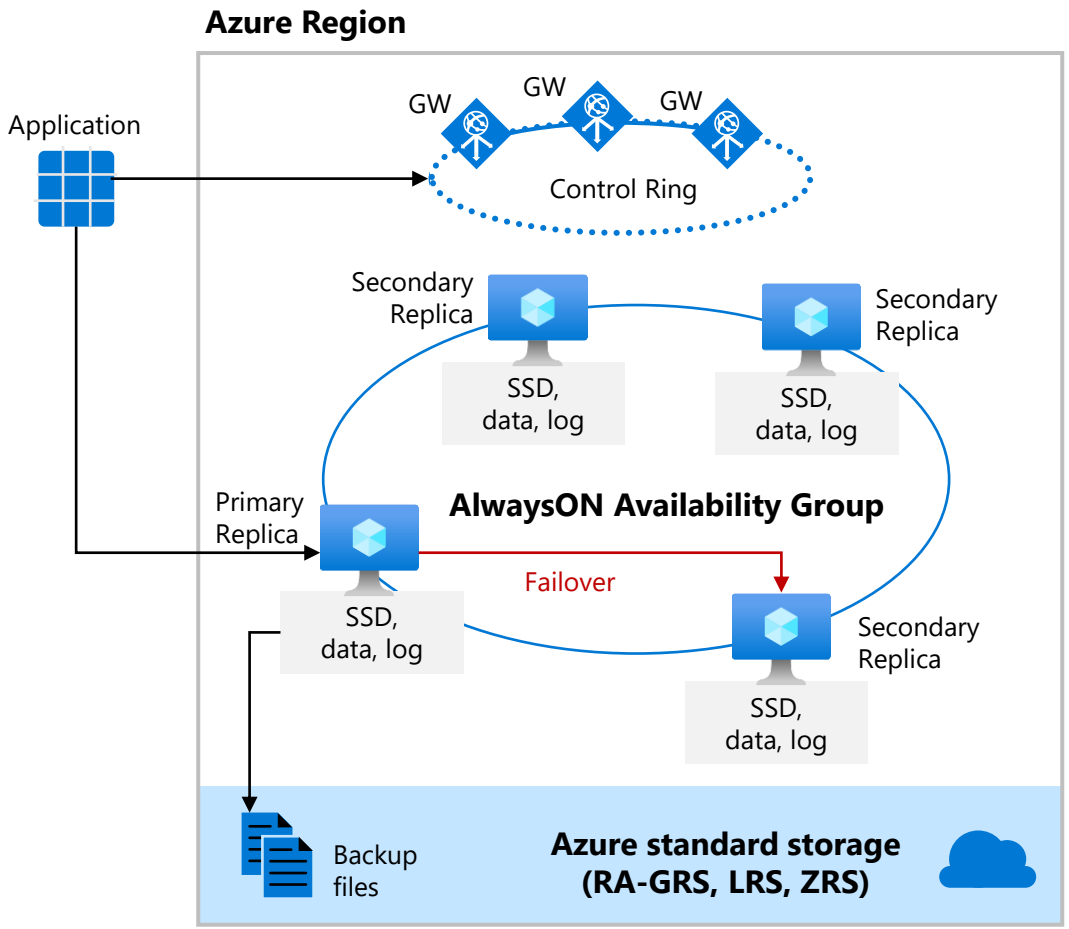
High availability is achieved by replicating both compute and storage to additional nodes.

High availability is implemented using a technology like SQL Server Always On Availability Groups.

The cluster includes a single primary replica for read-write workloads, and up to three secondary replicas (compute and storage) containing copies of data.

The failover is initiated by the Azure Service Fabric.

As an extra benefit, the premium availability model includes Read Scale-Out feature.



Zone redundant configuration

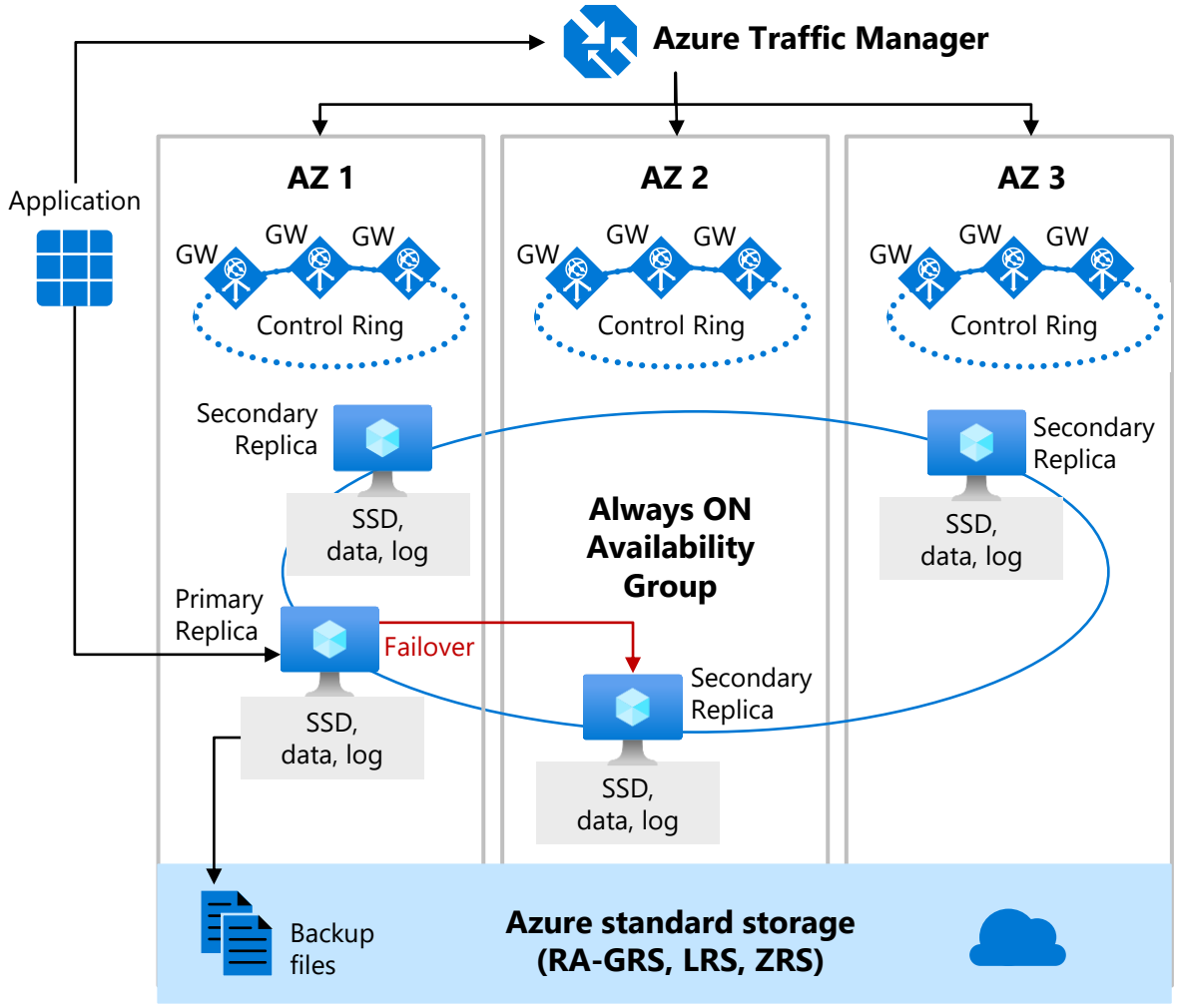
By default, the cluster of nodes for the premium availability model is created in the same datacenter.

SQL Database can place different replicas of the Business-Critical database to different availability zones in the same region.

The routing is controlled by Azure Traffic Manager (ATM).

The zone redundant databases have replicas in different datacenters with some distance between them, the increased network latency may impact the performance.

Zone redundant configurations are currently only supported in the Premium or Business Critical tiers



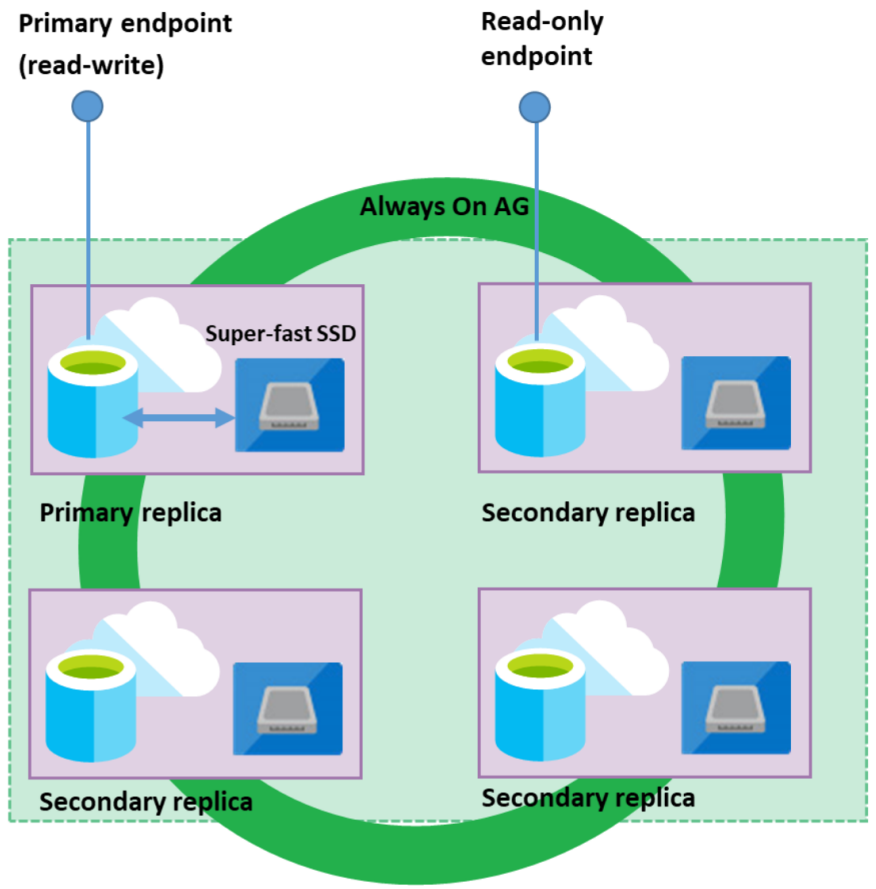
Read Scale-Out

Each database in the Premium and Business Critical service tiers is automatically provisioned with several AlwaysON replicas to support the availability SLA. These replicas are provisioned with the same compute size as the read-write.

Read Scale-Out redirects the read-only client connections to one of the ready-only replicas available instead of sharing the read-write replica.

Effectively isolate the read-only workload from the main read-write workload and doubles the compute capacity of the database or elastic pool at no additional charge.

This is ideal to scale-out for complex analytical workloads without affecting the primary OLTP workload.



Service Level Agreement (SLA)

Service tier	Single zone SLA	Multiple zones SLA
Basic, Standard, General Purpose	99.99%	N/A
Premium, Business critical	99.99%	99.995%

Business continuity	Service tier	SLA
Recovery point objective (RPO)	Business critical with Geo-DR	5 sec
Recovery Time Objective (RTO)	Business critical with Geo-DR	30 sec

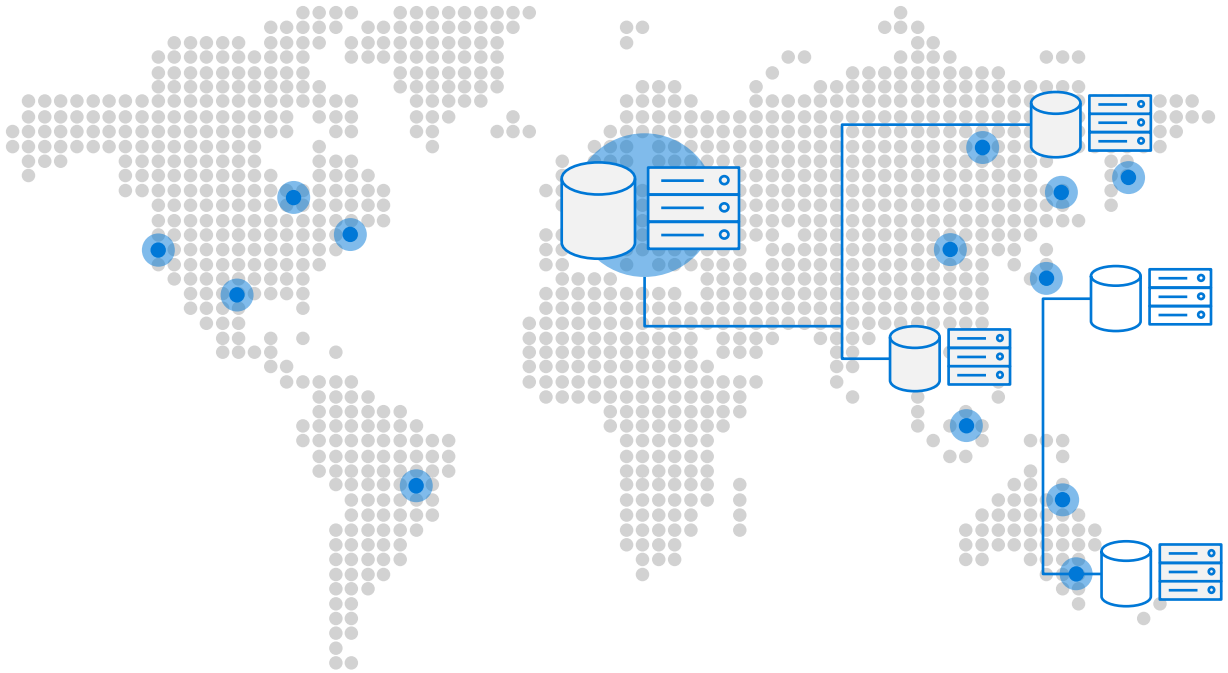
SLA for Azure SQL Database

SLA for Azure SQL Managed Instance

Questions?

Active Geo-replication

Service levels	Basic, standard, premium Self service
Readable secondaries	Up to 4
Regions available	Any Azure region
Replication	Automatic, asynchronous
Manageability tools	REST API, PowerShell, or Azure Portal
Recovery time objective (RTO)	<1 hour
Recovery point objective	<5 minutes
Failover	On demand



Up to 4 secondaries

Active geo-replication capabilities

Asynchronous Replication

Readable secondary databases

Multiple Readable Secondary Replicas

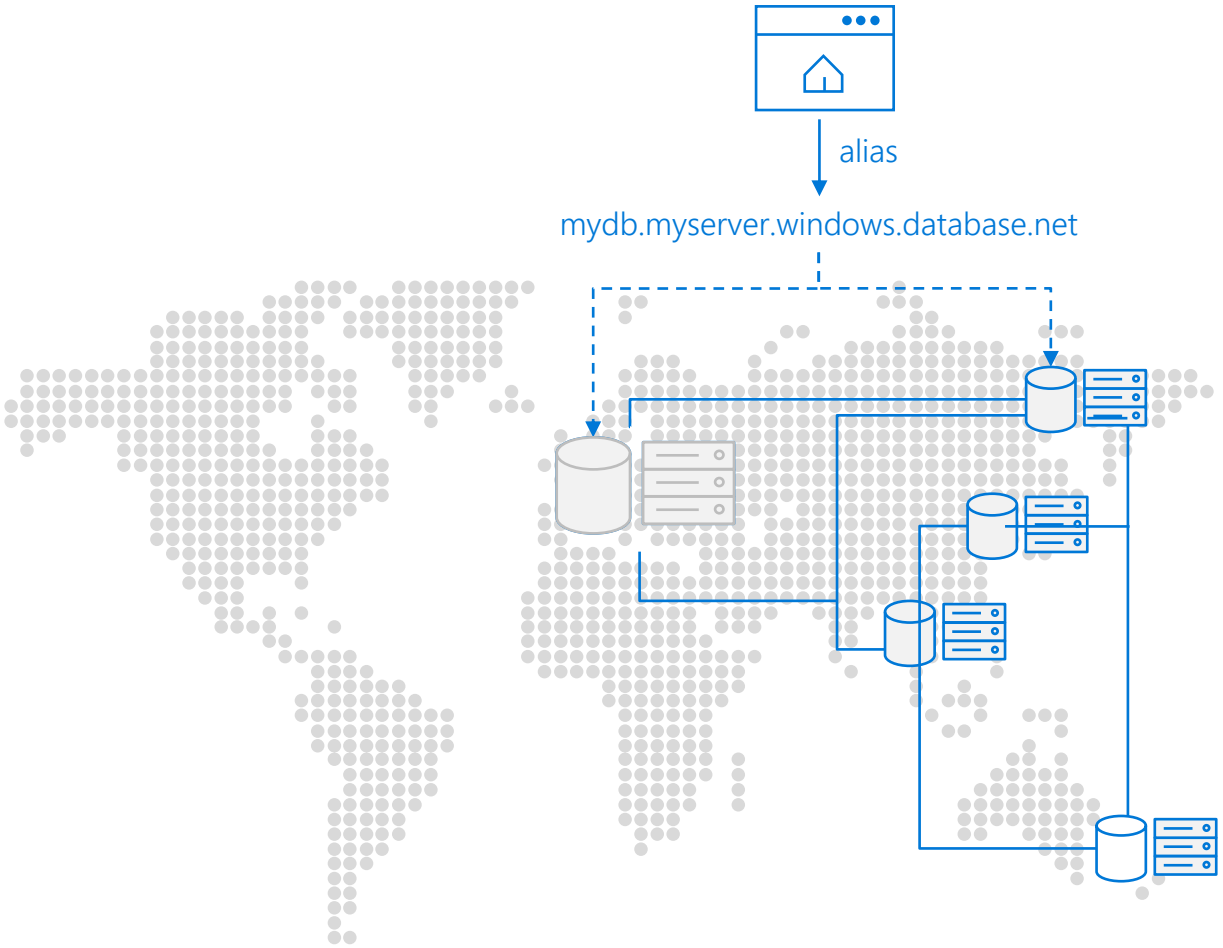
Configurable performance level of the secondary database

User-controlled failover and failback

Keeping credentials and firewall rules in sync

Failover groups extend geo-replication

- Enable geo-replication for a group of databases within a server.
- Automatically or manually failover a group of databases.
- Available for all service tiers.
- Configure the auto-failover policy that best meets your application needs.
- Usage of and listener end-points.
- DNS record is automatically updated.



*Currently in private preview - Microsoft Confidential – Shared Under NDA Only

Auto-failover group capabilities

Failover group

Failover group listener

Automatic Failover Policy

Grace Period with Data Loss

Active geo-replication vs auto-failover groups

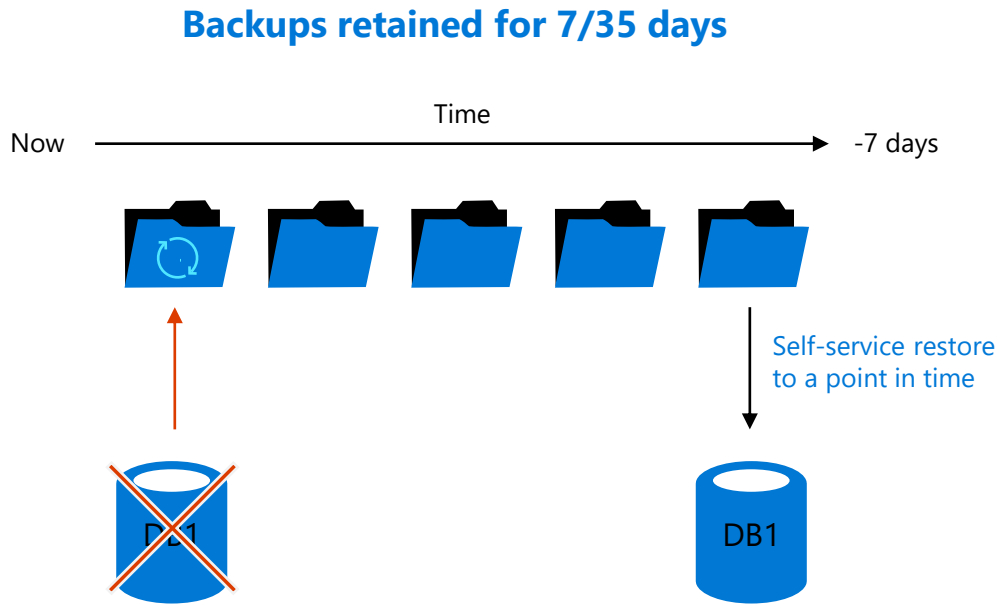
	Geo-replication	Auto-failover groups
Automatic failover	No	Yes
Fail over multiple databases simultaneously	No	Yes
Update connection string after failover	Yes	No
Managed instance supported	No	Yes
Can be in same region as primary	Yes	No
Multiple replicas	Yes	No
Supports read-scale	Yes	Yes

Questions?

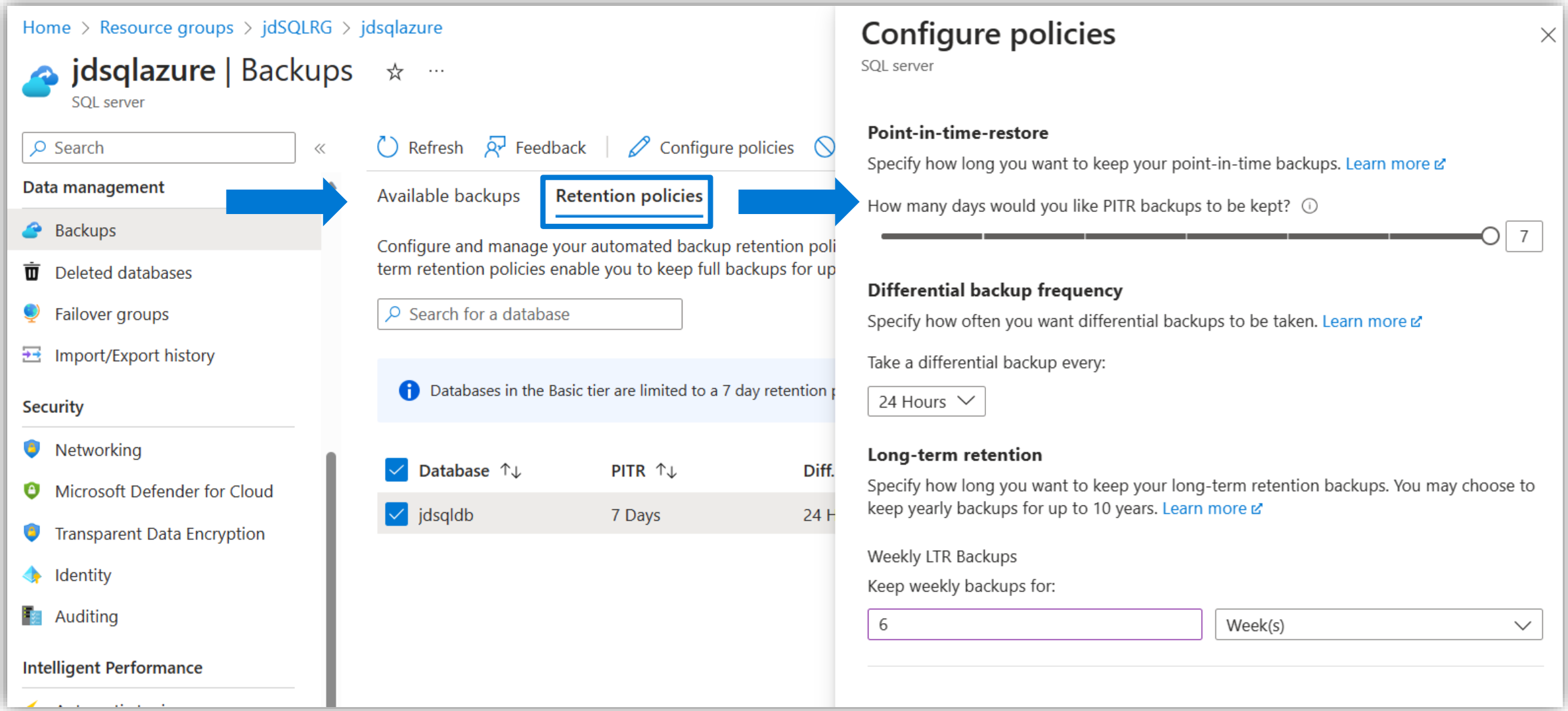
Backup and restore

Auto backups and Point in Time Restore (PITR)

- Full Database backup once a week
- Log Backups every 5-10 minutes
- Differential Backups every 12-24 hours
- Backup files on Azure storage with RA-GRS replicated
  - Can optionally select LRS or ZRS
- Backup Integrity checks
- Restore to new database
- Point-in-Time retention defaults to 7 days (up to 35 days)
- Long-term retention (up to 10 years) of backups
- Geo-restore of databases if primary region down
- Restore backups of deleted databases



Setting Backup Policies



Recover an Azure SQL database

By default, Azure SQL Database backups are stored in **geo-replicated blob storage** (RA-GRS storage type).

The following options are available for database recovery from automated database backups. You can:

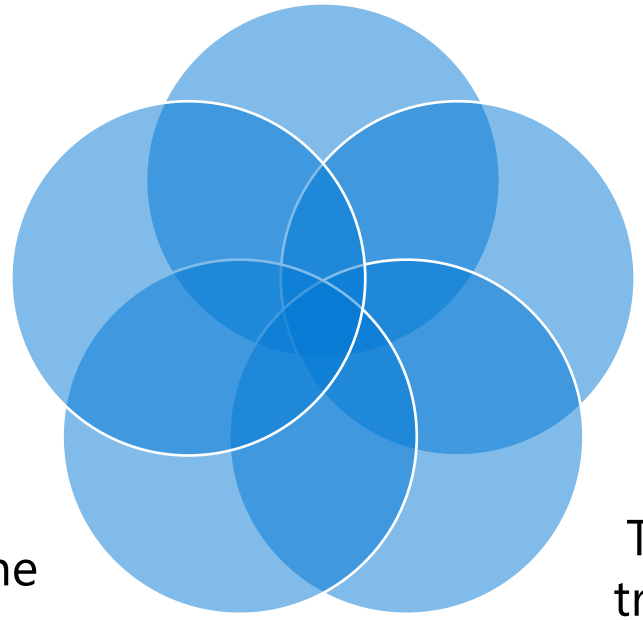
- Create a **new database** on the **same SQL Database server**, recovered to a specified point in time within the retention period.
- Create a **database** on the **same SQL Database server**, recovered to the deletion time for a deleted database.
- Create a **new database** on any SQL Database server **in the same region**, recovered to the point of the most recent backups.
- Create a **new database** on any SQL Database server **in any other region**, recovered to the point of the most recent replicated backups.

If you configured backup long-term retention, you could also create a new database from any long-term retention backup on any SQL Database server.

Factors Affecting Recovery Time

Size of the database.

Number of concurrent restore requests.



Performance level of the database.

The network bandwidth if the restore is to a different region.

The number of transaction logs involved.

Lesson 7: Maintenance Automation

Automating Maintenance

Maintenance Tasks

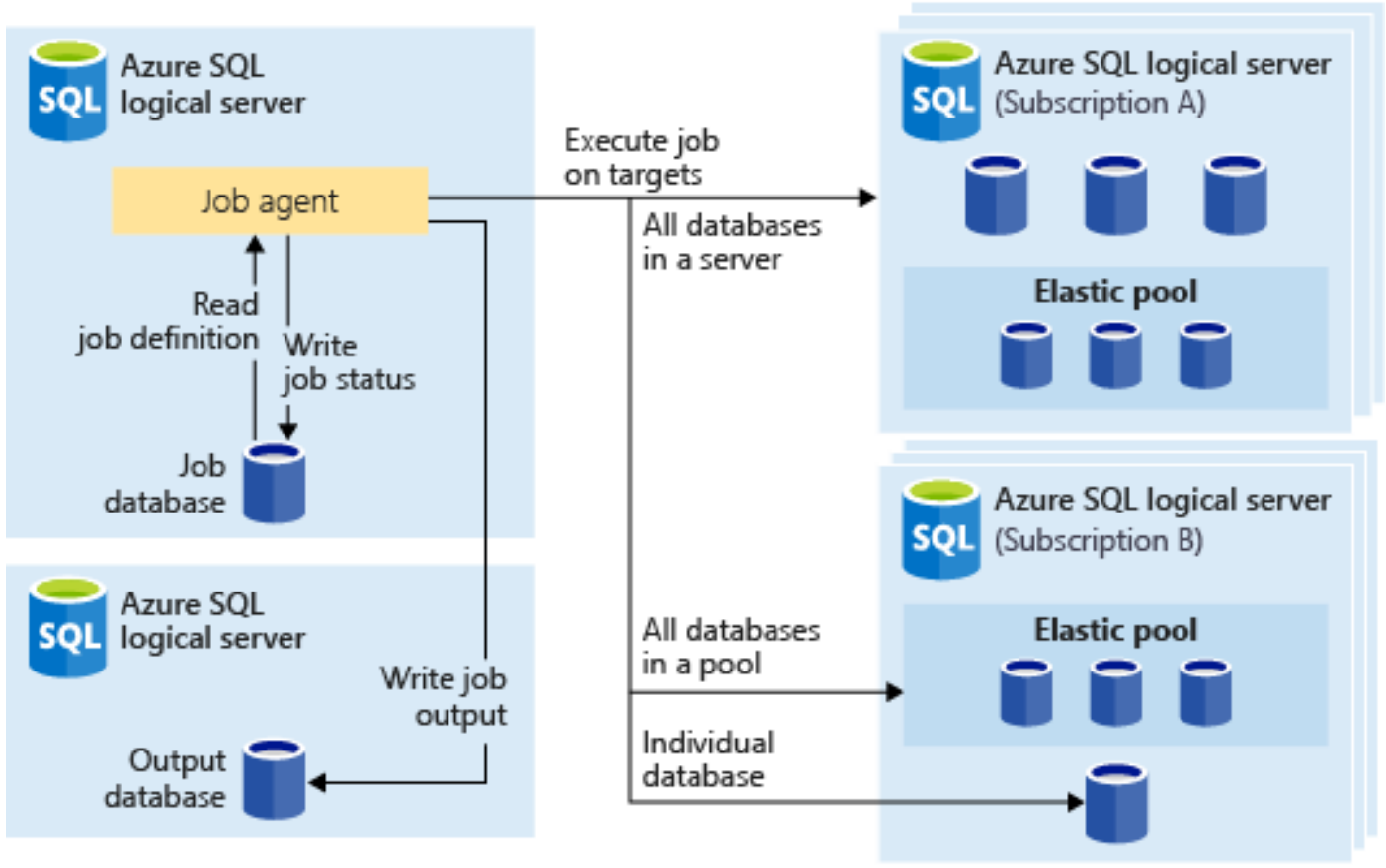
- Index maintenance same as On-Premises.
- Update statistics same as On-Premises.
- Support for running DBCC CHECKDB

Scheduling Jobs

- Azure SQL Database does not support SQL Server Agent.
  - You can use SQL Server Agent to schedule jobs from On-Premises if the Azure SQL Database is setup as a Linked Server.
- Use Elastic Database Jobs or Azure Automation instead.

What are Elastic Database Jobs?

Elastic Database Jobs provide the ability to run one or more T-SQL scripts in parallel, across a large number of databases, on a schedule or on-demand.



Elastic Job Components

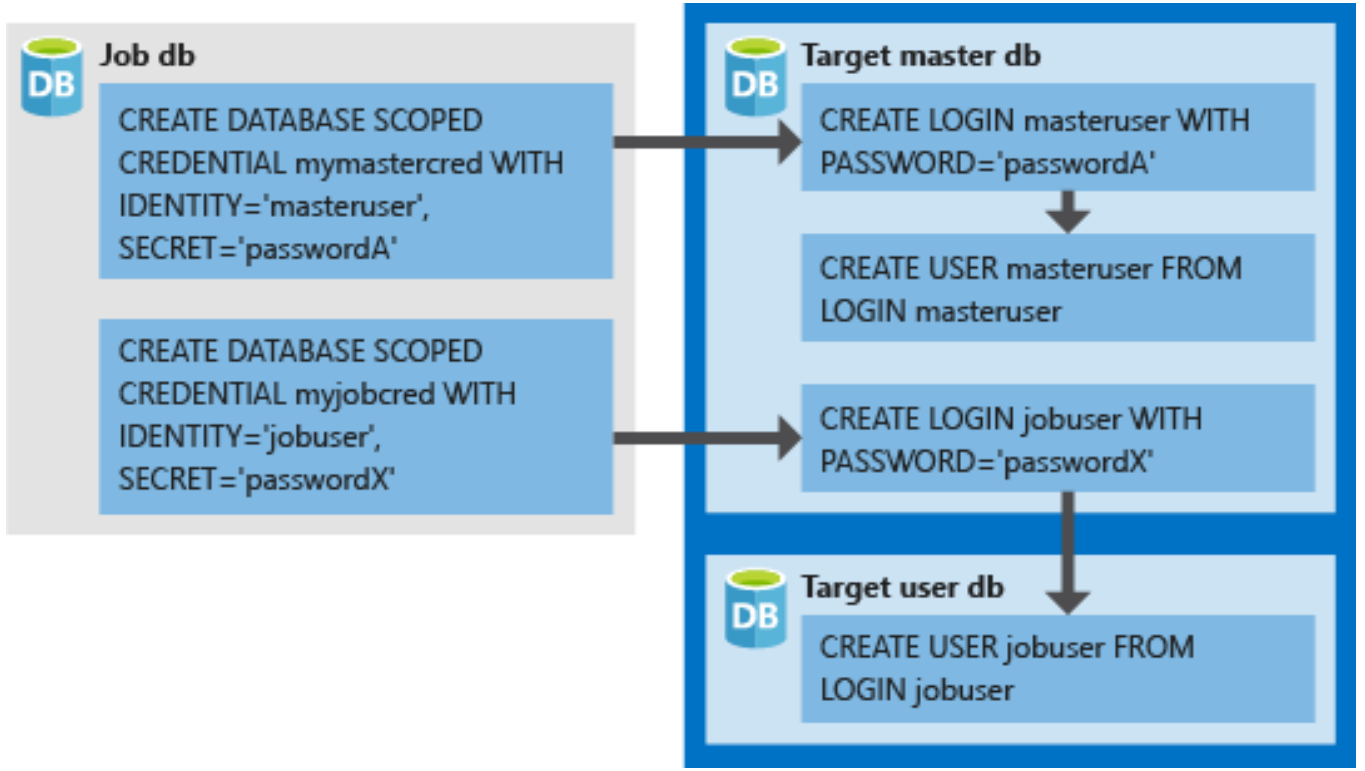
Component	Description
Elastic Job Agent	The Azure resource you create to run and manage Jobs.
Job Database	An Azure SQL database the job agent uses to store job related data, job definitions, etc.
Target Group	The set of servers, pools, databases, and shard maps to run a job against.
Job	A job is a unit of work that is comprised of one or more job steps. Job steps specify the T-SQL script to run, as well as other details required to execute the script.

Credentials for running jobs

Database Scoped Credentials

Used to connect to master database

Create a user in every database.

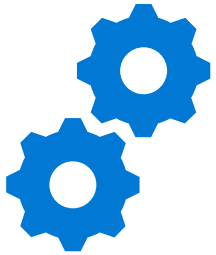


Questions?

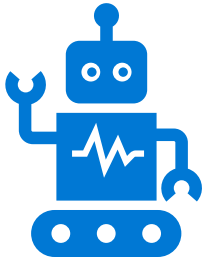
Azure Automation

Microsoft Azure Automation provides a way for users to automate the manual, long-running, error-prone, and frequently repeated tasks that are commonly performed in a cloud and enterprise environment.

Azure Automation - Runbook



Automating processes with runbooks.



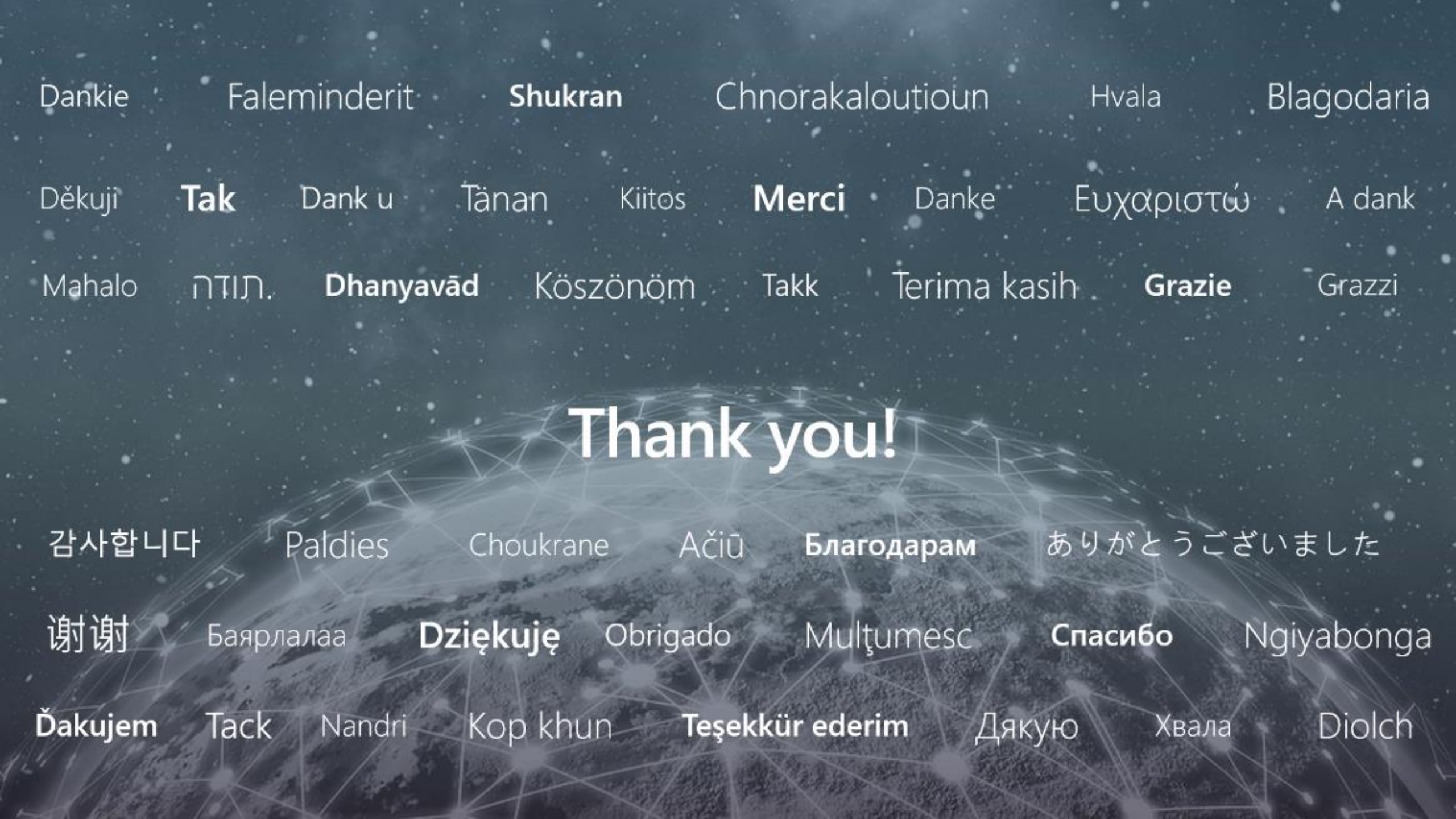
Runbook is a set of tasks that perform some automated process in Azure Automation.

Based on Windows PowerShell/ Windows PowerShell Workflow.

Azure Automation vs. SQL Server Agent Job

Azure Automation	SQL Server Agent Job
Create an Azure Automation Account	Create an SQL Server Agent Job
Create a runbook	Create a Job Step
Test the runbook	Start Job at Step
Publish the runbook	Save the job
Schedule the runbook	Schedule the SQL Server Agent Job
View jobs of the runbook	View History

Questions?


Dankie
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A dank
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Köszönöm
Takk
Terima kasih
Grazie
Grazzi
Thank you!
감사합니다
Paldies
Choukrane
Ačiū
Благодарам
ありがとうございました
谢谢
Баярлалаа
Dziękuję
Obrigado
Mulţumesc
Спасибо
Ngiyabonga
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