

SQL KONFERENZ 2026

SQL
KONFERENZ
2026

SQL : ground to cloud innovation for the era of AI





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Microsoft

GPM in SQL team (Azure Data organization). One of the Azure SQL product leaders focusing on migration and modernization of SQL workloads in Microsoft cloud.

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AI is transforming the world



Data is the fuel that powers AI

SQL – ground to cloud to fabric

The AI-ready enterprise database from ground to cloud

Develop once deploy anywhere



SQL Server 2025



Azure SQL



SQL database in Fabric

T-SQL

Developers



Engine



Tools



Fabric



AI



Copilots

SQL 2025 Database Engine

Develop once deploy anywhere

AI built-in | Built for developers | Mission Critical

AI built-in: what are the features?

Build Agentic RAG patterns *Inside* the engine



Vector Store
Native vector data type and DiskANN index*

Model Management
Secure Model definitions ground or cloud

Embeddings built-in
Text Chunking and embedding generation

Simple semantic searching with hybrid
Vector distance (KNN) and Vector search (ANN)*

Framework integration
LangChain, Semantic Kernel, EF Core, Agent Framework

*Enabled by PREVIEW_FEATURES

Built for developers

Develop modern data applications





Data API Builder

REST or GraphQL

JSON

JSON type, index, and updated T-SQL functions

Change Event Streaming*

Consume log change events

T-SQL

RegEx and other T-SQL functions

REST API

Connect your data to ***any*** REST interface with HTTPS

{ REST }

gpt-oss

There's more...

GitHub Copilot for MSSQL

Microsoft Python Driver for SQL Server

* Enabled by PREVIEW_FEATURES

Mission Critical Engine

Performance and Availability for your modern database



Improve Concurrency

- Optimized Locking
- Abort Query Hint
- Tempdb resource governance

Accelerate Performance

- IQP enhancements
- Columnstore indexes
- Query store on read replicas

Increase HADR

- Reliable Failover for AGs
- AG Tuning and diagnostics
- Backup enhancements

Industry proven engine

Enhancing the industry proven engine

Security

- Security cache improvements
- OAEP support for encryption
- PBKDF password hashing
- Authentication using system-assigned managed identity
- Backup to URL with managed identity
- Managed identity support for EKM
- Managed identity for AI models
- Entra logins with nonunique display names
- Custom password policy on Linux
- TDS 8.0/TLS 1.3 support for tools and features

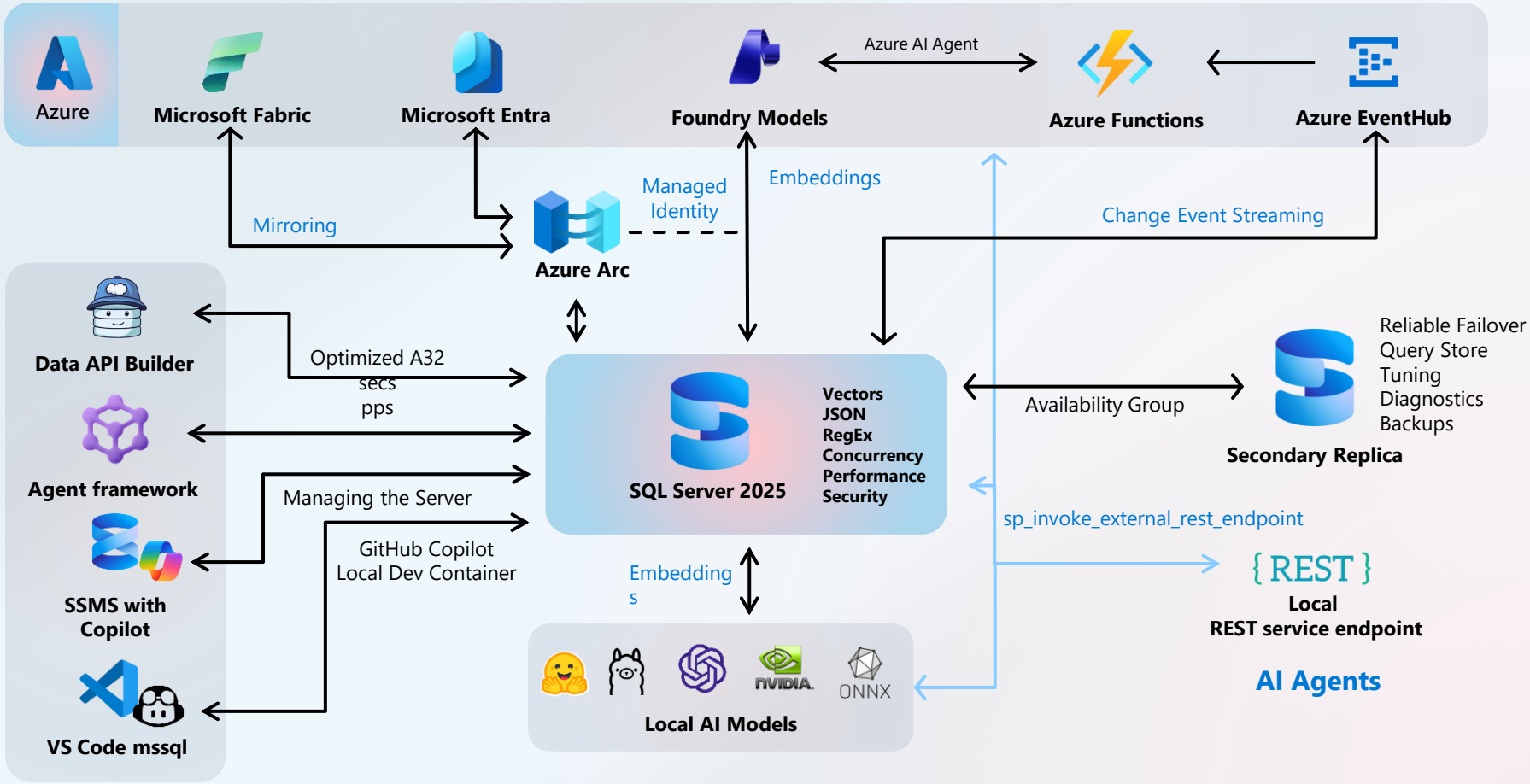
Performance

- Optimized Locking
- Tempdb space resource governance
- ADR in tempdb
- Persisted stats for readable secondaries
- Change tracking cleanup
- Columnstore index maintenance
- CE feedback for expressions
- Optional parameter plans optimization
- DOP feedback on by default
- Query store for readable secondaries
- ABORT_QUERY_EXECUTION query hint
- Optimized sp_executesql
- Batch mode optimizations
- Remove In-Memory OLTP from a database
- tmpfs support for tempdb in Linux

HADR

- Fast failover for persistent AG Health
- Async page request dispatching
- Improved health diagnostics
- Communication control flow tuning
- Switching to resolving state
- Remove listener IP address
- NONE for routing
- AG group commit waiting tuning
- Contained AG support for DAG
- DAG sync improvements
- Backups on secondary replicas
- ZSTD Backup compression
- Backup to Azure immutable storage

The SQL Server 2025 Platform Architecture





SQL



Migrate &
Modernize



Cloud-Native
AI Apps



Unified Data
Platform



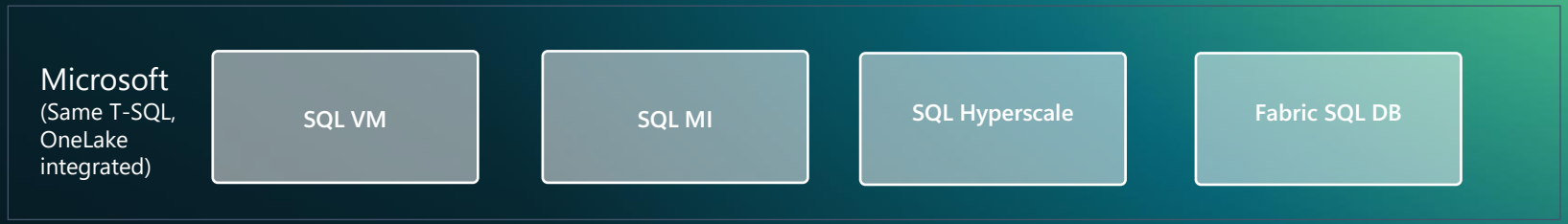
SQL



Migrate &
Modernize

Microsoft is the Best Cloud for SQL Server Workloads

One SQL engine, multiple deployment modes same T-SQL, same skills



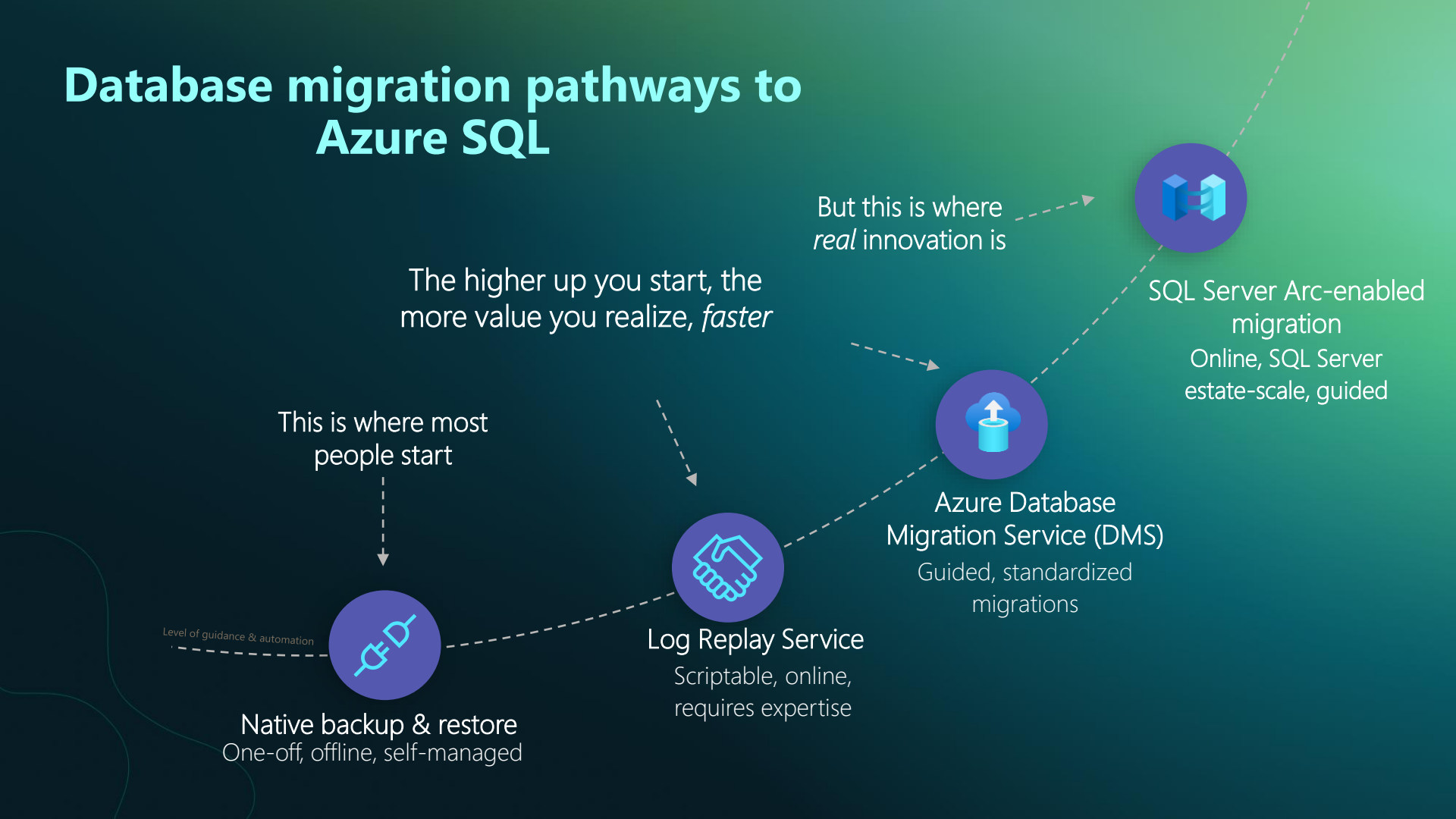
Easy start: lift & shift with OS access

Modernized Instance: removed OS mgmt, patching, built-in BCDR, retained instance model

Cloud-native DB: elastic scale for modern Apps

SaaS: analytics integrated + lowest ops

Database migration pathways to Azure SQL



Simplified SQL Server Arc-enabled migration

End-to-end AI-assisted experience from assessment to cutover



Continuous assessment



Recommended price & SKU



Zero downtime & clean cutover

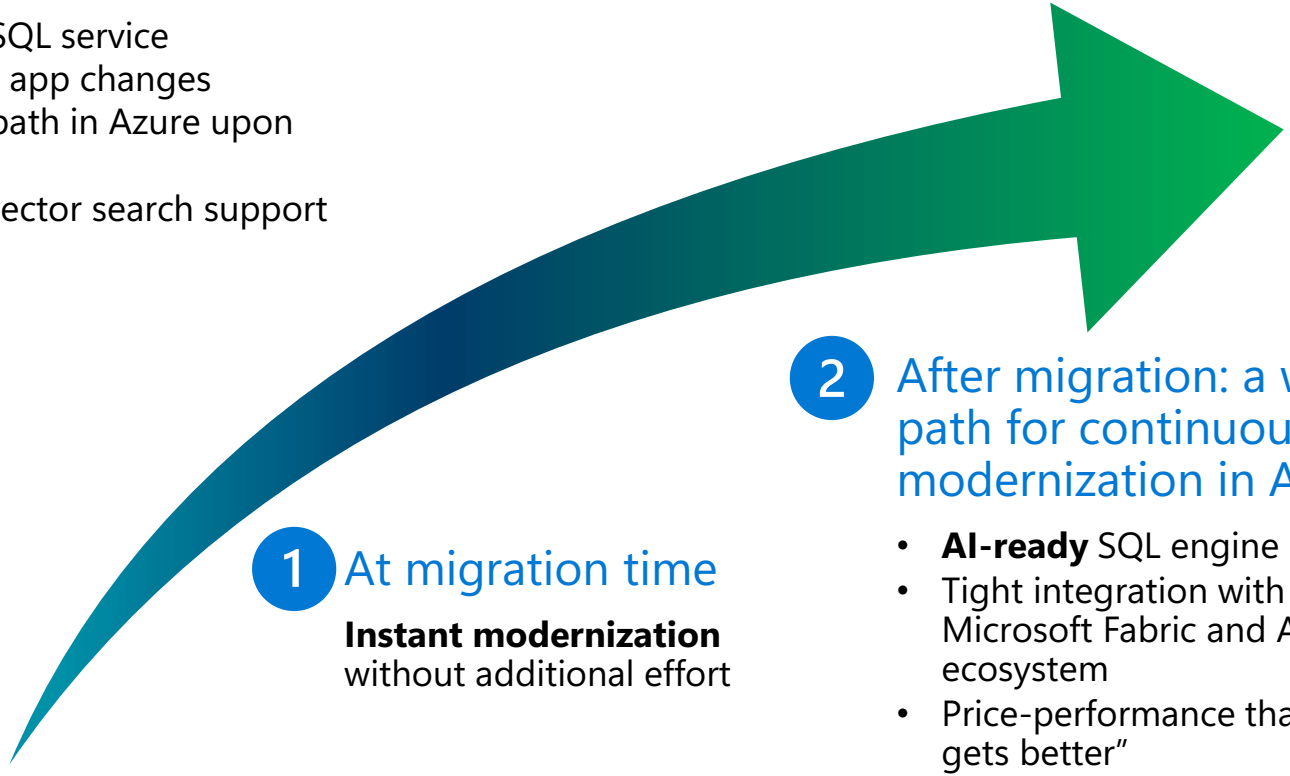


Automated client connection insights

Azure SQL Managed Instance

Lowest barrier of entry to modernize, AI-Ready out of the box

- Fully managed SQL service
- Zero or minimal app changes
- Modernization path in Azure upon migration
- Built-in AI and vector search support



1 At migration time

Instant modernization without additional effort

2 After migration: a wide path for continuous modernization in Azure

- **AI-ready** SQL engine
- Tight integration with Microsoft Fabric and Azure ecosystem
- Price-performance that "just gets better"

Azure SQL Managed Instance

Modernize SQL Server data at scale to a fully managed database as a service

Optimize performance for mission critical workloads

Evergreen compute and storage technologies

Optimized automatically through ML-based tuning

Up to **93% lower cost** compared to the competition

Increase DBA productivity

Fully managed and **always up to date** service

Performs time-consuming tasks on your behalf

Accelerates deployment and **scaling**

Keep your data secure and available

Industry-leading, multi-layered protection

Built-in **high availability** and **SLA up to 99.995%**

Built-in controls and **leading compliance**

Enable hybrid flexibility for SQL data stored anywhere

Cloud connectivity and Azure innovation **extended to on-premises**

Migration options on your terms

Unified management across environments

Modernize with AI

Support for **native vector data type** and **functions**

Fast, **accurate vector indexing** and search with DiskANN

Real time analytics with zero ETL using Fabric mirroring

SQL MI Next-gen GP capabilities vs. classic GP and BC

Category	Item	Classic GP	Next-gen GP	BC
Storage model	Performance limits	Per-file	Per-instance	Per-instance
Storage performance	Average I/O latency	5-10 ms	**3-4 ms**	**1 ms**
	Max data IOPS	<50k IOPS (*)	**80k IOPS (*)**	**320k IOPS**
	Max data throughput	~500 MB/s (*)	**1200 MB/s (*)**	**Unlimited**
	Max log rate	120 MB/s	**192 MB/s**	**192 MB/s**
Storage scalability	Max storage	16 TB	**32 TB**	16 TB
	Max DBs/instance	100 DBs	**500 DBs**	100 DBs
	Max files/instance	230 files	32k files	32k files
	IOPS slider	No	**Yes**	No
Compute scalability	Min vCores	4 vCores	4 vCores	4 vCores
	Max vCores	80 vCores	128 vCores	128 vCores
	Num. of vCore sizes	8 click stops	16 click stops	16 click stops
	Memory slider	No	**Yes**	No

Next-gen GP and BC offer optimal customer experience

BC provides the best storage performance

Next-gen GP provides the best storage scalability

Next-gen GP and BC offer resource flexibility

(*) subject to VM-level network limits – more pronounced for smaller instances

Update Policy in Azure SQL MI

Optimizing for latest SQL engine features vs. database portability/mobility

Always-up-to-date

Get **new SQL engine features** as soon as they are available in Azure.

Database format diverges and disables backup-restore and physical replication to SQL Server.

Export/import and transactional replication **remain available** for copying database to SQL Server.

SQL Server 2022

Cumulative Updates with security patches and bug fixes, and **no new SQL engine features**.

Can **restore SQL MI backup to SQL Server 2022** hosted anywhere.

Can create MI link **from SQL MI to SQL Server 2022.**

Generally Available!

SQL Server 2025

New **default** update policy aligned with SQL Server **2025 feature set**.

Cumulative Updates with security patches and bug fixes, and **no new SQL engine features**.

Can restore SQL MI backup or physically replicate data **to SQL Server 2025** hosted anywhere.

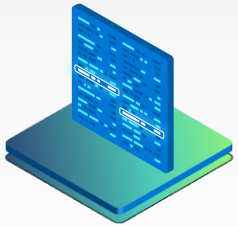
New Azure SQL **platform features** keep coming to all instances.

Classified as Microsoft Confidential

Try Azure SQL Managed Instance free of charge

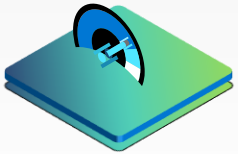
Get **750 vCore hours** of compute and **64 GB of storage** every month!

More than enough compute



Intel® Xeon® Scalable 2.8 GHz processors provide ample performance for your dev/test or proof of concept requirements.

Use it for 12 months



Use this free offer to support your migration proof of concepts for 12 months.

You're in control



Optimize your monthly available vCore hours by stopping and starting the instance when necessary.

What's included:

Up to two instances per Azure subscription with 4 or 8 vCores of general purpose compute and 750 vCore hours per month.

32 GB data storage +
32 GB backup storage.

Learn More: aka.ms/freesqlMI



SQL



Cloud-Native
AI Apps

Azure SQL Database Hyperscale

Build new, highly scalable AI applications for the price of commercial open-source databases

Highly scalable

- Compute and storge scale independently
- Auto-scales quickly up to 128TB
- Supports up to 128 vCores
- Consistent performance, regardless of operation size

Highly performant

- Low latency, high throughput
- Log throughput independent of compute
- Read scale-out support with up to 30 named replicas
- Snapshot-based backups
- Rapid database restore

AI-ready

- Native vector search
- Support for Langchain, Semantic Kernel and more
- Azure OpenAI and Azure AI Foundry integration
- Copilot support

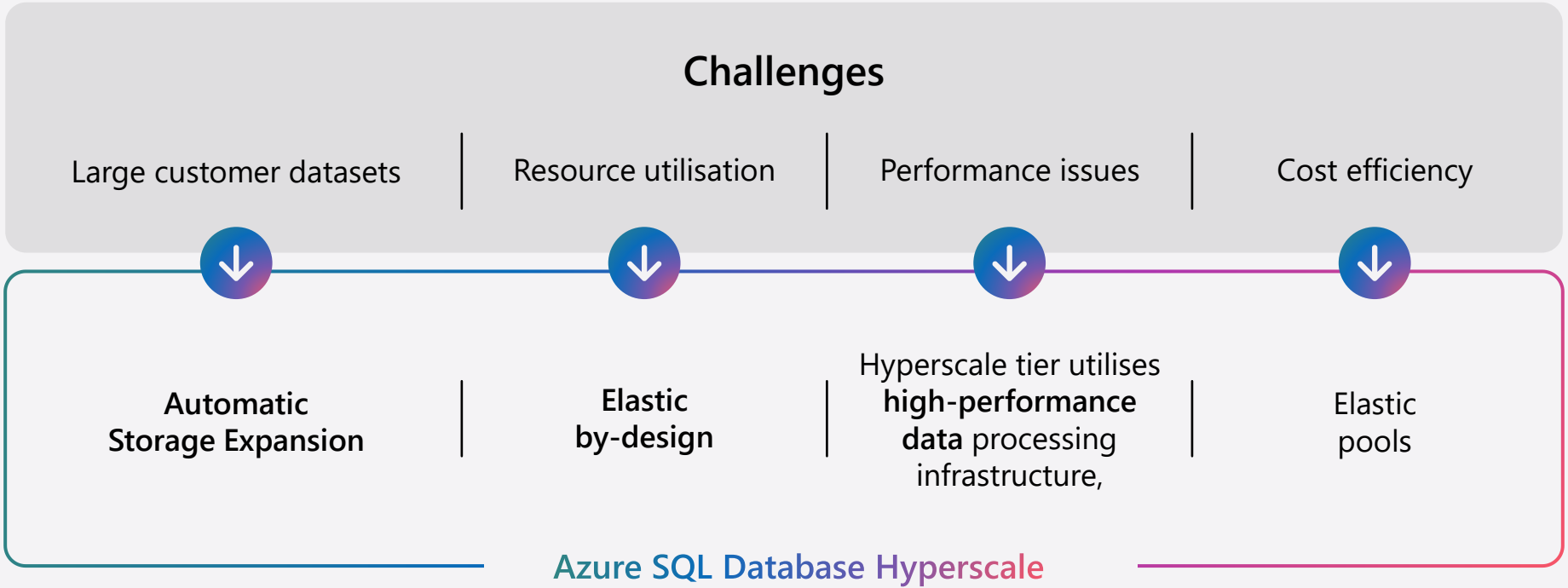
Cost management

- Commercial open-source pricing
- Pay only for what you use
- Optimize costs with elastic pools

Reliable and secure

- Multiple levels of redundancy
- No single points of failure
- Tamper-evident ledger capability
- 99.995% availability SLA

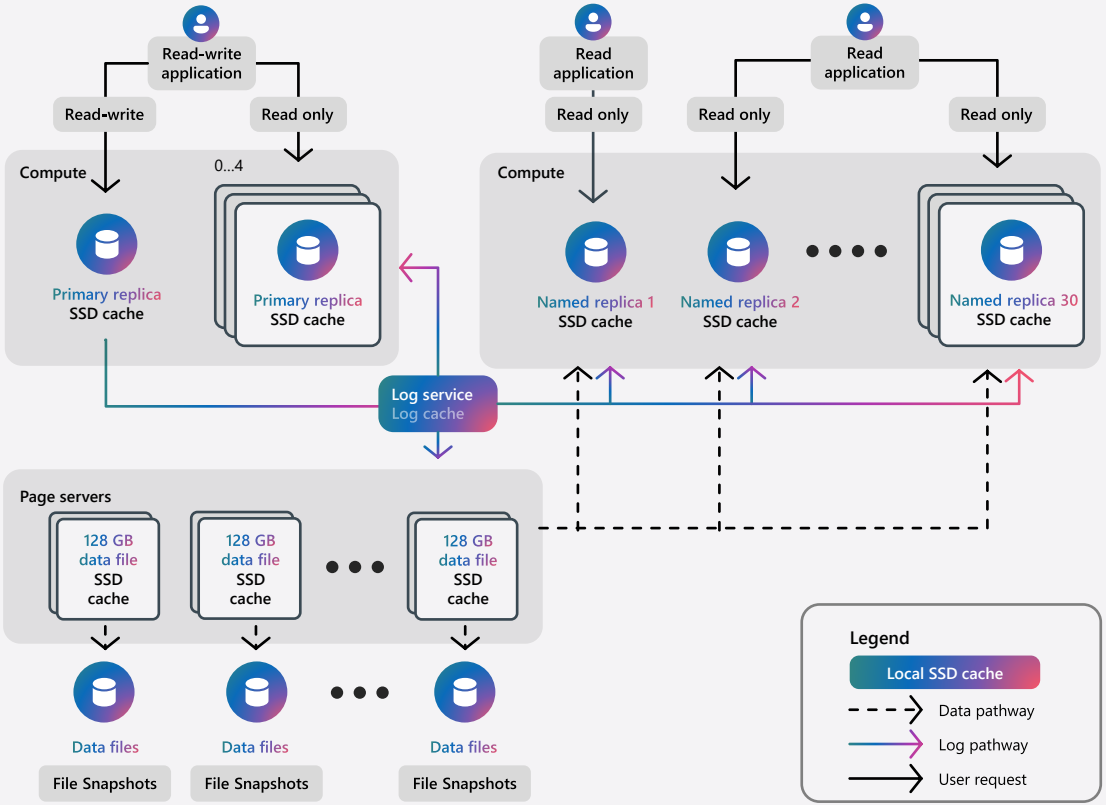
Why customers chose Azure SQL Database Hyperscale



Built-for-the cloud architecture enables near-limitless growth potential

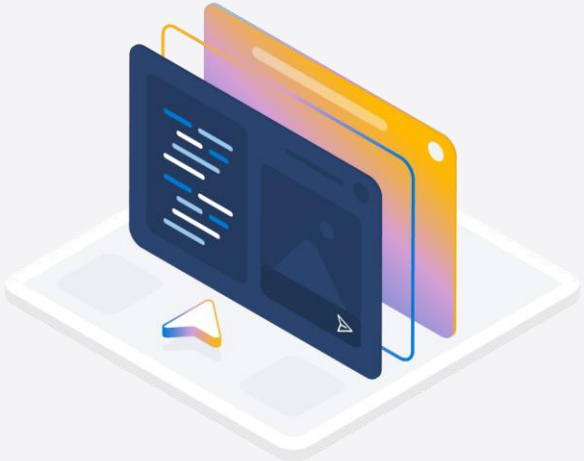
Distributed, scale-out & resilient

- Separation of compute & storage
- Compute with smart SSD cache
- Externalized log service
- Paired page servers, fully covering SSD (“RBPEX”) cache
- Redundant data and log in Azure Storage
- 0 to 4 secondary HA replicas
- 0-30 named replicas for read scale
- Fast Backup/Restore via storage snapshots



Build intelligent applications on Azure SQL Database Hyperscale

- Vectors and native vector type/functions
- Integration with Langchain, EF Core, Semantic Kernel and Logic apps
- Azure OpenAI for building RAG apps
- Azure AI Search
- Microsoft Foundry



- Azure Open AI Service
- Azure AI Search
- Microsoft Foundry
- LangChain
- Semantic Kernel & Agent Framework
- EF Core
- Logic Apps

Hyperscale: Best for Mission Critical Apps

128 TB

Max database size auto-scales from 10 GB

128 vCores

Compute power up to 10.2 GB/vCore memory

30+

Named read replicas for read scale-out

99.995 %

Availability SLA with zone redundancy

150 MiB/s

Transaction log throughput independent of compute

Cost efficiency

Fine grained billing | Scale to zero | Pool for multi-tenancy

SQL Elastic Pools

Share Resources to maximize utilization

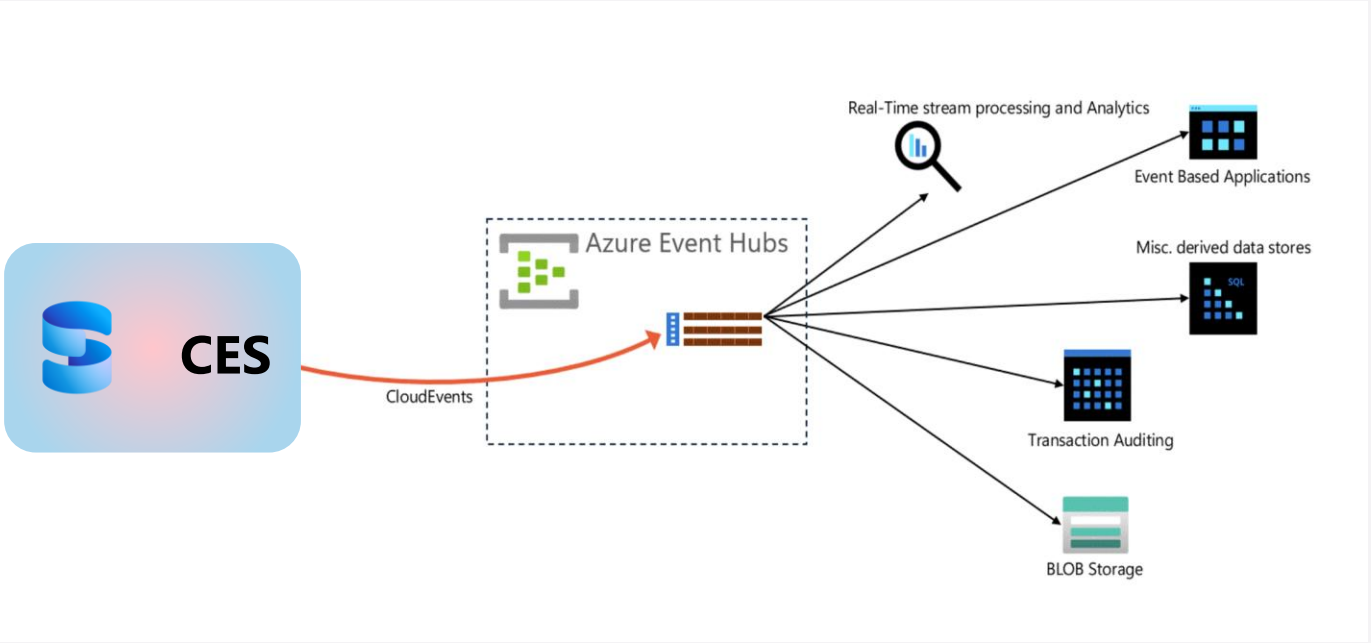


SQL Serverless

Virtually Infinite Elasticity



Change Even Streaming: enabler for real-time event processing



Scenarios

- Event-based microservices
- Real-time analytics
- Break down monoliths
- Cache update

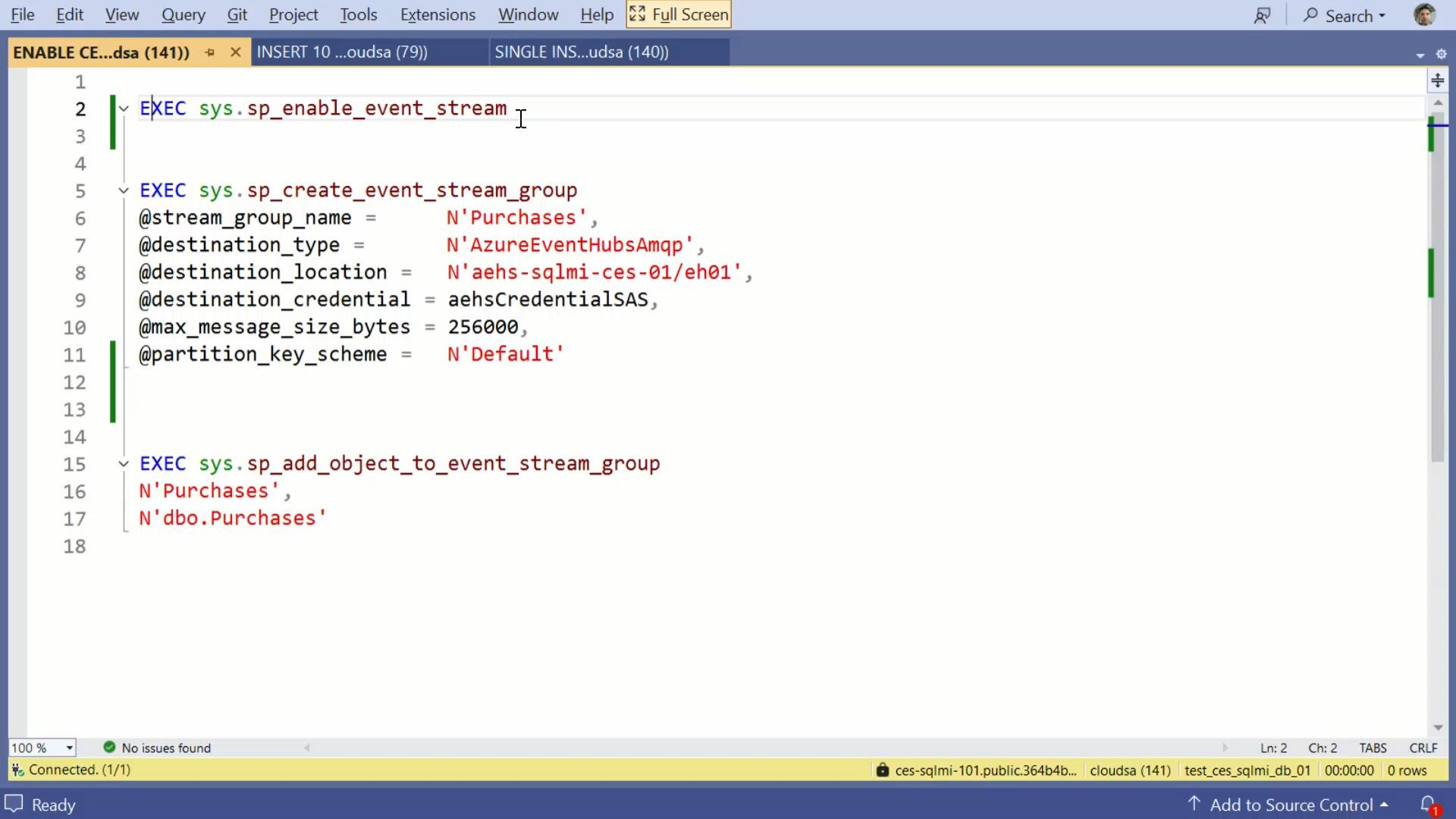
Benefits

- Reduced latency
- Simplified architecture
- Decoupling



Demo: Real time event processing with CES

Courtesy of Nikola Zagorac


File Edit View Query Git Project Tools Extensions Window Help Full Screen
Search
ENABLE CE...dsa (141))
INSERT 10 ...oudsa (79))
SINGLE INS...udsa (140))
EXEC sys.sp_enable_event_stream
EXEC sys.sp_create_event_stream_group
@stream_group_name = N'Purchases',
@destination_type = N'AzureEventHubsAmqp',
@destination_location = N'aehs-sqlmi-ces-01/eh01',
@destination_credential = aehsCredentialSAS,
@max_message_size_bytes = 256000,
@partition_key_scheme = N'Default'
EXEC sys.sp_add_object_to_event_stream_group
N'Purchases',
N'dbo.Purchases'
100 %
No issues found
Ln: 2 Ch: 2 TABS CRLF
Connected. (1/1)
ces-sqlmi-101.public.364b4b...
cloudsa (141)
test_ces_sqlmi_db_01
00:00:00
0 rows
Ready
Add to Source Control

File Edit View Query Git Project Tools Extensions Window Help Full Screen Search

ENABLE CES...udsa (76)) | Insert one ...udsa (130)) | INSERT 10 ...udsa (79))* | SINGLE IN...sa (102))*

```
1  use test_ces_sqlmi_db_01;
2
3  INSERT INTO [dbo].[Purchases] ([customer_name],[product_id],[product_name],[price_per_item],[quantity],[pu
4       VALUES ('Nikola Zagorac',127,'Bicycle',111,1,GETDATE() ,'Credit Card')
5
6
7
8  SELECT * FROM dbo.Purchases order by purchase_id desc
```

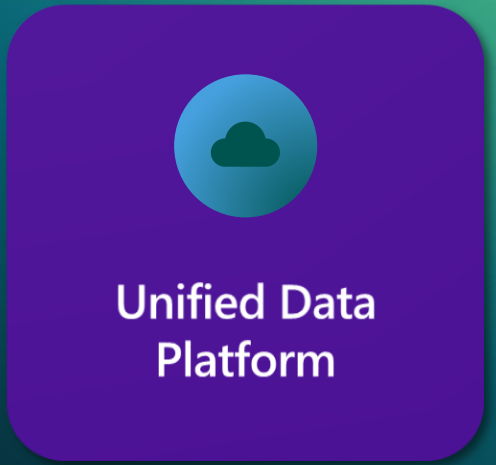
100 % | No issues found | Ln: 6 | Ch: 6 | SPC | CRLF

Connected. (1/1) | ces-sqlmi-101.public.364b4b... | cloudsa (102) | test_ces_sqlmi_db_01 | 00:00:00 | 0 rows

Ready



SQL

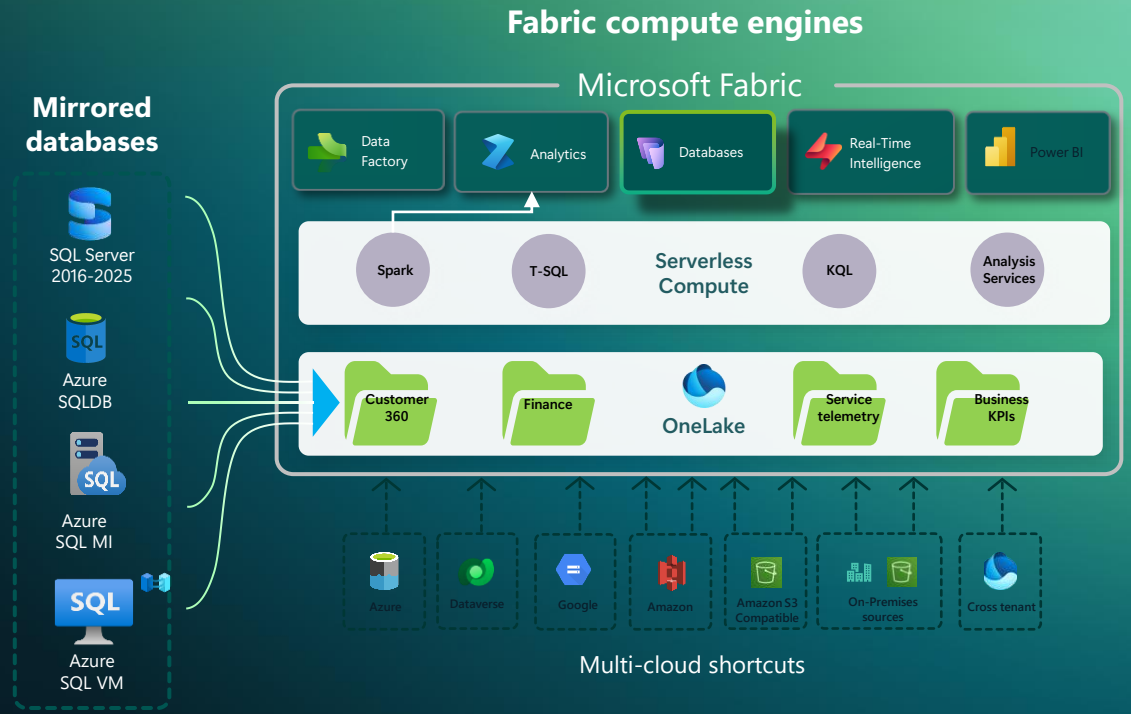


Database Mirroring

Zero ETL: every transaction, every update, every insert is automatically reflected in Fabric in near real time

Reduces complexity: no more custom pipelines to maintain

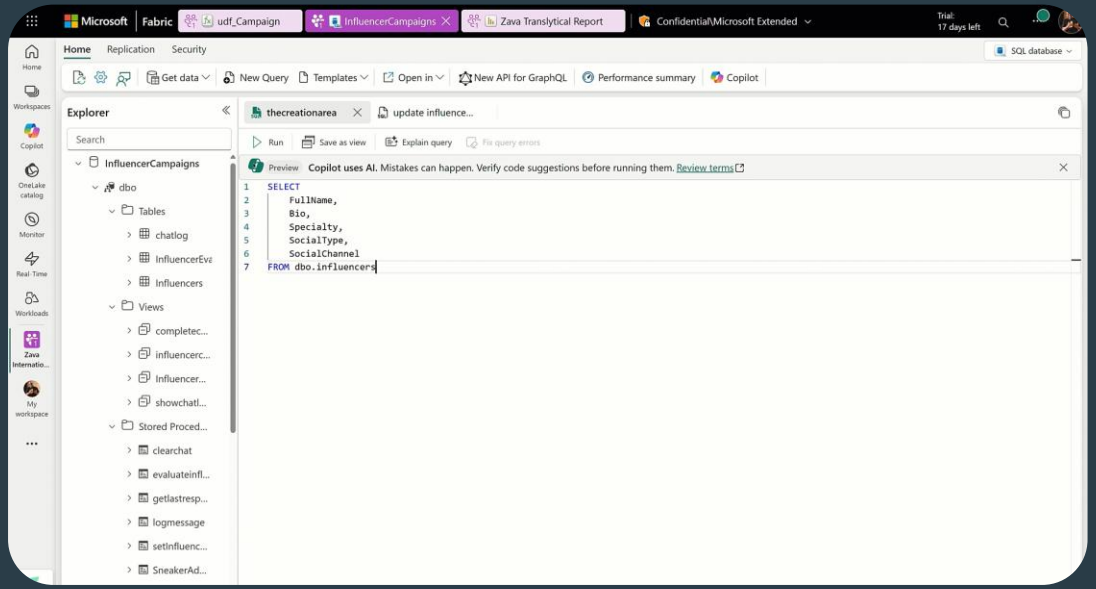
Ensures consistency: your analytics and AI are always working off the same source of truth as your apps



Fabric SQL Database

Reimagined for SaaS and now generally available across SQL and NoSQL

Ignite 2025



Simple to use with dev-friendly tools to unify OLTP and OLAP

Autonomous and secure with fast deployment, autoscaling, self-optimization, and more

Optimized for AI with built-in vector and RAG support

Power reverse ETL and app dev, from LOB to agentic



Demo: Building intelligent app with SQL in Fabric

Courtesy of Anna Hoffman

Zava Athletics

Products Cart Welcome, Anna! Logout

Our Products



Smart Cleats

Footwear

High-performance athletic cleats with smart tracking technology

$149.99

50 in stock

View Details



ZavaCore Elite Smart Mesh Athletic Pants

Bottoms

Premium athletic pants with advanced moisture-wicking smart mesh technology

$89.99

100 in stock

View Details



ZavaCore Elite Smart Mesh Athletic Shorts

Shorts

Elite performance shorts featuring breathable smart mesh fabric

$64.99

120 in stock

View Details



ZavaCore Elite Smart Mesh Long Sleeve Tee

Long Sleeve Tops

Long sleeve performance tee with temperature-regulating smart mesh

$74.99

80 in stock

View Details



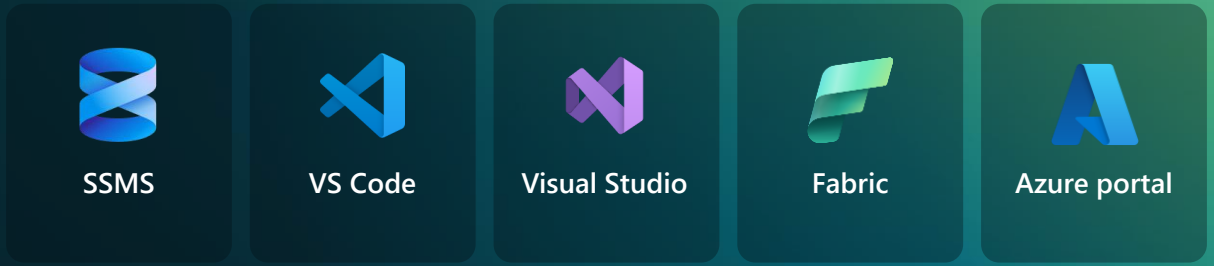






Microsoft SQL experiences

Meeting users where they are



Every database under source control

Consistent and tailored Copilot experiences

Trusted and reliable automated deployments

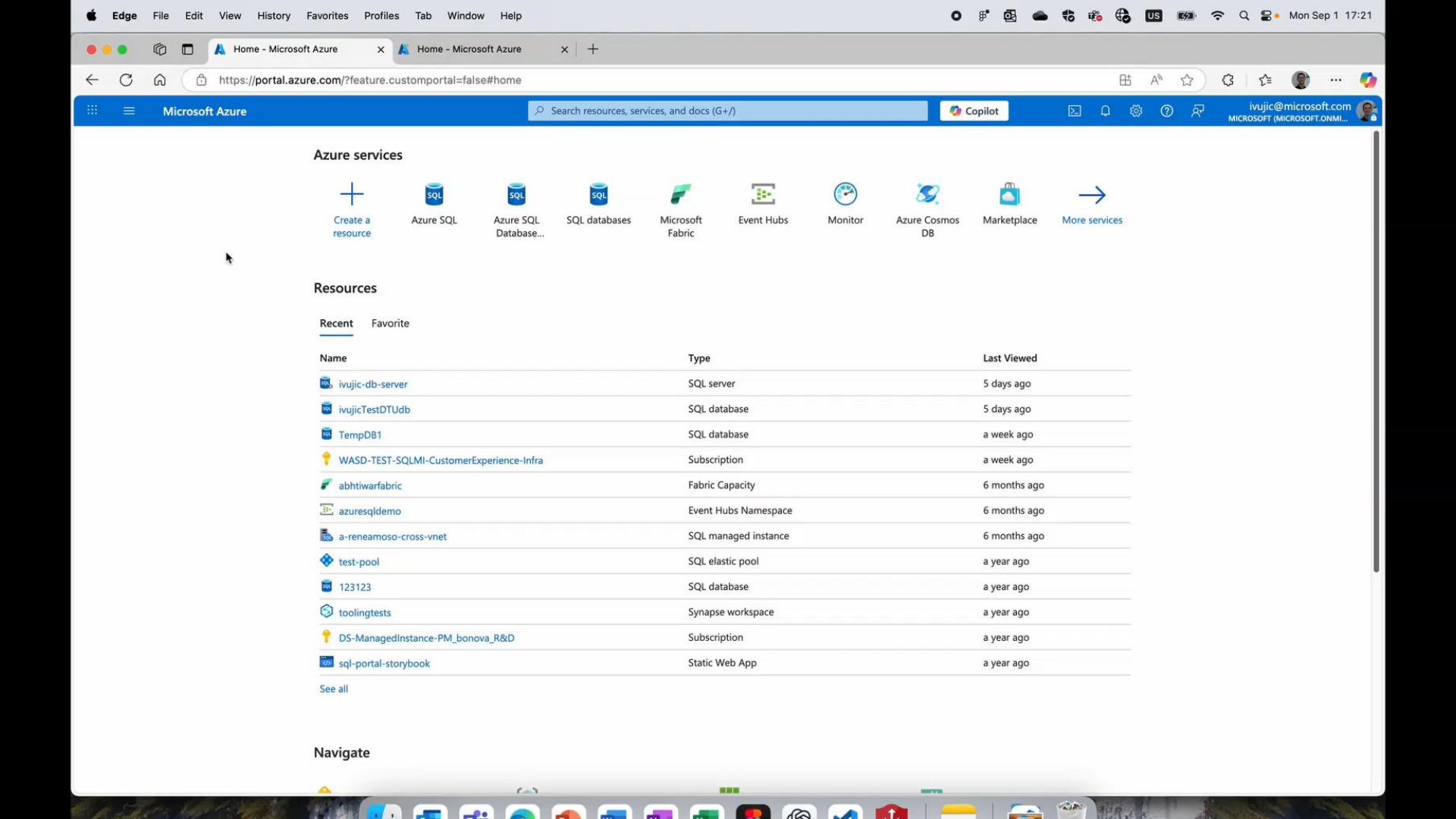
Modern drivers for modern workloads

Robust Data API and MCP Server



Demo: Getting started with Azure SQL Hub

Courtesy of Ivan Vujic


Edge File Edit View History Favorites Profiles Tab Window Help
Mon Sep 1 17:21
Home - Microsoft Azure
Home - Microsoft Azure
https://portal.azure.com/?feature.customportal=false#home
Microsoft Azure
Search resources, services, and docs (G+/)
Copilot
ivujic@microsoft.com
MICROSOFT (MICROSOFT.ONMI...
Azure services
Create a resource
Azure SQL
Azure SQL Database...
SQL databases
Microsoft Fabric
Event Hubs
Monitor
Azure Cosmos DB
Marketplace
More services
Resources
Recent
Favorite
Name
Type
Last Viewed
ivujic-db-server
SQL server
5 days ago
ivujicTestDTUdb
SQL database
5 days ago
TempDB1
SQL database
a week ago
WASD-TEST-SQLMI-CustomerExperience-Infra
Subscription
a week ago
abhtiwarfabric
Fabric Capacity
6 months ago
azuresqldemo
Event Hubs Namespace
6 months ago
a-reneamoso-cross-vnet
SQL managed instance
6 months ago
test-pool
SQL elastic pool
a year ago
123123
SQL database
a year ago
toolingtests
Synapse workspace
a year ago
DS-ManagedInstance-PM_bonova_R&D
Subscription
a year ago
sql-portal-storybook
Static Web App
a year ago
See all
Navigate



SQL



The database for all your needs



Migrate & Modernize



Cloud-Native AI Apps

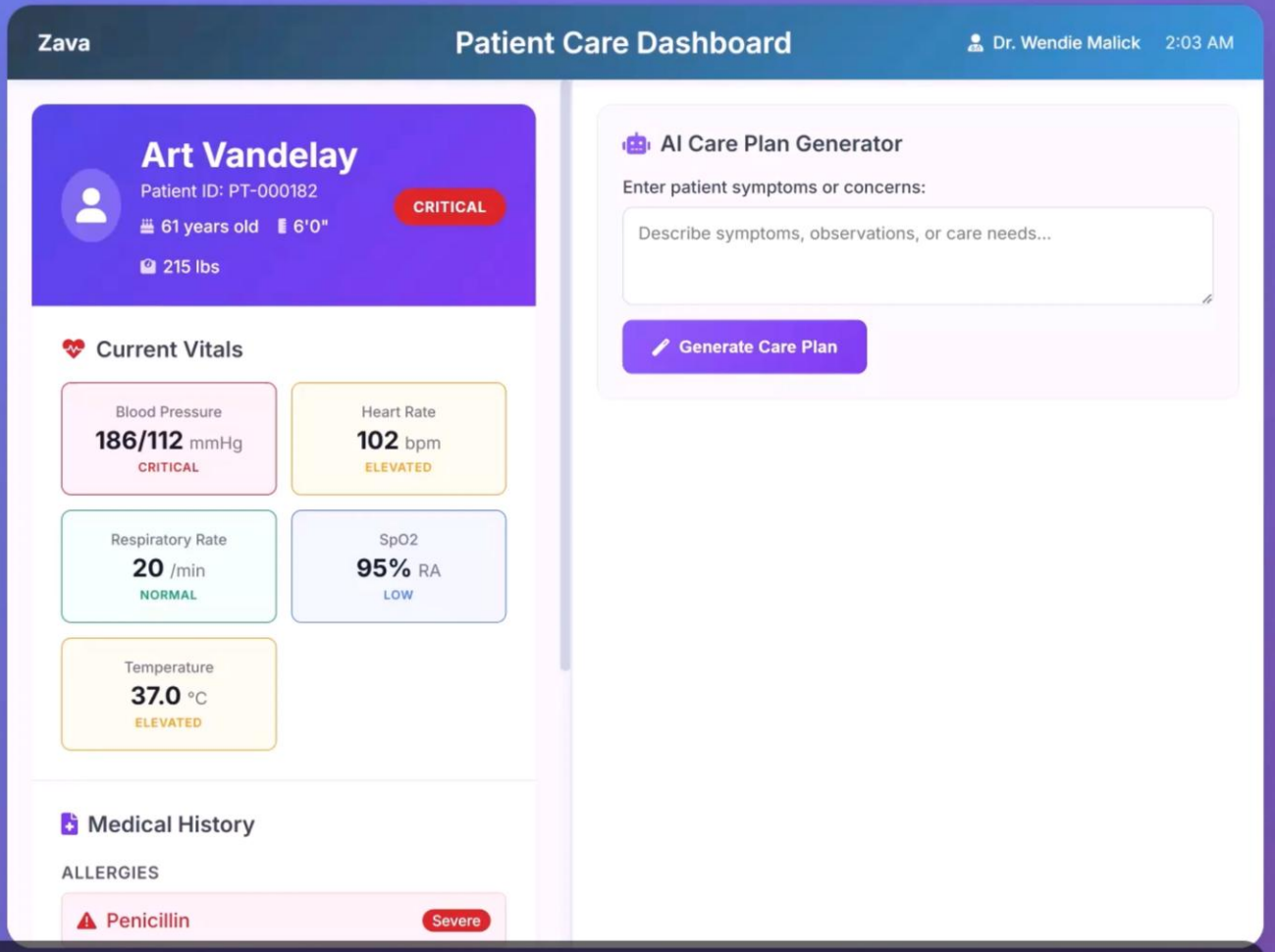


Unified Data Platform



Demo: SQL from ground to cloud to fabric

Courtesy of Bob Ward



DISCLAIMER: This is a demonstration interface. All patient information is fictional. This software does not provide medical advice and is not intended for clinical use. Always consult qualified healthcare professionals for medical decisions.

What you just saw?



SQL Server 2025



SQL Managed Instance – 2025 update policy &bi-directional MI link



SSMS with Github Copilot



AI built-in: AI_GENERATE_EMBEDDINGS, VECTOR data type and index, VECTOR_SEARCH, security functions

{REST} Developer features: sp_invoke_extrenal_rest_endpoint, JSON



Mirroring to OneLake and SQL Analytics Enpoint

The Future of SQL is at SQLCON

SQLCON

Microsoft SQL

COMMUNITY CONFERENCE

Georgia World Congress Center

Atlanta, GA

March 16-20, 2026

#SQLCON

aka.ms/sqlcon

Learn more

Getting started	Free offers: • aka.ms/SQLFreeOffer • aka.ms/freesqlMI Azure SQL DB Essentials: aka.ms/AzureSQLDBEssentials
AI and Azure SQL	Intelligent apps with Azure SQL: https://aka.ms/sqlai and aka.ms/sqlaisamples Generative AI with Azure SQL hands-on lab: https://github.com/AzureSQLDB/GenAILab Copilot in SQL Server Management Studio: http://aka.ms/ssmscopilot
SQL Migrations in Arc	aka.ms/arc-migrations-docs
Azure SQL blogs and videos	aka.ms/AzureSQLBlog aka.ms/AzureSQLDevBlog aka.ms/AzureSQLyt

Coming Spring 2026

SQL AI Database Developer Associate Certification

Empower Your Future with AI-Ready SQL Development Skills:

- AI-augmented SQL development
- Building AI-powered LLM-integrated apps
- Security, governance and responsible AI



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Thank you!

Session feedback code

