SQL database in Microsoft Fabric

Series Scenario – Conference session application

You need:

- to store and serve data for the conference webpage.
- to be able to run analysis over the data.
- an application that allows attendees to easily search for and find sessions of interest to them.
- to follow modern best practices for application lifecycle.
- to be able to monitor and troubleshoot database and query performance.

Course Overview and agenda

Episode 1: Introduction and Overview; Getting started

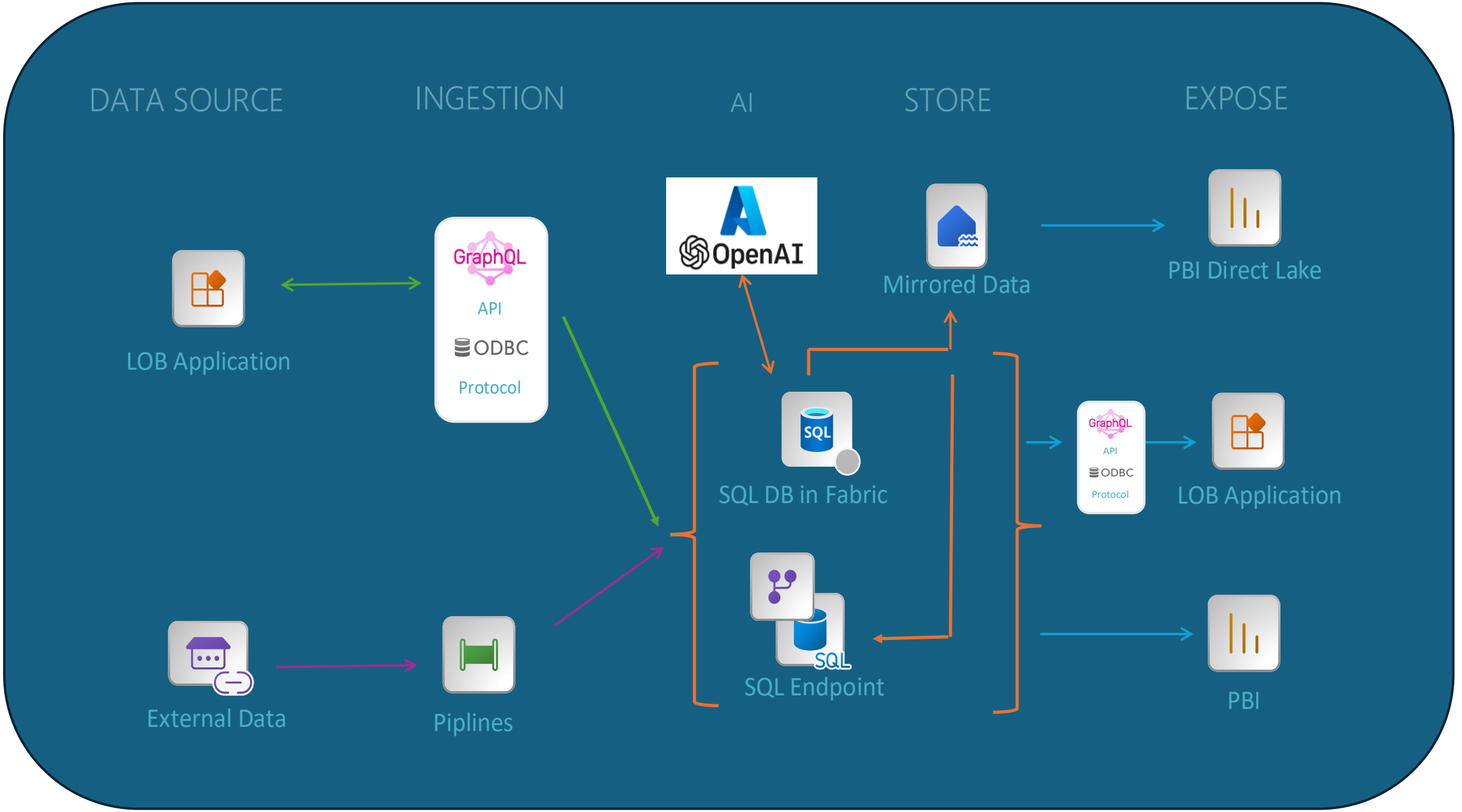
Episode 2: Dataflows, Notebooks, Reports

Episode 3: GenAI and vector databases

Episode 4: GraphQL and application development

Episode 5: Application lifecycle management

Episode 6: Performance Dashboard, Recap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STORE
EXPOSE
LOB Application
GraphQL
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SQL DB in Fabric
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LOB Application
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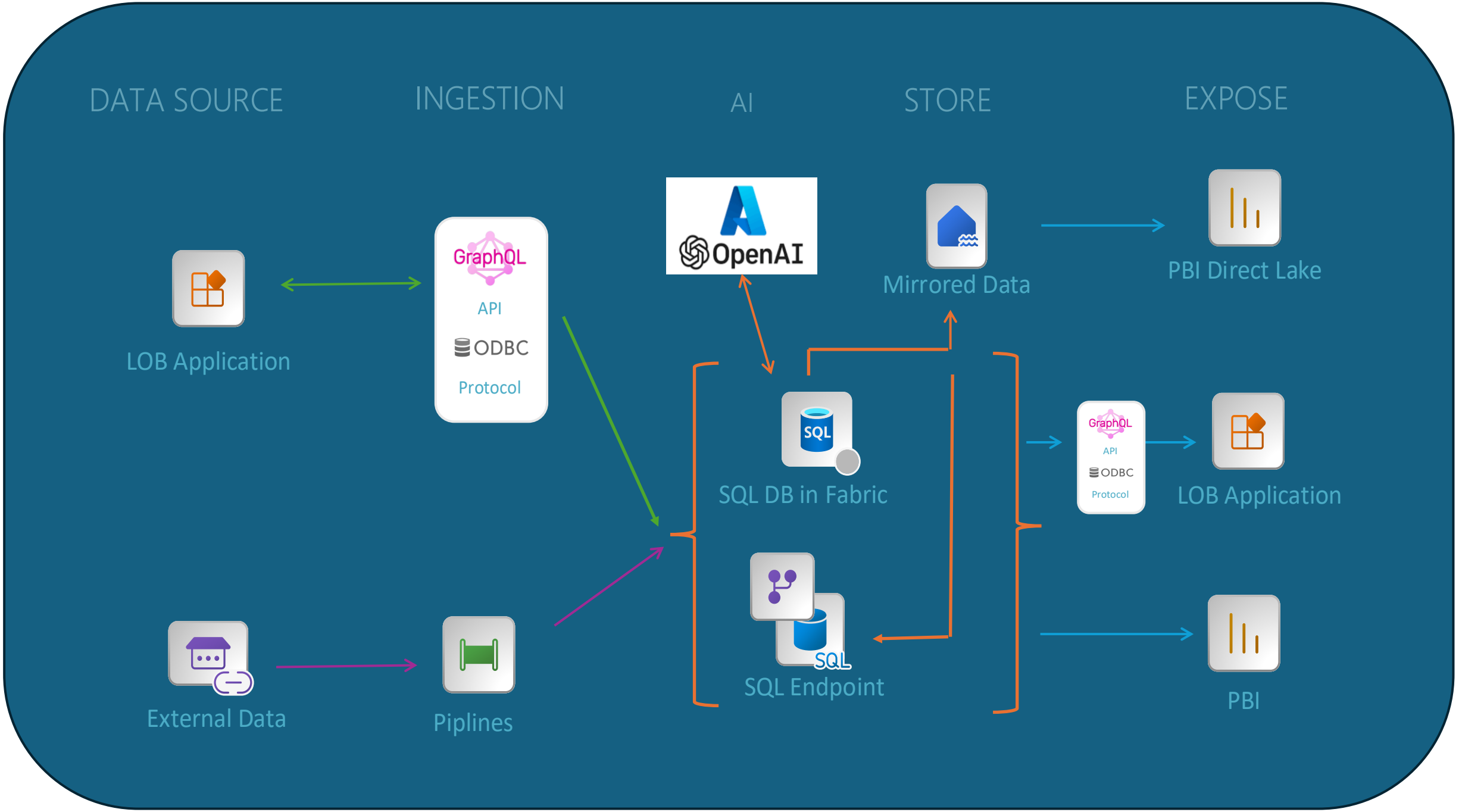
SQL Endpoint
External Data
Piplines
PBI

Episode 2: Ingest and work with data, build reports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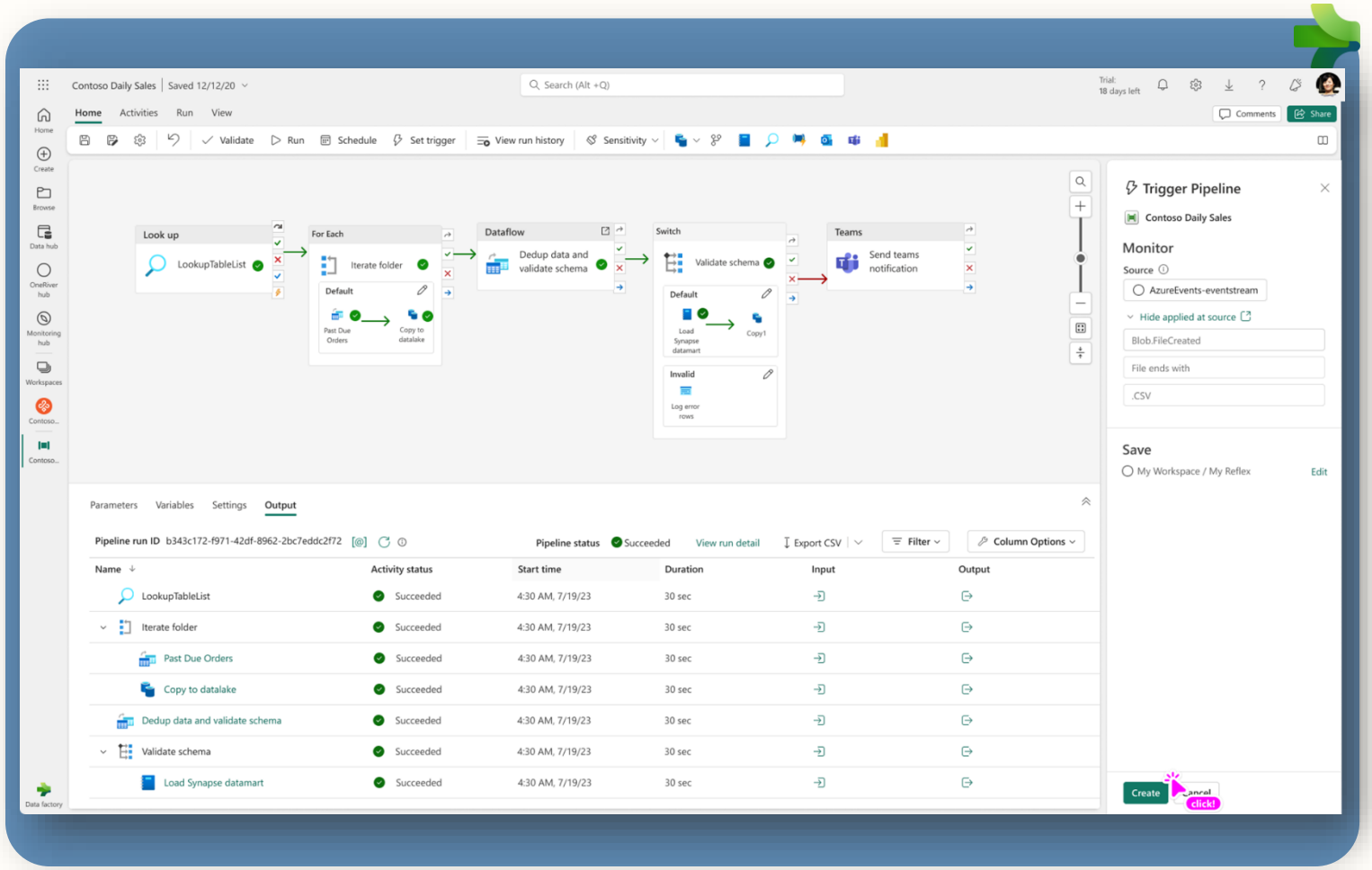
Data Pipelines

Data Pipelines enable powerful workflow capabilities at cloud-scale. Visually build complex workflows, move PB-size data, and defining sophisticated control flow pipelines.

Automate ETL processes and build workflows that can invoke any Fabric item tasks at scale.

Additionally, control flow capabilities are built into pipelines so you can visually design workflows that include loops and conditional logic



Data Pipelines | Connectors

Connectors provide a low-code interface for ingesting data from a variety of data sources

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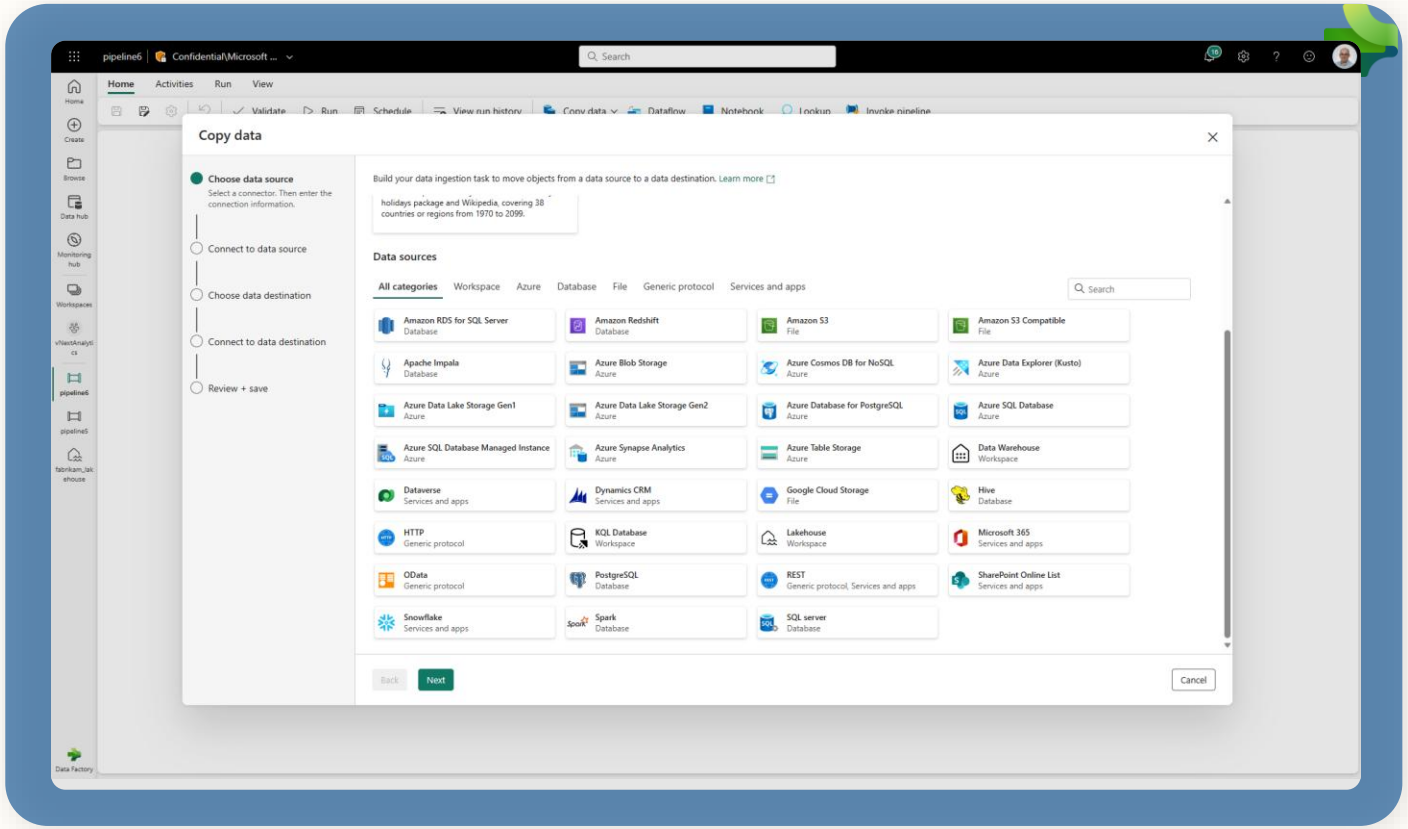
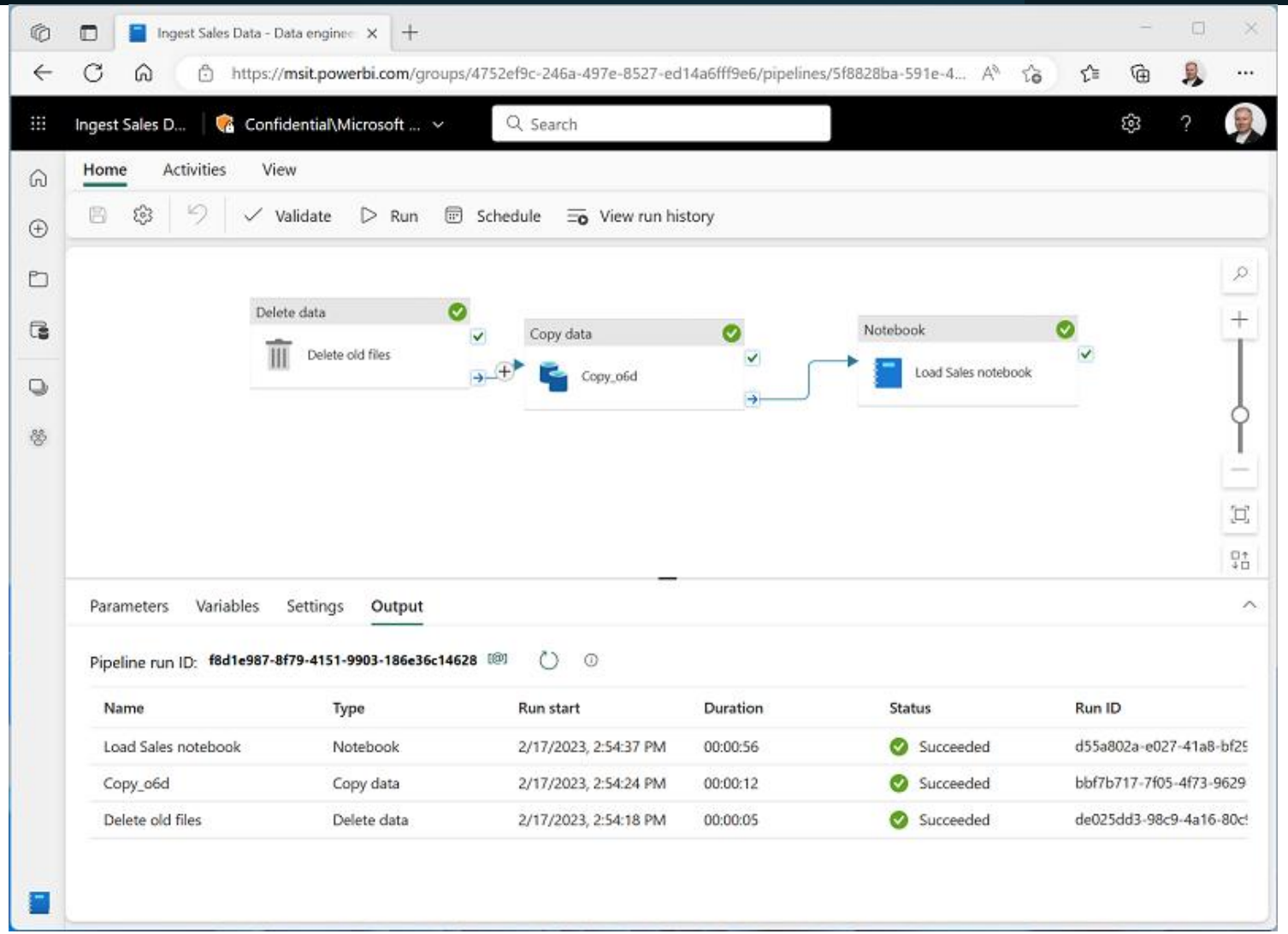
Connectors:

- Warehouse Connector; connect to existing Azure
- Lakehouse connector
- 100+ connectors in the copy activity
- Access to on-premises data
- Access protected data inside of a VNET



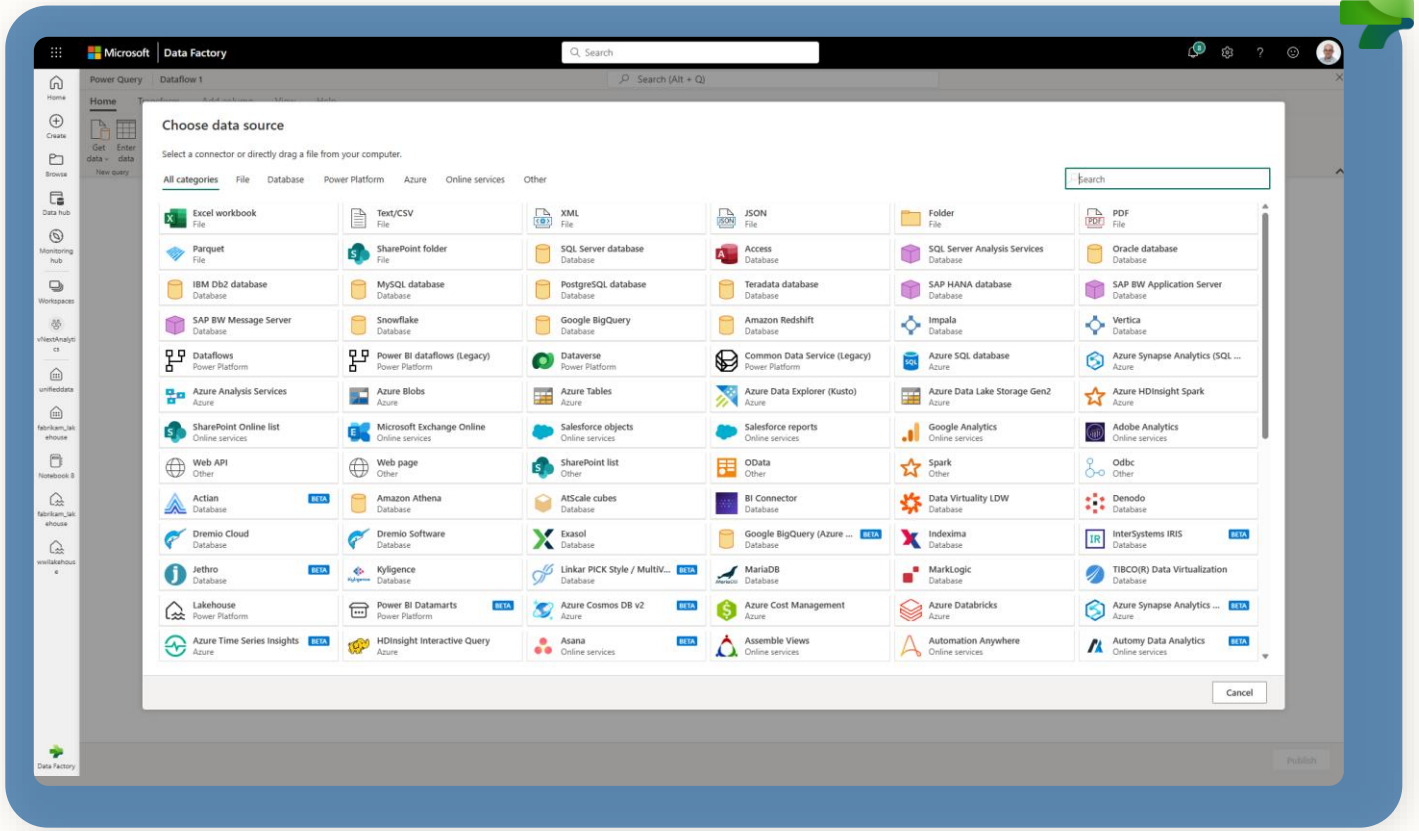
What pipelines look like



Dataflow Gen2

Dataflow provides a low-code interface (Power Query) for ingesting data from hundreds of data sources

Dataflows quickly and easily transform and unify data across multiple sources, establish a more collaborative analytics approach, and promote more informed, agile decision making.



Key Capabilities:

- Accelerate data transformation with code-free data flows
- Scale out using Fabric compute and Data Factory fast copy
- Load results of data transformations into multiple destinations (Azure SQL Databases, Lakehouse, etc.)

Dataflow Gen2 | Output Options

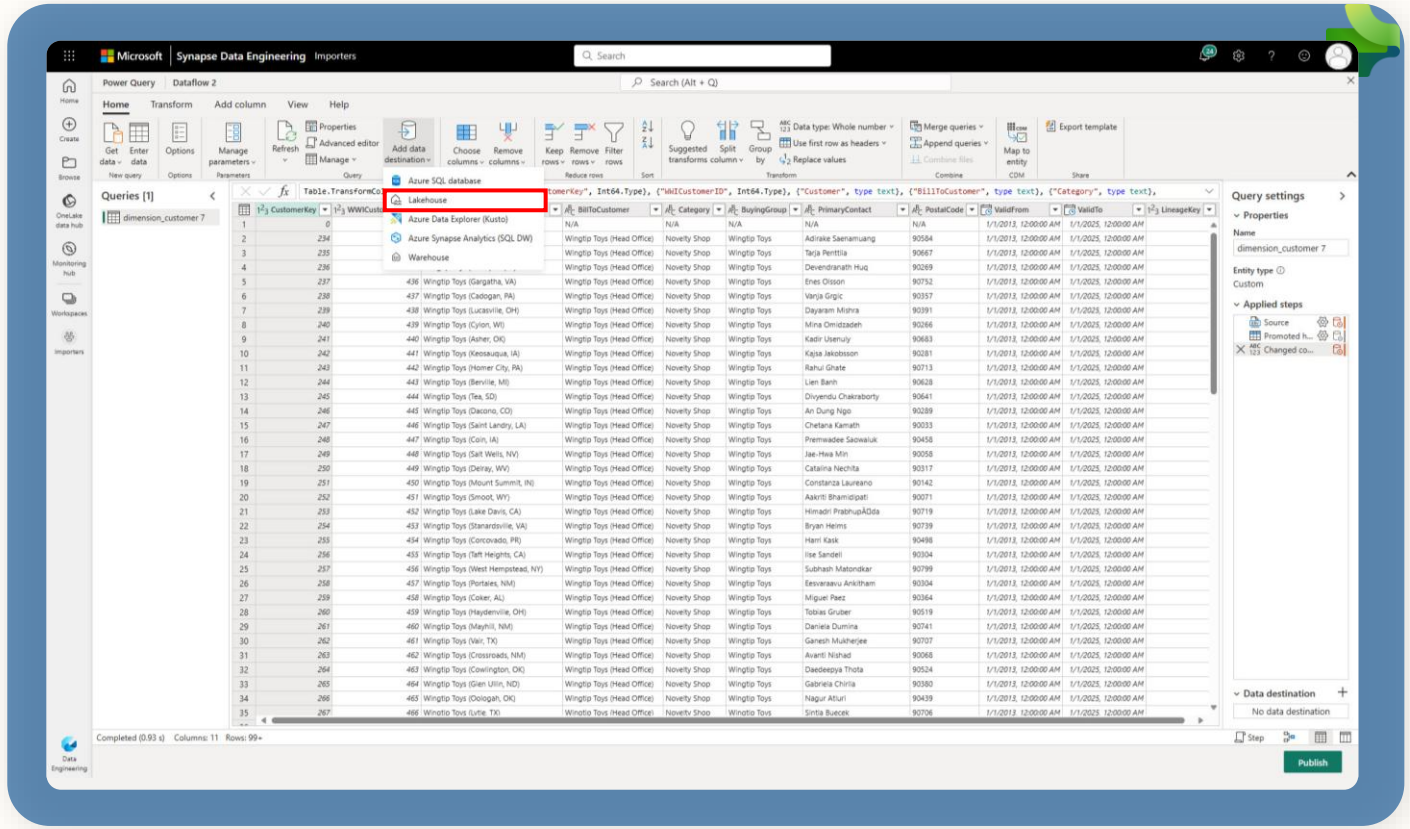
SQL database in Fabric:

Simply write into a Fabric SQL DB from a Dataflow

Users select the SQL Database output destination from the list and configure the connection.

Others:

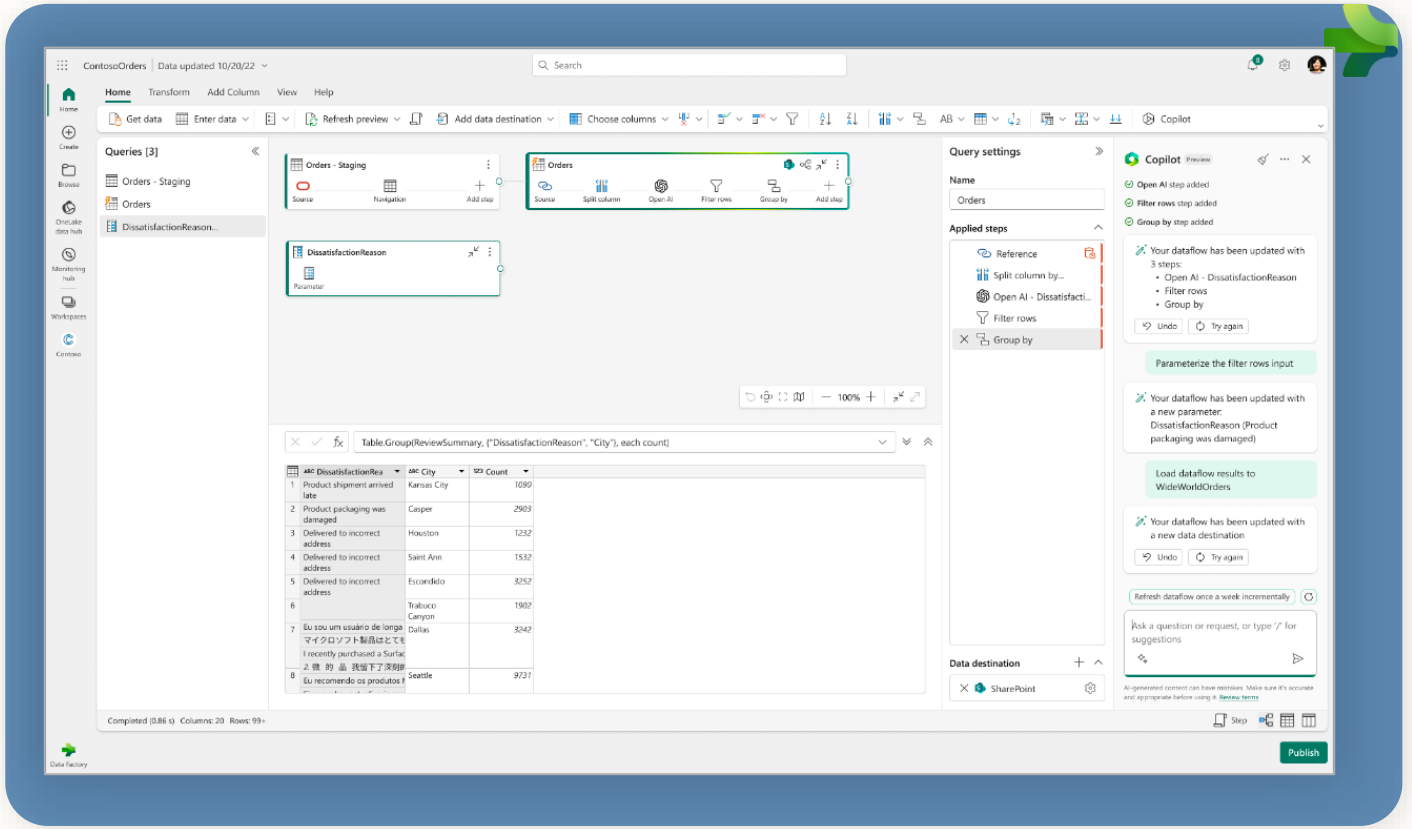
- **Lakehouse**
- **Warehouse**
- **Azure SQL Database**
- **Kusto**
- **SQL DW**



Data Factory Copilot

Allow AI Copilot to help design and build you Data Factory in Microsoft Fabric!

Generative AI Copilot for Data Factory enables natural language interfaces for constructing your Data Factory items



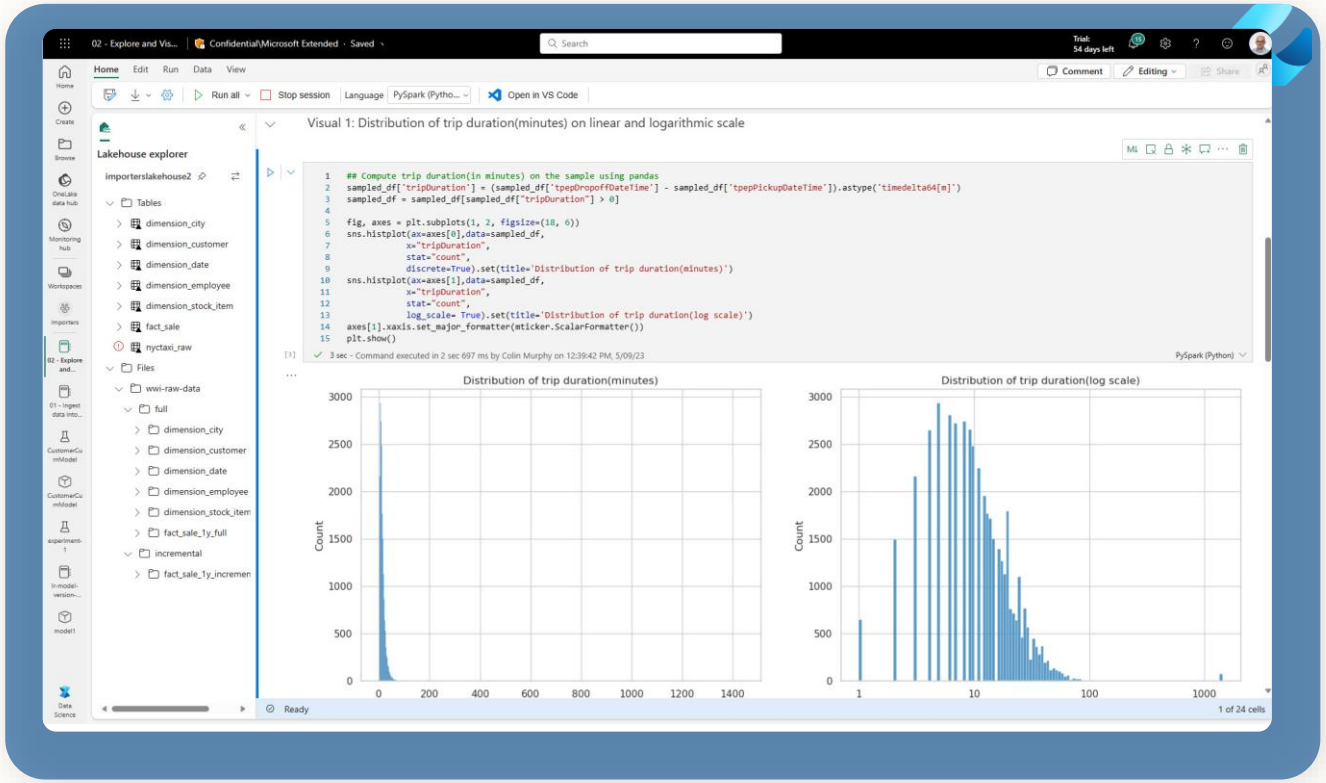
Copilot

Loading Data with Dataflow Gen 2

Notebooks

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:

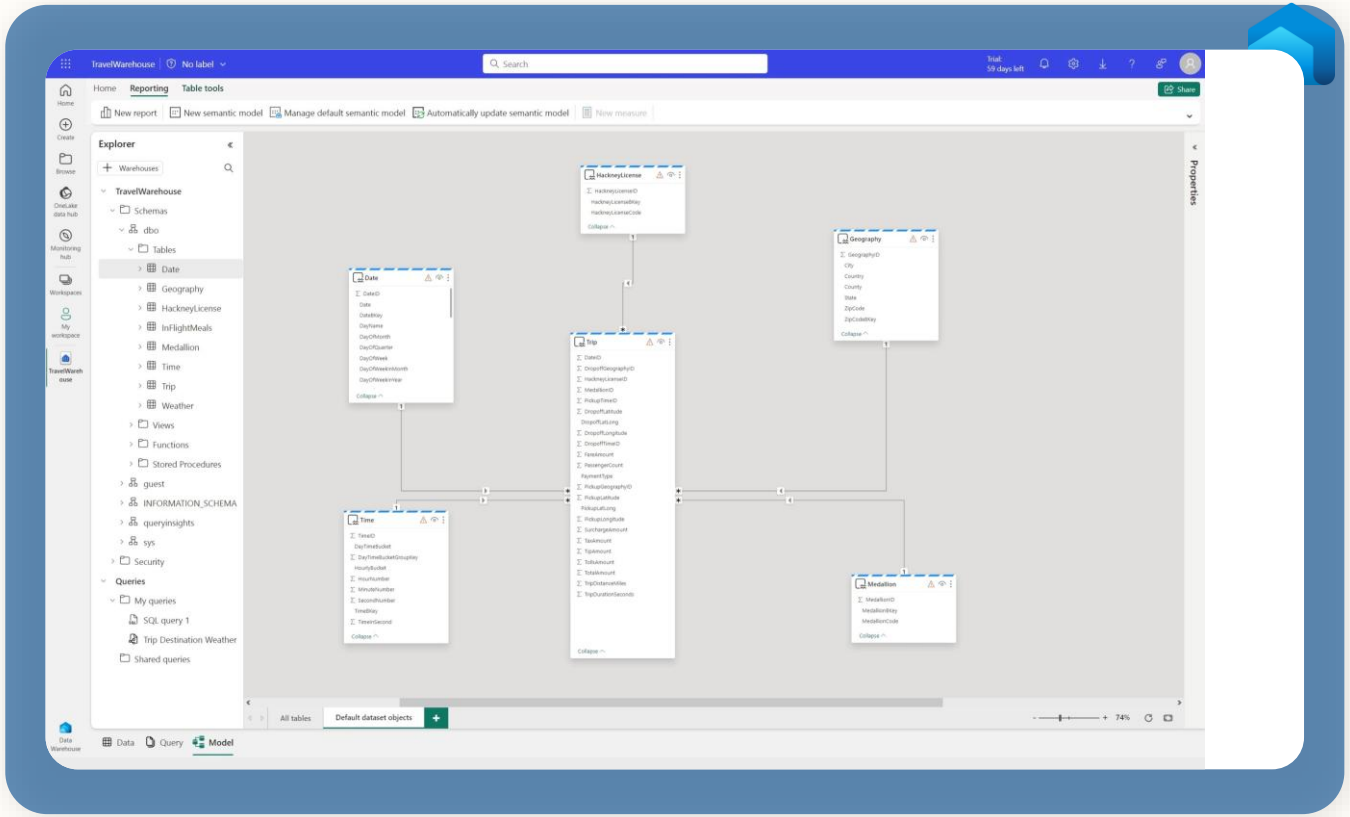
- Manage your Python and R libraries through in-line installs using commands like %pip install
- Advanced notebook development support with ability to reference notebooks in notebooks, and snapshots for easy troubleshooting
- In context monitoring complete with real time advice and error analysis
- Streamline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

Create a Notebook

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.



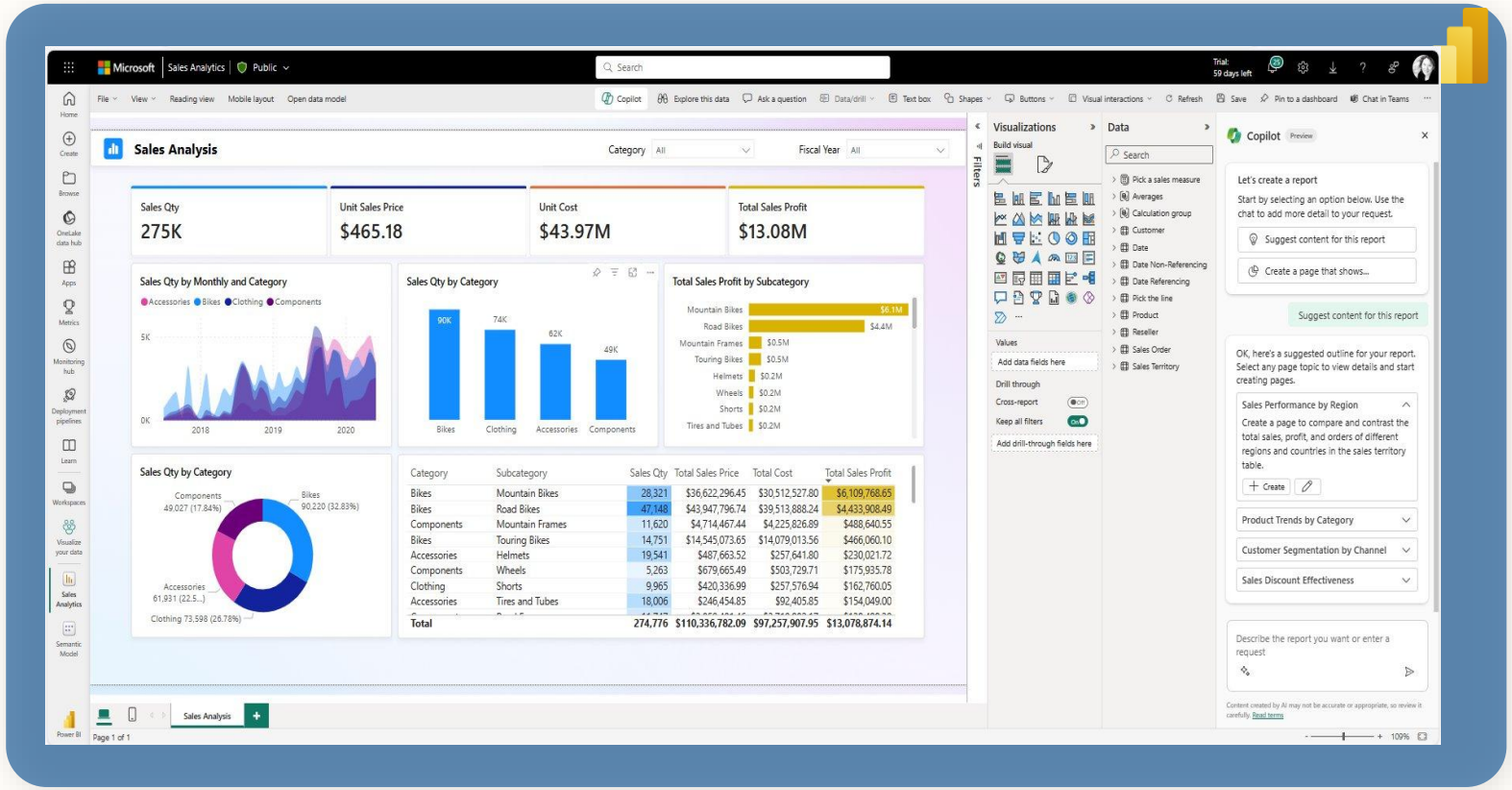
Key Capabilities:

- 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

Power BI

Auto create Power BI reports from your semantic model

Blazing fast performance with Direct Lake

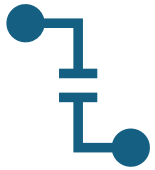


Key capabilities:

- 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

Build and share a report

Review



Imported data using dataflows

Simple and straightforward data import

…but it didn’t have to be simple!

Created a notebook

Connected to analytics endpoint

Data was automatically and seamlessly mirrored to analytics endpoint

Saved a few views

Created a report over our data

Semantic model was fully integrated

Views we saved from our notebook were automatically visible and usable for reports.

End Episode 2

Ingest Data – See it in action with Dataflows

Use Notebooks to query analytics endpoint

Create a report over data