

Microsoft Fabric Databases

Kamil Nowinski





Kamil Nowinski

Microsoft Data Platform **MVP**, Databricks Champion
Speaker, blogger, **YouTuber**, data enthusiast

Group Manager at [Avanade UK&I](#)

>20 years of experience in IT

Founder of blog [AzurePlayer](#)

GitHub: [#adftools](#), SCD Merge Wizard and more...

Member of the Data Community PL

Former co-organiser of SQLDay (PL), Data Relay (UK),
volunteer at SQLBits (UK)

SQL Server Certificates:

MCITP, MCP, MCTS, MCSA, MCSE Data Platform,

MCSE Data Management & Analytics, DevOps Expert

Moreover: Bicycle, Running, Digital photography, Aikido

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Blog

- Technical posts
- Various skill level
- Cheet sheets
- Recommended books
- Many useful other links
- Interviews (Podcast)
- YouTube Channel:

www.AzurePlayer.net/YouTube



Azure Player

Play with data & have fun!



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Ask SQL Family ► Play all

This set of videos promote episodes of "Ask SQL Family" podcast.



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Kamil Data Geek - Azure explained
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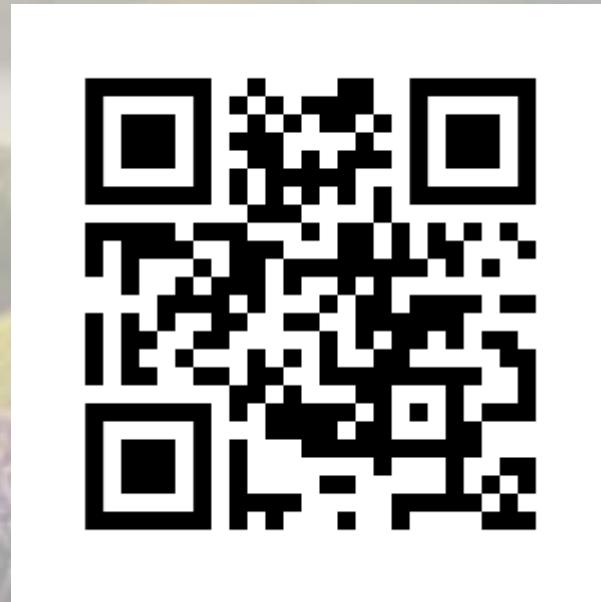


Use real time eventstreams in Microsoft Fabric | Lab 09

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www.AzurePlayer.net/YouTube

Slides available:



<https://azureplayer.net/slides>

Agenda

- What's Microsoft Fabric – very quick overview
- New Fabric offering: SQL Database
- Architecture
- Autonomous & Secure
- Demo (a lot of!)
- Summary

**Database users want
the same unified,
simple SaaS experience
offered by Fabric**



Quickly spin-up databases



Automate database
management



Seamlessly integrate with
analytics and AI



Microsoft Fabric

The unified data platform for AI transformation



Data
Factory



Data
Engineering



Data
Warehouse



Data
Science



Real-Time
Intelligence



Power BI



AI



OneLake



Purview



Microsoft Fabric

The unified data platform for AI transformation



Data
Factory



Analytics



Databases



Real-Time
Intelligence



Power BI



AI



OneLake



Purview



Microsoft Fabric

The unified data platform for AI transformation

Public Preview



Data
Factory



Analytics



Databases



Real-Time
Intelligence



Power BI



AI



OneLake



Purview

Microsoft SQL in the cloud

A unified SQL portfolio built on the industry-leading SQL Server engine

SQL Server on Azure
Virtual Machines



Azure SQL Managed
Instance



Azure SQL
Database



Best for re-hosting and apps requiring OS-level access and control

Automated manageability features and OS-level access

Best for modernizing existing apps

Offers high compatibility with SQL Server and native VNET support

Best for building new apps in Azure

Pre-provisioned or serverless compute and Hyperscale storage to meet demanding workload requirements

Infrastructure as a Service

Platform as a Service

SQL Database in
Fabric



Best for SaaS experience

OLTP to insights in real-time
AI-assisted, simplified, autonomous platform
Deeply integrated with Fabric
Database source control

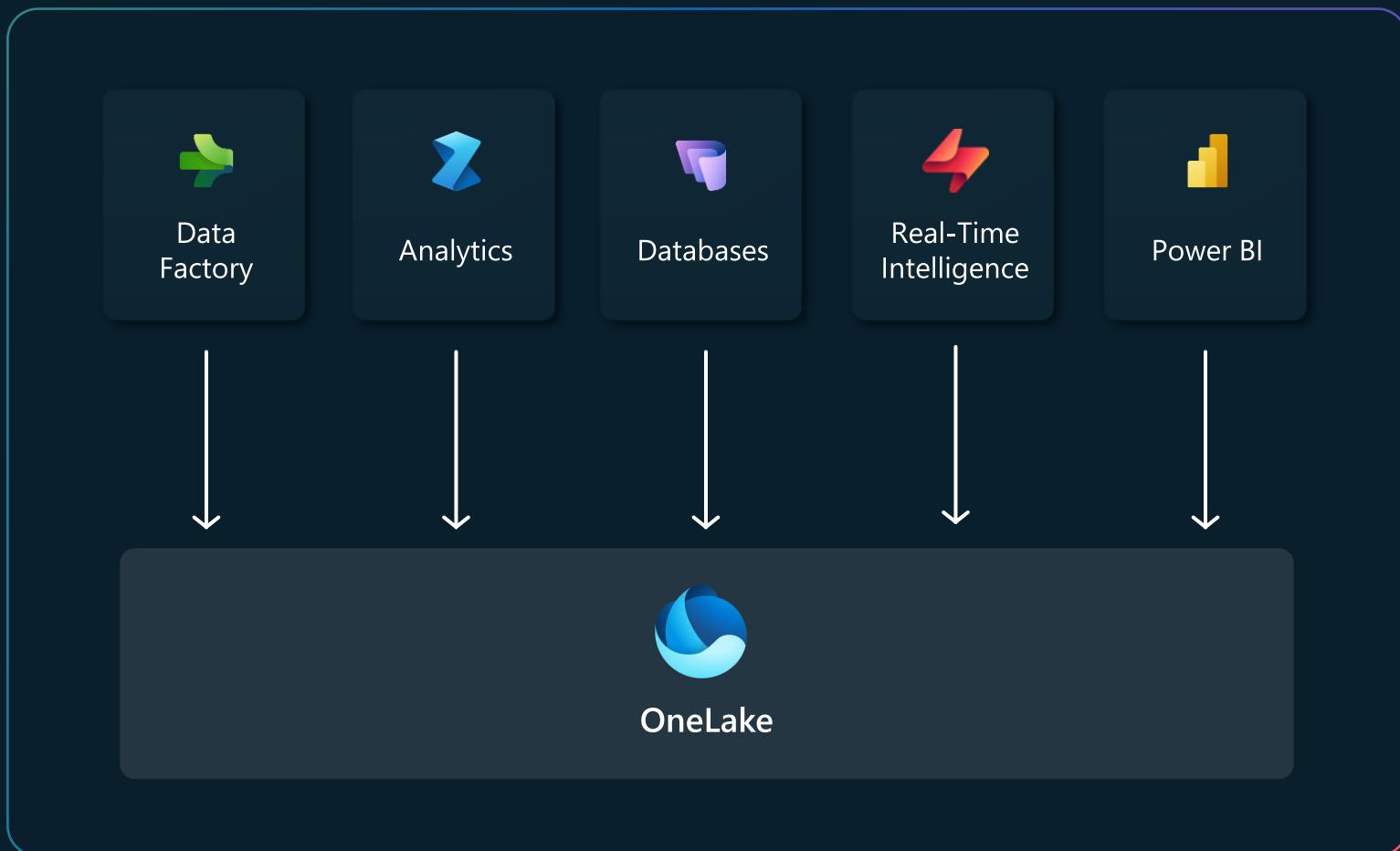
Software as a Service

“The OneDrive
for Data”



OneLake

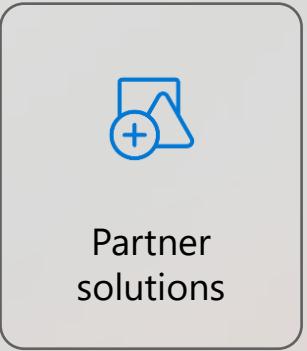
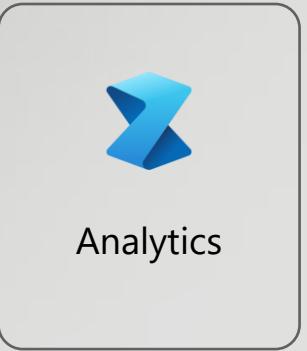
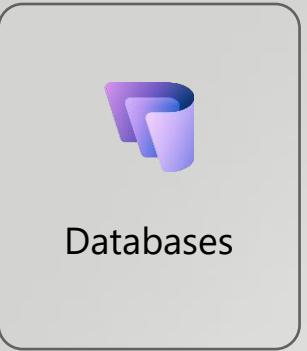
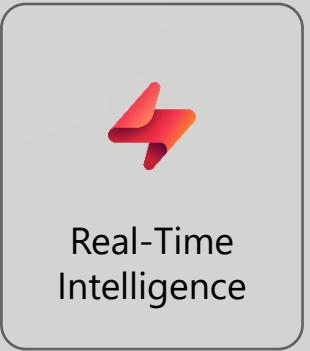
OneLake is the OneDrive for data



Single SaaS lake for the whole organization

Single open format used by all workloads to store and query data

Automatically indexed for discovery, MIP labels, lineage, PII scans, sharing, governance and compliance





SQL database in Fabric

Build AI apps faster and easier than ever



Simple



**Autonomous
and secure**



**Optimized
for AI**

Built upon the familiar SQL Server/Azure SQL Database engine, in Microsoft Fabric

Focus on building your app

A simple, integrated developer experience



Easy provisioning



AI assistance



Integrations from the editor



T-SQL support

The screenshot shows the Azure portal interface with the following details:

- Home** tab is selected.
- Top navigation bar includes: Get data, New Query, Templates, Open in, New API for GraphQL, Performance summary, and Copilot.
- Explorer** pane on the left shows the database structure:
 - ContosoDB
 - dbo
 - Tables
 - AuditLogs
 - Billing
 - ChatSummary
 - CustomerActivity
 - Customers
 - Employee
 - Inventory
 - OrderDetails
 - Orders
 - Payments
 - Plans
- Products** pane on the right shows the "Data preview - Products" table:

	ProductID	ProductName	Description	Price	Category	StockQuantity	CreatedDate
1	1	ScreenGuard Pro	Tempered glass screen...	7.28	Accessory	79	2024-01-01
2	2	CaseMate X	Durable phone case...	6.19	Accessory	8	2024-01-01
3	3	PowerBank Z	Portable power bank...	11.13	Accessory	28	2024-01-01
4	4	CarMount T	Car mount for phone...	19.76	Accessory	80	2024-01-01
5	5	WirelessCharger S	Wireless charging...	12.73	Accessory	76	2024-01-01
6	6	BluetoothSpeaker R	Portable Bluetooth speaker...	44.51	Accessory	31	2024-01-01
7	7	SelfieStick V	Extendable selfie stick...	6.44	Accessory	25	2024-01-01
8	8	PhoneStand A	Adjustable phone stand...	8.69	Accessory	32	2024-01-01
9	9	MemoryCard M	High-capacity memory card...	45.53	Accessory	81	2024-01-01
10	10	Earbuds E	Wired in-ear earbuds...	6.36	Accessory	100	2024-01-01
11	11	Stylus Pen	Precision stylus pen...	7.55	Accessory	52	2024-01-01
12	12	CleaningKit C	Phone cleaning kit...	9.67	Accessory	15	2024-01-01
13	13	LensKit L	Clip-on camera lens...	31.75	Accessory	32	2024-01-01
14	14	VRHeadset V	Virtual reality headset...	50.49	Accessory	26	2024-01-01
15	15	GameController G	Bluetooth game controller...	46.47	Accessory	24	2024-01-01
16	16	SmartWatch S	Smartwatch with fitness...	115.02	Accessory	96	2024-01-01
17	17	FitnessBand F	Fitness tracking band...	69.02	Accessory	53	2024-01-01
18	18	USBHub U	Multi-port USB hub...	23.89	Accessory	11	2024-01-01
- Message at the bottom: "Succeeded (3 sec 17 ms)"

Replication to OneLake

Near real-time replication to OneLake by default, seamless integrations with the rest of Fabric



Unified operational and analytics

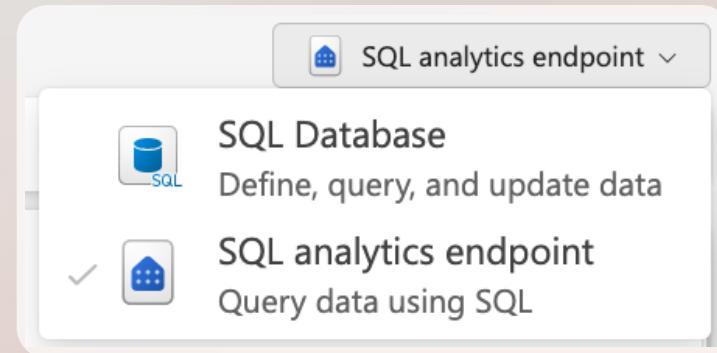
Name	Type
ContosoDB 1⚠️	SQL database
ContosoDB	Semantic model (default)
ContosoDB 1⚠️	SQL analytics endpoint



Data replicated to open-source
Delta



Shortcuts and SQL analytics
endpoint to query data
without copying it



Application lifecycle management

Every database under source control

Source control integration in the Fabric web interface (GitHub and Azure DevOps)

Database code editing in developer tooling

SqlPackage command line tool

The screenshot shows the Microsoft Fabric web interface. At the top, there's a navigation bar with options like 'View deployment pipeline', 'Create app', 'Manage access', and 'Workspace settings'. Below the navigation bar, a header includes a 'Source control' button with a red badge showing '8', a search bar, and a 'Filter by keyword' dropdown. A large central area displays a table titled 'Source control' with columns for 'Task', 'Owner', 'Refreshed', and 'Next refresh'. The table lists several items, mostly owned by 'Anna Ho...'. To the right of the table is a sidebar titled 'Current branch: planelanding' with tabs for 'Changes' (which has a red badge with '8') and 'Updates'. A modal window, numbered 2, is open over the table, listing database projects: 'Contoso PDFs RAG', 'RAG-with-resumes', 'api1', 'ContosoDB', 'dev', and 'Notebook 1'. Each item in the list has a checkbox, a preview icon, and a small circular icon with a plus sign or minus sign. At the bottom of the modal are 'Commit' and 'Undo' buttons. A number '3' is circled at the top left of the interface.

SQL database in Fabric capacity model

Microsoft Fabric is a unified product for all your data workloads. Rather than provisioning and managing separate compute for each workload, the capacity is shared between all the workloads. With Microsoft Fabric, your bill is determined by two variables: the amount of compute you provision and the amount of storage you use.



Compute

A shared pool of capacity that powers all capabilities in Microsoft Fabric.

Costs can be managed by pausing and resuming capacity

Purchased as a Pay-as-you-go resource (can apply Azure reservation)



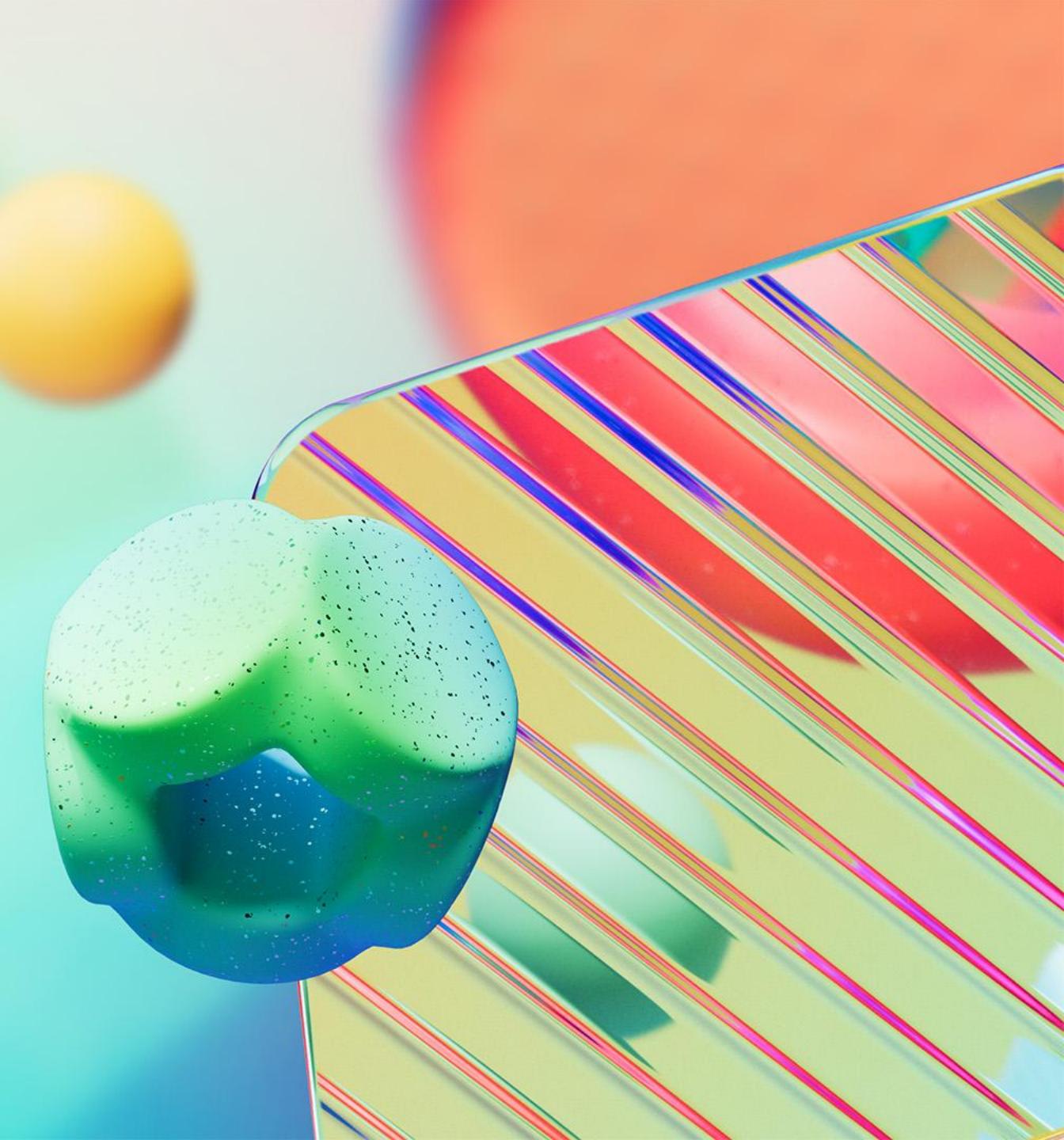
Storage

A single place to store all data.

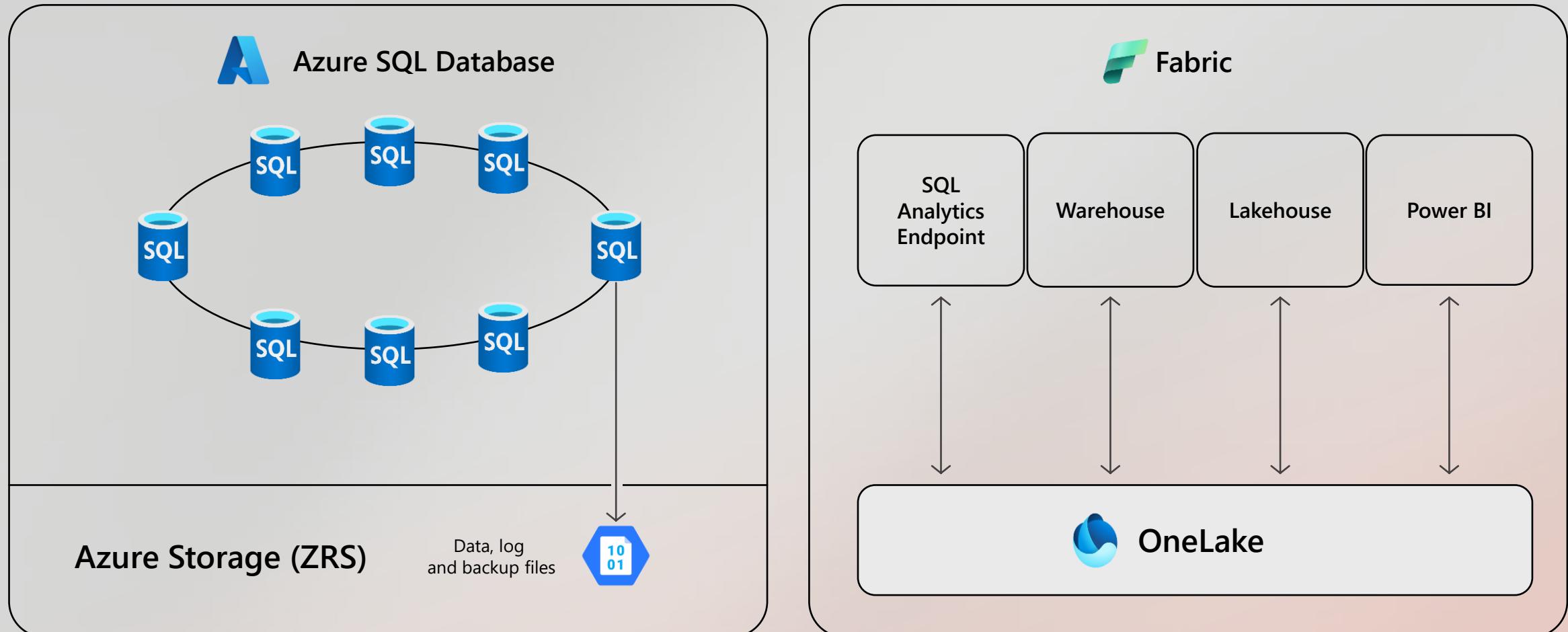
It is tied to a capacity and continues to accrue when capacity is paused

Purchased as Pay-as-you-go resource (no Azure reservation)

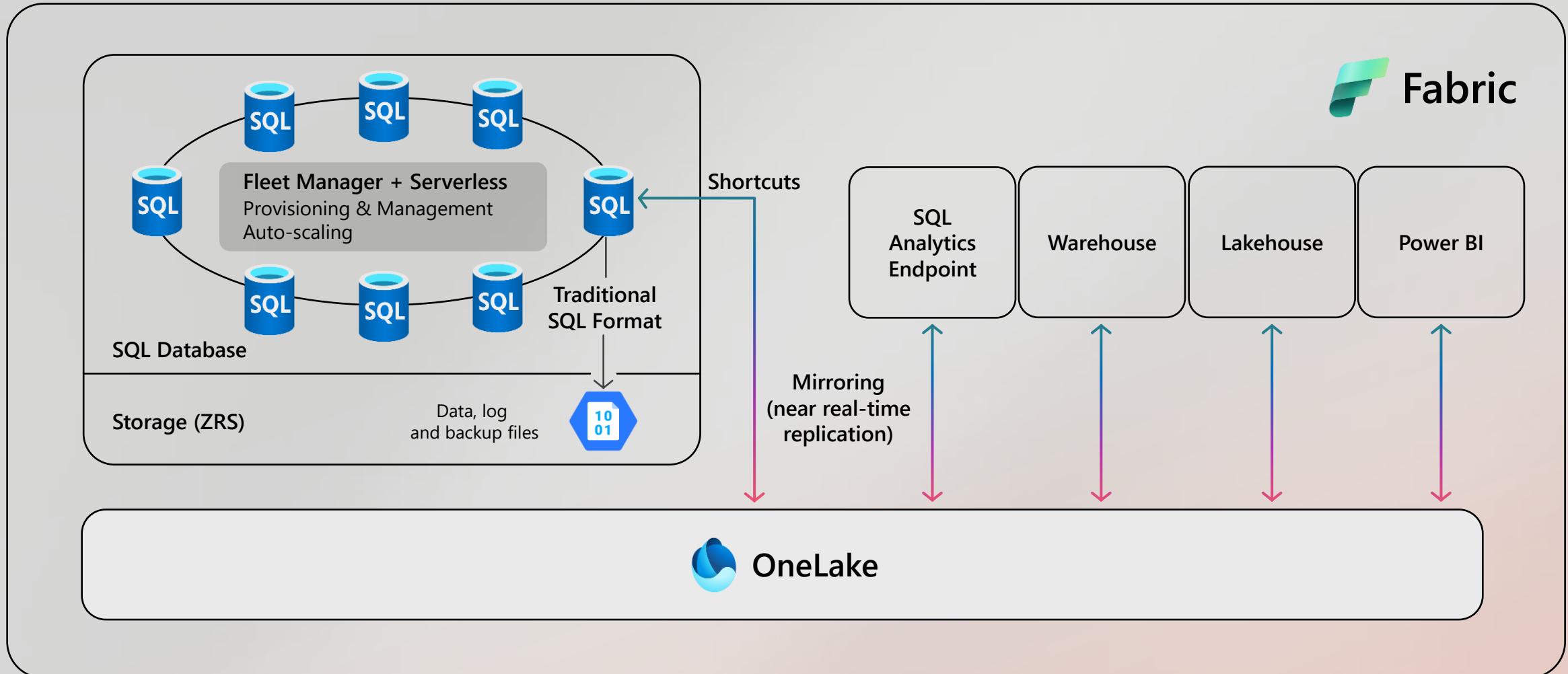
Architecture



Architecture

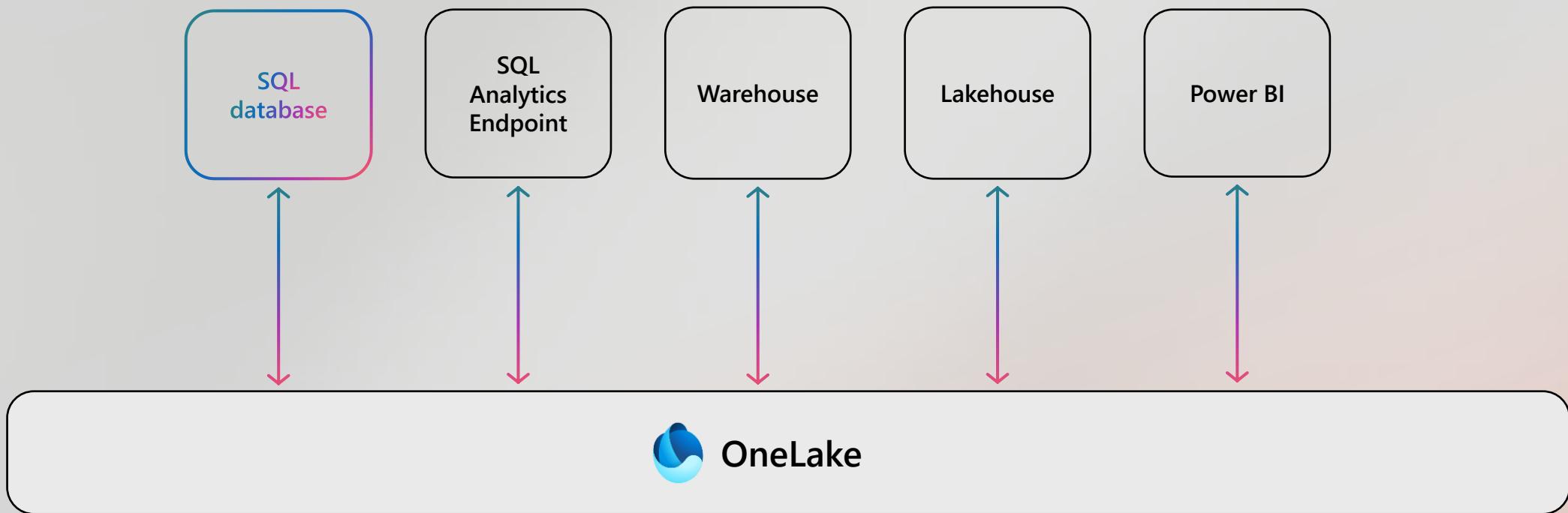


Architecture



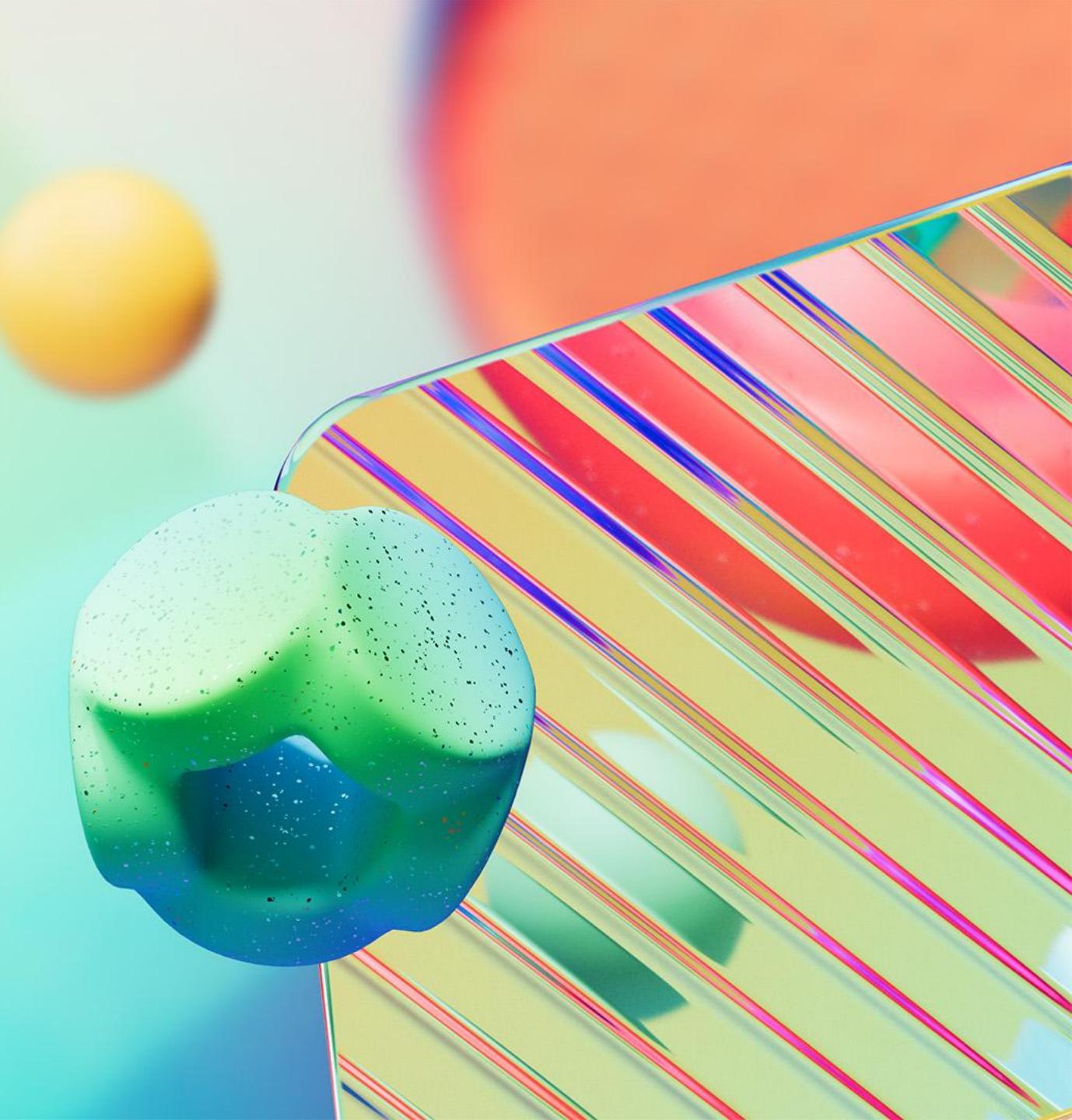
The power of Fabric with no compromises on your SQL operational database

Architecture



The power of Fabric with no compromises on your SQL operational database

Autonomous and secure



Autonomous capabilities manage your workloads



Challenge

Making the right choices and managing databases is complex.



Solution

SQL database in Fabric enables you to get the best security, availability, and performance configurations

Secure by default

Auto-managed HADR

Auto-scaling and auto-optimized



Secure and governed by default

Authentication

Microsoft Entra authentication **only**

- Central identity management
- Password-less authentication

Authorization

Workspace roles and item permissions for easy management

Proven SQL native features for granular access control

Network security

Private link-ready

All data encrypted in transit
- TLS 1.2

Data encryption

All data encrypted at rest

Customer Managed Key support*

Auditing*

Enabled by default and customizable

Central governance

Microsoft Purview sensitivity labels

Centrally-managed protection policies

Autonomous



Auto-HA with Zone Redundancy

Auto-scaling compute and storage

Auto-replicated to OneLake (no ETL)

Auto-indexing

Latest Intelligent Query Processing enhancements

Auto-backups, point-in-time restore available

Auto-patching

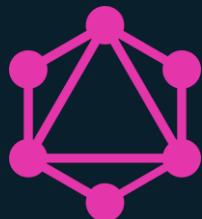
Demo



SQL Database

Getting started! SQL in Fabric

Generally Available



API for Graph QL in Fabric

Single intelligent endpoint
for multiple data sources

Efficient data fetching
and query flexibility

Fabric native:
CI/CD, security, governance,
& capacity consumption



...

Workloads

My workloads More workloads

My workloads

See all workloads included with Fabric or added by your organization.

Explore [more workloads](#) to extend the capabilities of Fabric.

All workloads

Included with Fabric

Added by my organization



Data Engineering
Microsoft

Create a lakehouse and operationalize your workflow to build, transform, and share your data estate.



Data Factory
Microsoft

Solve complex data ingestion, transformation, and orchestration scenarios using cloud-scale data movement and data transformation services.



Data Science
Microsoft

Unlock powerful insights using AI and machine learning technology.



Data Warehouse
Microsoft

Scale up your insights by storing and analyzing data in a secure SQL warehouse. Benefit from top-tier performance at petabyte scale in an open-data format.



Databases
Microsoft

Create operational SQL databases seamlessly for transactional workloads.



Industry Solutions
Microsoft

Use out-of-the-box industry data solutions and resources.



Power BI
Microsoft

Find insights, track progress, and make decisions faster using rich visualizations.



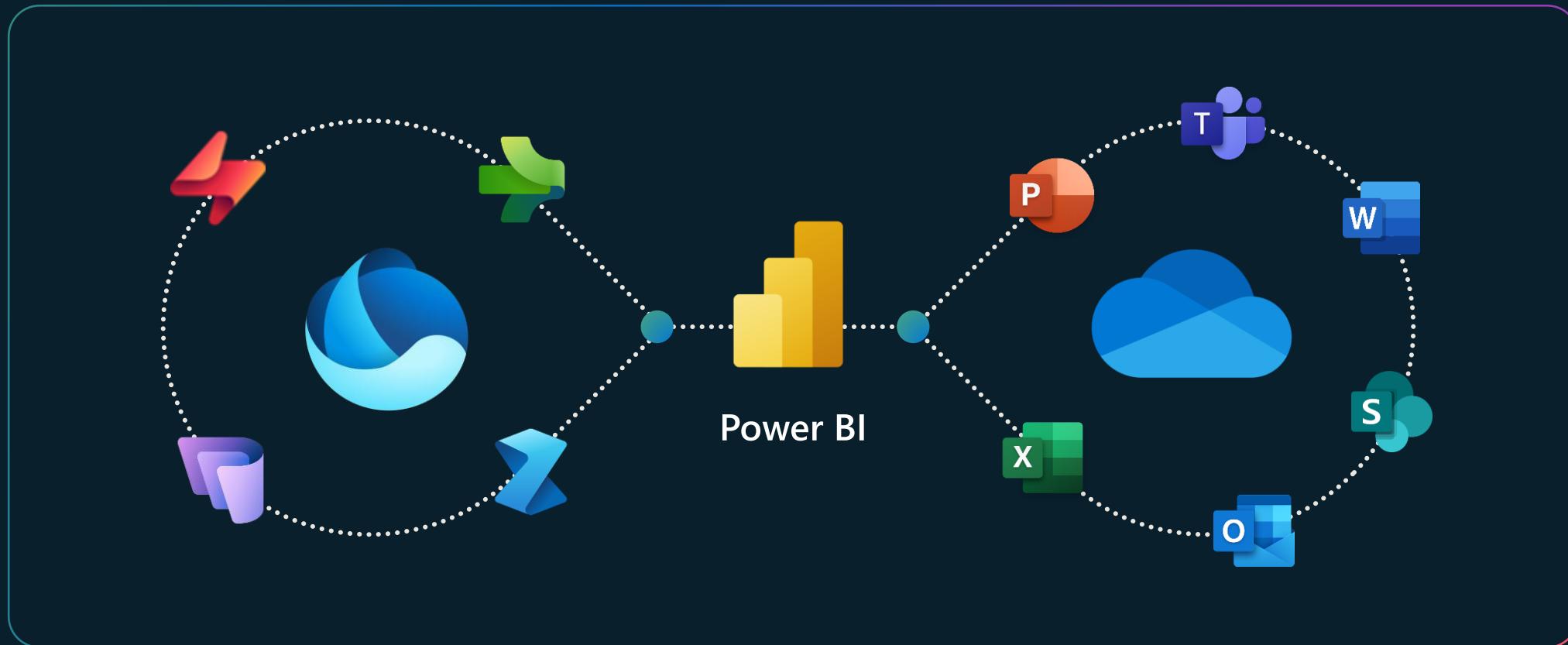
Real-Time Intelligence
Microsoft

Discover insights from your streaming data. Quickly ingest, index, and partition any data source or format, then query the data and create visualizations. You can also create alerts to flag anomalies.



Summary

Unified data culture



Unified data culture

Transactional

Analytical

Unified data culture

Translytical

Fabric databases are..

Simple

Quick create

No knobs

Intuitive, browser-based experiences

Autonomous *"just works"*

Serverless: auto-scaled compute and storage

Auto-managed HADR

Auto-optimized

Integrated

Integrated with OneLake

Dev-optimized with GraphQL and CI/CD support

Works seamlessly with other Fabric and Azure services

Secure by default

Simplified access control

Policy-driven

Fabric OneSecurity

AI-Assisted

Chat-based copilot

AI-assisted experiences

Intelligent database service

Resources

Get started and engage with the community
to accelerate your AI app development

Explore the documentation and build with our end-to-end tutorials:

<https://aka.ms/fabricsqldocs>

Skill up with our new learn modules: <https://aka.ms/learnfabricsql>

Watch episodes on Data Exposed: <https://aka.ms/dataexposedyt>

Ask questions, vote for ideas, and read the latest product news:

<https://community.fabric.microsoft.com/>

Live learning series starts December 3rd: <https://aka.ms/LearnFabricDB>

Join us at FabCon Las Vegas in March 2025: <https://aka.ms/FabCon25>

Get started today
with the 60-day
Fabric free trial



Resources

- Explore [Documentation](#) & [End-to-end tutorials](#)
- [Data Exposed episodes](#)
- [Microsoft Mechanics episode](#)
- [Join the community](#) for a free live learning series starting
- Get the latest product news here on the [Fabric updates blog](#).

- [My Fabric Labs series](#) (YouTube playlist)
- [Microsoft Fabric Community](#) (My YouTube playlist)
- [My GitHub-Fabric list](#)

Thank you!



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Kamil Nowinski

Microsoft Data Platform MVP

Analytics Architect, Azure DevOps Engineer Expert



MGM GRAND, Las Vegas, NV

**March 31 -
April 2, 2025**

Workshops: March 29, 30, and April 3

Join us at the second annual Microsoft Fabric Community Conference and get up close with the latest data, analytics, and AI developments—plus network with community leaders and other technical experts from around the world.

Don't miss the early bird discount and use code MSCUST to save \$150!



Register now: aka.ms/fabcon-vegas

