



Microsoft Fabric

# Microsoft Fabric

Day 1: Modern Data Platform & BI with Microsoft Fabric

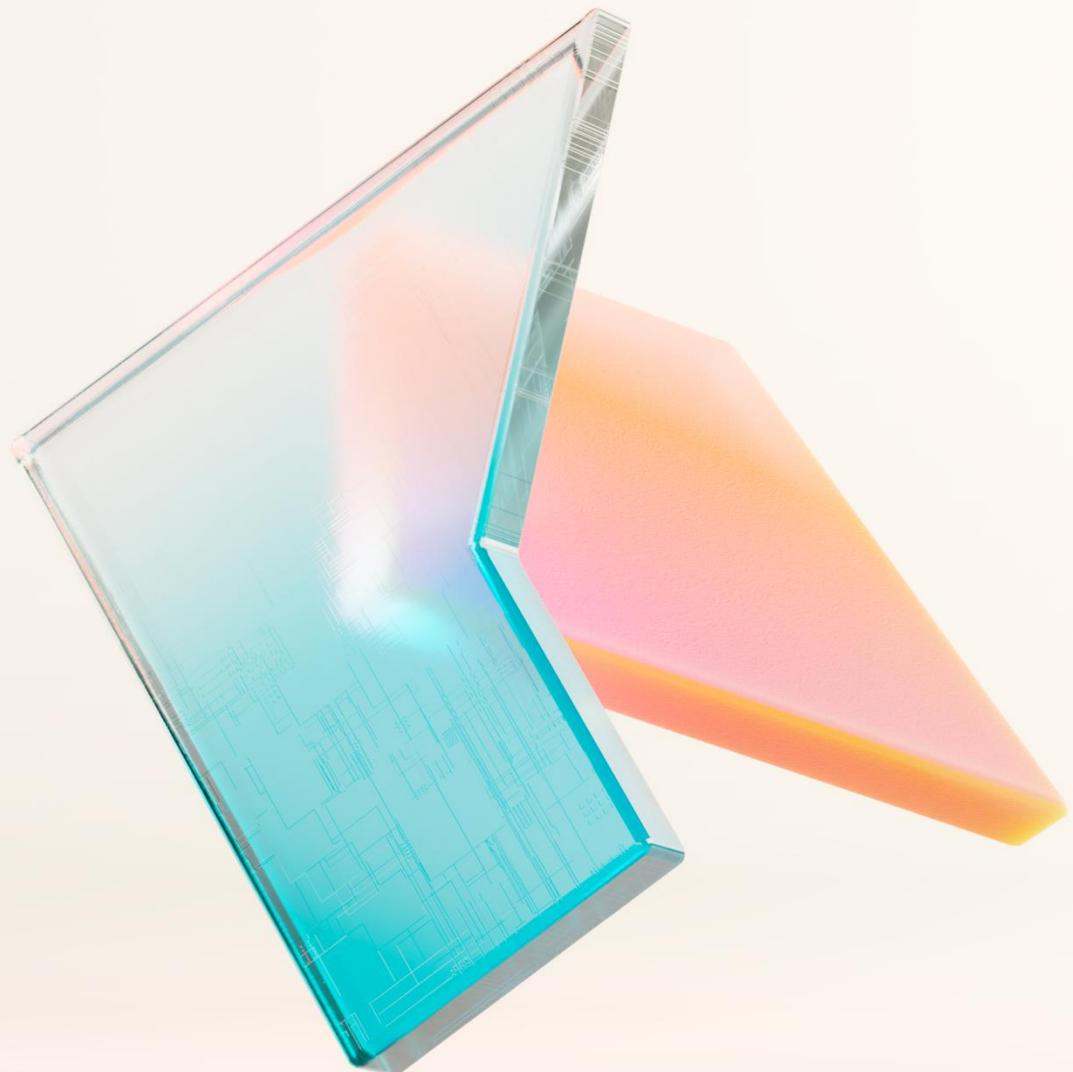
Claudio Mirti, Sr. Solution Engineer, EMEA GBB  
Martin Abrle, Partner Solution Architect

Microsoft Switzerland

# Agenda

## Day 1: Modern Data Platform & BI with Microsoft Fabric

- Introduction (10")  
Fabric & Modern analytics chain: ETL. Data Platform, Datamart, BI
- Microsoft Fabric  
from PaaS to a unified SaaS experience (15")
- One Lake (15")
- Task flow & Analytical Architecture (15")
- RTI, Warehouse, Lakehouse & Medallion Architecture (30")
- 🎉 Mid-session quiz + break 🎉 (15")
- Semantic Model & Business Intelligence (30")
- Demo (45")
- 🎉 End-of-day quiz 🎉 & wrap-up



## Terms & abbreviations

# ETL and ELT

**ETL:** Extract Transform Load – Extract data -> Transform data in the staging area -> Load into Target

- Pros: Controlled costs (don't store unneeded data), better for compliance, simpler for complex, predefined transformations, mature technology.
- Cons: Slower for large volumes, less flexible for new analysis, not ideal for data lakes.
- Best for: small datasets, legacy environments

**ELT:** Extract data > Load raw data into warehouse > Transform within warehouse (using its compute capacity)

- Pros: Faster ingestion, highly scalable, flexible (transform as needed), leverages cloud power, raw data access for data scientists.
- Cons: Requires powerful destination system, potential compliance challenges if not governed well (loads all data first), slower if warehouse lacks scalability.
- Best For: Big data, diverse data types (structured/unstructured), cloud-native environments, agile analytics, data lakes.

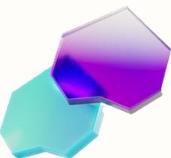
**Modern data warehouse:** shift from ETL to ELT



# Lakehouse

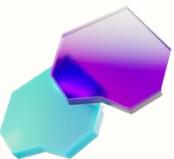
Lakehouse is a database and DB relevant capabilities on top of a data lake

Microsoft Fabric Lakehouse is a data repository for storing, managing, and analyzing structured and unstructured data in a single location. It's a flexible and scalable solution that allows organizations to handle large volumes of data using various tools and frameworks to process and analyze that data. It integrates with other data management and analytics tools to provide a comprehensive solution for data engineering and analytics. A lakehouse combines the scalability of a data lake with the performance and structure of a data warehouse, providing a unified platform for data storage, management, and analytics.



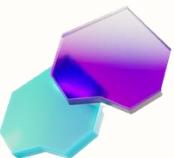
# Data warehouse

.... is a centralized repository that consolidates large volumes of data from multiple disparate sources—such as transactional and operational systems—into a single, unified store optimized for reporting and data analysis. Unlike operational databases designed for day-to-day transactions, a data warehouse supports Business Intelligence (BI) by providing a structured, long-term historical view of organizational data. Data is organized around key business subjects, integrated and standardized across sources, and remains stable once loaded to ensure consistent analysis. As defined by W. H. Inmon, a data warehouse is subject-oriented, integrated, non-volatile, and time-variant. These characteristics enable trend analysis, forecasting, and informed strategic decision-making over time.



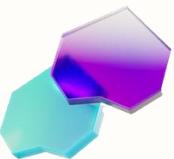
# Datamart

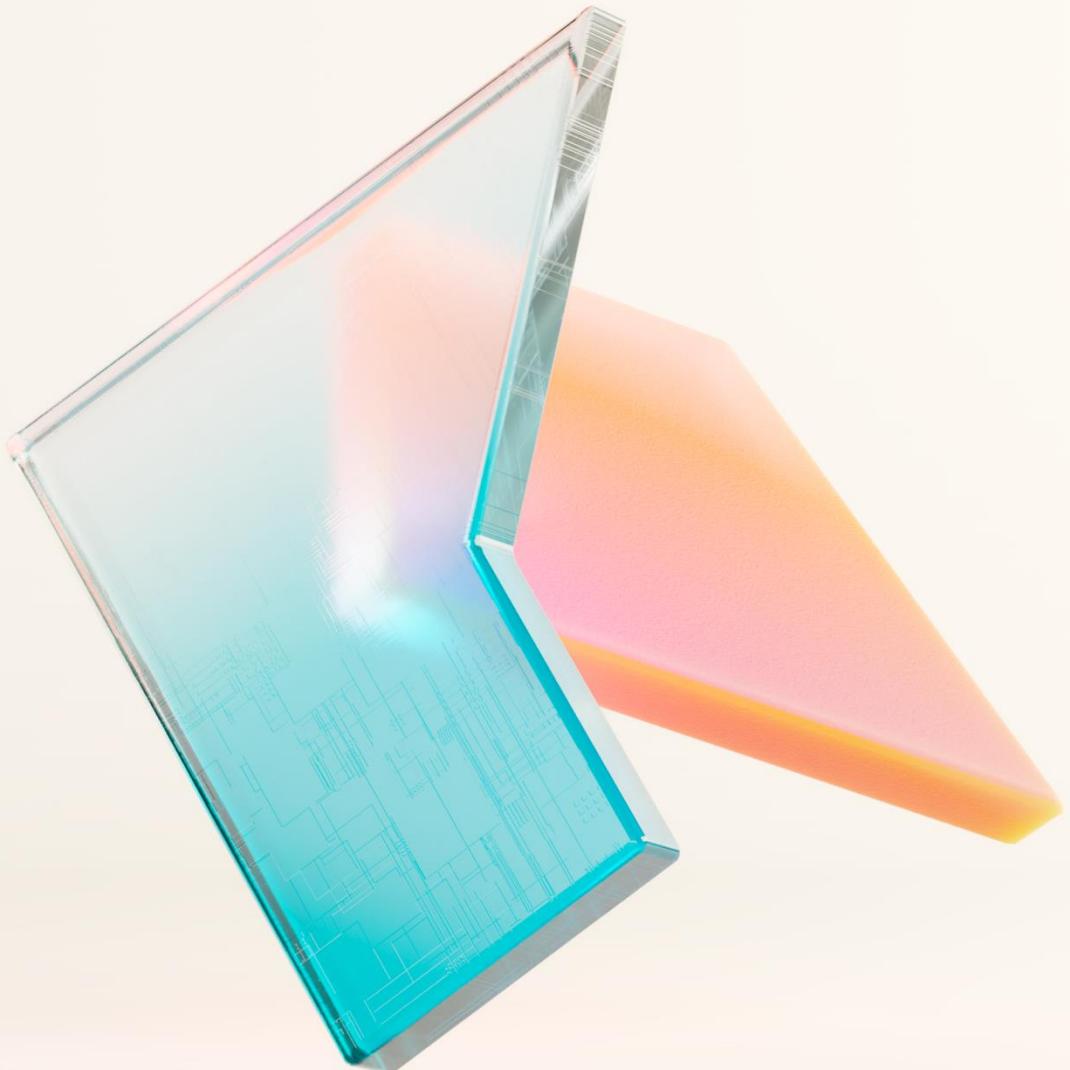
.... is a small, focused database that contains a curated set of tables designed to support the needs of a specific department (such as marketing or manufacturing), data team, community, or line of business. It is typically smaller in scale and narrower in scope than a data warehouse and often exists as a subset of an organization's enterprise data warehouse. Data marts are commonly used for analytics, business intelligence, and reporting. Historically, data marts represented the first evolutionary step toward centralized data warehouses and data lakes; ACNielsen introduced the first data mart to clients in the early 1970s. ([source](#))



# BI

**Business Intelligence (BI)** encompasses the processes, tools, and technologies used to collect, analyze, and present organizational data in order to deliver actionable insights for strategic and operational decision-making. BI transforms raw data into understandable reports, dashboards, and visualizations that help organizations improve efficiency, identify trends, and gain a competitive advantage. By combining analytics, reporting, data mining, and performance management, BI enables organizations to understand past performance and move from manual analysis to automated, data-driven decision-making.





# Introduction

## Microsoft Fabric & modern analytics chain

# Unify

**“I am the Chief Information Officer and  
don’t want to be the Chief Integration Officer.  
Help me translate AI to my competitive  
advantage.”**

**Every CIO,  
Every Enterprise**

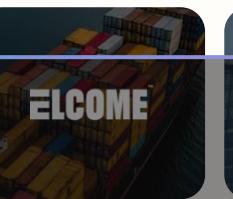


**Since the launch  
24 months ago**



25,000+

Fabric customers

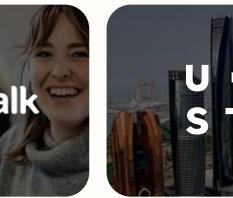
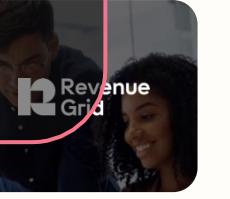
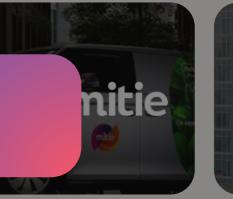
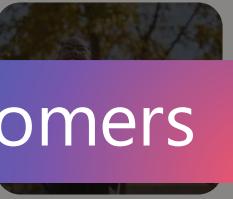


25,000+

Fabric customers

80%

> Fortune 500





80%

F500 customers

50%+

Using 3+ workloads

# Power BI: How the world understands data

**400K+**

Organizations using Power BI

**95%**

Fortune 500 Companies using Power BI

**35M+**

Power BI users

# Microsoft Recognition

# Data Integration



# Databases



# Artificial Intelligence



# Business Intelligence





# Weekly Fabric releases

## Rapid pace of innovation

**Microsoft | Fabric** Updates Community Support

### Microsoft Fabric Updates Blog

Updates > December 2024 > Fabric 2024 Holiday recap

#### Fabric 2024 Holiday recap

Microsoft Fabric

December 11, 2024 by Patrick LeBlanc 21,904 Views

in Share Twitter Like

Season's greetings, Fabric Community! As we wrap up an incredible year, the Microsoft Fabric team is taking a break for December, with all the planned updates rolling out in January. As we approach another year of innovation, let us take a moment to reflect on some key highlights from 2024.

Fabric turned one at Ignite 2024

Microsoft Fabric celebrated its first birthday at Microsoft Ignite 2024. Arun Ulag and Amir Netz's [showstopping breakout](#) introduced SQL on Fabric, making it the first-ever SaaS database in the industry, and announced the general availability of Real-Time Intelligence on Fabric. November also witnessed a tidal wave of Fabric announcements – catch up on all of them in the [November Fabric Update Blog](#).

#### Fabric Community Conference

In 2024 we introduced #FabCon, the [Fabric Community Conferences](#) that attracted over 8,000 Fabric fans across 2 sold-out conferences in Las Vegas and Stockholm.

Join us for FabCon 2025 in Las Vegas from March 21 to April 3 for the [biggest-ever FabCon](#). With 4 keynotes, 215 sessions, and

**Dec 2024**

**Microsoft | Fabric** Updates Community Support

### Microsoft Fabric Updates Blog

Updates > All > Fabric November 2024 Feature Summary

#### Fabric November 2024 Feature Summary

Announcements Data Engineering Data Factory Data Science Data Warehouse  
Databases Microsoft Fabric Monthly Update OneLake Real-Time Intelligence

November 19, 2024 by Adam Saxton 72,560 Views

in Share Twitter Like

#### Welcome to the November 2024 update for Microsoft Fabric!

This month, we're excited to bring you a host of new features and improvements designed to enhance your experience and productivity. From the introduction of Copilot in Power BI mobile apps to the new Fabric Databases, there's something for everyone. Whether you're looking to streamline your data analysis, improve your reporting capabilities, or simply stay up to date with the latest innovations, this update has you covered.

To learn more, read about all these announcements, and more in Arun's blog post [Accelerate app innovation with an AI-powered data platform | Microsoft Fabric Blog](#)

#### Be one of the first to use SQL database on Fabric

In this series on SQL database on Fabric, you will learn how Fabric brings together both transactional and analytical workloads, creating a truly unified data platform. You'll also learn how developers can build reliable, highly scalable applications where cloud authentication and encryption are secured by default. Starting December 3rd, join us for six sessions with database experts and see just how easy it is to get started. Sessions are available live and on-demand. View the sessions and [register for the series](#).

#### Don't miss Microsoft Ignite 2024 and FabCon 2025

Attend Microsoft Ignite 2024 on November 12–14, 2024, to learn about the latest innovations in Data & AI. Join us for FabCon 2025 in Las Vegas from March 21 to April 3 for the biggest-ever FabCon. With 4 keynotes, 215 sessions, and

**Nov 2024**

**Microsoft | Fabric** Updates Community Support

### Microsoft Fabric Updates Blog

Updates > All > Fabric October 2024 Monthly Update

#### Fabric October 2024 Monthly Update

Core Data Engineering Data Factory Data Warehouse Lakehouse Microsoft Fabric  
Monthly Update OneLake Real-Time Intelligence

October 30, 2024 by Patrick LeBlanc 55,080 Views

in Share Twitter Like

#### Welcome to the October 2024 Update!

Here are a few, select highlights of the many we have for Fabric this month. API for GraphQL support for Service Principal Names (SPNs). Introducing a powerful new feature in Lakehouses: Sorting, Filtering, and Searching capabilities. An addition to KQL Queryset that will revolutionize the way you interact with your data.

There is more to explore, please continue to read on.

#### Get certified in Microsoft Fabric—for free!

Get ready to fast-track your career by earning your Microsoft Certified: Fabric Analytics Engineer Associate certification. For a limited time, the Microsoft Fabric Community team is offering 5,000 free DP-600 exam vouchers to eligible Fabric Community members. Complete your exam by the end of the year and join the ranks of certified experts. Don't miss this opportunity to [get certified](#).

#### A new Fabric certification for data engineers

We are excited to announce a brand-new certification for data engineer. The new Microsoft Certified: [Fabric Data Engineer Associate certification](#) will help demonstrate your skills with data ingestion, transformation, administration, monitoring, and performance optimization in Fabric. To earn this Certification, pass [Exam DP-700: Implementing Data Engineering Solutions Using Microsoft Fabric](#), currently in beta.

**Oct 2024**

**Microsoft | Fabric** Updates Community Support

### Microsoft Fabric Updates Blog

Updates > All > Fabric September 2024 Monthly Update

#### Fabric September 2024 Monthly Update

Announcements Core Data Engineering Data Warehouse Lakehouse Microsoft Fabric  
Real-Time Intelligence

September 25, 2024 by Jason Himmelstein

in Share Twitter Like

#### Welcome to the September 2024 Update!

We have a lot of exciting announcements to share with you this month. We're introducing a new feature for Dataflows Gen2 and a richer Copilot experience when working with Real-Time Intelligence. With Real-Time Intelligence we have redesigned and

We announced the general availability of Fabric Git integration, allowing users to access Git repositories, leverage version control, and collaborate with others. We've also enhanced the left navigation bar, making it easier to switch between different sections of the Fabric interface. Real-Time hub user experience.

In AI, we have released Copilot in Fabric experience for Data Warehouse, allowing everyone to design dataflows with the help of AI. This feature provides a simplified interface for generating T-SQL queries for data analysis, explain and analyze complex data, fix broken T-SQL code, and generate preview data.

**Sep 2024**

# The Fabric community



**293K**

Community members

**273**

User groups

**67**

Countries

[aka.ms/FabricCommunity](http://aka.ms/FabricCommunity)



FabCon



All have Fabric  
available one click away

## Profile



Arun Ulagaratchagan

Tenant name:  
Microsoft ⓘ

[Switch tenant](#)

License type:  
Free account

[View account ↗](#)

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# Microsoft Fabric

Available now

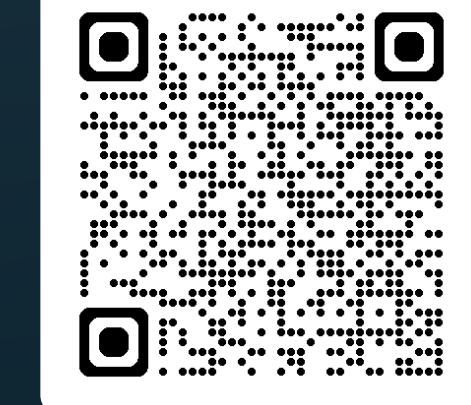
60-day free trial

No  
credit card

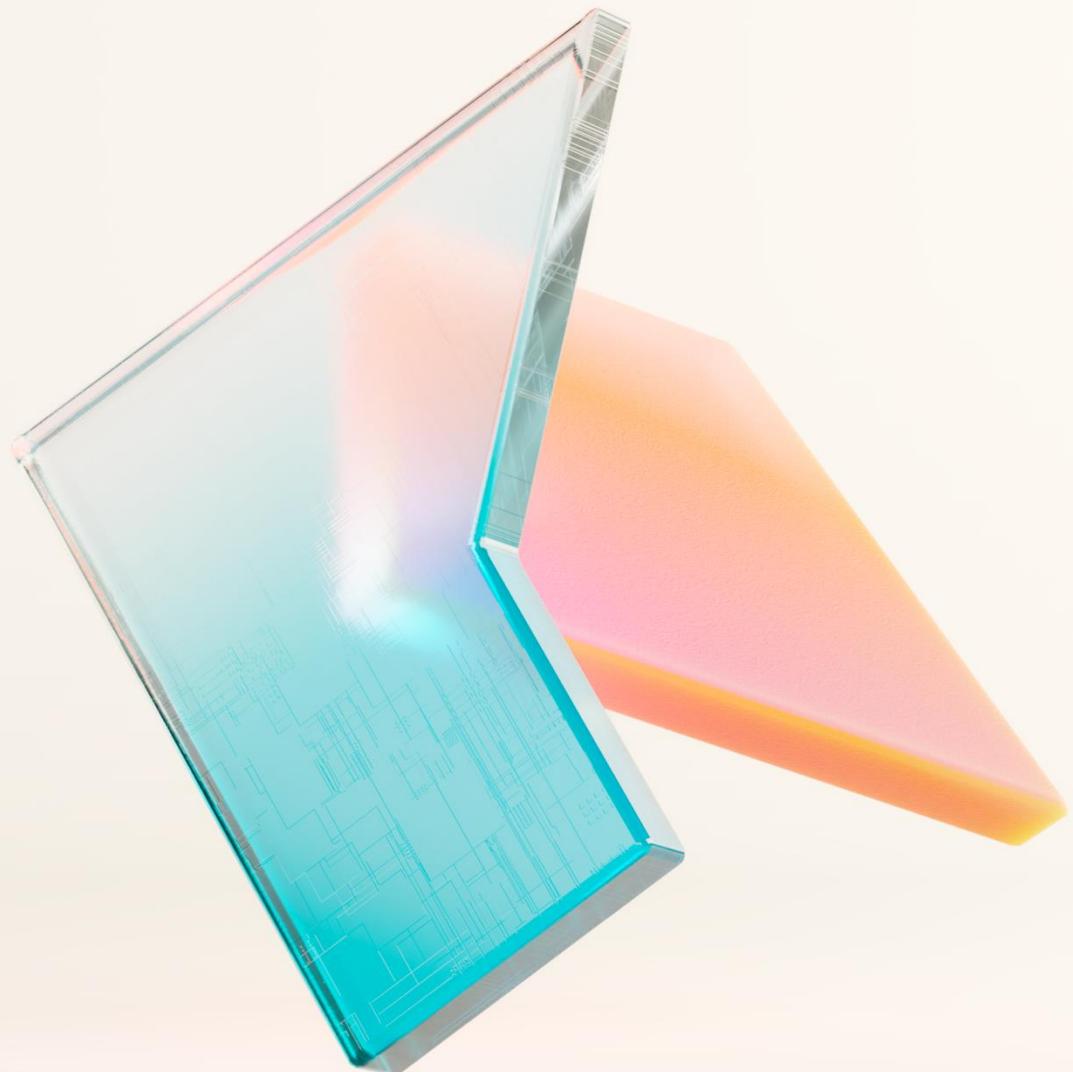
No Azure  
subscription

F64 SKU

\$17,000 value



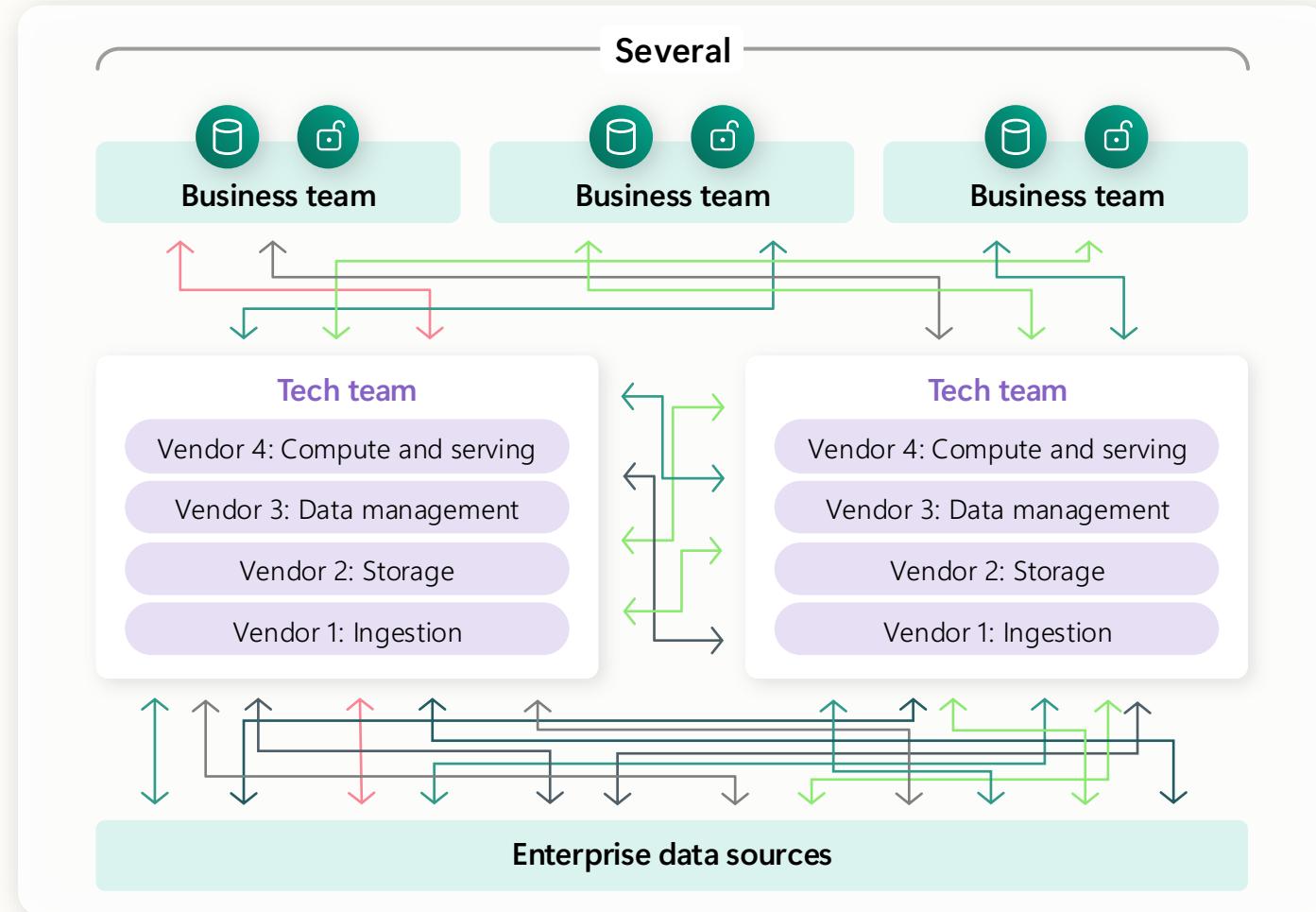
[aka.ms/try-fabric](http://aka.ms/try-fabric)



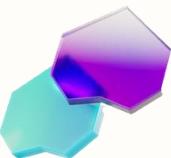
**Microsoft Fabric:**  
from PaaS to a unified SaaS experience

# The starting line

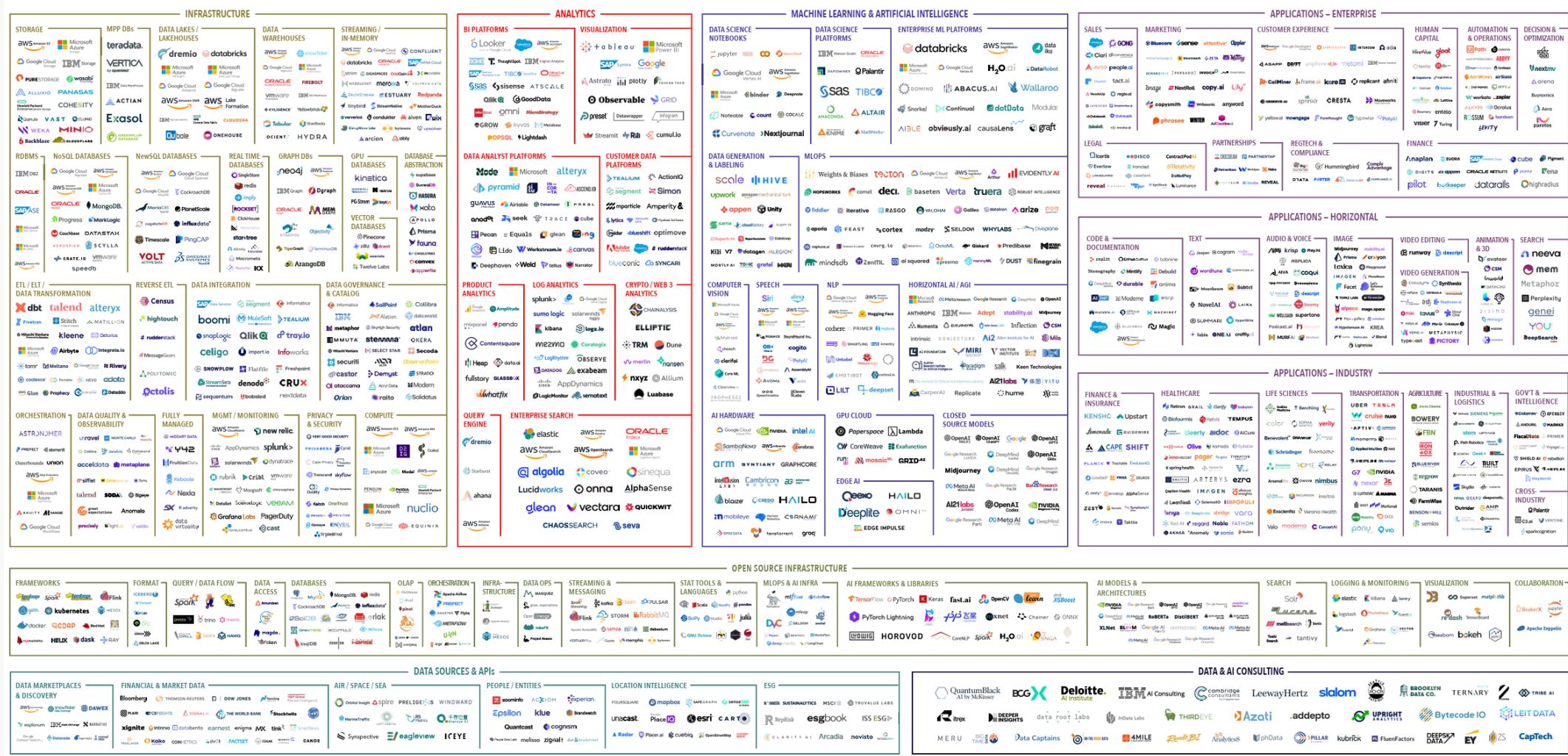
A complex, organically evolved data estate



- 1 Data copies and infrastructure inefficiencies
- 2 Limited interoperability between vendor services
- 3 Data exposure risks



# Customers enhancing their data estate face immense complexity



Version 1.0 - Feb 2023

© Matt Turck (@mattturck), Kevin Zhang (@kevinzhang) & FirstMark (@firstmarkcap)

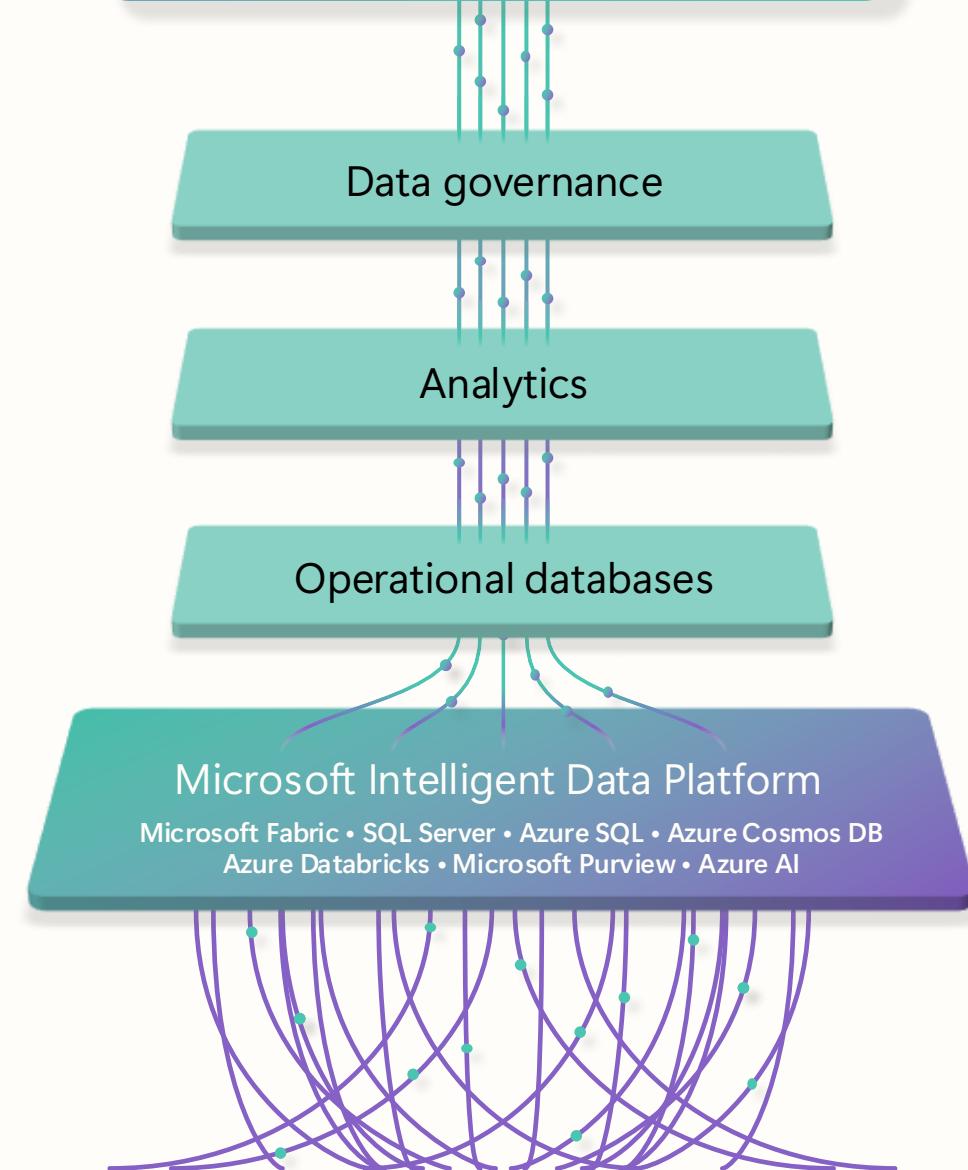
Blog post: mattturck.com/MAD2023

Interactive version: MAD.firstmarkcap.com

Comments? Email MAD2023@firstmarkcap.com

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EARLY STAGE VENTURE CAPITAL

An integral component of the comprehensive Microsoft Cloud Platform





# Microsoft Fabric

The data platform for the era of AI

From

To

Multiple analytics services

» Unified stack

Disconnected data sources

» All the data in one place

Isolated application

» Entire estate

Gen AI bolt on

» Gen AI built in





# Microsoft Fabric

business intelligence

business intelligence



Data  
Factory



Real-Time  
Intelligence



Databases



Analytics



Industry  
Solutions



Power BI



Partner  
solutions



Copilot in Fabric



OneLake



Microsoft Purview

# Demo: Microsoft Fabric

The SaaS data platform for the era of AI

# OneLake for all data

"The OneDrive for data"



OneDrive  
for documents



OneLake  
for data

OneLake provides a data lake as a service without you needing to build it

# OneLake for all Data

“The OneDrive for Data”

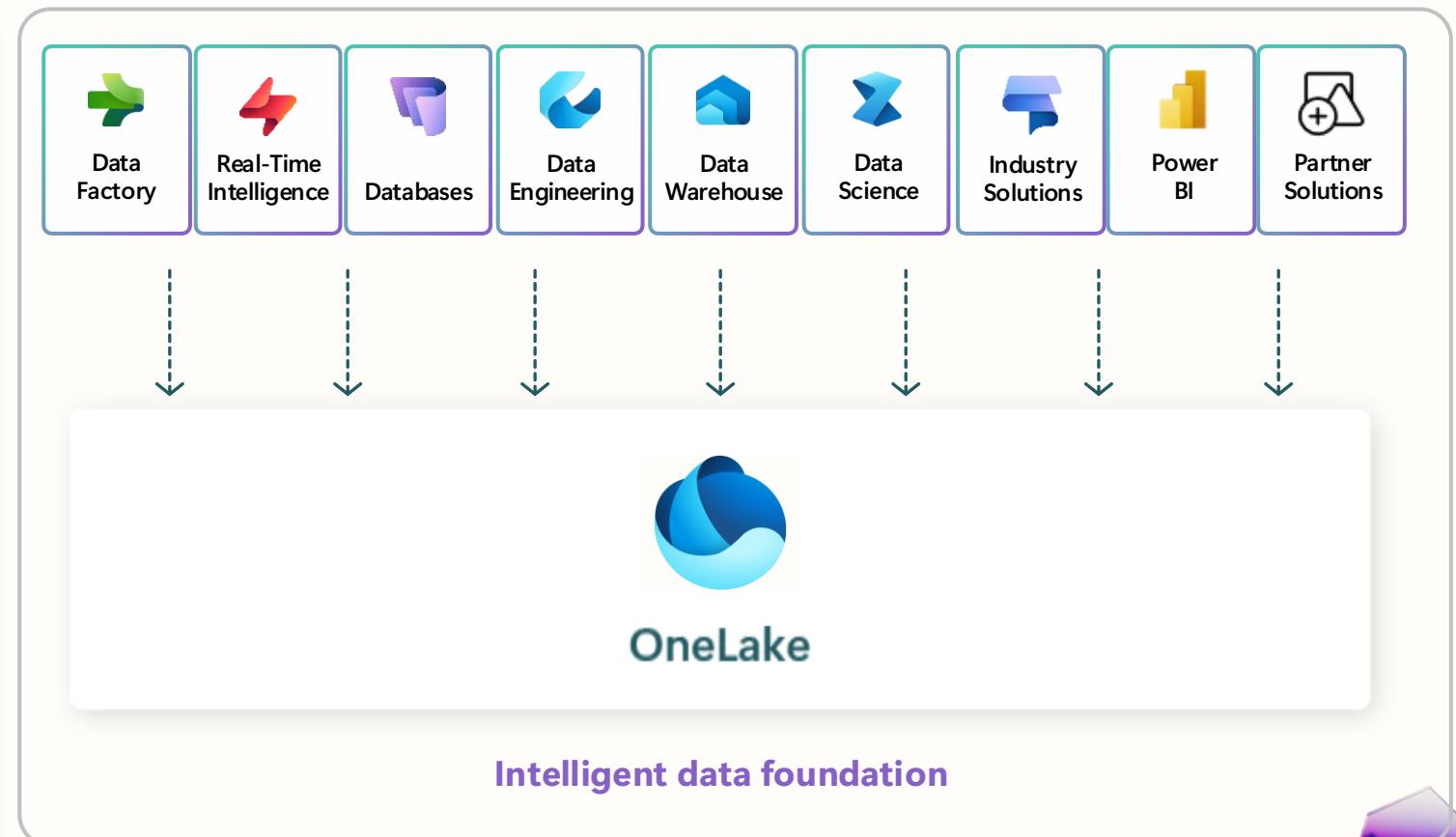
A single SaaS lake for the whole organization

Provisioned automatically with the tenant

All workloads automatically store their data in the OneLake workspace folders

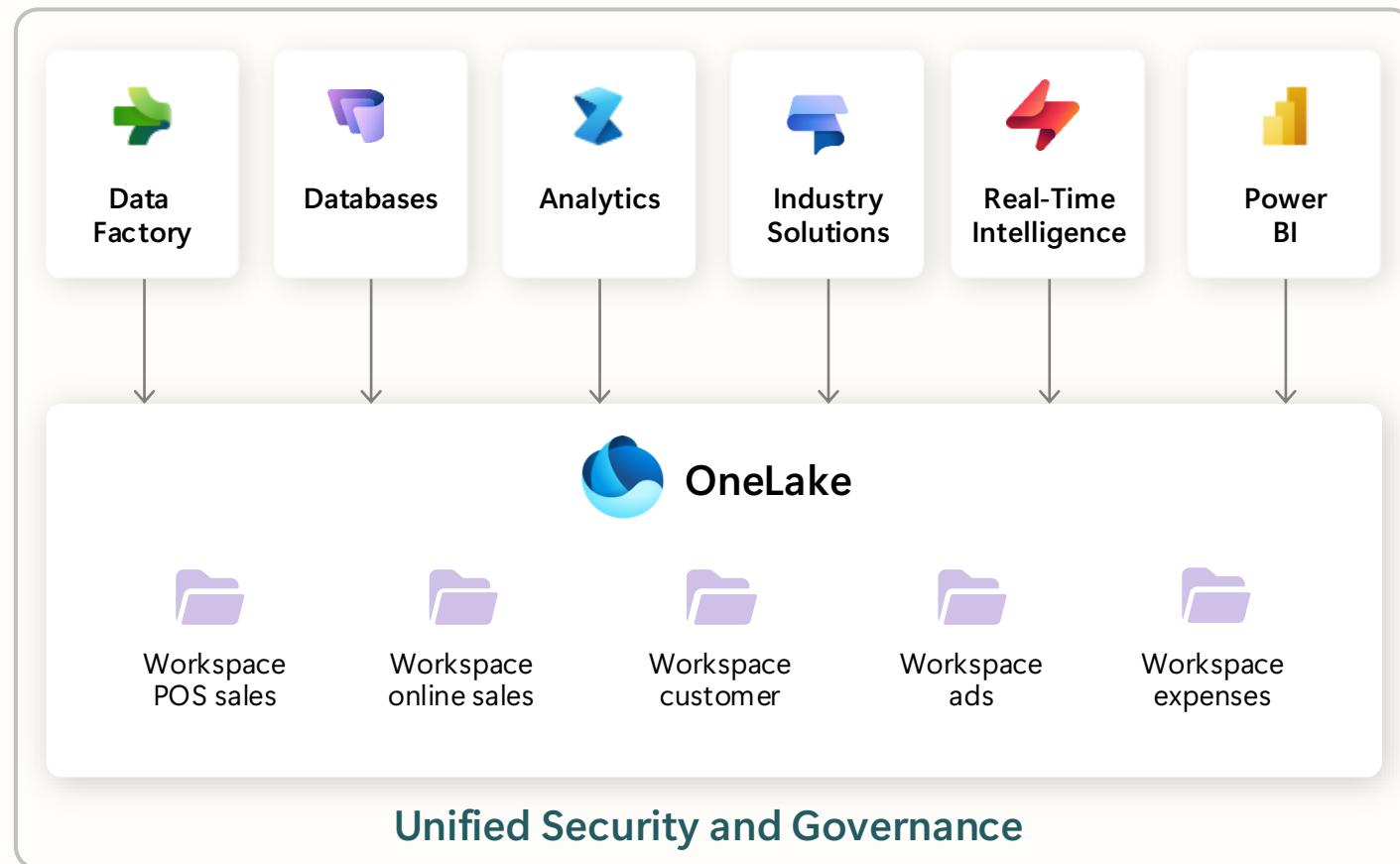
All the data is organized in an intuitive hierarchical namespace

The data in OneLake is automatically indexed for discovery, MIP labels, lineage, PII scans, sharing, governance and compliance



# A single unified SaaS data lake

"No Silos"



Provisioned automatically with the tenant.

Any data in OneLake works with out-of-the-box governance such as data lineage, data protection, certification, catalog integration, etc. All data is ultimately under the control of a tenant admin.

OneLake enables distributed ownership. Different workspaces allow different parts of the organization to work independently while still contributing to the same data lake. Each workspace can have its own administrator, access control, region and capacity for billing.

# OneLake which logically spans the world

To achieve data residency requirements, workspaces can reside in different regions around the world while still being part of the same data lake.

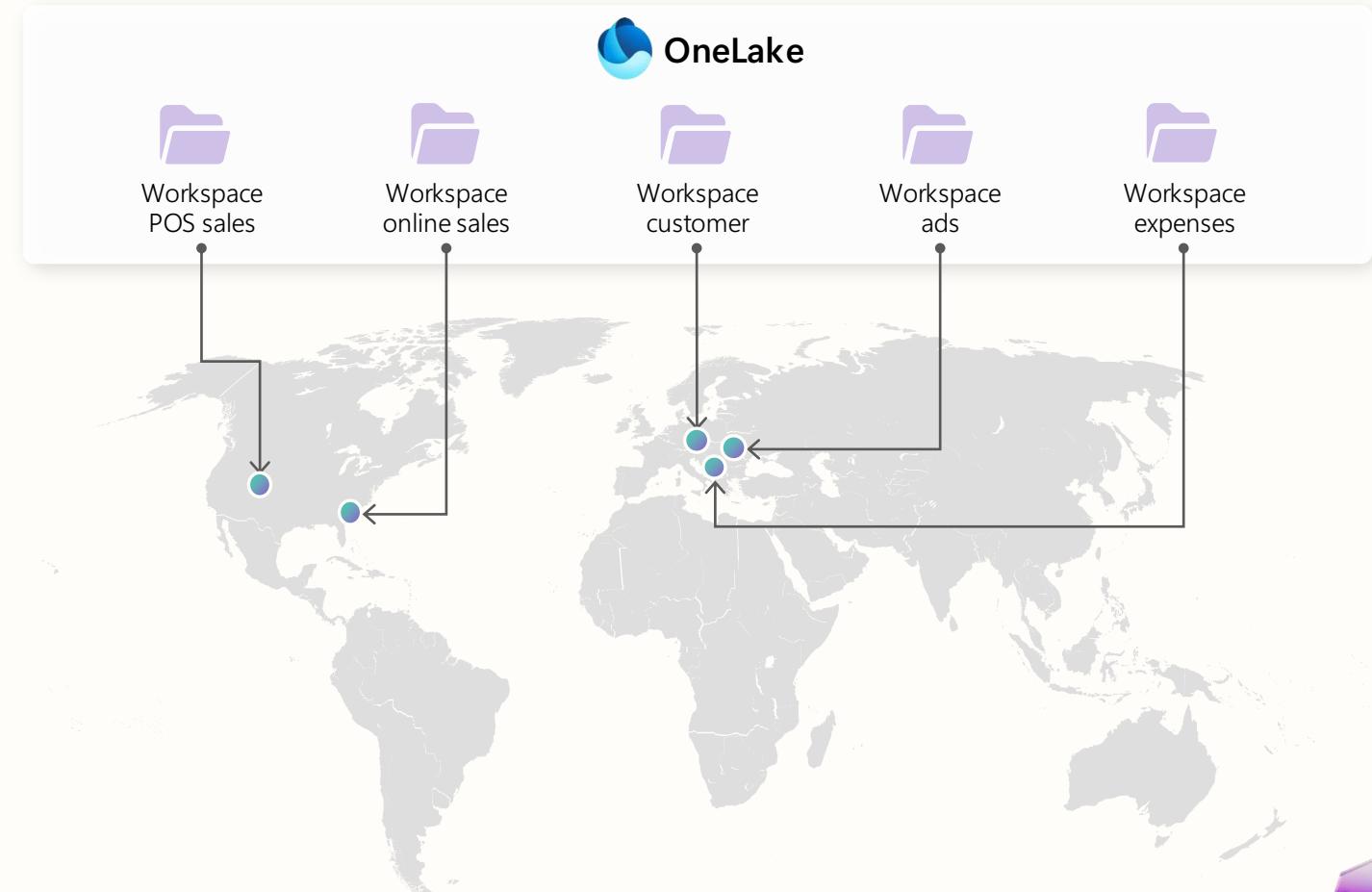
Data can reside in different regions without the overhead of managing different storage resources and without creating data silos.

OneLake provisions storage resources for each workspace to meet demand for scale (capacity, throughput and IOPS).

Underlying physical storage is virtualized away.

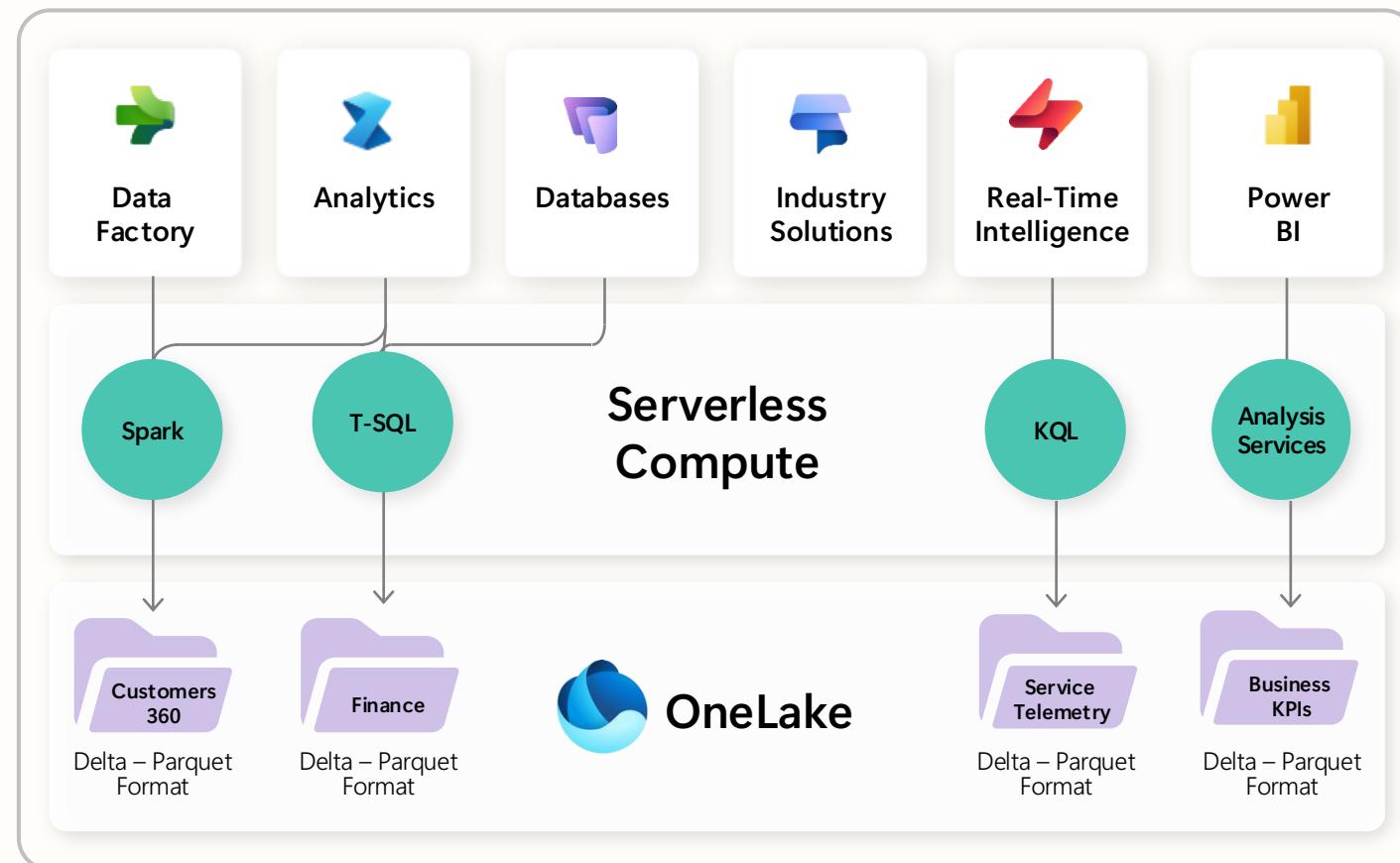
All storage is zone redundant by default with an option for Geo redundancy.

## Unified Security and Governance



# One Copy for all computers

Real separation of compute and storage



All the compute engines store their data automatically in OneLake as data items.

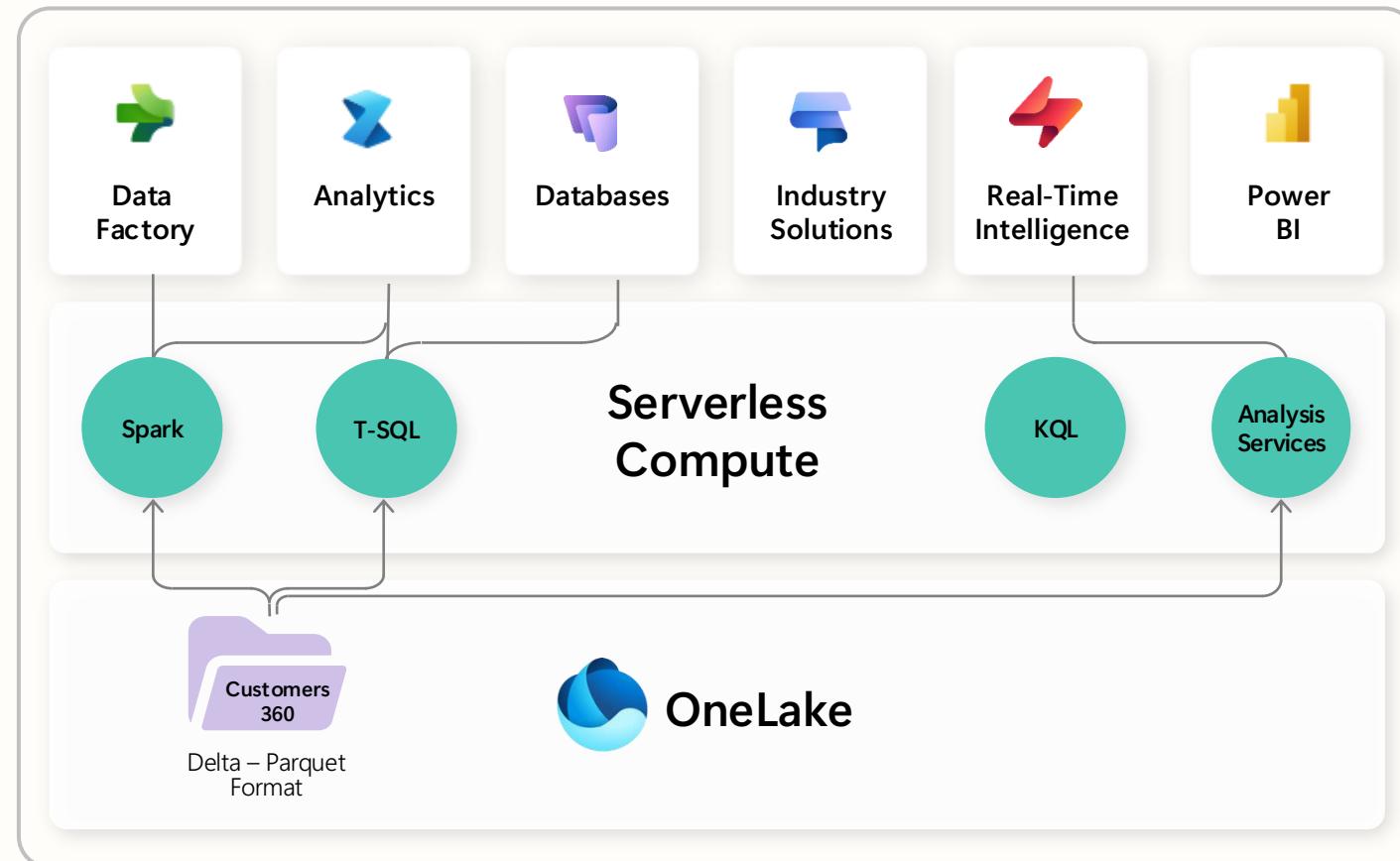
The data is stored in a single common format.

**Delta – Parquet**, an open standards format, and it is the storage format for all tabular data in Fabric.

All the compute engines have been fully optimized to work with Delta Parquet as their native format.

# One Copy for all computers

One copy of data can be read by all engines



Once data is stored in the lake, it is directly accessible by all the engines without needing any import/export.

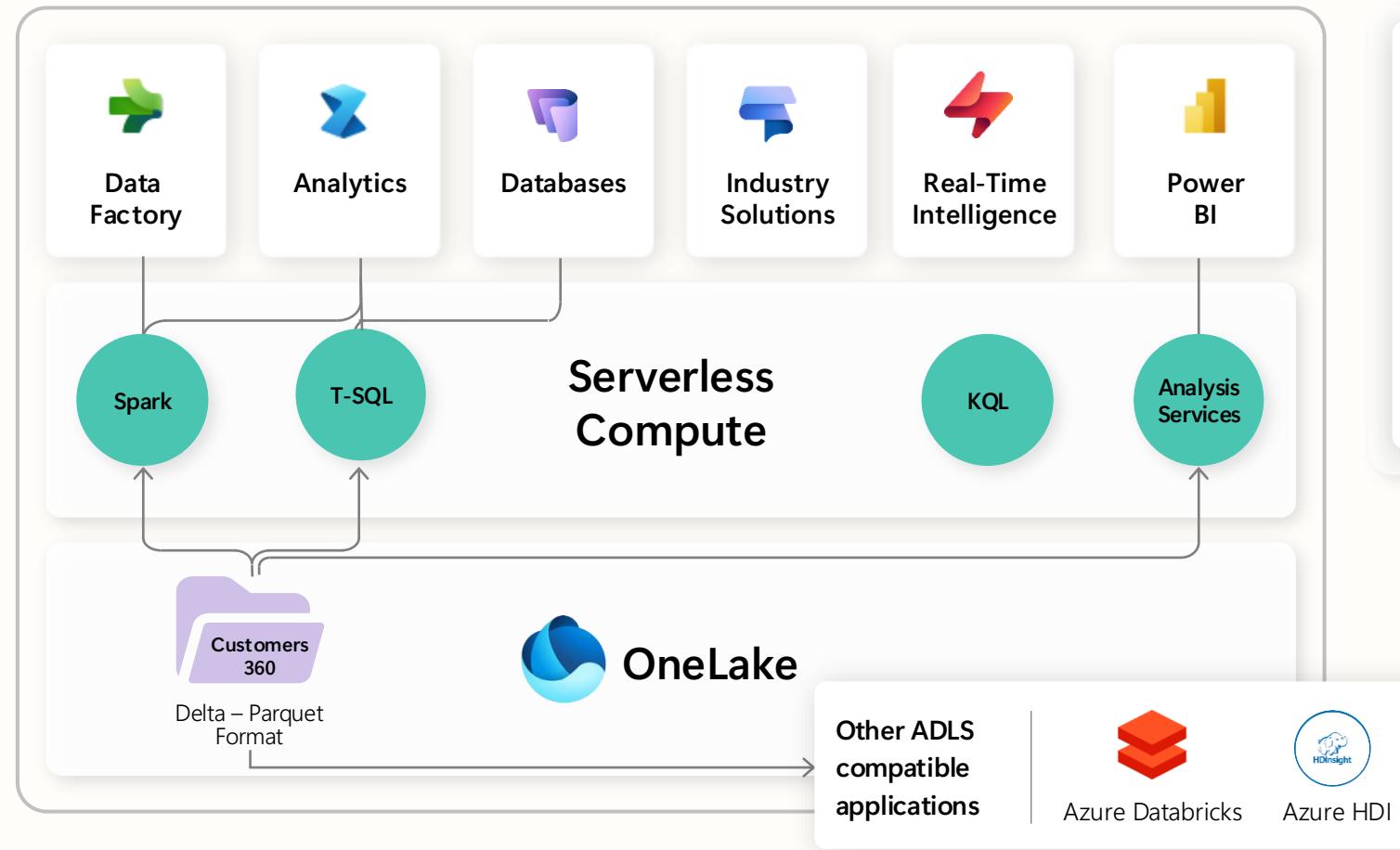
You are able to choose the right engine for the right job.

All the compute engines have been fully optimized to work with Delta Parquet as their native format.

Shared universal security model is enforced across all the engines (coming soon).

# Open Access to data in OneLake

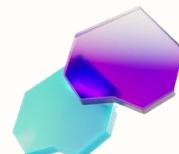
No lock-in with industry standard APIs and open file formats



By supporting the ADLS Gen2 DFS APIs and SDKs, OneLake is compatible with existing ADLS applications.

Tenants will appear as one big storage account with different workspaces appearing as different containers with data organized into folders.

Underlying physical storage is virtualized away. OneLake ensures proper scale and performance.



# Unifying data in OneLake

## Data Factory



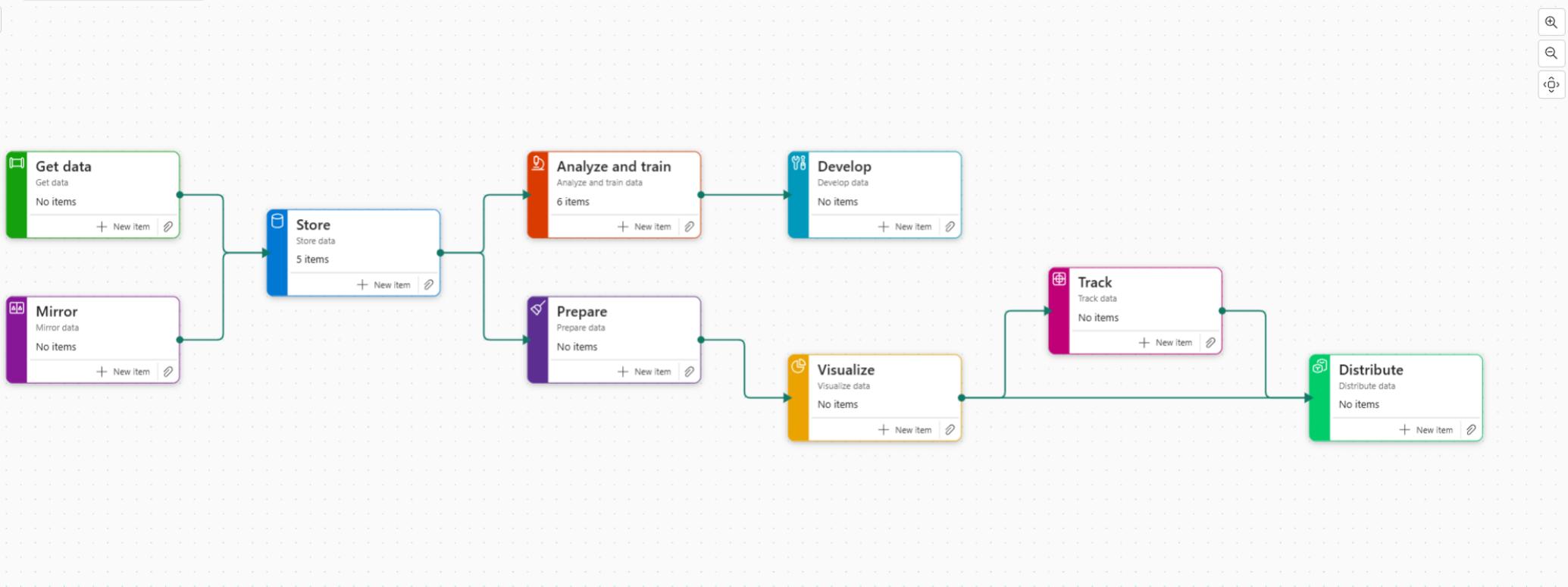
Azure Database for PostgreSQL	Azure Databricks Delta Lake	Amazon RDS for Oracle	Amazon RDS for SQL Server	Amazon Redshift	Phoenix	PostgreSQL	Presto	Magento (Preview)
Azure SQL Database	Azure SQL Database Managed Instance	Apache Impala	Azure SQL Database Managed Instance	DB2	SAP BW	SAP BW	SAP HANA	Oracle Eloqua (Preview)
Azure Table Storage	MongoDB Atlas	Drill	Google AdWords	Google BigQuery	SAP Table	SQL server	Spark	PayPal (Preview)
Azure Cosmos DB (MongoDB API)	Azure Cosmos DB (SQLAPI)	Greenplum	HBase	Hive	Amazon S3	Amazon S3 Compatible	FTP	SAP Cloud For Customer
Azure Data Lake Storage Gen1	Azure Data Lake Storage Gen1 for Cosmos Structured Stream	IBM Informix	MariaDB	Microsoft Access	File system	Google Cloud Storage (S3APD)	HDFS	Salesforce Marketing Cloud
Azure Data Lake Storage Gen1 for Cosmos Structured Stream	Azure Database for MariaDB	MySQL	Netezza	Oracle	HTTP	Oracle Cloud Storage (S3AP)	SFTP	Shopify (Preview)
teradata	VERTICA	ODBC	OData	REST	Amazon Marketplace Web Service	Concur (Preview)	Dataverse (Common Data Service for App)	Web Table
Jira	Kusto	SharePoint Online List	Dynamics 365	Dynamics AX	Dynamics CRM	Cassandra	Couchbase (Preview)	MongoDB

# Task Flow

+ New item New folder Import Migrate

Filter by keyword Filter

Add



### General

Task flow details

This task flow guides you through the completion of high-level data processing tasks within Fabric and the items typically assigned to them.

Edit

### Tasks

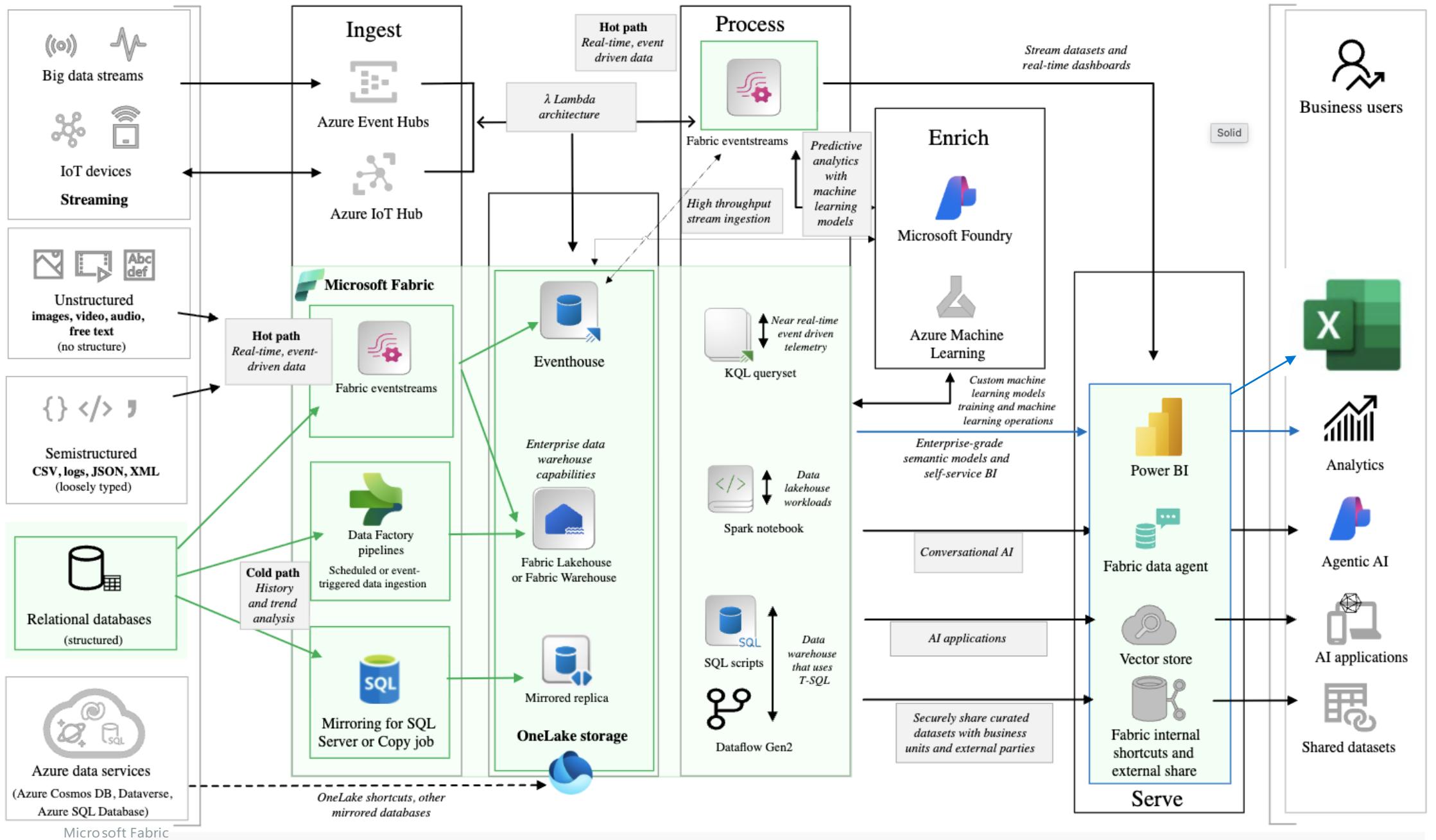
9 Tasks

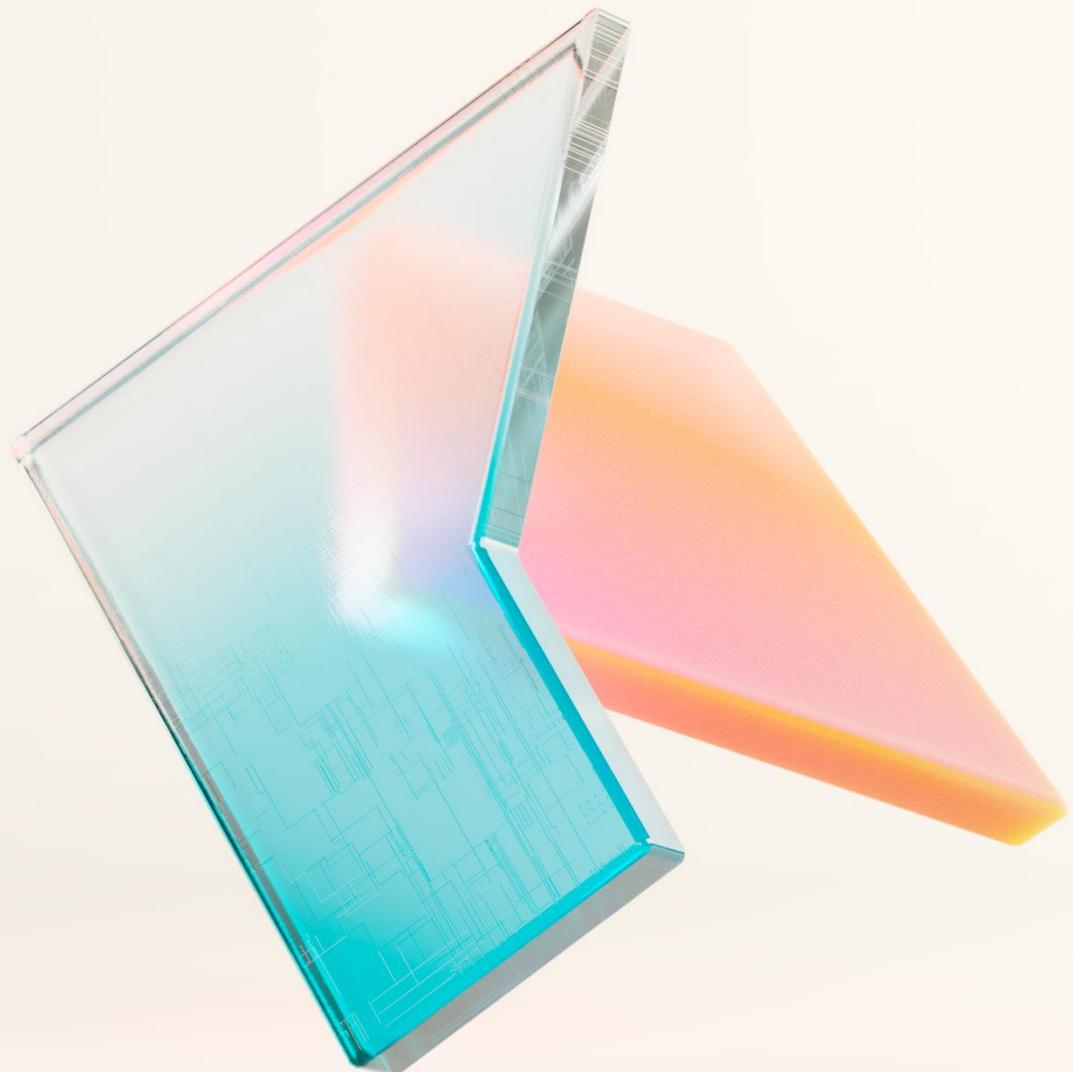
- Get data
- Store
- Analyze and train
- Prepare
- Visualize
- Track
- Develop
- Mirror
- Distribute

	Name	Type	Task	Owner	Refreshed	Next refresh	Endorsement	Sensitivity	Included in app
	DataflowsStagingWarehouse	Warehouse	Store	Debra Berger	—	N/A	—	Confidential	
	DataflowsStagingWarehouse	Semantic model (default)	Store	Debra Berger	4/11/2024, 1:01:42 AM	N/A	—	Confidential	
	MyModel	ML model	Analyze and train	Adele Vance	—	—	—	Confidential	
	MyNewNotebook	Notebook	Analyze and train	Adele Vance	—	—	—	Confidential	

# Demo: Workspaces, Task Flow, Items

# Analytical architecture





Lakehouse



# Lakehouse | Overview

Store, manage and analyze all your data in a single location & easily share across the entire enterprise

Quickly and easily create a Lakehouse without having to provision and configure compute, storage and networking

## **Key Capabilities:**

- Flexible and scalable solution that enables organizations to handle large data volumes of all types and sizes
- Built-in SQL endpoint unlocks data warehouse capabilities on top of your Lakehouse with no data movement
- Use 'direct lake' mode to build reports in seconds directly on top of the data lake with blazing fast performance
- Easily ingest data into the Lakehouse through a variety of methods
- Share your Lakehouse as a data product with consumers

The screenshot shows the Microsoft Fabric Explorer interface. On the left, the 'Explorer' sidebar is open, displaying a tree view of a 'importerslakehouse' dataset. Under 'Tables', there are several fact and dimension tables. Under 'Files', there is a 'wwi-raw-data' folder containing 'full' and 'incremental' sub-folders. The 'full' folder is expanded, showing a list of Parquet files named 'fact\_sale\_ty\_full'. The 'incremental' folder is also visible. On the right, a detailed table lists these files with columns for Name, Date modified, Type, and Size. The table shows multiple partitions of the 'fact\_sale\_ty\_full' table, each being a Parquet file. The 'Date modified' column shows various times on April 24, 2023, and the 'Size' column shows file sizes ranging from 0 B to 36 MB.

Name	Date modified	Type	Size
_SUCCESS	4/24/2023 6:58:06 PM	-	0 B
part-00001-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:09 PM	PARQUET	22 MB
part-00001-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:09 PM	PARQUET	26 MB
part-00002-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:09 PM	PARQUET	19 MB
part-00003-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:09 PM	PARQUET	19 MB
part-00004-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:09 PM	PARQUET	33 MB
part-00005-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:10 PM	PARQUET	20 MB
part-00006-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:11 PM	PARQUET	36 MB
part-00007-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:09 PM	PARQUET	23 MB
part-00008-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:11 PM	PARQUET	24 MB
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part-00011-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:11 PM	PARQUET	31 MB
part-00012-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:11 PM	PARQUET	22 MB
part-00013-ced648ca-e8c8-46e5-8526-5ca85d56e67e-c000.snappy.parquet	4/24/2023 6:58:11 PM	PARQUET	21 MB



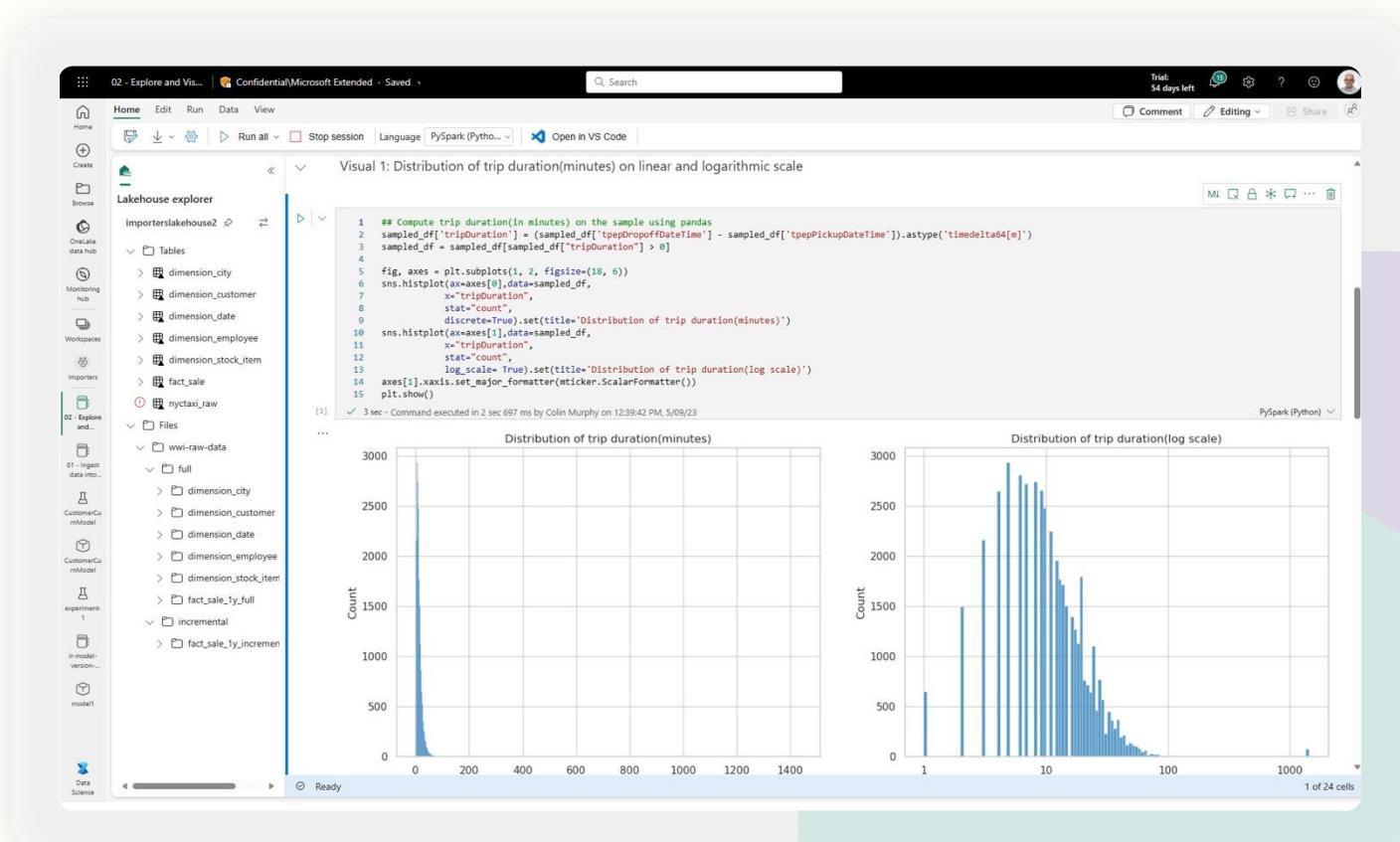
# Notebook | Overview

Immersive authoring experience for data developers

Rich notebook capabilities including native Lakehouse integration, real-time collaboration with commenting support, auto-save support, lightweight scheduling and pipeline integration

## Key Capabilities:

- Manage your Python and R libraries through inline installs using commands like %pip install
- Advanced notebook development support with ability to reference notebooks in notebooks, and snapshots for easy troubleshooting
- In context monitoring complete with real time advice and error analysis
- Streamline data prep without giving up the power of reproducibility of Python



# Seamless data enrichment with AI functions

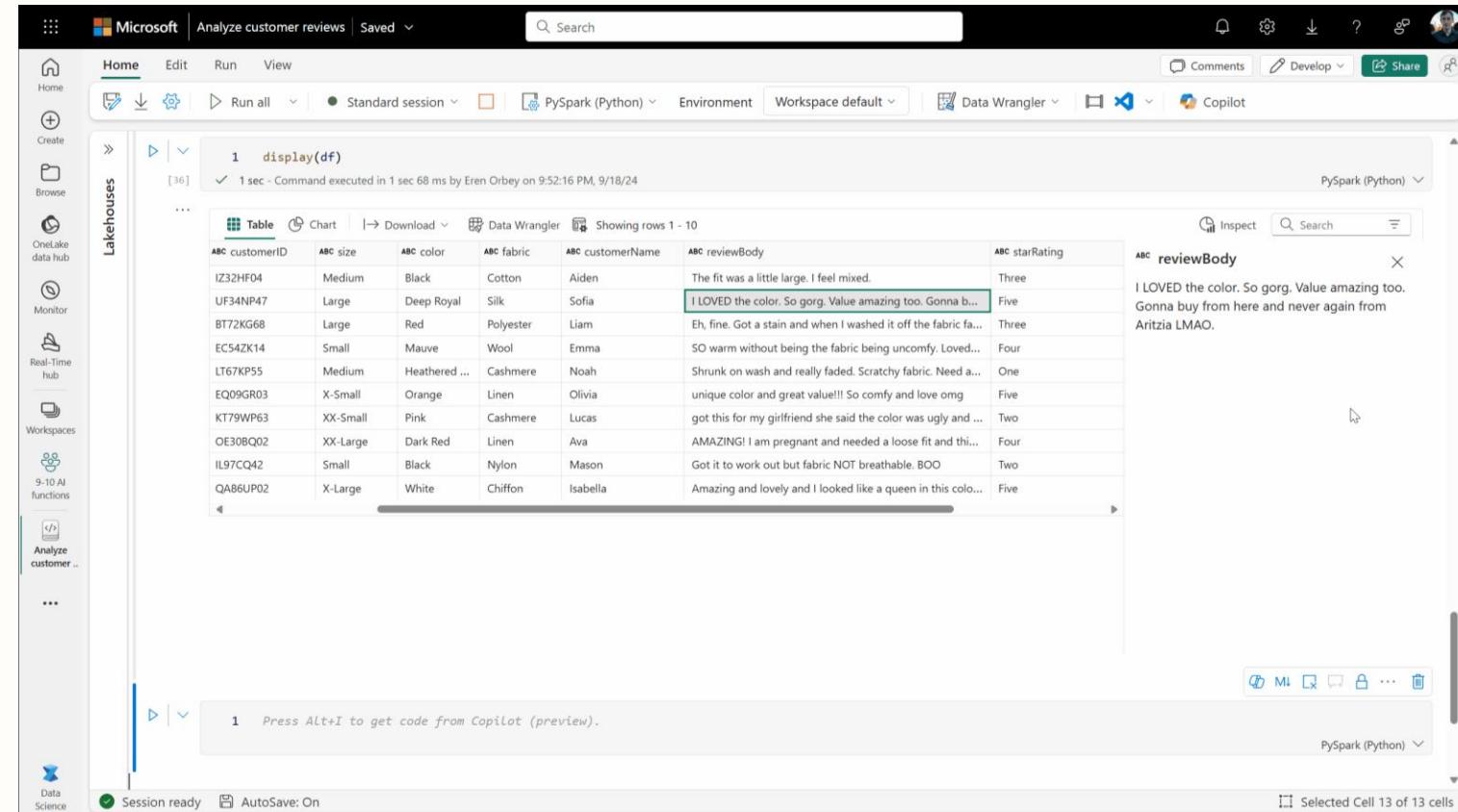
Transform and enrich data with user-friendly **AI functions**

Invoke state-of-the-art LLMs in just a **single line of code**

**Summarization, translation, sentiment analysis, and more**

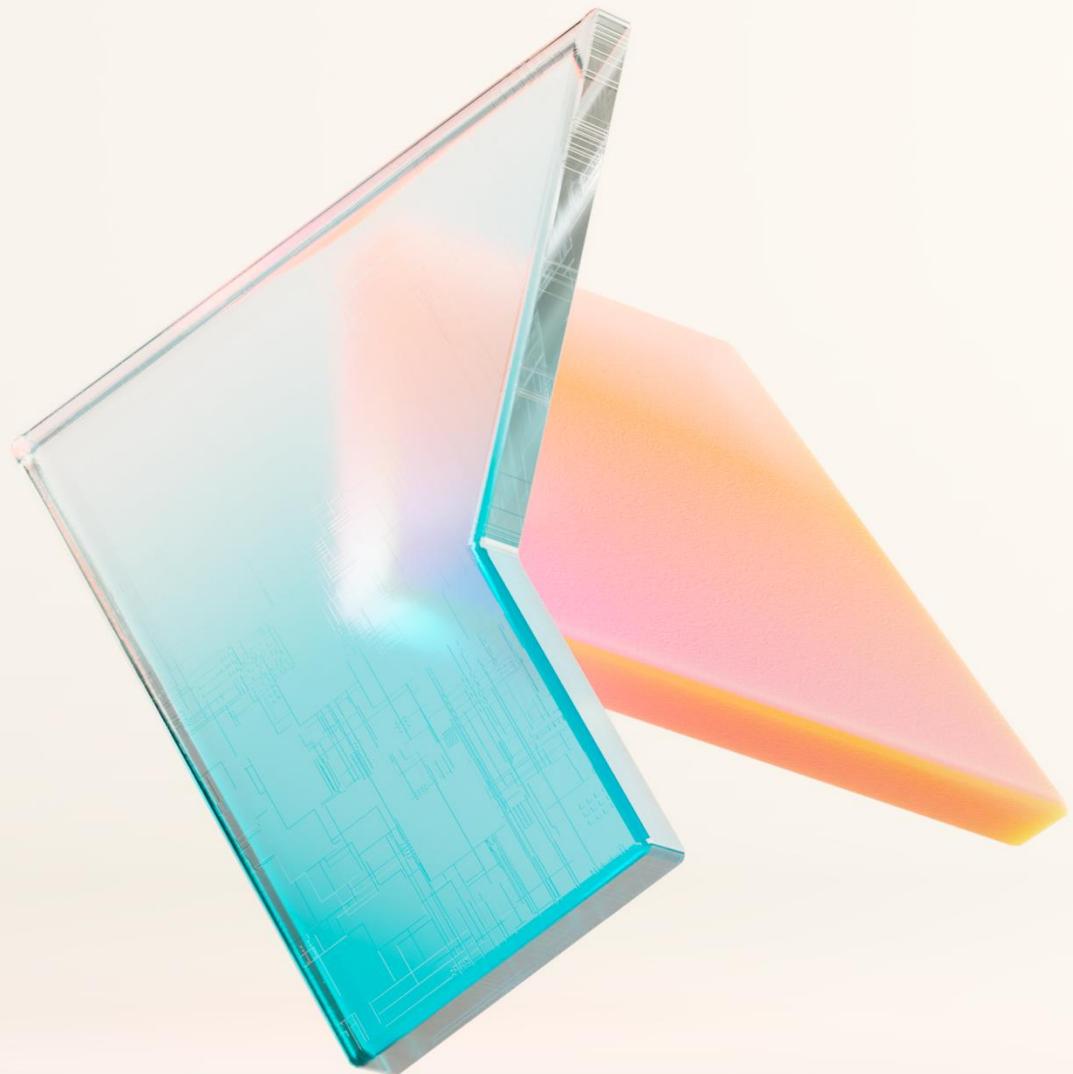
**Coming soon:** AI functions on Spark, in SQL, in OneLake, and in Data Wrangler

Join the preview of AI functions  
[aka.ms/aifunc-optin](http://aka.ms/aifunc-optin)



The screenshot shows a Microsoft Data Science Platform interface. On the left, a sidebar lists various services: Home, Create, Browse, OneLake data hub, Monitor, Real-Time hub, Workspaces, 9-10 AI functions, and Analyze customer. The main area is titled "Analyze customer reviews | Saved" and shows a PySpark (Python) session. A code cell displays the command "1 display(df)" and its execution results. The results are presented in a table with columns: ABC customerID, ABC size, ABC color, ABC fabric, ABC customerName, ABC reviewBody, and ABC starRating. The table contains 13 rows of customer review data. To the right of the table, a tooltip for the "ABC reviewBody" column shows a summary generated by an AI function: "I LOVED the color. So gorg. Value amazing too. Gonna buy from here and never again from Aritzia LMAO." At the bottom of the interface, a message says "1 Press Alt+I to get code from Copilot (preview)." and "Selected Cell 13 of 13 cells".

# Demo: Lakehouse



Warehouse



# Data Warehouse | Overview

Enterprise scale data warehouse with open standard format

No knobs performance with minimal set-up and deployment, no configuration of compute or storage needed

## **Key Capabilities:**

- Lake-centric warehouse stores data in OneLake in open Delta format with easy data recovery and management
- Use Fabric Mirroring for Zero-ETL integration of data from Azure SQL, Snowflake, or Azure Cosmos DB
- Data loading and transforms at scale, with full multi-table transactional guarantees provided by the SQL engine
- Virtual warehouses with cross-database querying and a fully integrated semantic layer
- Flexibility to build data warehouse or data mesh based on organizational needs and choice of no-code, low-code, or T-SQL for transformations

The screenshot shows the Microsoft Fabric Data Explorer interface. On the left, the Explorer sidebar displays a tree view of databases, schemas, tables, and other database objects. In the center, a query editor window titled "SQL query 1" contains the following T-SQL code:

```
CREATE TABLE [TravelWarehouse].[dbo].[InFlightMeals]
(
    MealId int NOT NULL,
    MealCategory varchar(50) NOT NULL,
    MealName varchar(75) NOT NULL,
    IsVegan varchar(3) NULL,
    IsVegetarian varchar(3) NULL,
    IsGlutenFree varchar(3) NULL
)
```

Below the code, the "Messages" pane shows the execution history:

- 6:12:28 PM: Started running query at line 1
- 6:12:29 PM: Statement ID: (917CFABC-197D-4F9F-A862-06E76573958F)  
Msg 24526, Level 0, State 1  
Total execution time: 00:00:01.743

At the bottom, the status bar indicates "Succeeded (1 sec: 743 ms)" and "Columns: 0 Rows: 0".



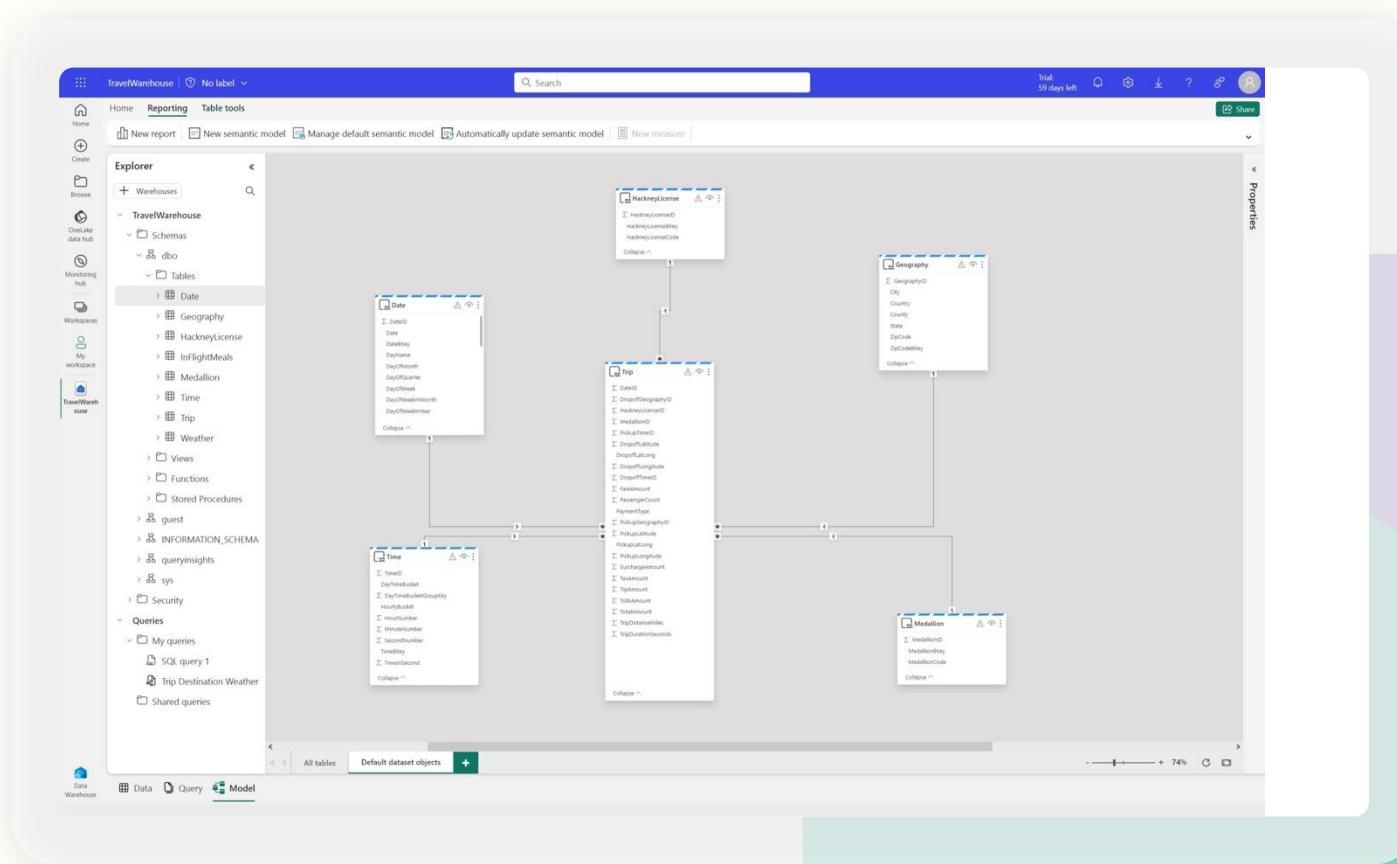
# Fully integrated Power BI semantic layer

Reduce integration and gain insight from your data in seconds

Built-in Power BI enables everyone to visualize their data in seconds.

## **Key Capabilities:**

- Auto-generated semantic models always in sync
- Default dataset in Direct Lake mode but automatically switches to Direct Query or Import mode as security or performance needs change
- Flexibility to add/remove tables to dataset
- Full web authoring experience for creating measures





# Secure by default

Keep data secure for any role accessing it and ensure peace of mind

Customers can secure their data using familiar constructs and ensure data is only visible to those authorized to do so

## Key Capabilities:

- **Workspace roles:** Workspace roles are used for collaboration with team. Add users to workspace with role assignment of Admin, Member, Contributor, Viewer
- **Artifact permissions:** Artifact permissions are used for sharing for consumption of Warehouses. Provide access and share individual Warehouses with specific permissions
- **Data security:** Use T-SQL, GRANT, REVOKE or DENY to secure any object within Warehouse. Users can be assigned to built-in custom roles.
- **Sensitivity labels:** Apply sensitivity labels on your Warehouse to classify sensitive data.
- **Granular security:** Implement row or column security or Dynamic Data Masking for granular data access control

The screenshot shows the Microsoft Fabric interface for managing a dataset named 'importerdw'. The left sidebar includes options like Home, Create, Browse, OneLake data hub, Monitoring hub, Workspaces, Importers, and importerdw. The main area displays 'Details for importerdw' with tabs for General, Refreshed, Sensitivity (set to General), and a '+1' button. It also shows sections for 'Visualize this data' (with a 'Create a report' button) and 'Share this data' (with a 'Share warehouse' button). A table titled 'See what already exists' lists one item: 'importerdw' (Dataset (default), Downstream, Importers, Refreshed 5/4/23, Endorsement -, Sensitivity General). On the right, a 'Show objects' sidebar lists multiple items with blurred names. The bottom left corner features a 'Data Engineering' badge.

# Mirroring in Microsoft Fabric

Simplify near real-time intelligence

Fabric Mirroring enables adding existing databases and data warehouses to Fabric without any ETL.

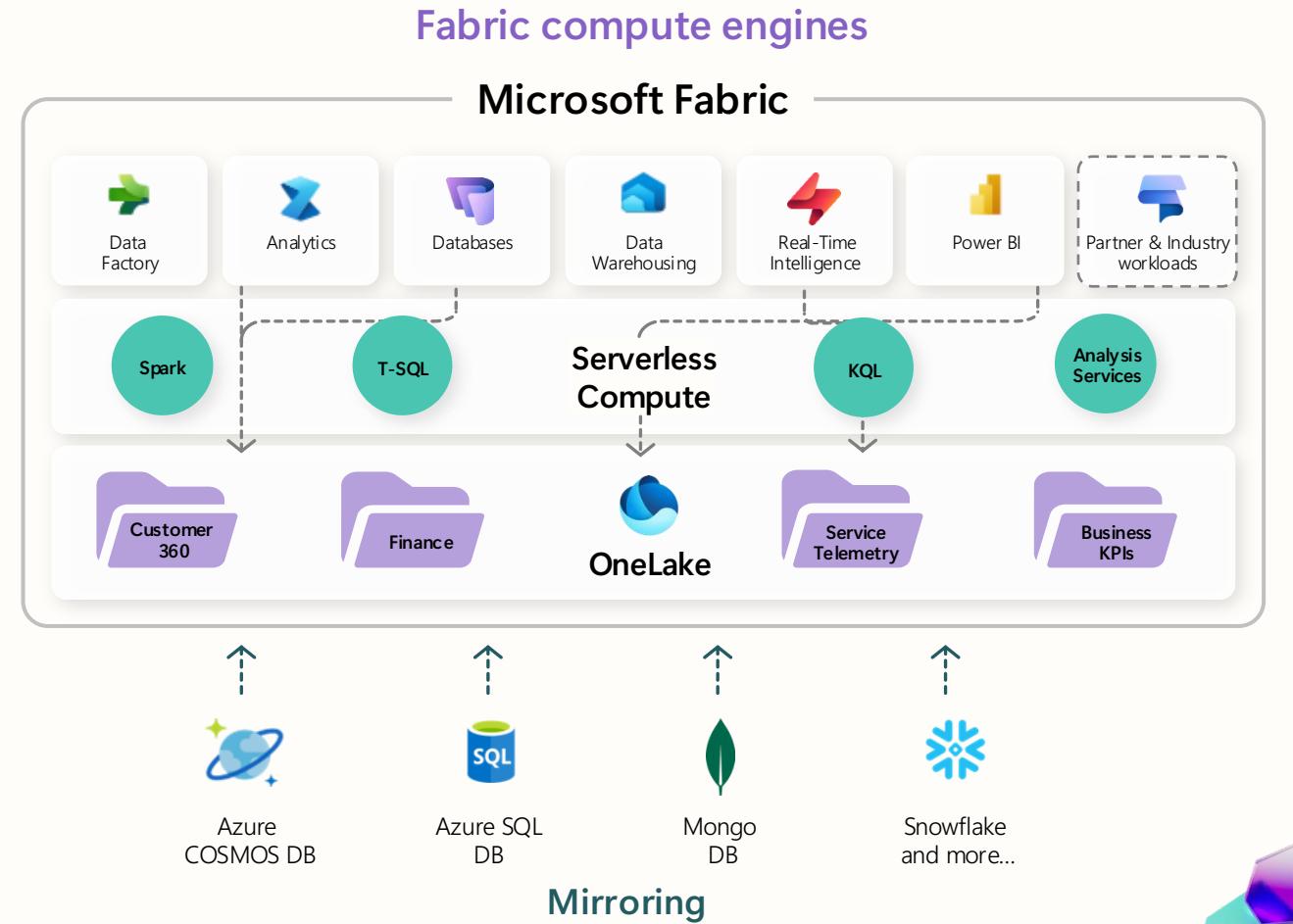
A full editing experience of the source database is available for the Mirrored database.

Data is replicated into OneLake in Delta format and kept up-to-date in near-real-time.

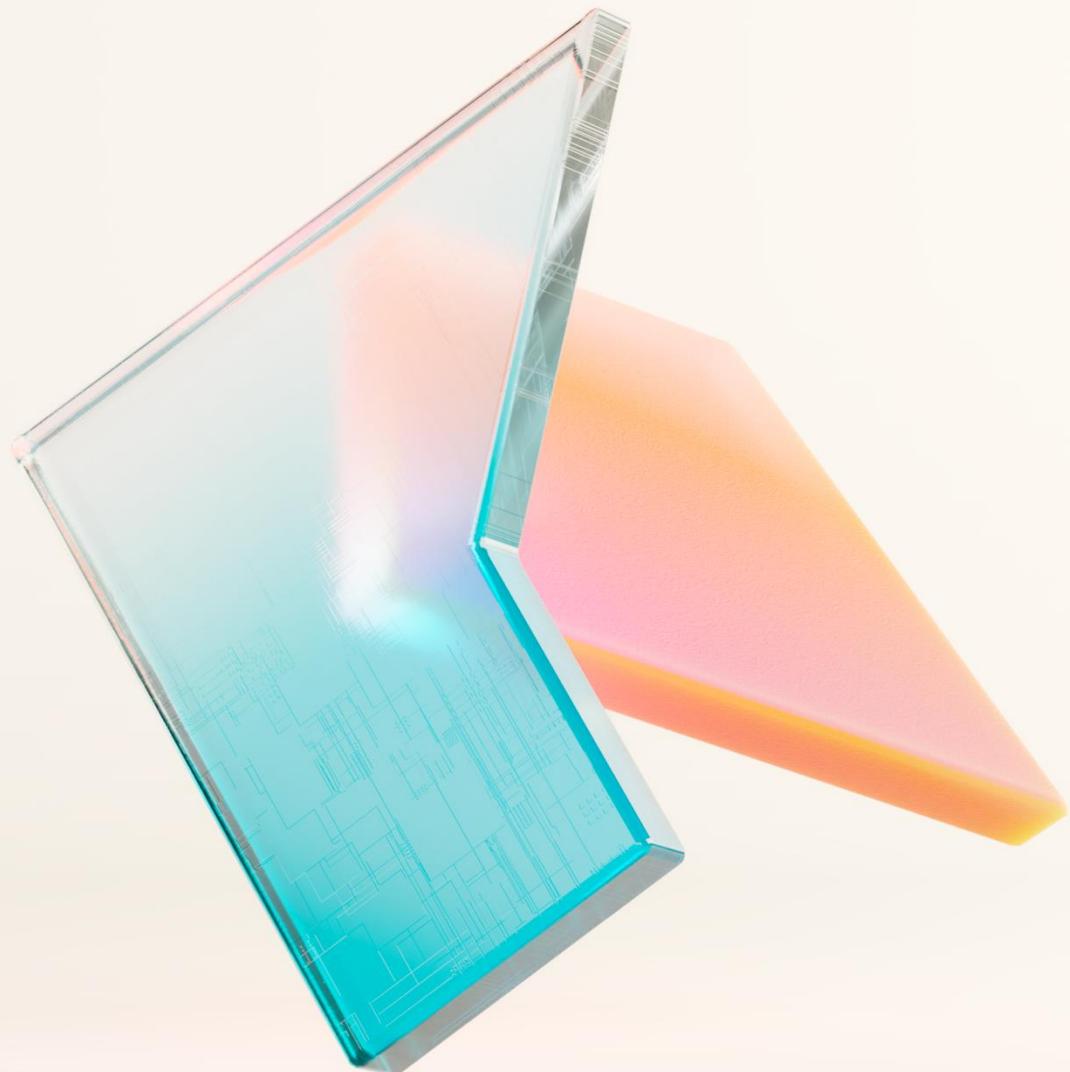
All the Fabric experiences instantly work with the OneLake replica.

Analysts and Data Scientists can work with real-time data.

The replica protects operational databases from analytical queries.



# Demo: Warehouse



Real time intelligence



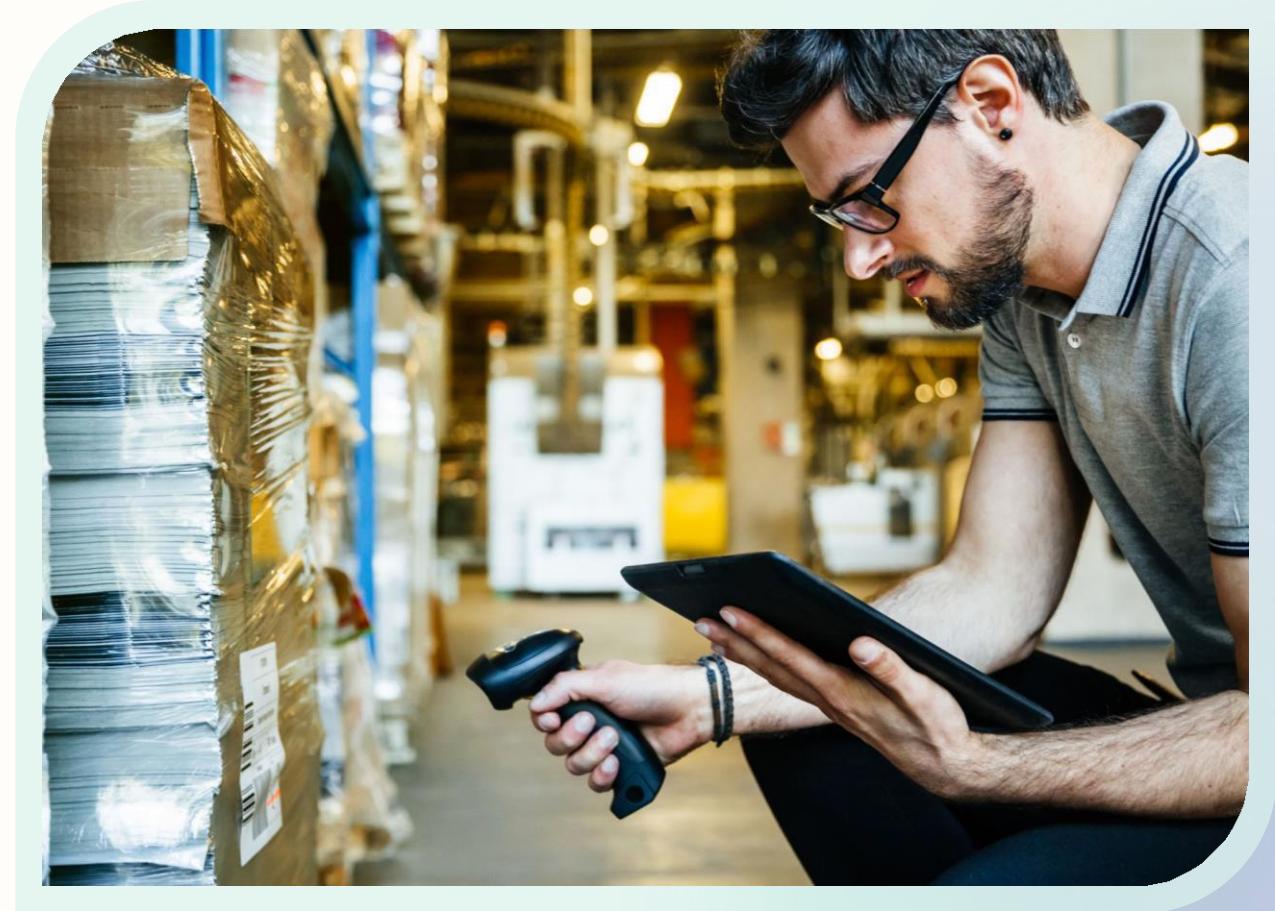
There is a rapidly growing set of use cases that need 'real-time' speeds, generating decisions and actions at least **20 times faster** than the blink of an eye."

Forbes, "[Understanding AI and ML in the real-time economy,](#)" February 2024

# Time-oriented data is difficult to manage, yet critical for success

**For customers, it is:**

- Challenging to capture high throughput data from disparate sources in real time
- Difficult to model scenarios using event data
- Complicated to choose from array of bespoke technologies and data formats
- Hard to successfully leverage the power of AI against data in real time





# Microsoft Fabric

## Intelligent data foundation



Data  
Factory



Data  
Engineering



Data  
Warehouse



Data  
Science



Real-Time  
Intelligence



Power  
BI



Industry  
Solutions



Powered by AI with Copilot in Microsoft Fabric



Catalog for data in motion

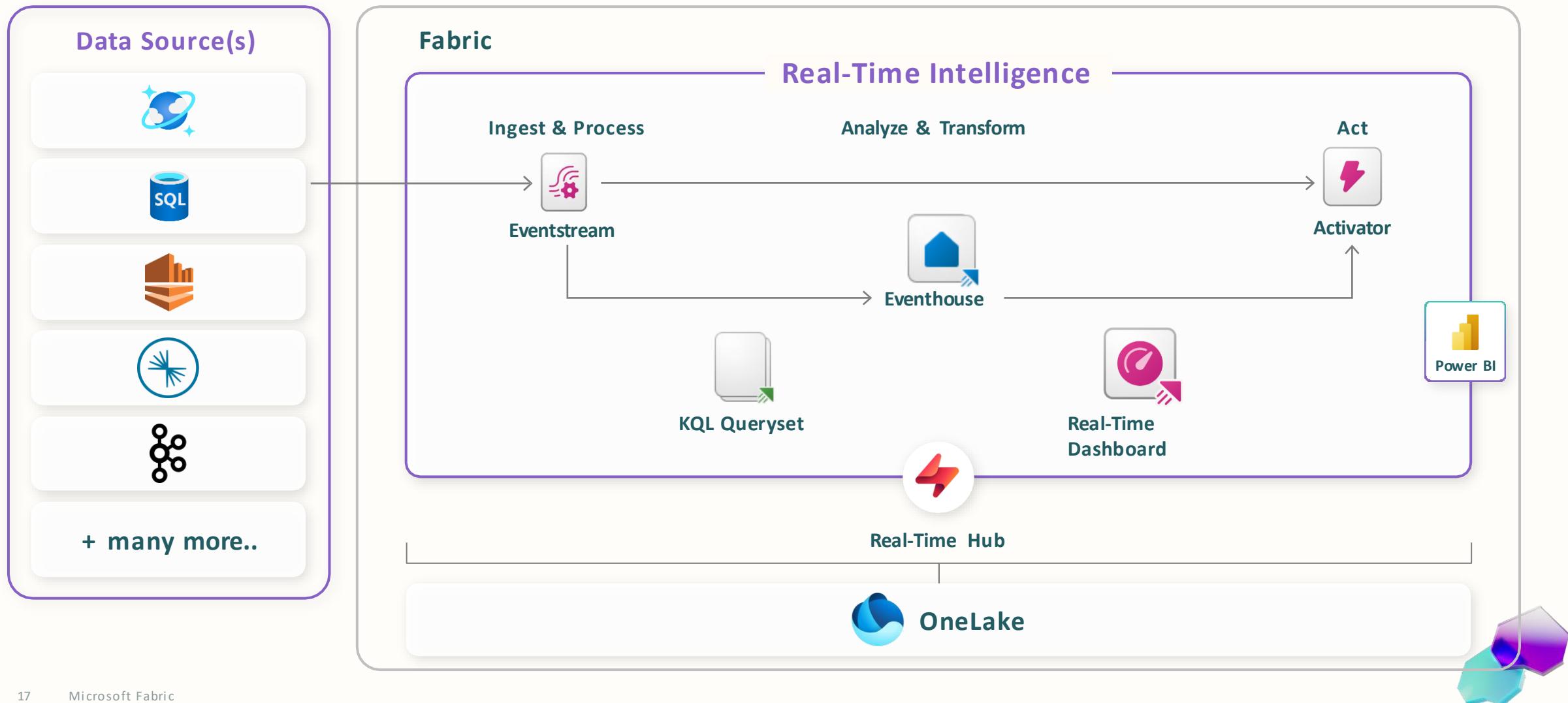
Real-Time Hub



Unified data foundation

OneLake

# Components of Fabric's Real-Time Intelligence



# Real-Time hub

Discover, manage, and reuse Real-Time data in one place

The screenshot shows the Microsoft Fabric Real-Time hub interface. On the left, there's a sidebar with navigation links: 'All data streams' (highlighted), 'My data streams', 'Connect to Data sources' (with 'Microsoft sources' listed), 'Subscribe to Fabric events' (with 'Preview'), and 'Azure events'. The main area is titled 'All data streams' and contains a search bar with placeholder text 'Search for streaming data across your organization'. Below the search bar are filters for 'Data stream' and 'Owner'. A table lists several data streams with their names:

Name
es_Fabrikam_TruckMovement-stream
new_event_stream-stream
FabrikamResellers
FabrikamResellerInventory
TruckMovement
SilverRapidDeliveryNearestDrivers

Central location within Fabric to discover, manage, and reuse real-time data across your entire organization. Every Fabric tenant is automatically provisioned with this hub. No extra steps needed to setup or manage it.

Data can be easily discovered by its [stream type](#), [owner](#), [Item](#), and [workspace](#)

Abundant connectors for simplified data ingestion into fabric

You can [create streams](#) for the supported sources. After you create the streams, you can process them, [analyze](#) them, and set [alerts](#) on them

You will see all your organizational [streams](#) and Kusto Query Language (KQL) [tables](#)



# Planet-scale infrastructure for real-time data

10 EB

Events and logs per month

350 PB

Ingested daily

5.1 B

Real-time queries per day

19.2 T

Streaming events processed monthly

99.9992%

Success rate across messaging



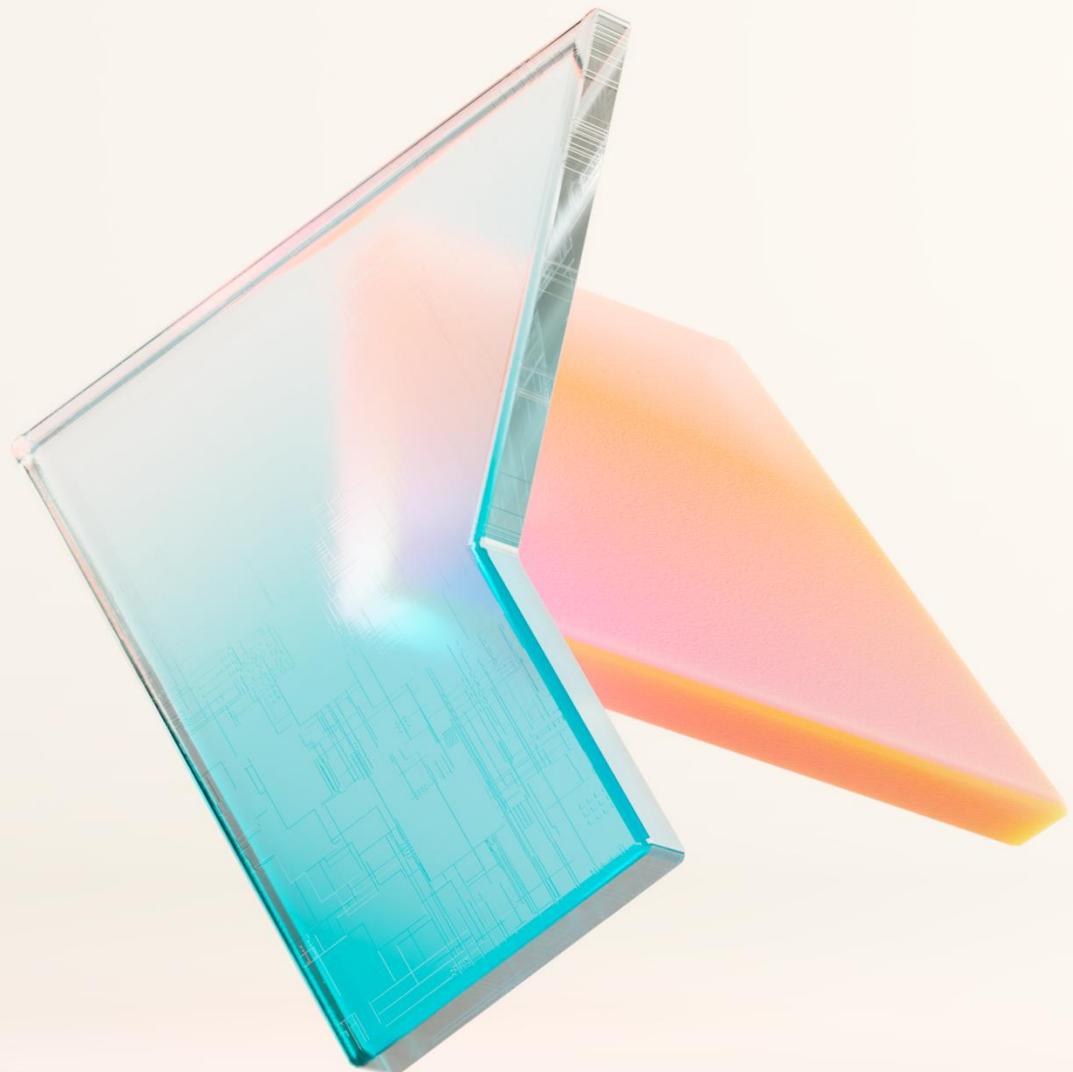
# Accelerating momentum

8.9K

Fabric customers  
use Real-Time Intelligence

360%

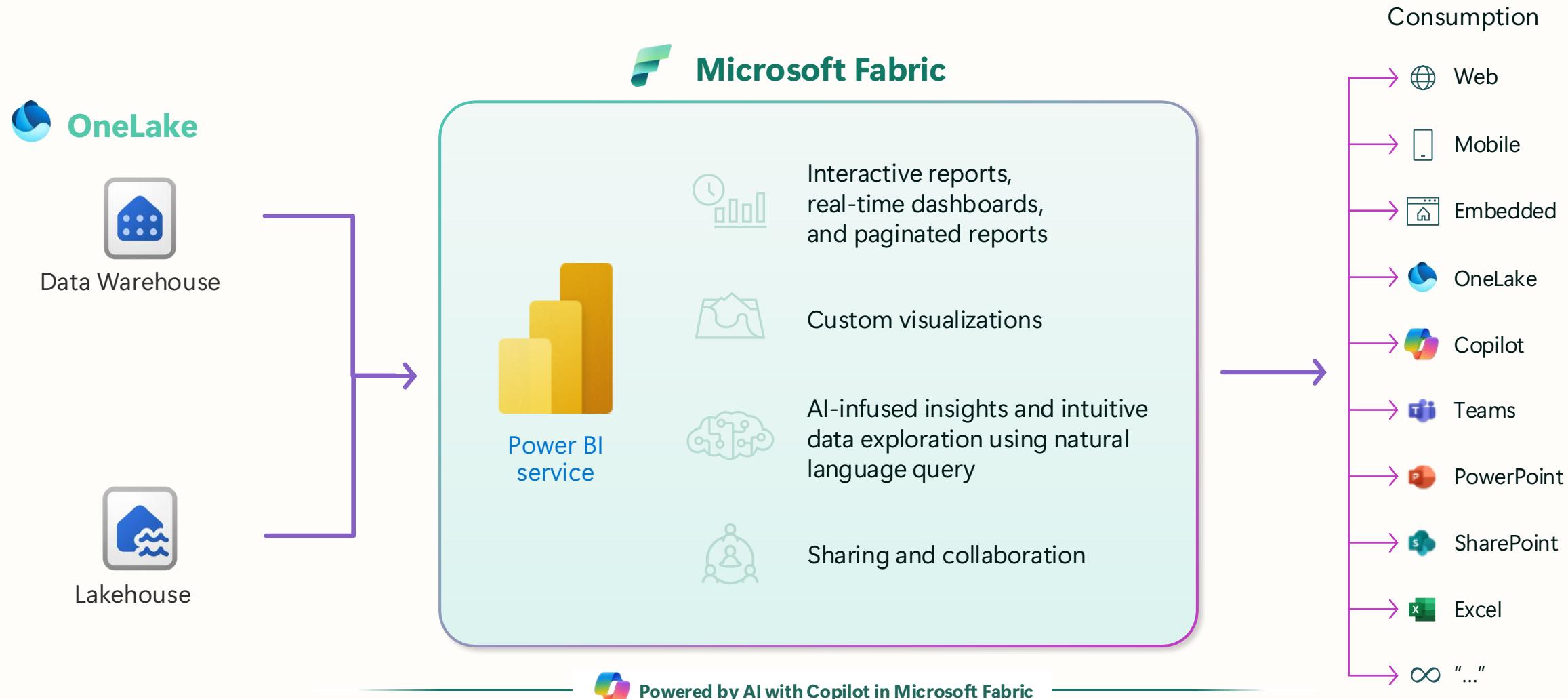
Y/Y growth  
in active users



- Semantic model
- Business Intelligence



# Power BI: The bridge between data and decisions



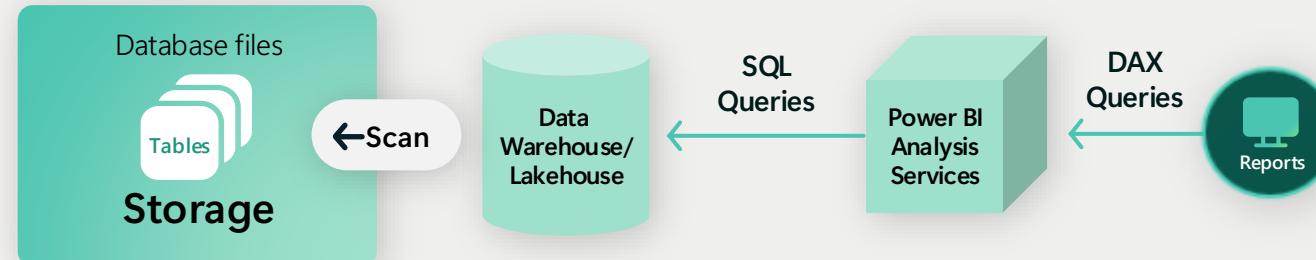


# Power BI | Direct Lake Mode

Direct Lake is a fast-path to load the data from the lake straight into the Power BI engine, ready for analysis

Direct Lake is based on loading parquet-formatted files directly from a data lake without having to query a Lakehouse endpoint, and without having to import or duplicate data into a semantic model

**Direct Query Mode.** Slow, but real time



**Direct Lake Mode.** Fast and real time





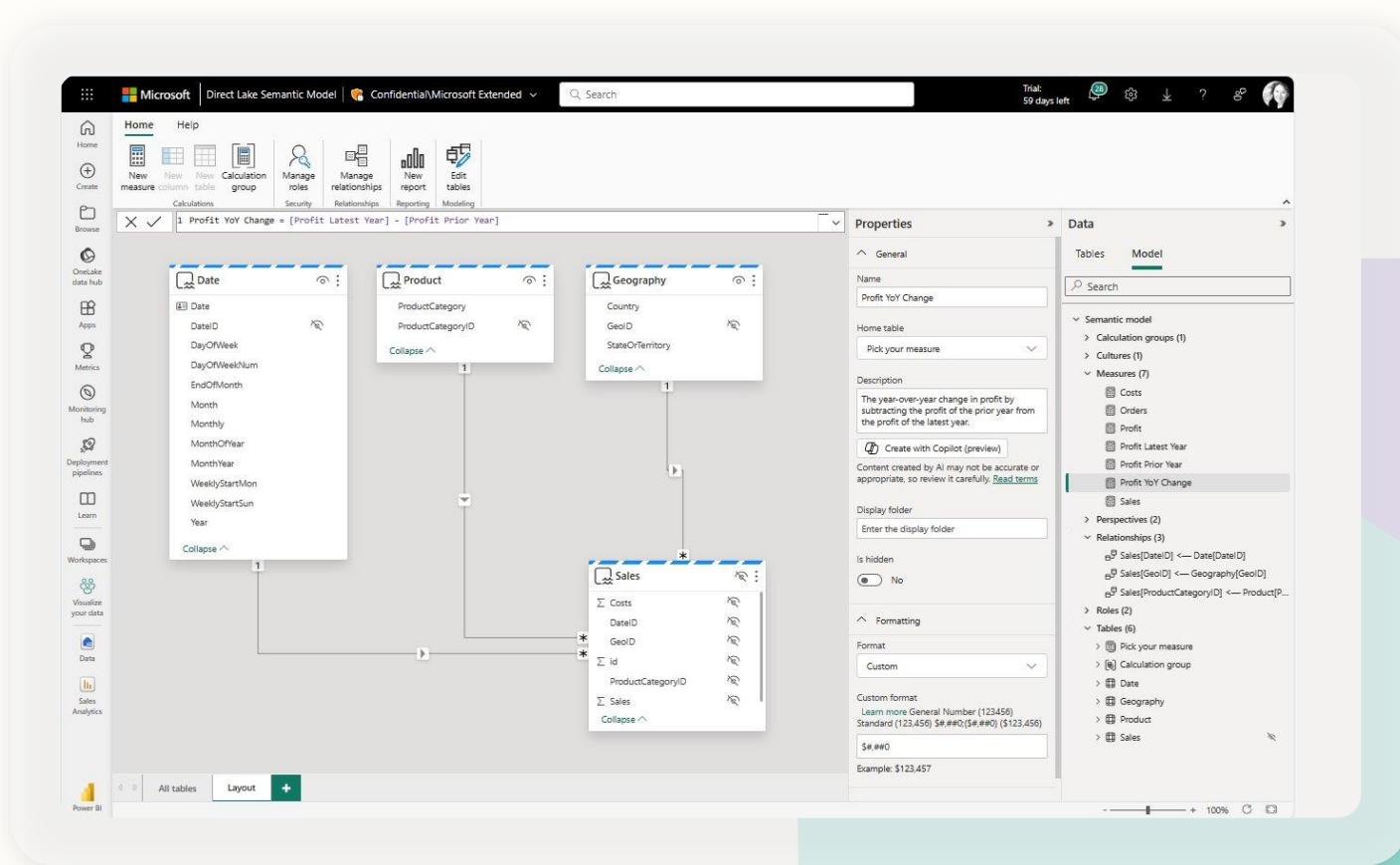
# Power BI | Semantic Model

Model your data and quickly unlock insights

Power BI enables everyone to build semantic models they can use to explore data, visualize data in reports, and create scorecards

## **Key capabilities:**

- Power BI semantic models in Fabric use Direct Lake mode to create lightning-fast reports on OneLake data
- Rich semantic modeling experience both online in browser and offline in Power BI Desktop, and in many community-built tools via XMLA endpoint
- Power BI semantic models give data tables meaning by creating relationships between tables and defining business logic in measures





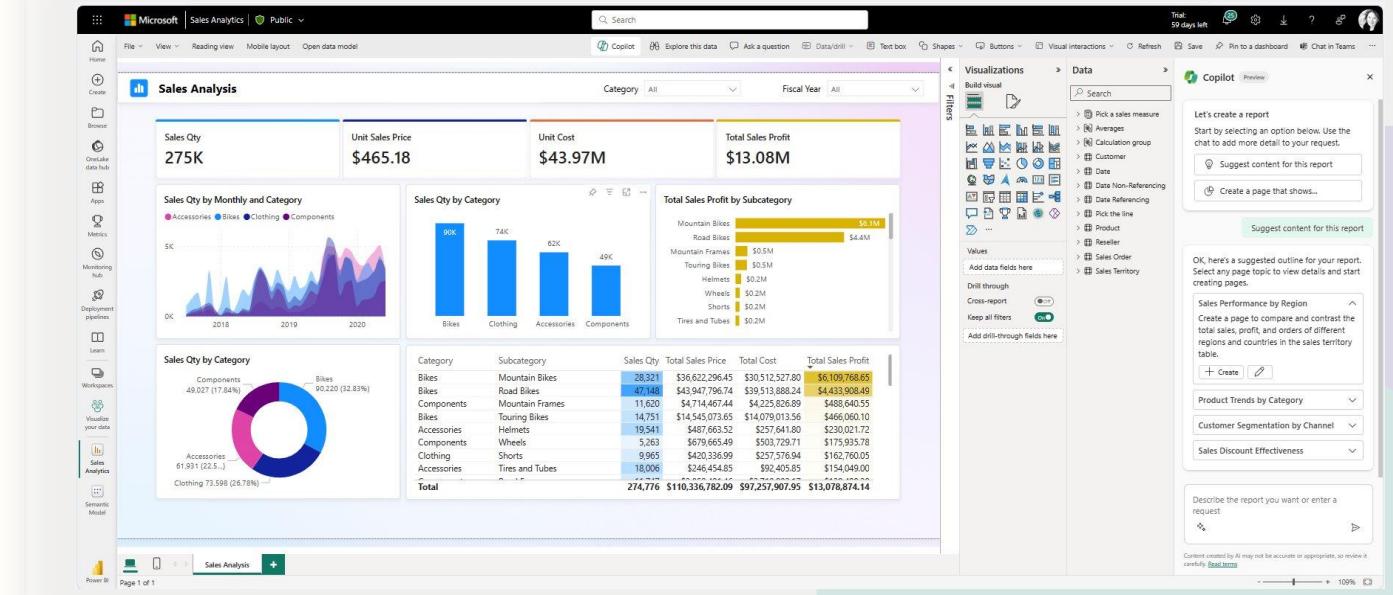
# Power BI | Reports

Auto create Power BI reports from your semantic model

Blazing fast performance with Direct Lake

## Key capabilities:

- Create an interactive report to discover and share business insights
- Use Copilot to help create, understand, and summarize reports
- Share interactively with Teams and PowerPoint
- View on phone or tablet with mobile-ready layouts for every report
- Explore data and find quick insights



# Semantic models in Fabric: Connecting data to AI

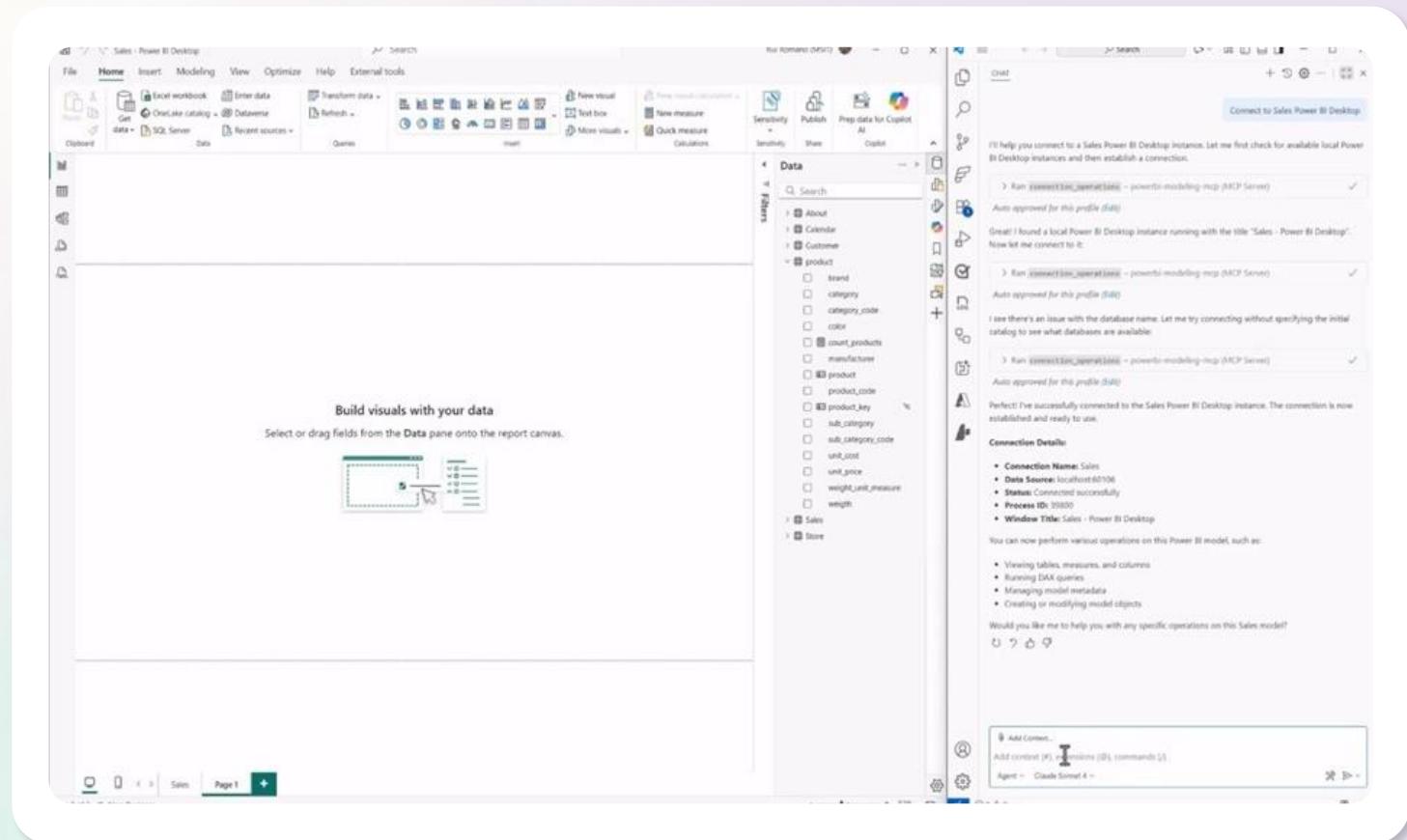
A semantic model in Fabric makes data easier to understand and use by defining common terms, relationships, and calculations—so everyone in your organization can explore and analyze data using the same consistent language

Analyze very large or frequently updated datasets directly in OneLake with Direct Lake mode, giving AI real-time access to data

Connect live to source systems with DirectQuery so Copilot and agents always reflect the latest business changes

Speed up performance with Import mode by keeping stable data ready in memory

Quickly create AI-ready insights by building new semantic models in Direct Lake



# Building AI-ready data in Copilot in Power BI

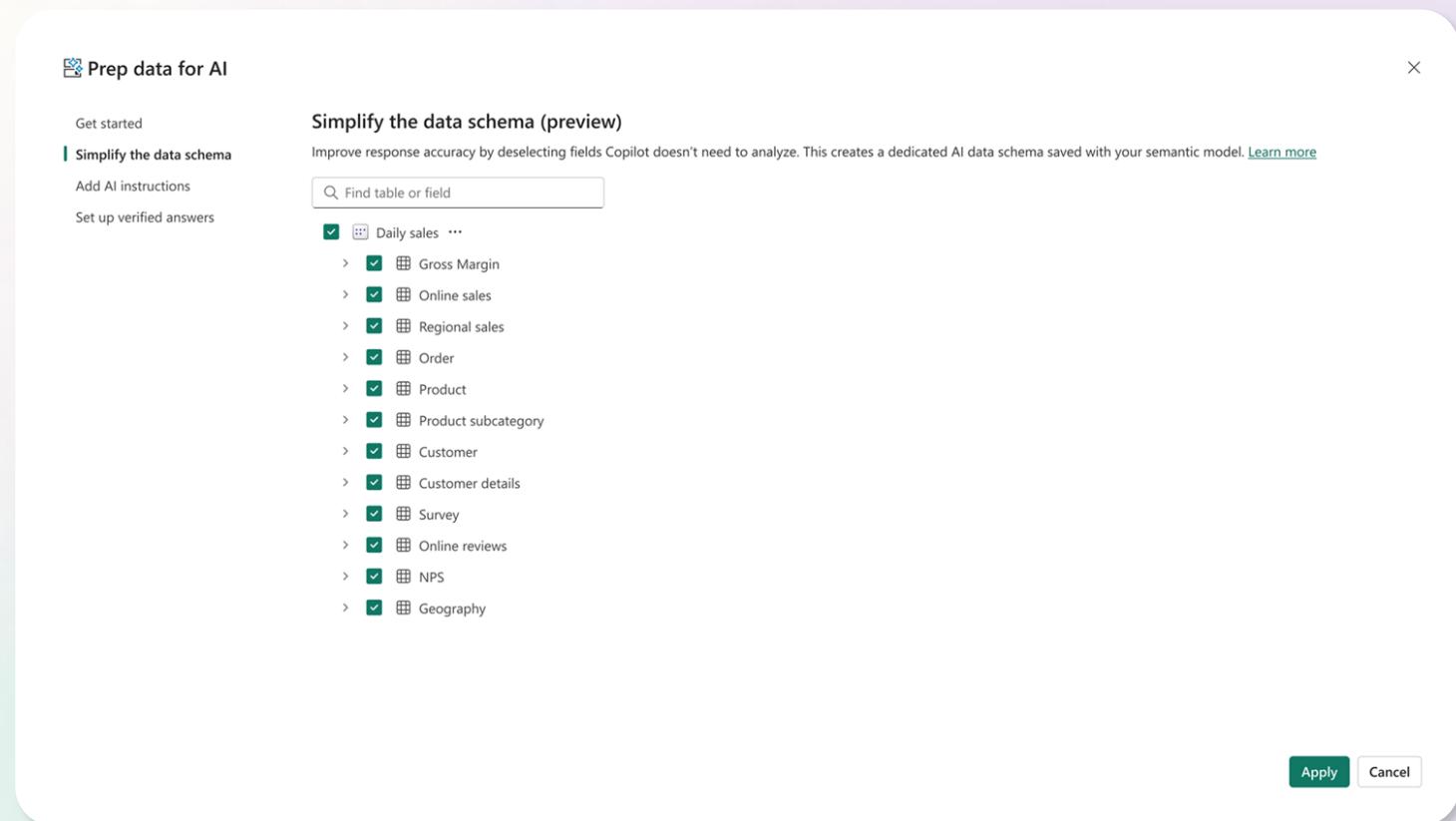
“Prep your data for AI” in Copilot for Power BI are a new set of capabilities that help ensure your data is structured, governed, and optimized for AI-driven experiences within Power BI

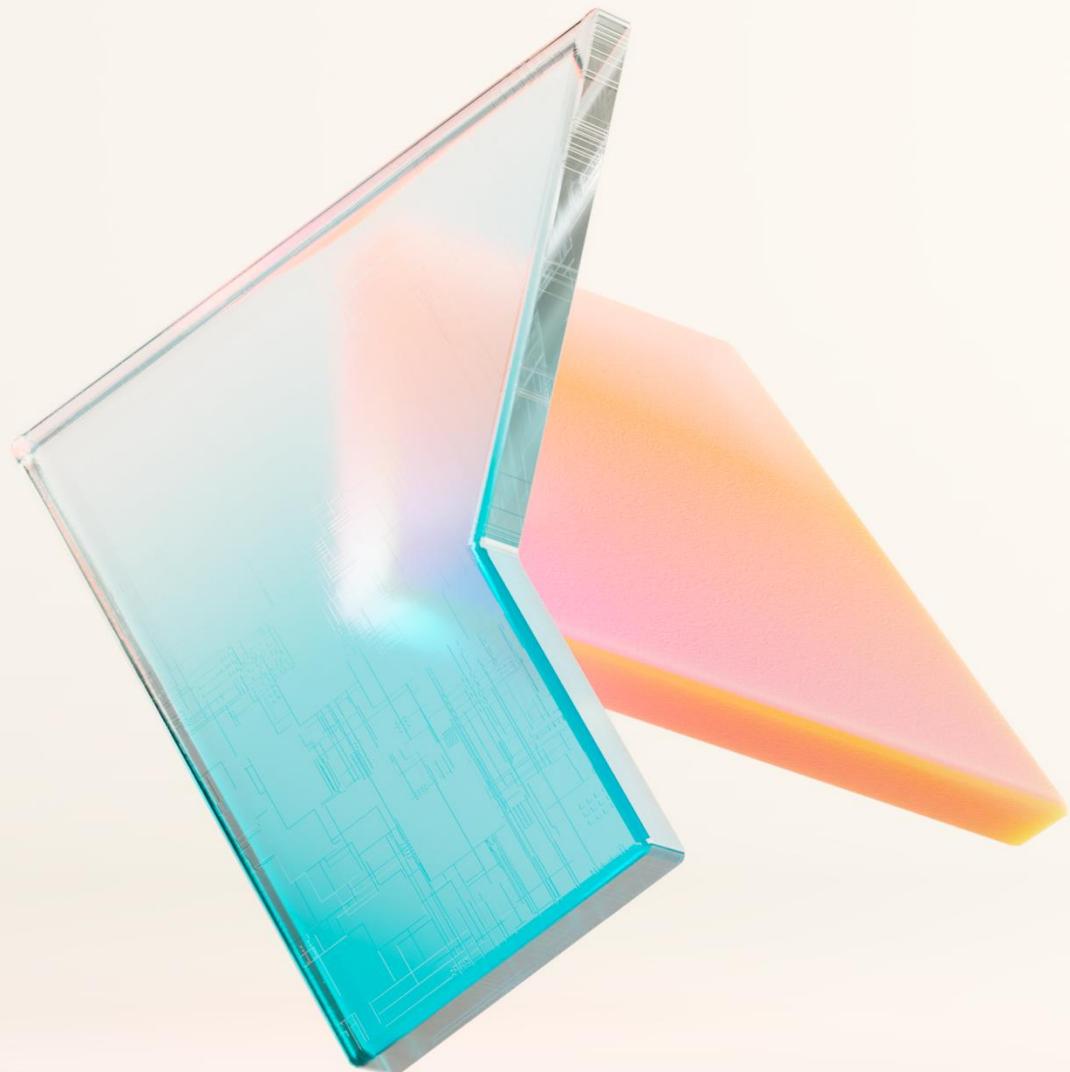
Ground Copilot with verified and example answers that provide consistent, trusted business responses

Define business terms, synonyms, and navigation rules with instructions to curate the right answers

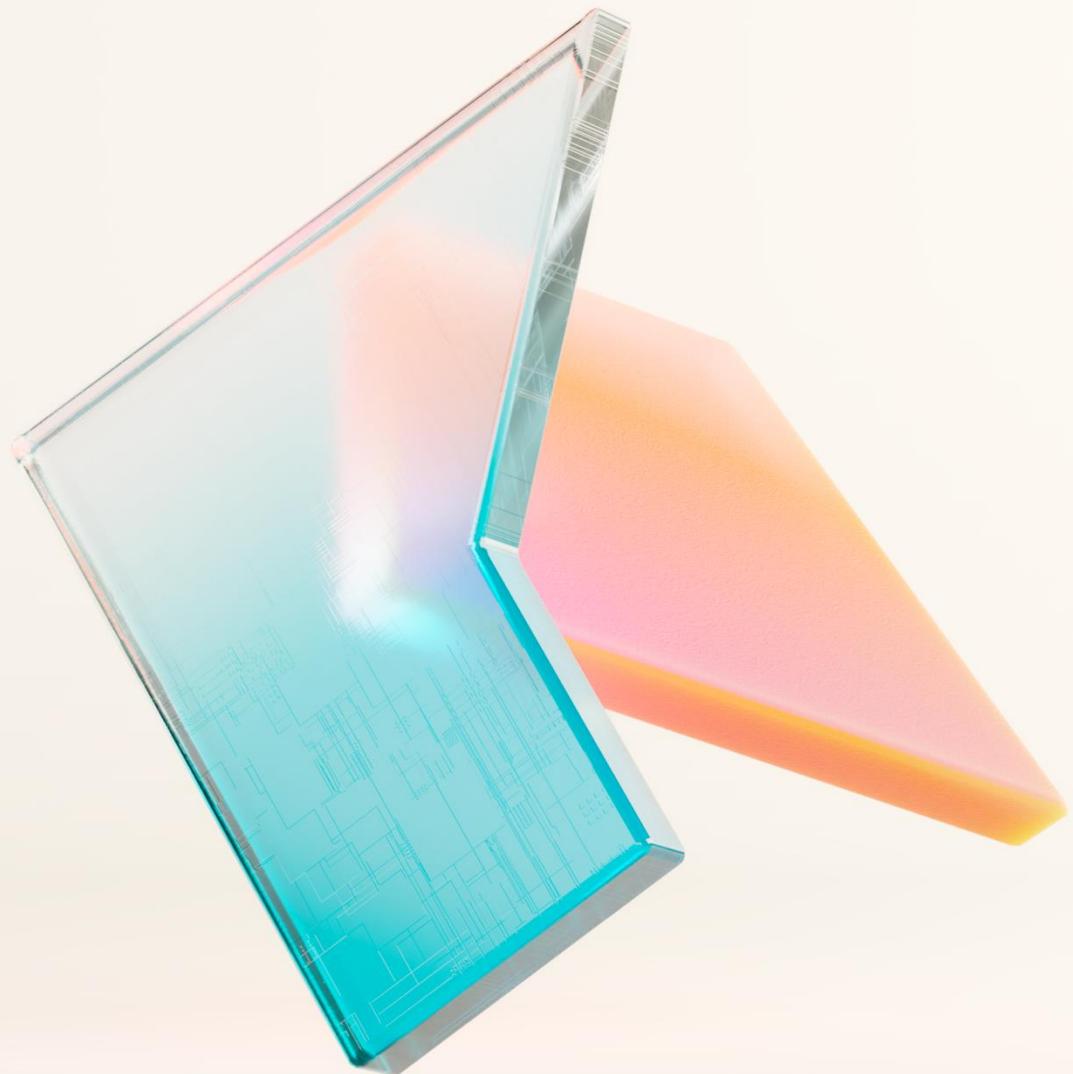
Configure schema selection to specify which columns Copilot can and cannot use

Unify these capabilities to make data preparation seamless and improve AI accuracy across Fabric





- Demo



Copilot in Fabric

# Copilot in Fabric

Home | Get data | New SQL query | New visual query | Query activity | Download SQL database project | Copilot

This warehouse has a default Power BI semantic model for easier reporting. To add warehouse objects to the model, go to Manage default semantic model. [Learn more](#)

Explorer

- + Warehouses
- Demo
  - Schemas
  - dbo
    - Tables
      - Date
      - Geography
      - HackneyLice...
      - Medallion
      - Time
      - Trip
      - Weather
    - Views
    - Functions
    - Stored Proced...
  - guest
  - INFORMATION\_SCHE...
  - queryinsights
  - sys
  - Security- Queries
  - My queries

SQL query 13

Preview: Copilot uses AI. Mistakes can happen. Verify code suggestions before running them. [Review terms](#)

```
1 SELECT TOP 3
2     [G1].[City] AS DropOffCity,
3     COUNT(*) AS DropOffCount
4 FROM
5     [Demo].[dbo].[Trip] AS [T2]
6 JOIN [Demo].[dbo].[Geography] AS [G1]
7     ON [T2].[DropoffGeographyID] = [G1].[GeographyID]
```

Manage default Power BI semantic model

Home | Reporting | Get data | New SQL query | New visual query | New report | New measure | Download SQL database project | Copilot

This warehouse has a default Power BI semantic model for easier reporting. To add warehouse objects to the model, go to Manage default semantic model. [Learn more](#)

Explorer

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    - Stored Proced...
  - guest
  - INFORMATION\_SCHE...
  - queryinsights
  - sys
  - Security- Queries
  - My queries

Data preview

ID	DateID	Date	DayName	DayOrMonth	DayOrWeek	DayOrWeekMonth	DayOrWeekYear	DayOrWeekYearMonth	DayOrQuarter	DayOrYear	WeekOrM
1	20100101	2010-01-17 00:00:00.0000000	03/17/2015	17	17B	Tuesday	3	11	11	76	3
2	20050101	2005-01-17 00:00:00.0000000	03/17/2005	17	17B	Thursday	5	3	11	76	3
3	20010101	2001-01-17 00:00:00.0000000	03/17/2001	17	17B	Saturday	7	3	11	76	3
4	20000101	2000-01-17 00:00:00.0000000	03/17/2009	17	17B	Tuesday	3	3	11	76	3
5	20040101	2004-01-17 00:00:00.0000000	03/17/2004	17	17B	Wednesday	4	3	11	77	3
6	20000101	2000-01-17 00:00:00.0000000	03/17/2006	17	17B	Friday	6	3	11	77	3
7	20120101	2012-01-17 00:00:00.0000000	03/17/2012	17	17B	Saturday	7	3	11	77	3
8	20080101	2008-01-17 00:00:00.0000000	03/17/2006	17	17B	Monday	2	3	11	76	3
9	20110101	2011-01-17 00:00:00.0000000	03/17/2011	17	17B	Thursday	5	3	11	76	3
10	20100101	2010-01-17 00:00:00.0000000	03/17/2010	17	17B	Wednesday	4	3	11	76	3
11	20070101	2007-01-17 00:00:00.0000000	03/17/2007	17	17B	Saturday	7	3	11	76	3
12	20140104	2014-01-14 00:00:00.0000000	02/14/2014	14	14B	Friday	6	2	7	45	3
13	20030104	2003-01-14 00:00:00.0000000	02/14/2003	14	14B	Friday	6	2	7	45	3
14	20080104	2008-01-14 00:00:00.0000000	02/14/2008	14	14B	Thursday	5	2	7	45	3
15	20110104	2011-01-14 00:00:00.0000000	02/14/2011	14	14B	Monday	2	2	7	45	3
16	20020104	2002-01-14 00:00:00.0000000	02/14/2005	14	14B	Monday	2	2	7	45	3
17	20070104	2007-01-14 00:00:00.0000000	02/14/2007	14	14B	Wednesday	4	2	7	45	3
18	20000104	2000-01-14 00:00:00.0000000	02/14/2006	14	14B	Tuesday	3	2	7	45	3
19	20030104	2003-01-14 00:00:00.0000000	03/14/2003	14	14B	Thursday	5	2	7	45	3
20	20010104	2001-01-14 00:00:00.0000000	03/14/2012	14	14B	Tuesday	3	2	7	45	3
21	20120104	2012-01-14 00:00:00.0000000	03/14/2009	14	14B	Monday	2	2	7	45	3
22	20020104	2002-01-14 00:00:00.0000000	03/14/2010	14	14B	Sunday	1	2	7	45	3
23	20070104	2007-01-14 00:00:00.0000000	02/14/2007	14	14B	Wednesday	4	2	7	45	3
24	20130104	2013-01-14 00:00:00.0000000	02/14/2013	14	14B	Thursday	5	2	7	45	3
25	20090101	2009-01-11 00:00:00.0000000	03/11/2009	31	31B	Saturday	7	5	44	5	304
26	20120101	2012-01-11 00:00:00.0000000	03/11/2012	31	31B	Wednesday	4	5	44	5	305
27	20070101	2007-01-11 00:00:00.0000000	03/11/2007	31	31B	Wednesday	4	5	44	5	304
28	20030101	2003-01-11 00:00:00.0000000	03/11/2002	31	31B	Tuesday	3	5	44	5	304
29	20110101	2011-01-11 00:00:00.0000000	03/11/2015	31	31B	Saturday	7	5	44	5	304
30	20090101	2009-01-11 00:00:00.0000000	03/11/2009	31	31B	Tuesday	3	5	44	5	304
31	20000101	2000-01-11 00:00:00.0000000	03/11/2008	31	31B	Tuesday	3	5	44	5	305
32	20130101	2013-01-11 00:00:00.0000000	03/11/2013	31	31B	Thursday	5	5	44	5	304
33	20140101	2014-01-11 00:00:00.0000000	03/11/2014	31	31B	Friday	6	5	44	5	304
34	20080101	2008-01-11 00:00:00.0000000	03/11/2008	31	31B	Friday	6	5	44	5	305
35	20030101	2003-01-11 00:00:00.0000000	03/11/2003	31	31B	Friday	6	5	44	5	304
36	20110101	2011-01-11 00:00:00.0000000	03/11/2001	31	31B	Wednesday	4	5	44	5	304
37	20000101	2000-01-12 00:00:00.0000000	03/12/2007	25	25B	Monday	2	4	5	305	5

Columns: 13 Rows: 99000000

Content created by AI may not be accurate or appropriate. Review it carefully before use.

## Fabric items that support Copilot experiences

 Fabric capacity

 Data factory

- Dataflows gen2
- Data pipeline

 Data warehousing

- Data warehouse

 Real-time intelligence

- KQL Queryset
- Real-time Dashboard

 Power BI

- Semantic models
- Reports

 Databases

- SQL database

 Custom copilots

Type a request.



# Copilot in Fabric

Contoso Daily Sales | Data updated 1/12/23

Sales Overview

Date: 06/01/2022 - 01/12/2023

Revenue Won: \$7,720,093 | Close %: 28.3% | AVG Days to Close: 84 | Opportunities Won: 334

Revenue Won by Month

Month	Revenue Won (\$)
June 2022	~\$100K
Jul 2022	~\$100K
Aug 2022	~\$400K
Sep 2022	~\$300K
Oct 2022	~\$400K
Nov 2022	~\$1M
Dec 2022	~\$1.8M
Jan 2023	~\$1.5M

Close % by Month

Month	Close %
May	23%
Jun	32%
Jul	26%
Aug	37%
Sep	37%
Oct	38%
Nov	51%
Dec	47%
Jan	37%

Close % by Region

AVG Days to Close by Month

Month	Avg Days to Close
May	116
Jun	117
Jul	117
Aug	121
Sep	114
Oct	112
Nov	109
Dec	102
Jan	96

Copilot Preview

Create a report with Copilot

Describe the report you want, in your own words, and Copilot will create it quickly.

Help me build a sales report summarizing our key metrics and trends

Sales overview page added

Ask a question or type / for suggestions

AI-generated content can have mistakes. Make sure it's accurate and appropriate before using it. [Read preview terms](#)

to finding insights and creating reports,



# Copilot in Fabric | Data Factory

Easily integrate generative AI into your dataflows and pipelines using Copilot

Chat with Copilot to describe data transformations in natural language

Tap into generative AI capabilities from Azure Open AI as data transformation steps

Use Copilot to schedule and run and manage dataflows

## Copilot in Data Factory



# Copilot in Fabric | Data Engineering and Data Science

Use Copilot to enrich, model, analyze and explore your data in notebooks

🔍 Work with Copilot to understand how best to analyze your data

💬 Chat with Copilot to create and configure ML models

⌚ Write code faster with inline code suggestions from Copilot

</> Use Copilot to summarize and explain code to understand how it works

## Copilot in Data Science



# Copilot in Fabric | Data Warehouse

Use Copilot to help write SQL queries, create tables, and even get data

Instantly explain queries with detailed comments next to the code

Quickly write new SQL queries and even get code suggestions as you write

Fix queries with a single click

The screenshot shows the Microsoft Power BI Data Warehouse interface. The top navigation bar includes 'Power BI', a search bar, and a trial status message 'Trial: 59 days left'. Below the navigation is a toolbar with icons for 'Get data', 'New SQL query', 'New visual query', 'New report', 'New measure', 'Azure Data Studio', 'Download SQL database project', and 'Copilot'. The main area has tabs for 'Home' and 'Reporting'. A message in the center states: 'This warehouse has a default Power BI semantic model for easier reporting. To add warehouse objects to the model, go to Manage default semantic model.' Below this is the 'Explorer' pane, which lists various database objects like Warehouses, Geography, HackneyLice..., Medallion, Time, Trip, Weather, Views, Functions, Stored Proced..., guest, INFORMATION\_SCHE..., queryinsights, sys, Security, and Queries. Under 'Queries', there are 'My queries' (SQL query 1) and 'Shared queries' (F\_AVG, Top 10 Cities, Trip Summary, W\_Impact). The right side of the screen displays a large data preview table with 1,000 rows of data across 32 columns. The table includes columns such as DateID, Date, ABC DateBKey, ABC DayOfMonth, ABC DaySuffix, ABC DayName, ABC DayOfWeek, ABC DayOfWeekInMonth, ABC DayOfWeekInYear, ABC DayOfQuarter, ABC DayOfYear, and ABC V. The bottom of the table shows a success message: 'Succeeded (3 sec 554 ms)' and 'Columns: 32 Rows: 1,000'.



# Copilot in Fabric | Real-Time Intelligence

Explore and analyze your real-time data with ease in Copilot

Ask questions about your real-time data in conversational language

Automatically translate it to a KQL query you can execute

Get the most from your time-series data stored in Eventhouse even if you're less familiar with KQL queries

The screenshot shows the Microsoft ExploreDB interface. On the left, there's a sidebar with various navigation options like Home, Help, Create, Browse, OneLake data hub, Monitor, Real-Time hub, Workspaces, Contoso Operations, and the current selected tab, ExploreDB. Below that is a section for 'Operations' with a list of tables: Deliveries, VendorID, tpep\_pickup\_da..., tpep\_dropoff\_d..., passenger\_coun..., trip\_distance, RatecodeID, store\_and\_fwd\_f..., PUlocationID, DOlocationID, payment\_type, fare\_amount, extra, mta\_tax, tip\_amount, tolls\_amount, improvement\_s..., total\_amount, congestion\_surc..., and airport\_fee.

The main area has tabs for Run, Preview, Recall, Copy query, Pin to dashboard, KQL Tools, and Build PowerBI report. A search bar is at the top. The preview pane shows a KQL query:

```
15 // This query returns the number of ingestions per hour in the given table.  
16 YOUR_TABLE_HERE  
17 | summarize IngestionCount = count() by bin(ingestion_time(), 1h)  
18  
19  
20 // Use 'take' to view a sample number of records in the table and check the data.  
21 Deliveries  
22 | take 100  
23  
24 // See the most recent data - records ingested in the last 24 hours.  
25 Deliveries  
26 | where ingestion_time() between (now(-1d) .. now())  
27
```

Below the preview is a table titled 'Table 1 Stats' with 100 records. The columns are: VendorID, tpep\_pickup\_datetime, tpep\_dropoff\_datetime, passenger\_count, trip\_distance, RatecodeID, store\_and\_fwd\_flag, PUlocationID, DOlocationID, payment\_type, fare\_amount, extra, and mta\_tax. The data starts with:

VendorID	tpep_pickup_datetime	tpep_dropoff_datetime	passenger_count	trip_distance	RatecodeID	store_and_fwd_flag	PUlocationID	DOlocationID	payment_type	fare_amount	extra	mta_tax
> 1	2022-06-06 05:25:34	2022-06-06 05:26:14	2.0	0.3	5.0	N	132	132	3	0.0	1.25	0.0
> 1	2022-06-06 05:27:40	2022-06-06 05:28:02	2.0	0.3	5.0	N	132	132	1	68.0	1.25	0.0
> 2	2022-06-06 05:02:33	2022-06-06 05:23:20	1.0	14.76	3.0	N	211	1	1	57.0	0.5	0.0
> 2	2022-06-06 05:51:21	2022-06-06 05:54:18	1.0	0.7	1.0	N	90	186	1	4.5	0.5	0.5
> 2	2022-06-06 05:35:45	2022-06-06 06:31:40	3.0	18.38	2.0	N	132	230	2	52.0	0.0	0.5
> 1	2022-06-06 05:25:46	2022-06-06 05:57:22	1.0	9.9	99.0	N	61	142	1	39.2	0.0	0.5
> 1	2022-06-06 05:01:24	2022-06-06 05:08:03	2.0	0.9	1.0	N	249	114	2	6.0	3.0	0.5
> 1	2022-06-06 05:31:40	2022-06-06 05:44:19	1.0	2.8	1.0	N	186	140	1	11.5	3.0	0.5
> 2	2022-06-06 05:26:56	2022-06-06 05:49:55	6.0	9.3	1.0	N	132	76	2	28.0	0.5	0.5
> 2	2022-06-06 05:07:57	2022-06-06 05:37:16	2.0	16.84	2.0	N	233	132	2	52.0	0.0	0.5
> 1	2022-06-06 05:00:27	2022-06-06 05:19:40	2.0	14.4	1.0	N	132	179	1	39.0	1.75	0.5
> 2	2022-06-06 05:38:15	2022-06-06 05:44:36	1.0	1.39	1.0	N	7	146	1	7.0	0.5	0.5
> 2	2022-06-06 05:50:34	2022-06-06 05:52:58	1.0	1.02	1.0	N	229	170	1	5.0	0.5	0.5



# Copilot in Fabric | Power BI

Stay focused on your business outcomes and unlock insights in your data

Create beautiful and insightful reports just by chatting with Copilot

Define metrics and calculations for your data model just by describing them in natural language

Use Copilot to find and summarize insights in your data

## Copilot in Power BI

**Sales Overview**

Time Period: 1/1/2019 - 6/29/2025 | Customer Segment: All | Product Names: All

**Net Sales**: \$13.6M

**YoY Net Sales Comparison**: A line chart showing Net Sales from 2019 to 2025. The sales show a peak around 2020 followed by a decline.

**Revenue Distribution by Customer Segment**: A bar chart showing revenue distribution across Customer Segments.

Customer Segment	Revenue
Individual	\$8.7M
Business	\$3.9M
Government	\$0.6M

**Top 5 Selling Products by Revenue**:

Product Name	Revenue
Fork Set	\$396K
Coffee Maker	\$363K
Spatula	\$292K
Road-150 Red, 48	\$283K
Baking Pan	\$200K

**Top 5 Selling Products by Quantity**:

Product Name	Quantity
Spatula	1,407
Espresso Machine	1,383
Food Storage Set	1,377
Coffee Mug	1,374
Fork Set	1,372

**Sales Distribution by Gender**: A donut chart showing sales distribution between Male and Female customers.

Is this response helpful? Upvote Downvote

**Copilot**: you have any questions about your data, need a summary of your report, or want to explore specific metrics, just let me know how I can assist you.

Can you further breakdown the revenue distribution by customer segment?

The revenue distribution by customer segment is as follows:

- Individual customers contribute the largest share, with **\$8,740,792.30** in revenue.
- Business customers account for **\$3,915,277.99** in revenue.
- Government customers generate **\$636,601.09** in revenue.

This indicates that the Individual segment is the primary driver of revenue, followed by Business and then Government customers 1.

Is this response helpful? Upvote Downvote

How much revenue did Individual vs. Business customers contribute in 2024?

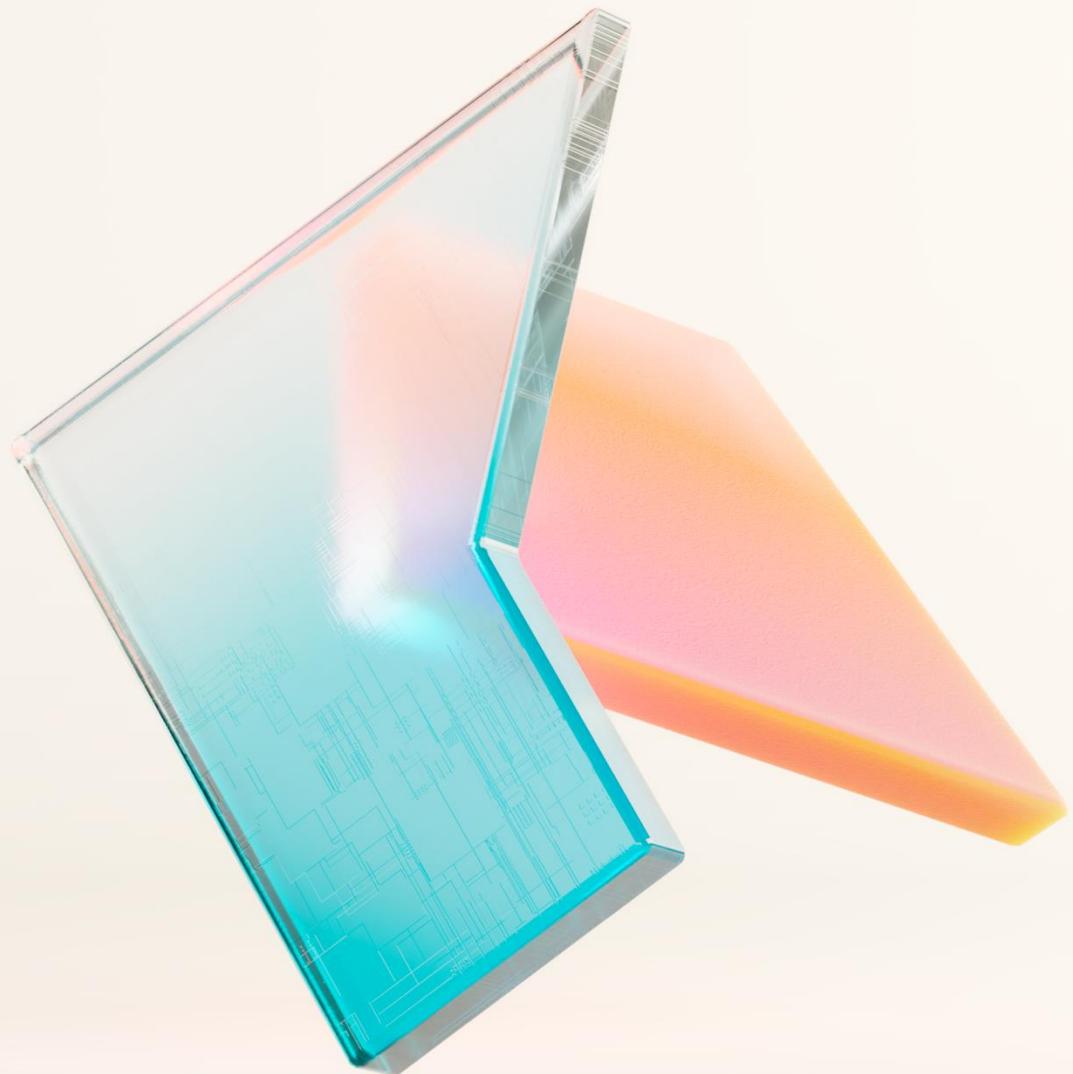
In 2024, Individual customers contributed **\$1,298,486.75** in revenue, while Business customers contributed **\$624,026.70** 1.

Is this response helpful? Upvote Downvote

Ask a question about this report

Copilot uses AI. Always review content for mistakes. [Learn more](#)





Wrap-up

# Microsoft Fabric link library

Getting Started with Fabric	Copilot in Microsoft Fabric	OneLake	Security, Governance, and Admin	End-to-End Tutorials	Other
<a href="#">What is Fabric?</a> <a href="#">Fabric website</a> <a href="#">Fabric trial</a> <a href="#">Fabric licenses</a> <a href="#">Buy a Fabric subscription</a> <a href="#">Navigate the Fabric portal</a> <a href="#">Workspaces in Fabric</a> <a href="#">Fabric Learning Pathway</a> <a href="#">Fabric Technical Documentation</a> <a href="#">Fabric Guided Tour</a> <a href="#">Fabric Industry Solutions</a> <a href="#">Fabric Community</a> <a href="#">See more</a>	<a href="#">Copilot for Data Science and Data Engineering</a> <a href="#">Copilot for Data Factory</a> <a href="#">Copilot for Power BI</a>	<a href="#">What is OneLake?</a> <a href="#">What are shortcuts?</a> <a href="#">Create a lakehouse with OneLake</a> <a href="#">See more</a>	<a href="#">Fabric administration</a> <a href="#">Data governance and compliance</a> <a href="#">Security</a> <a href="#">See more</a>	<a href="#">Lakehouse tutorial</a> <a href="#">Data Science tutorial</a> <a href="#">Real-Time Intelligence tutorial</a> <a href="#">Data Warehouse tutorial</a> <a href="#">Power BI tutorial</a> <a href="#">Data Factory tutorial</a>	<a href="#">Azure Databricks trial</a>



# End-to-end tutorials



## Lakehouse tutorial

<https://learn.microsoft.com/en-us/fabric/data-engineering/tutorial-lakehouse-introduction>



## Data Science tutorial

<https://learn.microsoft.com/en-us/fabric/data-science/tutorial-data-science-introduction>



## Real-Time Analytics tutorial

<https://learn.microsoft.com/en-us/fabric/real-time-analytics/tutorial-introduction>



## Data warehouse tutorial

<https://learn.microsoft.com/en-us/fabric/data-warehouse/tutorial-introduction>



## Power BI tutorial

<https://learn.microsoft.com/en-us/power-bi/fundamentals/fabric-get-started>



## Data Factory tutorial

<https://learn.microsoft.com/en-us/fabric/data-factory/tutorial-end-to-end-introduction>



# Microsoft Fabric workload link library



## Data Factory

[What is Data Factory?](#)

[Create your first pipeline](#)

[Create your first dataflow](#)

[Connectors](#)

[See more](#)



## Data Engineering

[What is Data Engineering?](#)

[Create a Lakehouse](#)

[Create a Spark job definition](#)

[See more](#)



## Databases

[What are Databases?](#)

[Create a Database](#)

[See more](#)



## Data Warehouse

[What is Data Warehouse?](#)

[Create a Warehouse](#)

[Query using SQL query editor](#)

[See more](#)



## Real-Time Intelligence

[What is Real-Time Intelligence?](#)

[What is Event stream?](#)

[Create a database](#)

[See more](#)



## Data Science

[What is Data science?](#)

[Machine learning experiment](#)

[Use end-to-end AI samples](#)

[See more](#)



## Power BI

[Enable Microsoft Fabric for your organization](#)

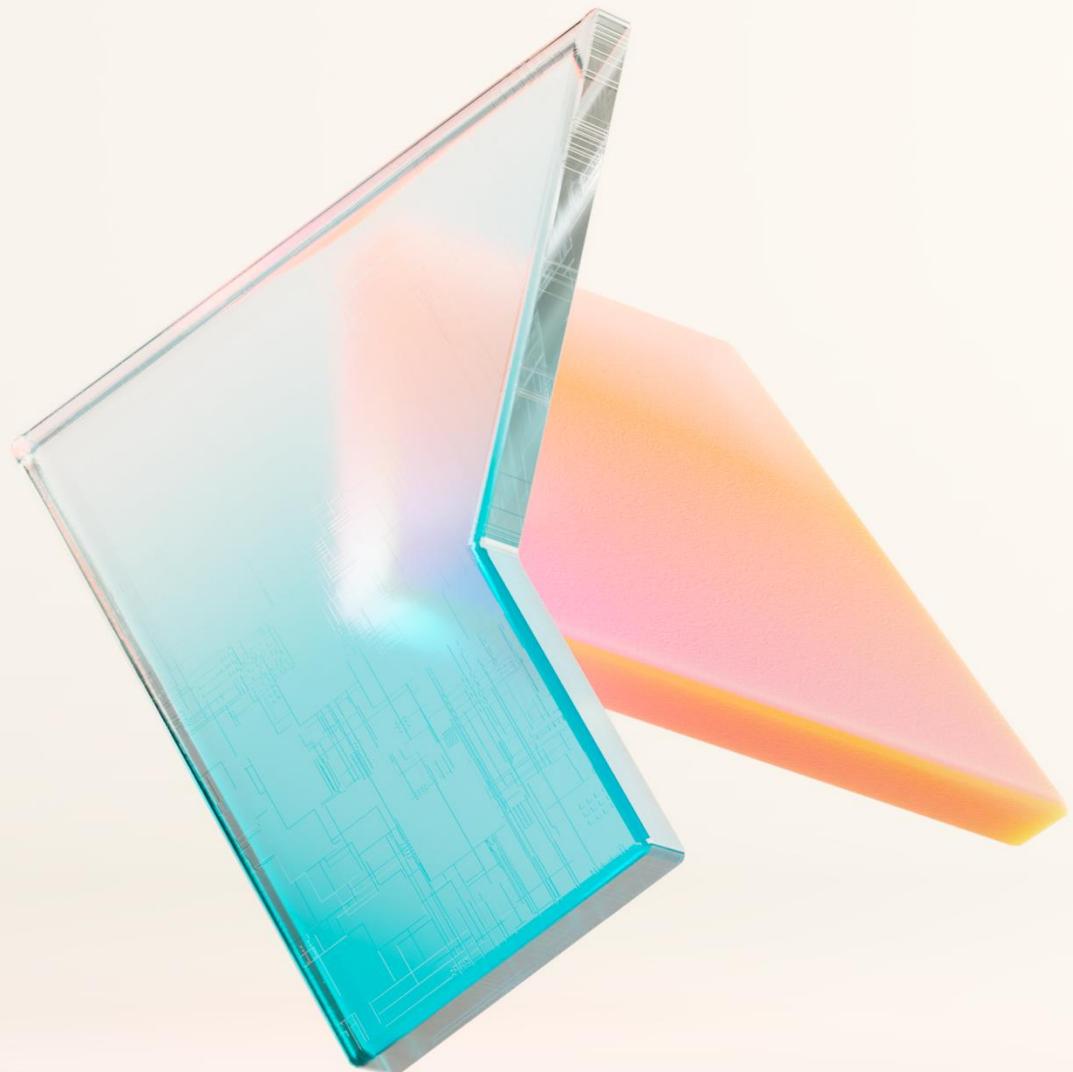
[What is Power BI?](#)

[What is a datamart?](#)

[Azure and Power BI integration](#)

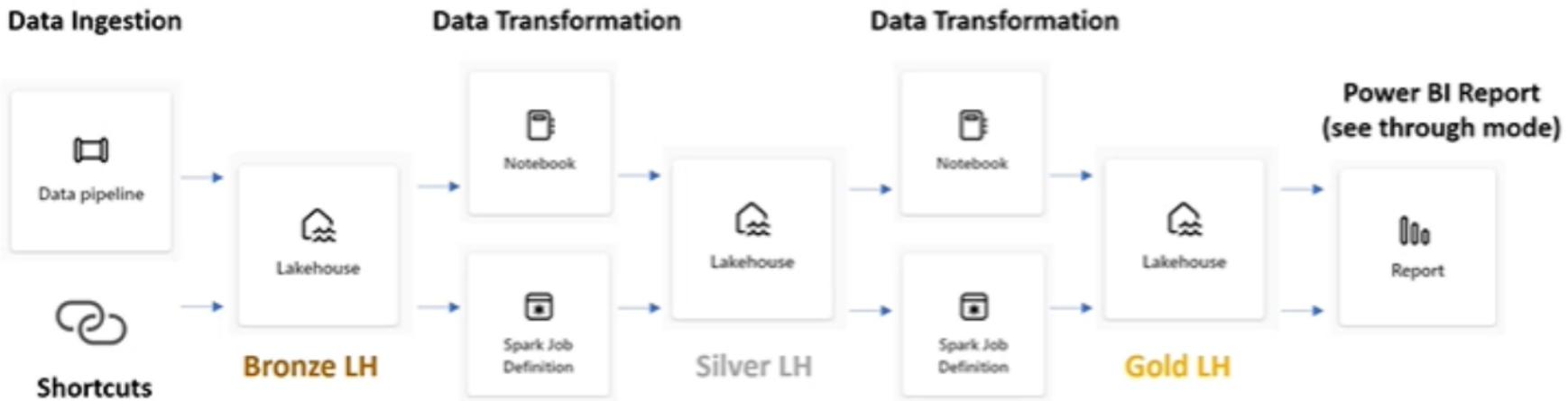
[See more](#)





Time permits: Medallion  
Architecture

# Lakehouse - Medallion Architecture Workflow ([link](#))

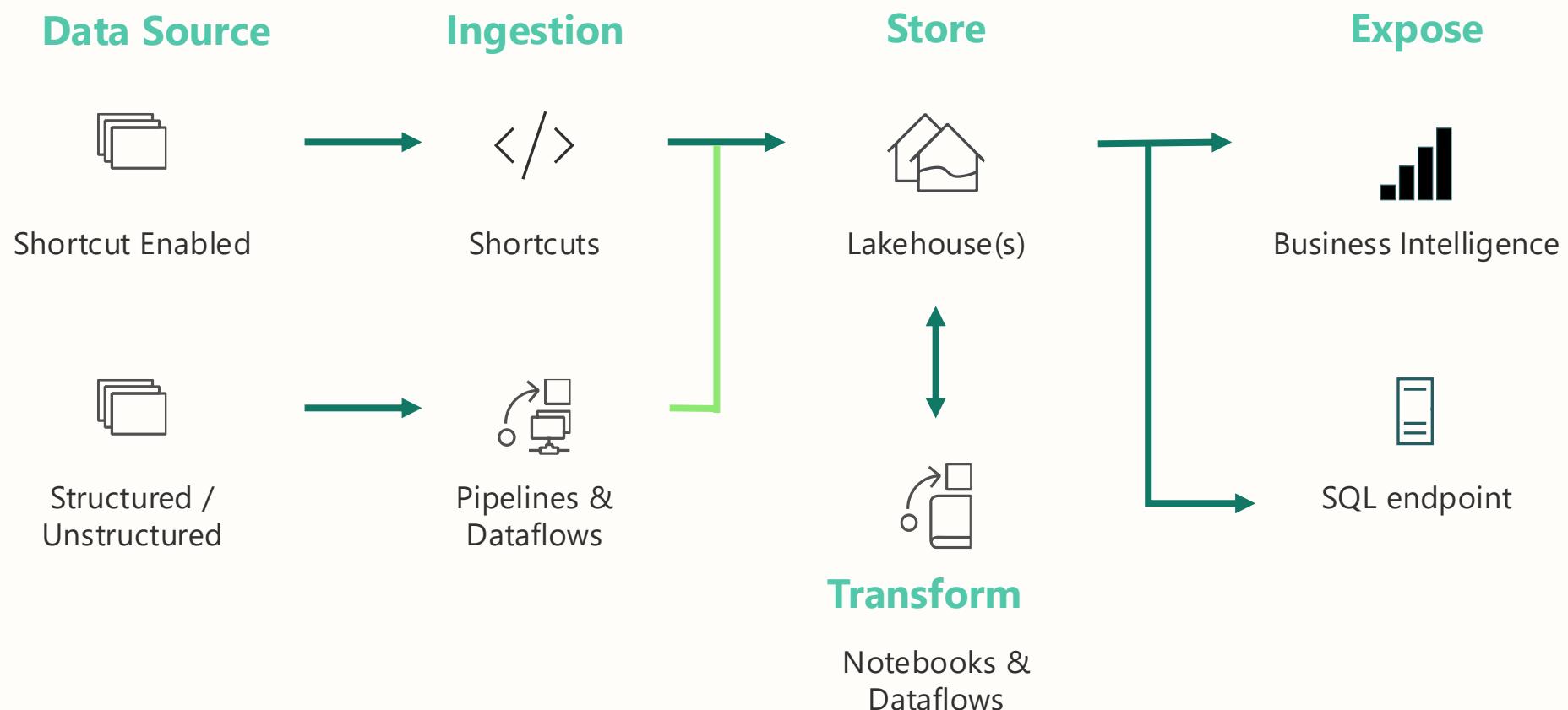


- **Bronze LH :** Incremental data, CSV format, partitioned, data lands into this zone directly from the source systems in its original format. Generally considered append only and immutable.
- **Silver LH :** Transform and merge with full data (facts) or overwrite (dimensions), Delta Lake format. Data is cleaned of all erroneous records, normalized in format, enriched with other sources, and used to provide an enterprise view of all business entities (such as customers, products, sales transactions, etc.).
- **Gold LH :** Aggregate data, data lands into this zone from enriched zone that has been merged/aggregated and is ready to be served to users via reporting services or other down-stream systems. Dim and Facts.



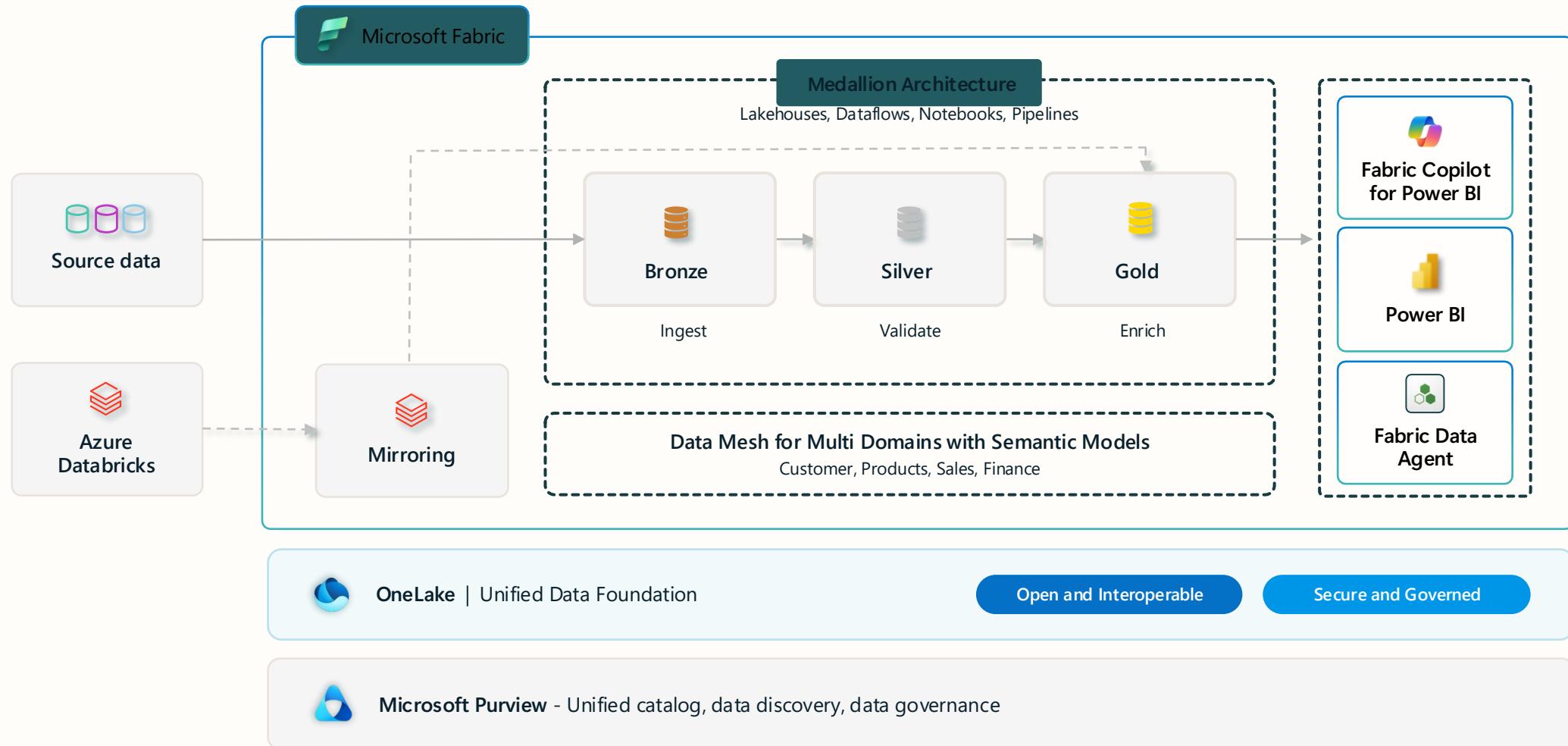
# Lakehouse scenario

End-to-end analytics scenario

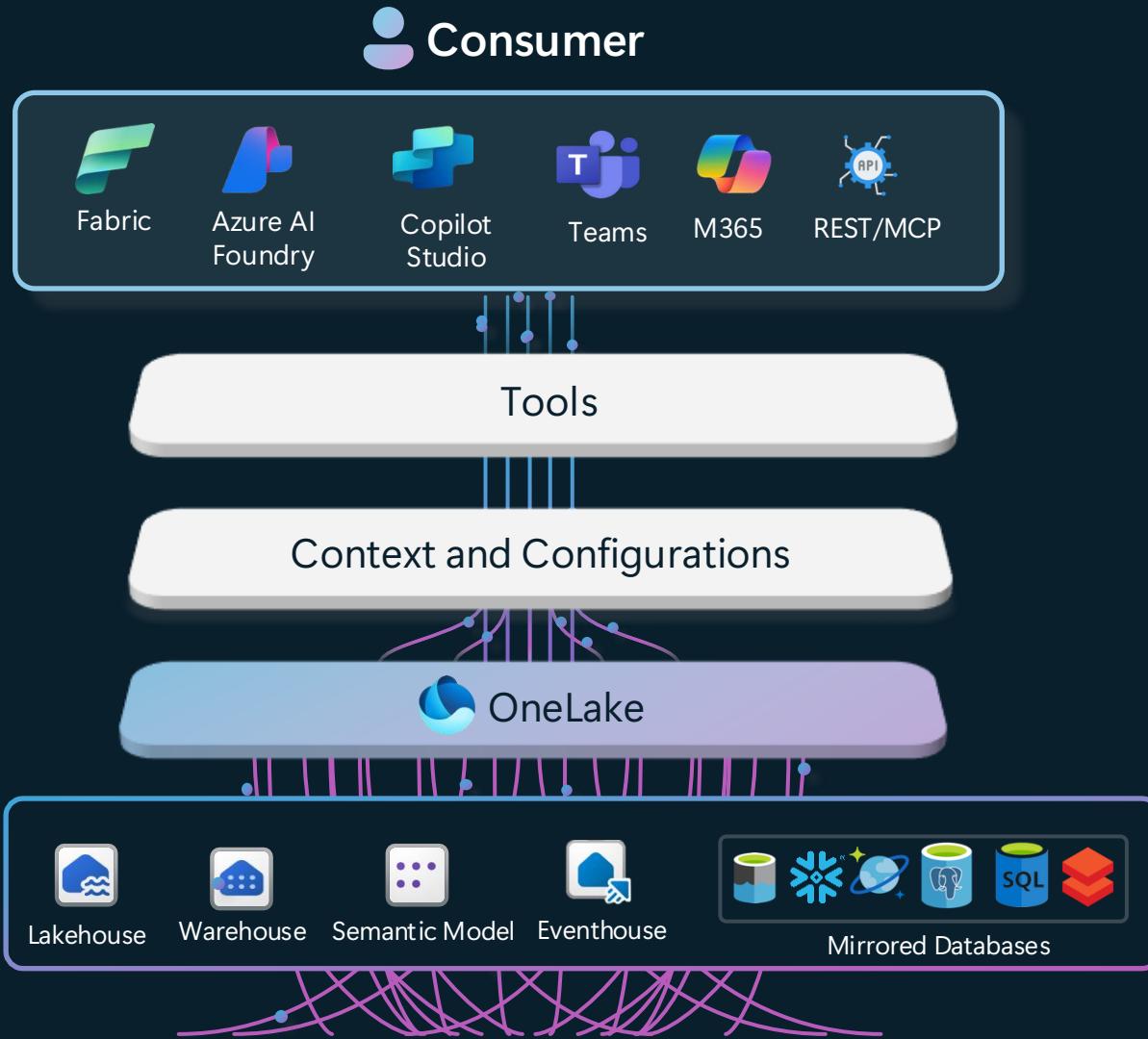


# Accelerator architecture

## 4. Core Medallion Architecture in Microsoft Fabric + Microsoft Purview + Azure Databricks



# Fabric data agents



This **conversational data agent** allows users to interact with a virtual analyst.



Tooling for creators from UI and SDK, with **new debugging capabilities**, making it easier to understand and refine responses.



Seamlessly reason over data in OneLake, including shortcuts and mirrored databases to reason over tables, files and real-time events, to create a powerful data expert tailored to your data domain.



Your Data Agents can be consumed inside and outside of Fabric. Stay tuned for **upcoming integrations** with your own custom applications.

# OVERVIEW: CONSUMING FABRIC DATA AGENTS

Bringing governed enterprise data to where users and developers work.

