Fabric Workshop

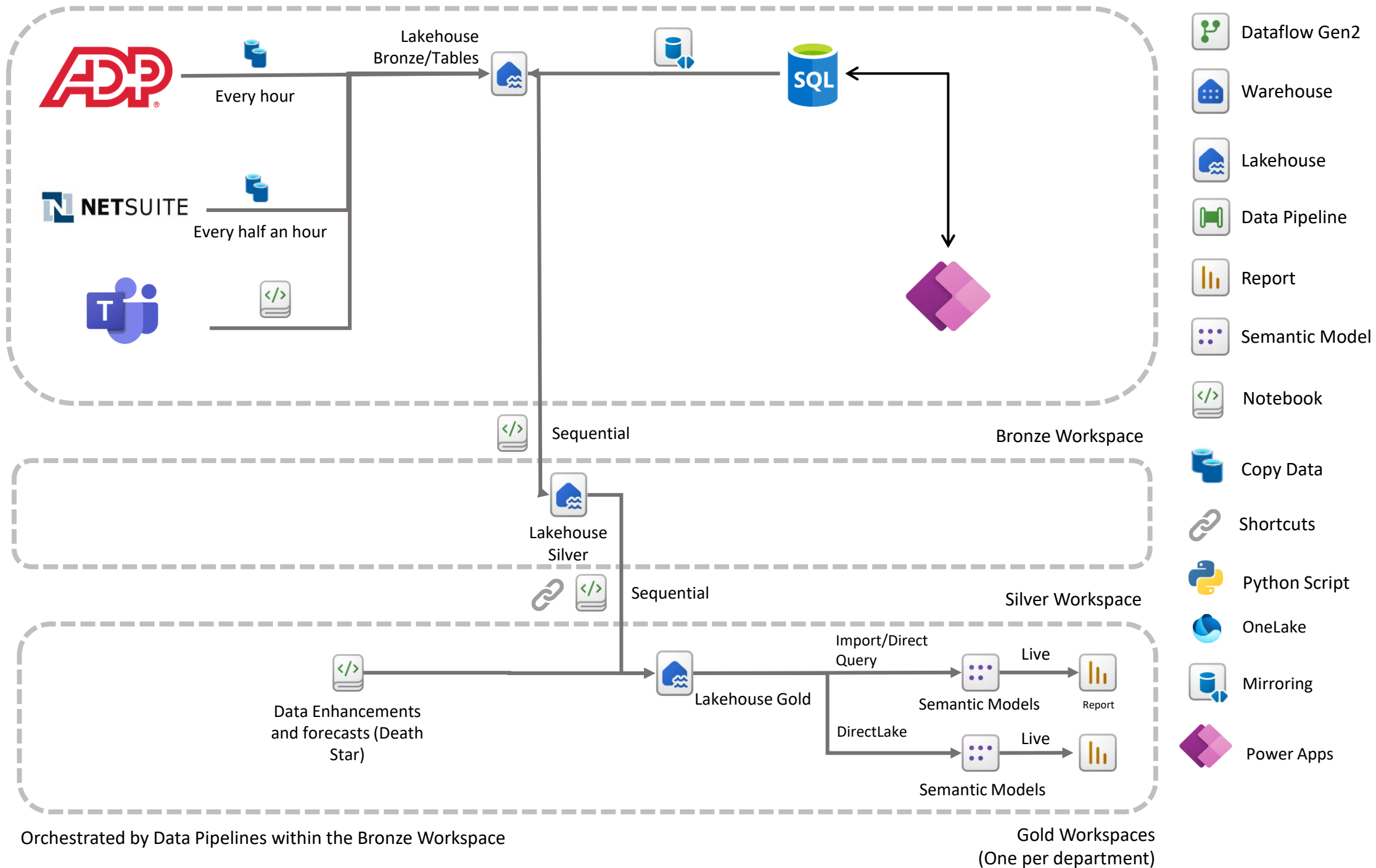2025-02-28 Part 2

SQL Database in Fabric

SQL Database

SQL Database (Preview)

- OLTP (vs OLAP)
- Based on Azure SQL Database
- Automatic provisioning and scaling
- Near real time into OneLake
  - Available with Spark, notebooks, data engineering, reports
- Query editor
  - Fabric Query Editor
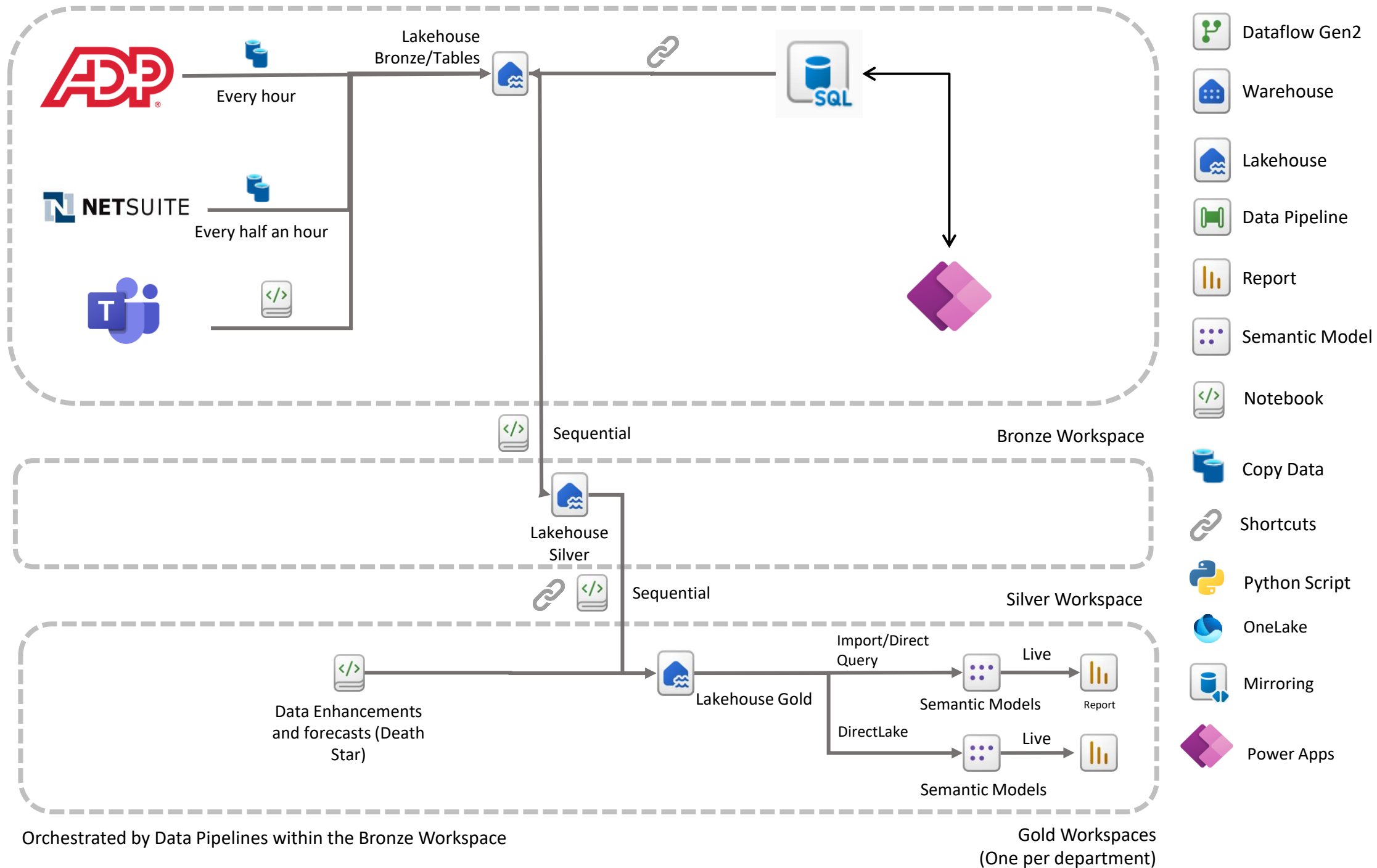 - SQL Server Management Studio
  - Visual Studio Code
- GraphQL APIs

SQL Database – Use case example

- Bring your OLTP data to Fabric

Data Flow
NexaCore

Lakehouse
Bronze/Tables

Every hour

Every half an hour

Sequential

Lakehouse
Silver

Sequential

Data Enhancements
and forecasts (Death
Star)

Lakehouse Gold

Import/Direct
Query

Live

Report

DirectLake

Live

Semantic Models

Semantic Models

Bronze Workspace

Silver Workspace

Gold Workspaces
(One per department)

Orchestrated by Data Pipelines within the Bronze Workspace

Dataflow Gen2

Warehouse

Lakehouse

Data Pipeline

Report

Semantic Model

Notebook

Copy Data

Shortcuts

Python Script

OneLake

Mirroring

Power Apps

Data Flow NexaCore

Lakehouse Bronze/Tables

Every hour

Every half an hour

Sequential

Bronze Workspace

Lakehouse Silver

Sequential

Silver Workspace

Data Enhancements and forecasts (Death Star)

Lakehouse Gold

Import/Direct Query

Live

Semantic Models

Report

DirectLake

Live

Semantic Models

Orchestrated by Data Pipelines within the Bronze Workspace

Gold Workspaces (One per department)

Legend:

- Dataflow Gen2
- Warehouse
- Lakehouse
- Data Pipeline
- Report
- Semantic Model
- Notebook
- Copy Data
- Shortcuts
- Python Script
- OneLake
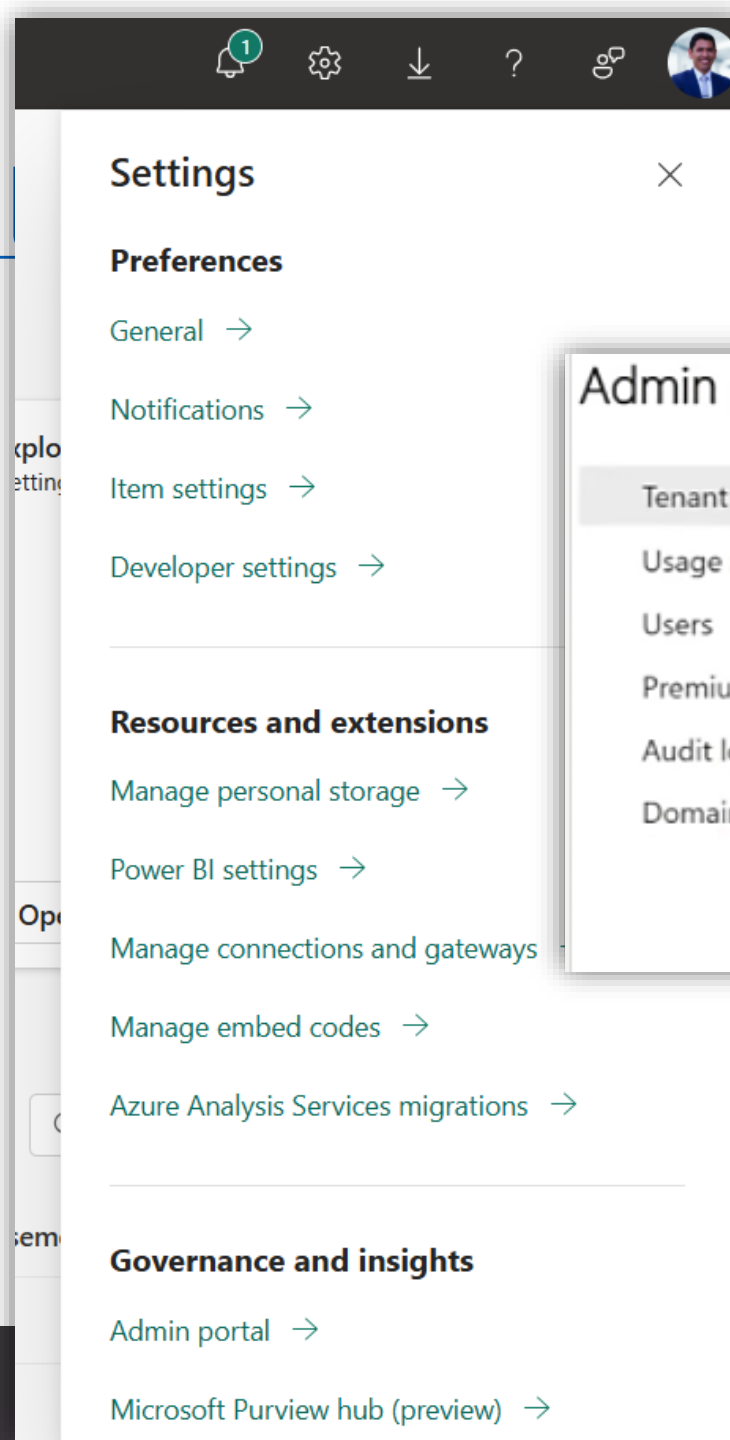- Mirroring
- Power Apps

DEMO – SQL Database in Fabric

- [Enable SQL Database](#) in Fabric
- 1. Create a SQL DB
- 2. Explore different sections
- 3. Upload data
  - Dataflow
  - Pipeline
- 4. Create data
  - Table (templates)
  - View
  - Shortcut
- 5. Create and save queries
- 6. API for GraphQL
- 7. Explore the Analytics Endpoint
  - Connect through VSCode
  - Connect from a Power App

SQL Database

DEMO – [Enab   se](#)

- Admin Portal>tenant settings
  - Enable for your tenant
  - Enable for a capacity
  - Disable

Settings ✕

Preferences

General →

Notifications →

Item settings →

Developer settings →

Resources and extensions

Manage personal storage →

Power BI settings →

Manage connections and gateways →

Manage embed codes →

Azure Analysis Services migrations →

Governance and insights

Admin portal →

Microsoft Purview hub (preview) →

Admin portal

Tenant settings **New**

Usage metrics

Users

Premium Per User

Audit logs

Domains **New**

ⓘ There are new or updated tenan

Microsoft Fabric

▷ API for GraphQL (preview)
  Enabled for the entire organizatio

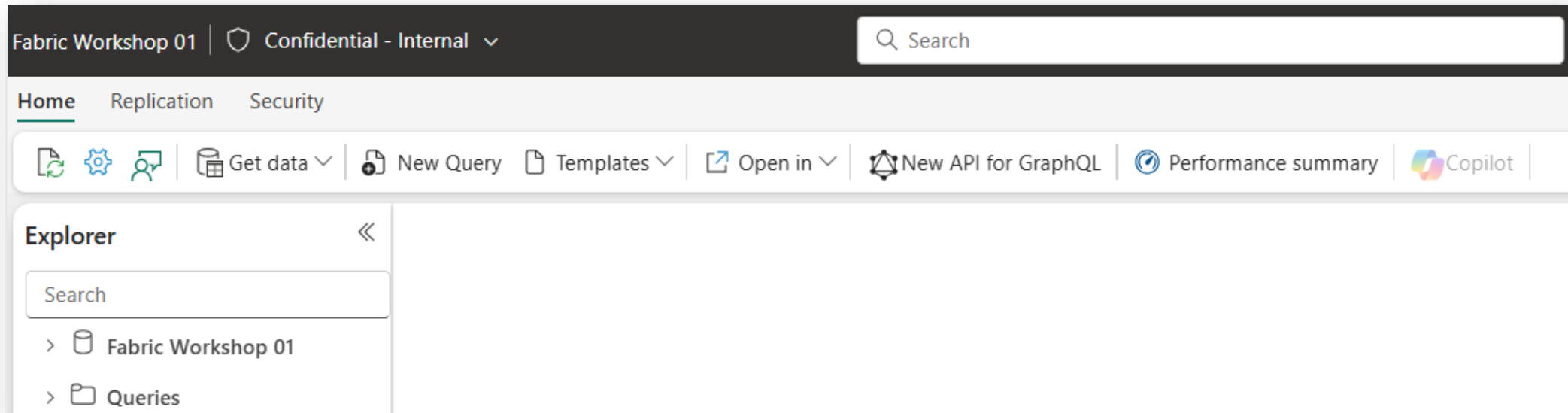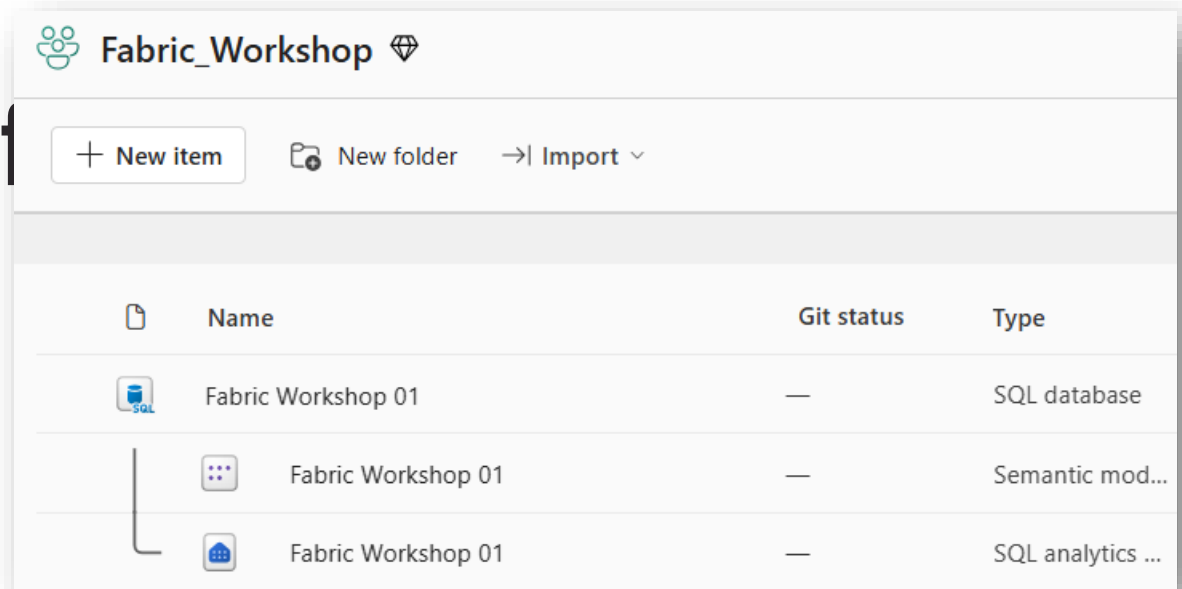▷ **SQL** Database (preview)
  Enabled for the entire organizatio

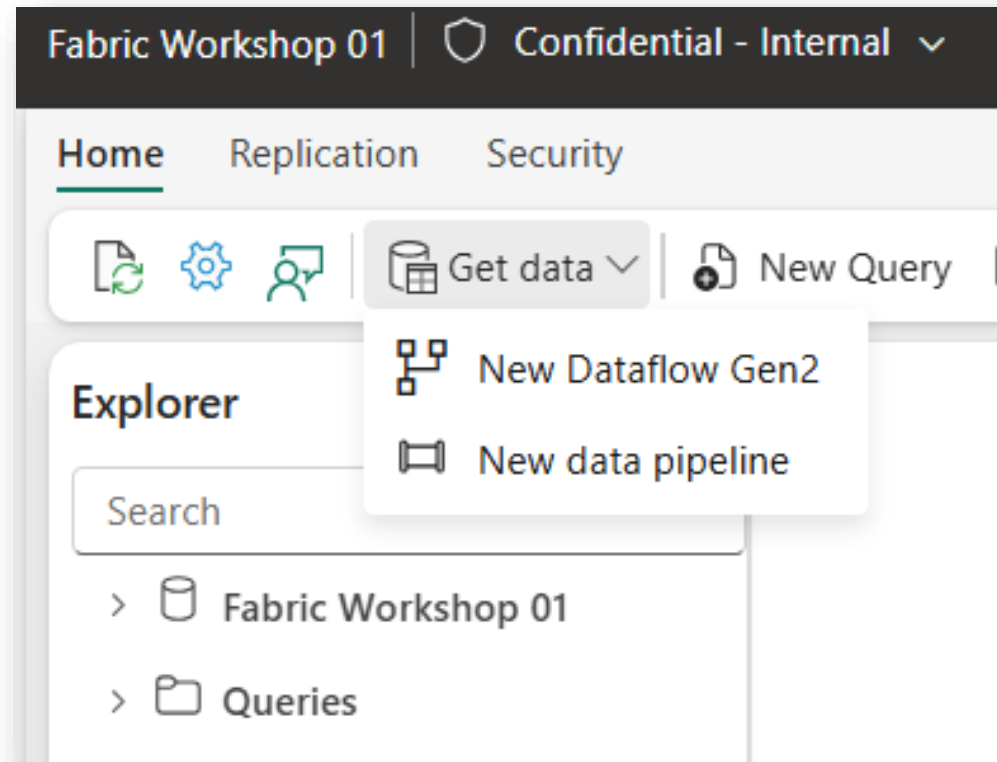# DEMO – Create a SQL Database

- **1. Create a DB**

SQL Database

DEMO – Explore dif

- **2. Explore different sections**

SQL Database
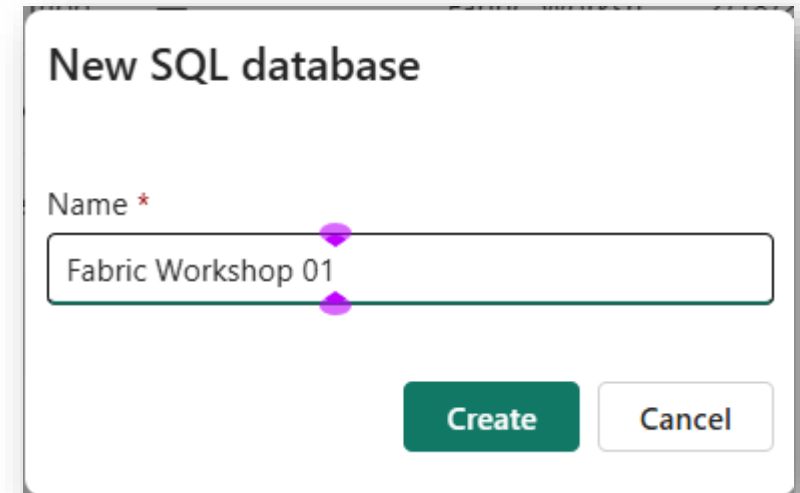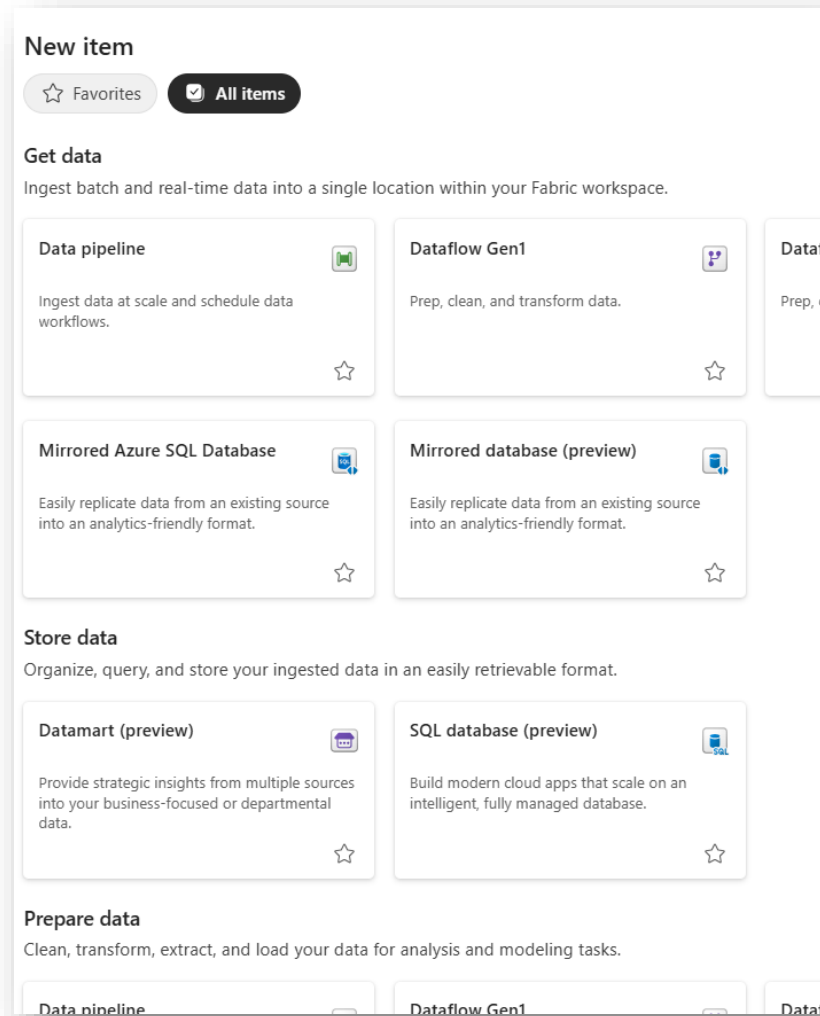
DEMO – Upload data

- **3. Upload data**
  - Dataflow Gen2
  - Pipeline
  - Via external connections

SQL Database

References

- https://learn.microsoft.com/en-us/fabric/database/sql/overview

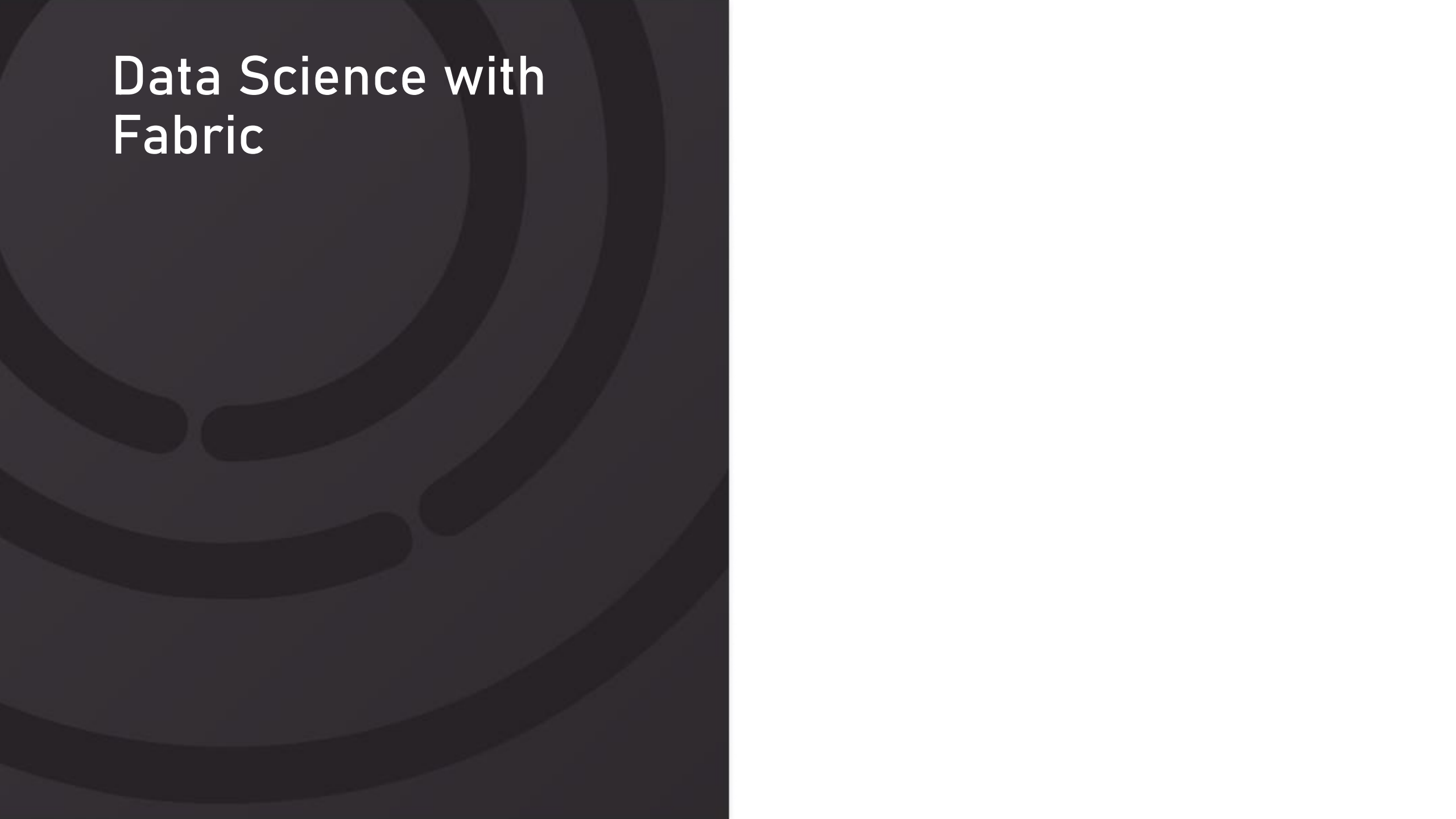SQL Database

Power BI Report

Industry Solutions

Industry Solutions – Intro

- Industry Data Models
  - Standardization: A consistent structure for storing and organizing retail data. This simplifies data management and analysis.
  - Efficiency: Simplify data input and minimize errors by providing preset fields and formats for retail data.
  - Data integrity: Apply data validation rules and quality checks to ensure accurate reporting and analysis.
  - Consolidation: Make data easier to work with by consolidating data from different sources like POS, ecommerce, etc.
  - Analysis and reporting: Well structured data lead to high quality insights and timely decision-making.
  - Data governance: Ensure compliance, security, and privacy for data visibility.
- Pre-built AI/ML Retail Models

Retail Data Solutions – Deep dive

Retail data solutions
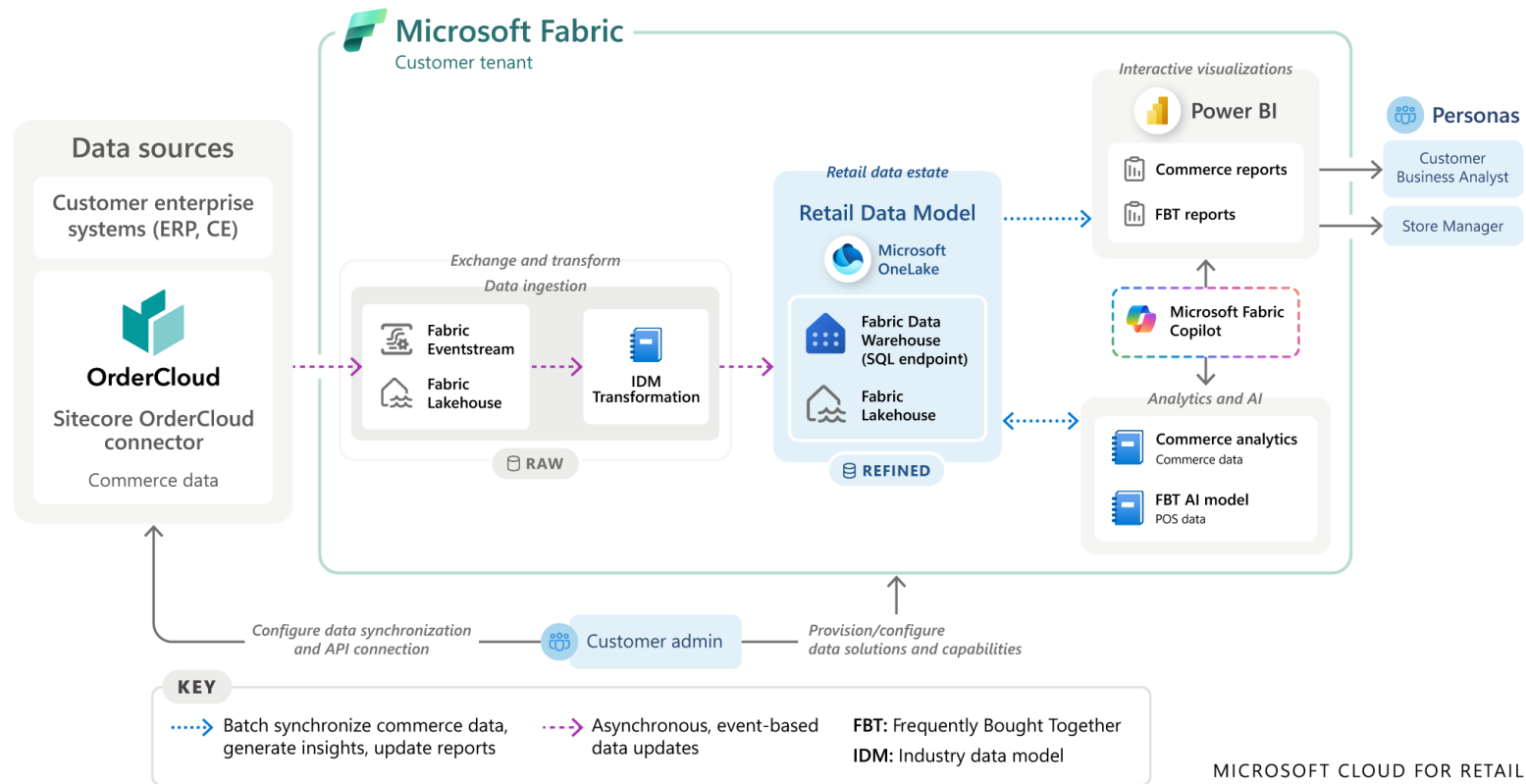
Data Science with Fabric

Open AI + Fabric

Overview of Integration

- APIs
- Azure OpenAI Service
- Fabric's Capabilities (Spark notebooks, Data Factory Pipelines)

Key Use Cases

- Data Summarization
- Text Classification
- Chatbot Assistance for Insights
- Automated Data Cleaning
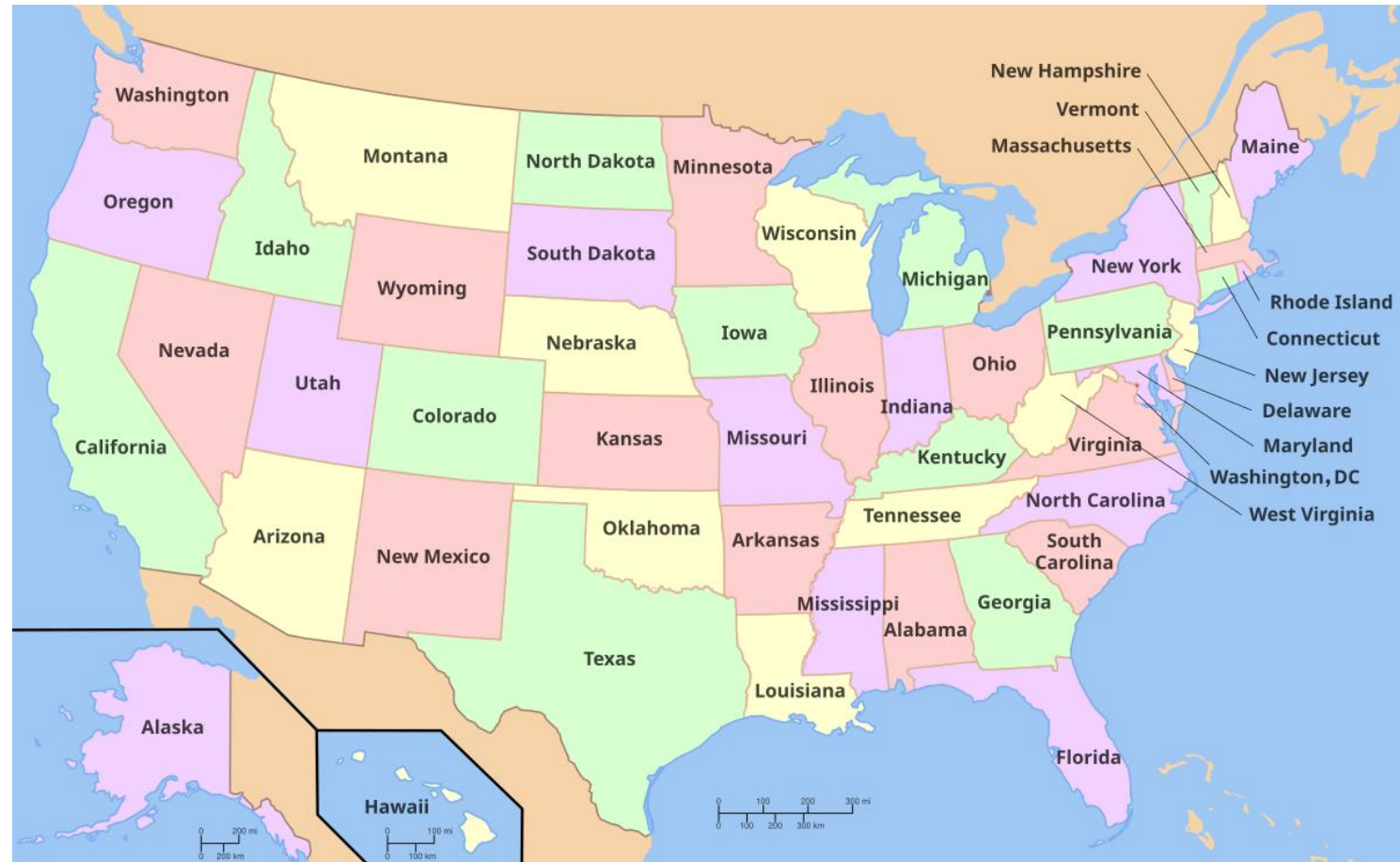
Fabric + Open AI
Key Considerations

API Rate Limits & Pricing

Data Security & Governance

Model	Input	Cached input	Output
gpt-4o ↳ gpt-4o-2024-08-06	$2.50	$1.25	$10.00
gpt-4o-audio-preview ↳ gpt-4o-audio-preview-2024-12-17	$2.50	-	$10.00
gpt-4o-realtime-preview ↳ gpt-4o-realtime-preview-2024-12-17	$5.00	$2.50	$20.00
gpt-4o-mini ↳ gpt-4o-mini-2024-07-18	$0.15	$0.075	$0.60
gpt-4o-mini-audio-preview ↳ gpt-4o-mini-audio-preview-2024-12-17	$0.15	-	$0.60
gpt-4o-mini-realtime-preview ↳ gpt-4o-mini-realtime-preview-2024-12-17	$0.60	$0.30	$2.40
o1 ↳ o1-2024-12-17	$15.00	$7.50	$60.00
o3-mini ↳ o3-mini-2025-01-31	$1.10	$0.55	$4.40
o1-mini ↳ o1-mini-2024-09-12	$1.10	$0.55	$4.40

Case Study: Home Delivery with Open AI

- Context:
  - Thousands of reviews with comments.
  - 5 Carriers
  - 100 Hubs

- Problem:
  - Providing Actionable Insights from Reviews

Fabric + Open AI Demo