



# Zero to Fabric in 45: Everything You Need to Know About Microsoft Fabric and AI







# Housekeeping

- Please silence your phones. If you need to take a call, feel free to step outside and come back in.
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- Survey responses get you more entries into the raffle at the end of the day. (prizes included surface headphones, Smart Ray Bans, RayBan Meta Smart Bluetooth Glasses, and lots more).
- Wifi Info: BusinessTechnologySummit  
Password: journeyteam!

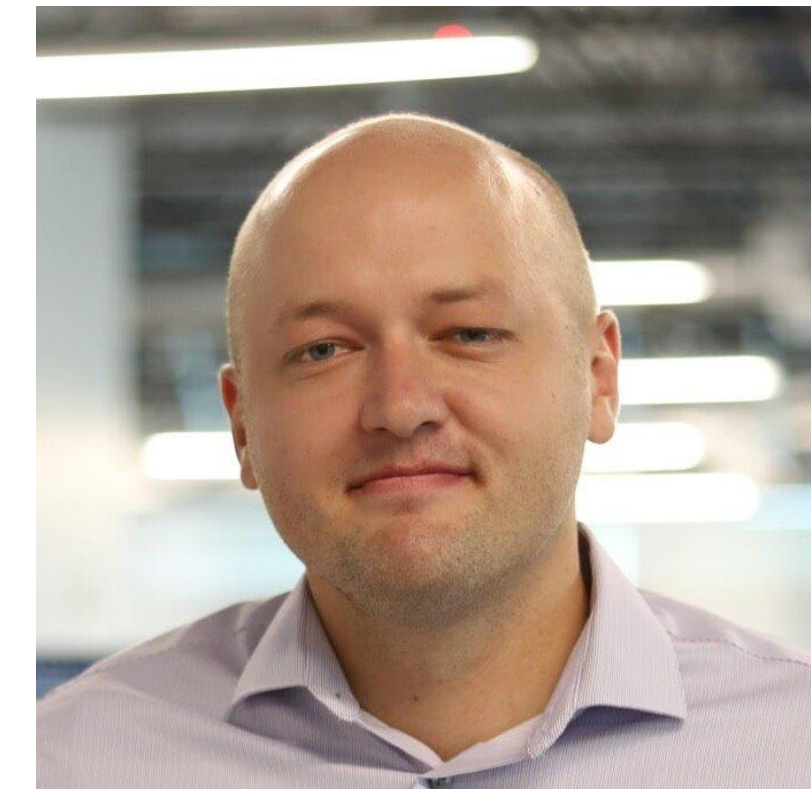




# Presenters



**BRAD SODERMAN**  
DATA ENGINEER



**CONNOR MERKLEY**  
DATA ENGINEER





# What is Fabric?

One Data Tool to rule them all!





# Microsoft Fabric: What is it?



OneLake



Data Factory



Synapse Data Engineering



Synapse Data Warehouse



Synapse Data Science



Synapse Real-Time Analytics



Power BI



Data Activator

Lake-centric and open

Role-specific tools

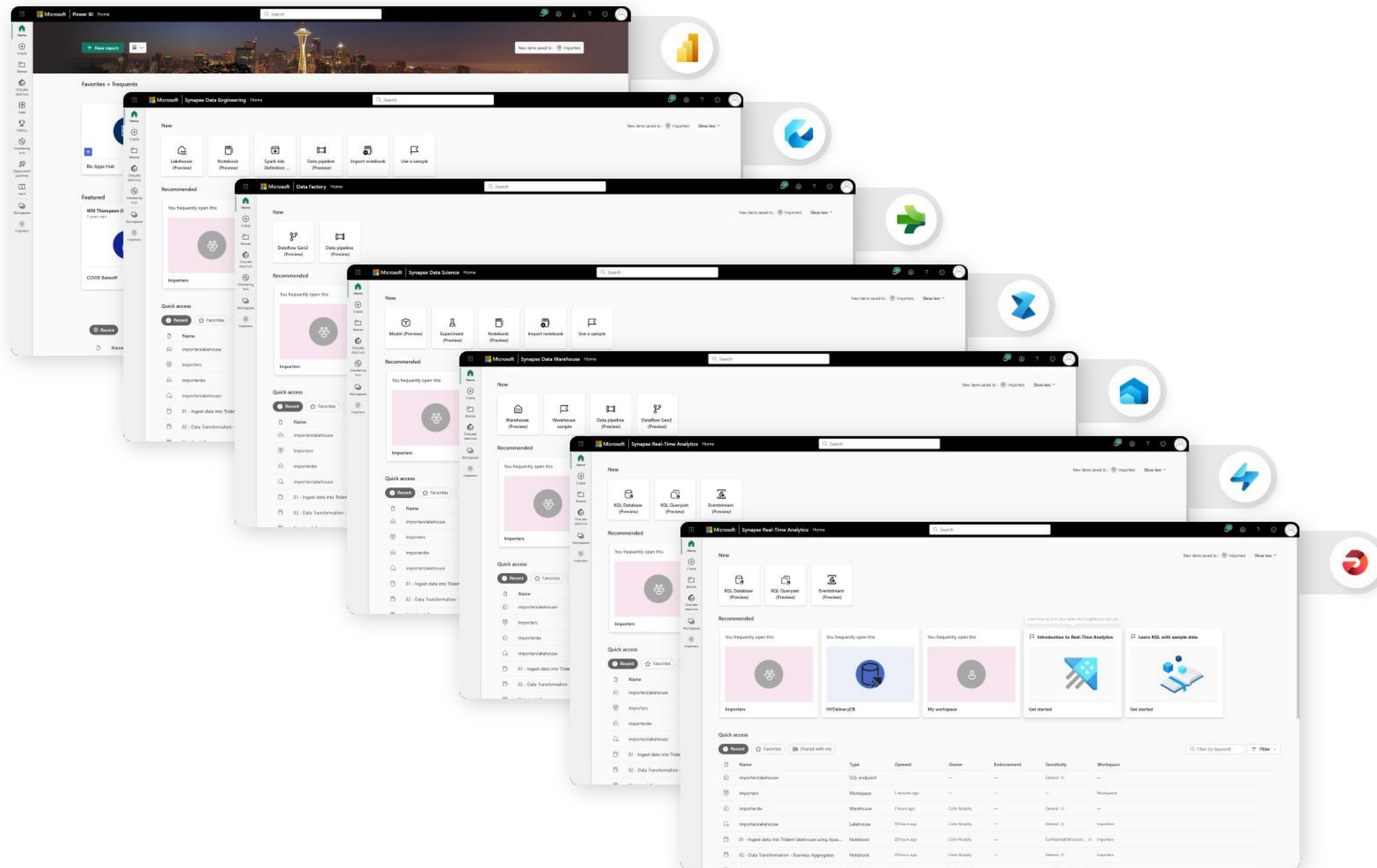
Empower every Microsoft 365 user

Persistent governance and security

## Single...

- Onboarding and trials
- Sign-on
- Navigation model
- UX model
- Workspace organization
- Collaboration experience
- Data Lake
- Storage format
- Data copy for all engines
- Security model
- CI/CD
- Monitoring hub
- Data Hub
- Governance & compliance

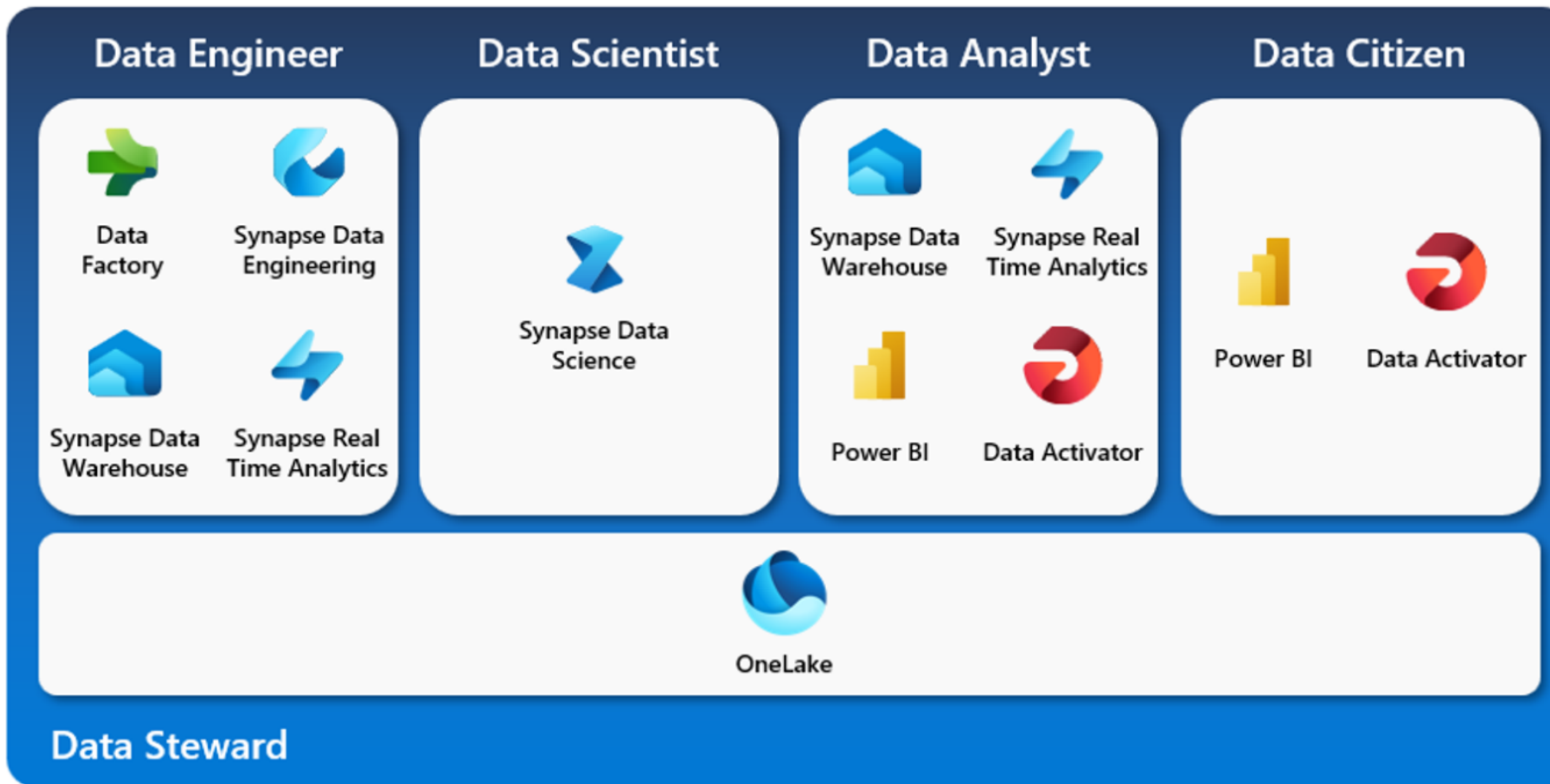
# Multiple Personas: One Experience



# Common Data Problems Organizations Face

1. Which Azure data services do I need to use?
2. Difficulty in Determining Costs
3. Data Silos
4. How do I secure my Data?
5. Data Lineage and Adoption

# Which Services Do I Need





Power BI Fabric Testing Grounds

Search

Trial: 59 days left

Home Create Browse OneLake data hub Apps Metrics Monitoring hub Workspaces Fabric Testing... WorldWideLakehouse Project Deep Dive... Power BI

Fabric Testing Grounds

+ New Upload Create app Manage access Workspace settings

Filter by keyword Filter List view

Name	Type	Owner	Refreshed	Next refresh	Endorsement	Sensitivity	Include
01 - Create Delta Tables	Notebook	Connor Merkley	—	—	—	—	
02 - Data Transformation - Business Aggregates	Notebook	Connor Merkley	—	—	—	—	
DF_Source_To_Lakehouse	Dataflow Gen2	Connor Merkley	2/12/24, 7:53:22 PM	N/A	—	—	
DP_Source_To_Lakehouse	Data pipeline	Connor Merkley	—	—	—	—	
Fabric_Demo	Lakehouse	Connor Merkley	—	—	—	—	
Fabric_Demo	Semantic model (...)	Fabric Testing Gro...	2/18/24, 11:06:56 PM	N/A	—	—	
Fabric_Demo	SQL analytics end...	Fabric Testing Gro...	—	N/A	—	—	
Orchestration_Pipeline	Data pipeline	Connor Merkley	—	—	—	—	
Profit Reporting	Report	Fabric Testing Gro...	11/6/23, 7:48:22 AM	—	—	—	<input type="checkbox"/>
WorldWideLakehouse	Lakehouse	Connor Merkley	—	—	—	—	
WorldWideLakehouse	Semantic model (...)	Fabric Testing Gro...	11/6/23, 7:48:22 AM	N/A	—	—	
WorldWideLakehouse	SQL analytics end...	Fabric Testing Gro...	2/12/24, 10:19:45 PM	N/A	—	—	





Power BI Fabric Testing Grounds

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Home, Create, Browse, OneLake data hub, Apps, Metrics, Monitoring hub, Workspaces, Fabric Testing..., WorldWideLakehouse, Project Deep Dive..., Power BI

+ New, Upload, Create app, Manage access, Workspace settings

Filter by keyword, Filter

Name	Type	Owner	Refreshed	Next refresh	Endorsement	Sensitivity	Include
01 - Create Delta Tables	Notebook	Connor Merkley	—	—	—	—	
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Orchestration_Pipeline	Data pipeline	Connor Merkley	—	—	—	—	
Report	Report	Fabric Testing Gro...	11/6/23, 7:48:22 AM	—	—	—	<input type="checkbox"/>
Lakehouse	Lakehouse	Connor Merkley	—	—	—	—	
ouse	Semantic model (...)	Fabric Testing Gro...	11/6/23, 7:48:22 AM	N/A	—	—	
ouse	SQL analytics end...	Fabric Testing Gro...	2/12/24, 10:19:45 PM	N/A	—	—	

Microsoft Fabric →

- Power BI
- Data Factory
- Data Activator
- Industry Solutions
- Synapse
  - Data Engineering
  - Data Science
  - Data Warehouse
  - Real-Time Analytics



Synapse Data Engineering Home

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### New

Current workspace: Fabric Testing Grounds

Items will be saved to this workspace.

Show less ^

- Lakehouse
- Notebook
- Environment (Preview)
- Spark Job Definition
- Data pipeline
- Import notebook
- Use a sample

### Recommended

You frequently open this

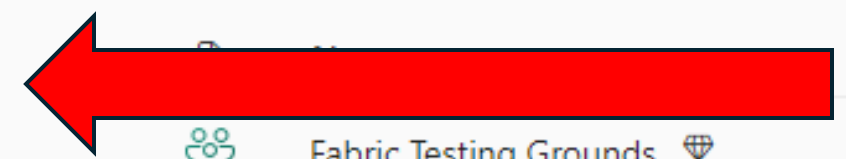
- My workspace
- Lakehouse Notebook Test
- Orchestration\_Pipeline
- WorldWideLakehouse
- 01 - Create Delta Tables

### Quick access

Recent Favorites

Filter by keyword Filter

Type	Opened	Owner	Endorsement	Sensitivity	Location
Workspace	11 minutes ago	—	—	—	Workspaces





Synapse Data Engineering Fabric Testing Grounds

Search

Trial: 59 days left

Home

Create

Browse

OneLake data hub

Monitoring hub

Workspaces

Fabric Testing...

WorldWideLakehouse

Project Deep Dive...

Data Engineering

### Fabric Testing Grounds

+ New

- Data pipeline
- Dataflow Gen2
- Environment (Preview)
- Eventhouse (Preview)
- Eventstream
- Experiment
- KQL Database
- KQL Queryset
- Lakehouse
- ML model
- Notebook
- Reflex (Preview)
- Report
- Spark Job Definition
- Warehouse

More options

Import item

- Import notebook

Workspace access Workspace settings

Filter by keyword Filter

Type	Owner	Refreshed	Next refresh	Endorsement	Sensitivity	Included in app
Notebook	Connor Merkley	—	—	—	—	
Notebook	Connor Merkley	—	—	—	—	
Dataflow Gen2	Connor Merkley	2/12/24, 7:53:22 PM	N/A	—	—	
Data pipeline	Connor Merkley	—	—	—	—	
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Data pipeline	Connor Merkley	—	—	—	—	
Report	Fabric Testing Gro...	11/6/23, 7:48:22 AM	—	—	—	<input type="checkbox"/> No
Lakehouse	Connor Merkley	—	—	—	—	
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SQL analytics end...	Fabric Testing Gro...	2/12/24, 10:19:45 PM	N/A	—	—	

Store big data for cleaning, querying, reporting, and sharing.



WorldWideLakehouse

Search

Trial: 59 days left

Home

Get data | New semantic model | Open notebook

A SQL analytics endpoint for SQL querying and a default Power BI semantic model for faster reporting were created and will be updated with any tables added to the lakehouse.

Explorer

WorldWideLakehouse

- Tables
  - aggregate\_sale\_by\_date\_city
  - aggregate\_sale\_by\_date\_employee
  - dimension\_city
  - dimension\_customer
  - dimension\_date
  - dimension\_employee
  - dimension\_stock\_item
  - fact\_sale
- Files
  - wwi-raw-data
    - dimension\_city
    - dimension\_customer
    - dimension\_date
    - dimension\_employee
    - dimension\_stock\_item
    - fact\_sale
    - fact\_sale\_1y\_full
    - wwi-raw-customer

aggregate\_sale\_by\_date\_city

Showing 1000 rows

	Date	ABC CalendarMo...	ABC Day	ABC ShortMonth	123 CalendarYear	ABC City	ABC StateProvince	ABC SalesTerritory	SumOfTotalExclu...	SumOfTaxAmount	SumOfTotalInclu...	SumOfProfit
1	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Bazemore	Alabama	Southeast	82944.00	12441.60	95385.60	50688.00
2	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Belgreen	Alabama	Southeast	601280.00	90192.00	691472.00	262464.00
3	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Coker	Alabama	Southeast	257984.00	38697.60	296681.60	148608.00
4	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Eulaton	Alabama	Southeast	507584.00	76137.60	583721.60	241248.00
5	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Highland Home	Alabama	Southeast	18480.00	2772.00	21252.00	11736.00
6	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Jemison	Alabama	Southeast	278816.00	41822.72	320638.72	153536.00
7	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Marion Junction	Alabama	Southeast	212992.00	31948.80	244940.80	118784.00
8	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Nanafalia	Alabama	Southeast	312256.00	46838.40	359094.40	142592.00
9	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Robertsdale	Alabama	Southeast	799222.40	119883.36	919105.76	421734.40
10	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Saks	Alabama	Southeast	469312.00	70396.64	539708.64	254032.00
11	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Southside	Alabama	Southeast	20160.00	3024.00	23184.00	14112.00
12	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Tuscaloosa	Alabama	Southeast	36000.00	5400.00	41400.00	19200.00
13	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Akhiok	Alaska	Far West	601177.60	90176.64	691354.24	254153.60
14	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Ekwok	Alaska	Far West	106000.00	15900.00	121900.00	51360.00
15	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Haycock	Alaska	Far West	284544.00	42681.60	327225.60	165952.00
16	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Ikatan	Alaska	Far West	114400.00	17160.32	131560.32	50848.00
17	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Iliamna	Alaska	Far West	662976.00	99447.04	762423.04	296704.00
18	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	King Cove	Alaska	Far West	140800.00	21120.00	161920.00	75136.00
19	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Kwethluk	Alaska	Far West	27264.00	4089.60	31353.60	17472.00
20	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Lemeta	Alaska	Far West	3756.00	563.52	4319.52	2232.00
21	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Port Chilkoot	Alaska	Far West	27520.00	4128.00	31648.00	18432.00
22	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Cortaro	Arizona	Southwest	217420.80	32613.12	250033.92	95462.40
23	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Peeples Valley	Arizona	Southwest	82944.00	12441.60	95385.60	48384.00
24	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Queen Valley	Arizona	Southwest	543424.00	81513.60	624937.60	262976.00
25	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Tempe	Arizona	Southwest	272640.00	40896.00	313536.00	134720.00
26	1/1/2000 12:00:0...	CY2000-Jan	1	Jan	2000	Tumacacori	Arizona	Southwest	54272.00	8140.80	62412.80	31744.00

Succeeded (16 sec 503 ms)

Columns 12 Rows 1,000



Power BI Fabric Testing Grounds

Search

Trial: 59 days left

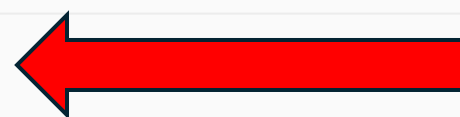
Home, Create, Browse, OneLake data hub, Apps, Metrics, Monitoring hub, Workspaces, Fabric Testing..., WorldWideLakehouse, Project Deep Dive..., Power BI

Fabric Testing Grounds

+ New, Upload, Create app, Manage access, Workspace settings

Filter by keyword, Filter, List view

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WorldWideLakehouse	Lakehouse	Connor Merkley	—	—	—	—	
WorldWideLakehouse	Semantic model (...)	Fabric Testing Gro...	11/6/23, 7:48:22 AM	N/A	—	—	
WorldWideLakehouse	SQL analytics end...	Fabric Testing Gro...	2/12/24, 10:19:45 PM	N/A	—	—	





Orchestration\_Pipeline

Home Activities Run View

Copy data Dataflow Notebook Get metadata Lookup Script Stored procedure Set variable If conditions ForEach Web Invoke pipeline Office 365 Outlook

WWI Dataflow

Invoke pipeline (Preview)

WWI Data Pipeline DP\_Source\_To\_Lakeh...

Create Delta Tables

Table Aggregations

General Settings

Name \* WWI Dataflow [Learn more](#)

Description

Activity state  Activated  Deactivated

Timeout 0.12:00:00

Retry 0

> Advanced

Data Engineering

02 - Data Transformation - Business Aggregates | Saved

Home Edit Run Data View

Run all Stop session Language PySpark (Python) Environment Workspace default Open in VS Code Copilot

All sources

Lakehouses

+ Data sources

WorldWideLakehouse

Tables

- aggregate\_sale\_by\_date\_city
- aggregate\_sale\_by\_date\_emp...
- dimension\_city
- dimension\_customer
- dimension\_date
- dimension\_employee
- dimension\_stock\_item
- fact\_sale

Files

- wwi-raw-data

### Approach #1 - sale\_by\_date\_city

In this cell, you are creating three different Spark dataframes, each referencing an existing delta table.

```
1 df_fact_sale = spark.read.table("WorldWideLakehouse.fact_sale")
2 df_dimension_date = spark.read.table("WorldWideLakehouse.dimension_date")
3 df_dimension_city = spark.read.table("WorldWideLakehouse.dimension_city")
```

[1] ✓ -Apache Spark session ready in 2 min 4 sec 667 ms. Command executed in 11 sec 873 ms by Connor Merkley on 8:07:42 AM, 11/06/23

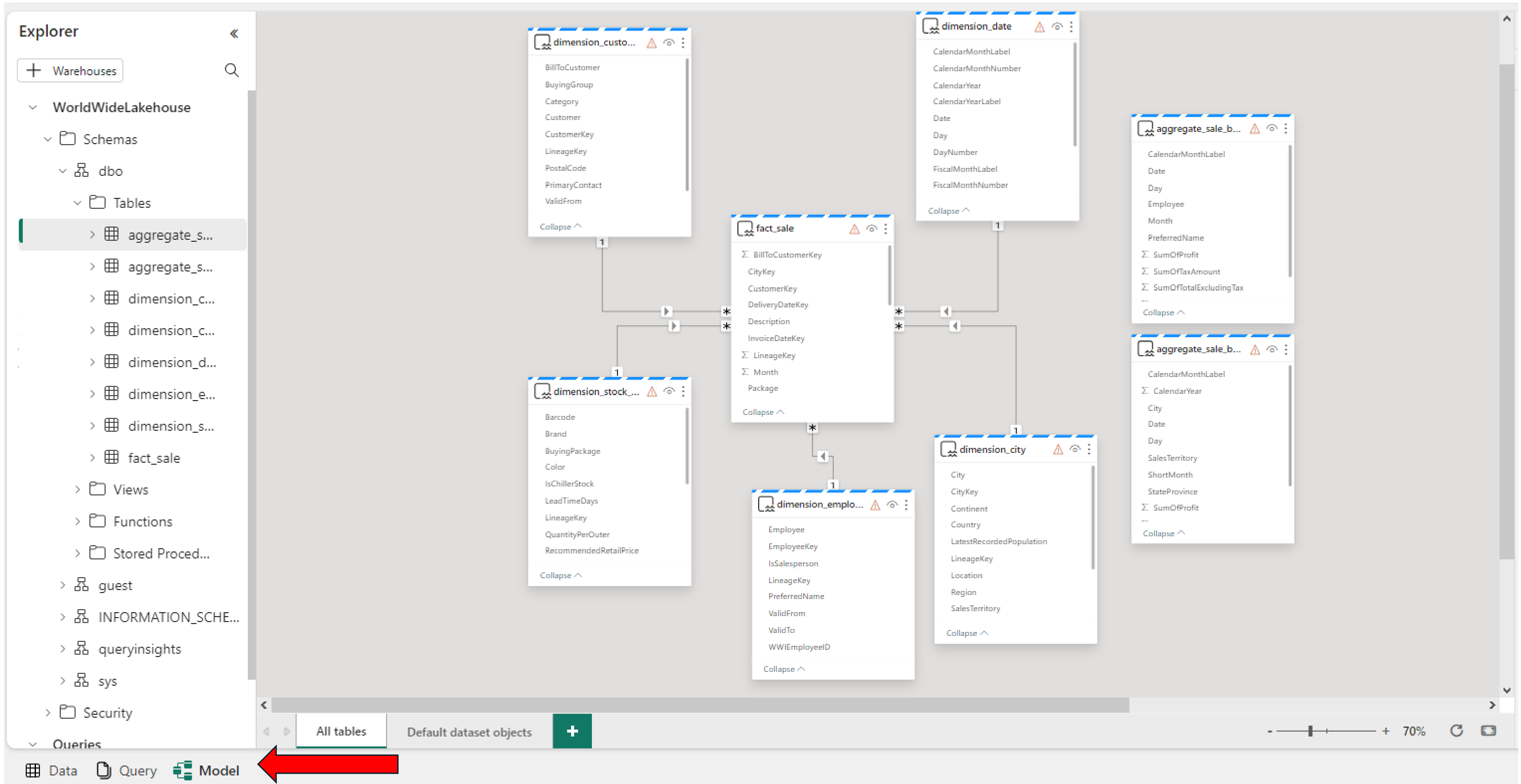
In this cell, you are joining these tables using the dataframes created earlier, doing group by to generate aggregation, renaming few of the columns and finally writing it as delta table in the *Tables* section of the lakehouse.

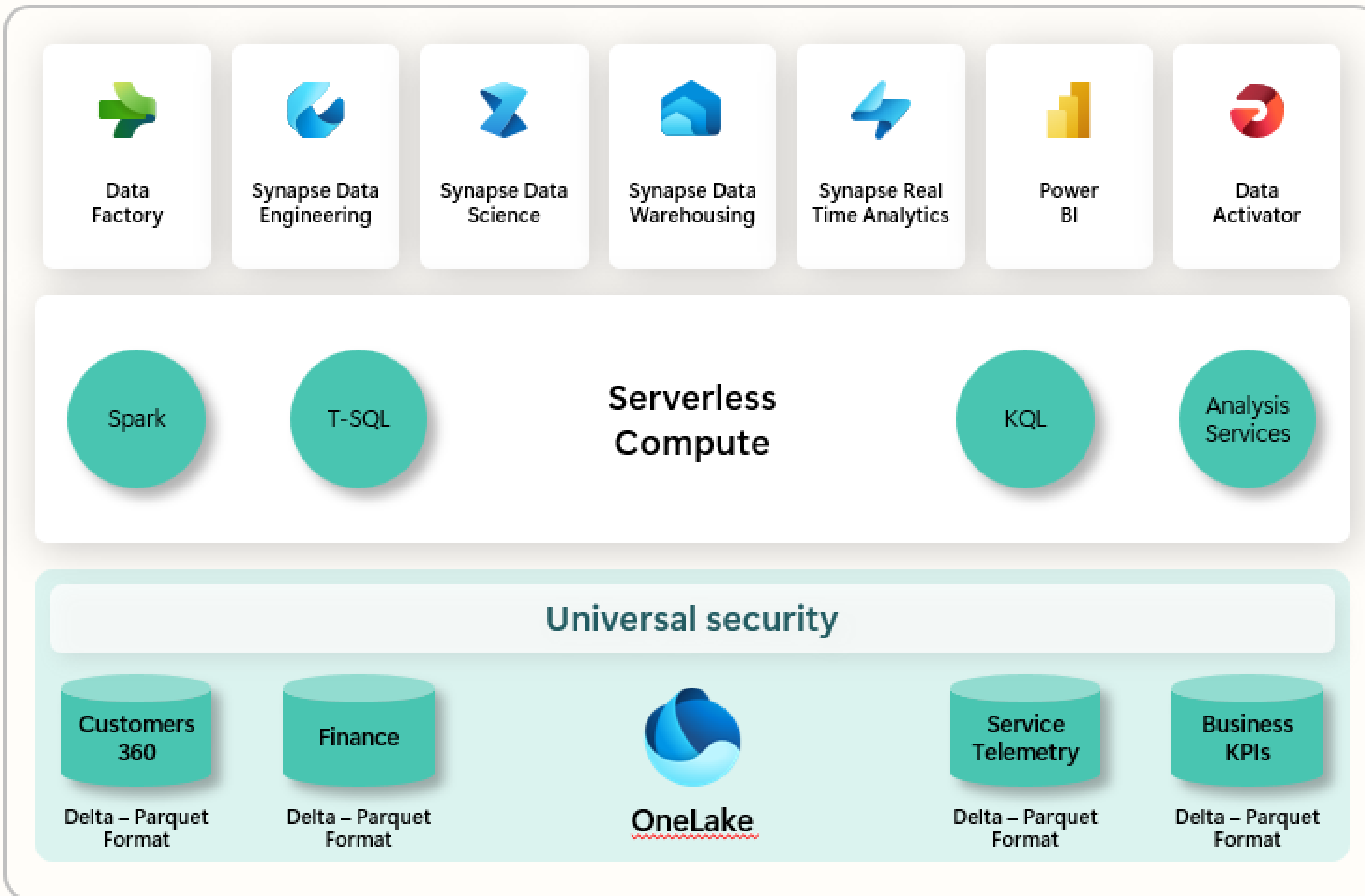
```
1 sale_by_date_city = df_fact_sale.alias("sale") \
2 .join(df_dimension_date.alias("date"), df_fact_sale.InvoiceDateKey == df_dimension_date.Date, "inner") \
3 .join(df_dimension_city.alias("city"), df_fact_sale.CityKey == df_dimension_city.CityKey, "inner") \
4 .select("date.Date", "date.CalendarMonthLabel", "date.Day", "date.ShortMonth", "date.CalendarYear", "city.City", "city.StateProvince", "city.SalesTerritory", "sale.TotalExclu
5 .groupBy("date.Date", "date.CalendarMonthLabel", "date.Day", "date.ShortMonth", "date.CalendarYear", "city.City", "city.StateProvince", "city.SalesTerritory")\
6 .sum("sale.TotalExcludingTax", "sale.TaxAmount", "sale.TotalIncludingTax", "sale.Profit")\
7 .withColumnRenamed("sum(TotalExcludingTax)", "SumOfTotalExcludingTax")\
8 .withColumnRenamed("sum(TaxAmount)", "SumOfTaxAmount")\
9 .withColumnRenamed("sum(TotalIncludingTax)", "SumOfTotalIncludingTax")\
10 .withColumnRenamed("sum(Profit)", "SumOfProfit")\
11 .orderBy("date.Date", "city.StateProvince", "city.City")
12
13 sale_by_date_city.write.mode("overwrite").format("delta").option("overwriteSchema", "true").save("Tables/aggregate_sale_by_date_city")
```

[2] ✓ -Command executed in 32 sec 603 ms by Connor Merkley on 8:08:15 AM, 11/06/23

Not connected AutoSave: On Selected Cell 1 of 10 cells







All the compute engines store their data automatically in OneLake

---

The data is stored in a single common format

---

**Delta - Parquet**, an open standards format, is the storage format for all tabular data in Microsoft Fabric

---

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

---

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



# Determining Costs – Reducing Ambiguity

SKU	Capacity unit (CU)	Pay-as-you-go	Reservation	
F 2	2	\$262.80/month	\$156.334/month ~41% savings	
F 4	4	\$525.60/month	\$312.667/month ~41% savings	\$87.25
F 8	8	\$1,051.20/month	\$625.334/month ~41% savings	
F 16	16	\$2,102.40/month	\$1,250.667/month ~41% savings	= \$13.00
F 32	32	\$4,204.80/month	\$2,501.334/month ~41% savings	
F 64	64	\$8,409.60/month	\$5,002.667/month ~41% savings	= \$8.25
F 128	128	\$16,819.20/month	\$10,005.334/month ~41% savings	
F 256	256	\$33,638.40/month	\$20,010.667/month ~41% savings	= \$33.00
F 512	512	\$67,276.80/month	\$40,021.334/month ~41% savings	
F 1024	1024	\$134,553.60/month	\$80,042.667/month ~41% savings	= \$33.00

Azure Managed

Orchestration a

Orchestration

13  
Activity Runs (in thousar

Executions

33  
Data movement activi  
execution hours

33  
Pipeline activity executi  
hours

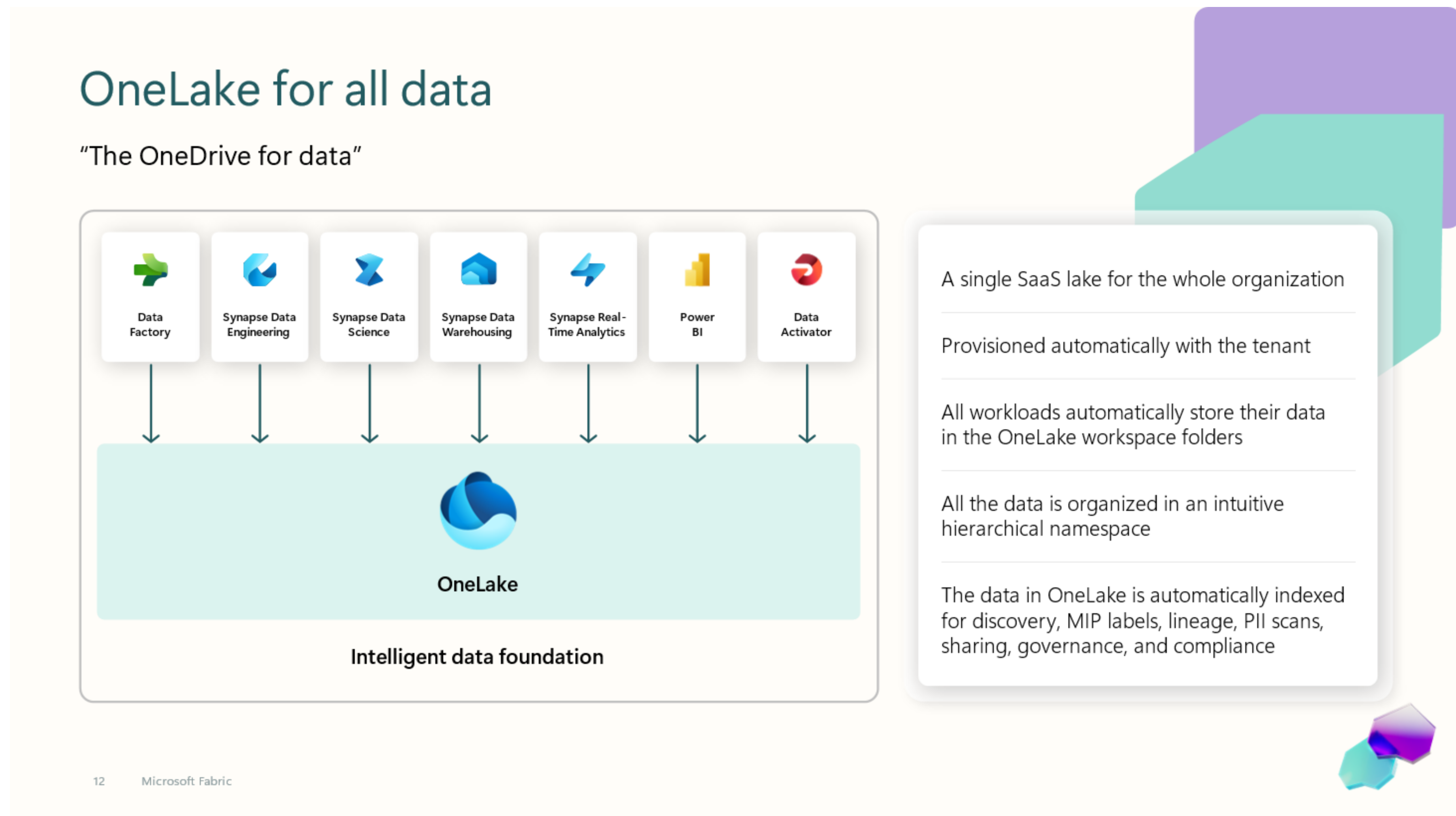
33  
External Pipeline activi  
execution hours

Slide is based on East US Region. Prices vary by region.

# Fabric's answer to Data Silos: OneLake

## "The OneDrive for data"

- OneLake is the storage mechanism for Fabric.
- Based on ADLS Gen 2 Storage.
- Supports structured and unstructured data.
- Utilizes the Delta Parquet file format for data storage.
  - This format is compatible with various analytical engines such as T-SQL and Spark.





# OneLake File Explorer

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Filter by title

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  - Open access
  - Integrate with Azure services
  - Secure and manage data
  - OneLake file explorer for Windows
    - OneLake file explorer overview**
    - Release notes
  - Discover data in the OneLake data hub
  - OneLake compute and storage consumption

Learn / Microsoft Fabric / OneLake /

## Use OneLake file explorer to access Fabric data

Article • 12/20/2023 • 6 contributors

Feedback

### In this article

- Installation instructions
- Limitations and considerations
- Scenarios
- OneLake file explorer icons
- Related content

The OneLake file explorer application seamlessly integrates OneLake with Windows File Explorer. This application automatically syncs all OneLake items that you have access to in Windows File Explorer. "Sync" refers to pulling up-to-date metadata on files and folders, and sending changes made locally to the OneLake service. Syncing doesn't download the data, it creates placeholders. You must double-click on a file to download the data locally.

Name	Status	Date modified	Type
SalesWorkspace	☁	2/2/2023 8:33 AM	File folder
ResearchWorkspace	☁	4/5/2023 9:25 AM	File folder
ProjectContoso	☁	3/23/2023 1:33 PM	File folder

### Additional resources

#### Training

Module

[Upload, download, and manage data with Azure Storage Explorer - Training](#)

Azure Storage Explorer allows you to quickly view all the storage services under your account. You can browse through, read, and edit data stored in those services through a user-friendly...

#### Documentation

[OneLake in Microsoft Fabric documentation - Microsoft Fabric](#)

OneLake is included with every Microsoft Fabric tenant and is designed to be the single place for all your analytics data. Find resources.

[Create a lakehouse with OneLake - Microsoft Fabric](#)

Learn how to create a lakehouse and load data into it with OneLake; you can also add data in bulk or schedule data loads.

[What is OneLake? - Microsoft Fabric](#)

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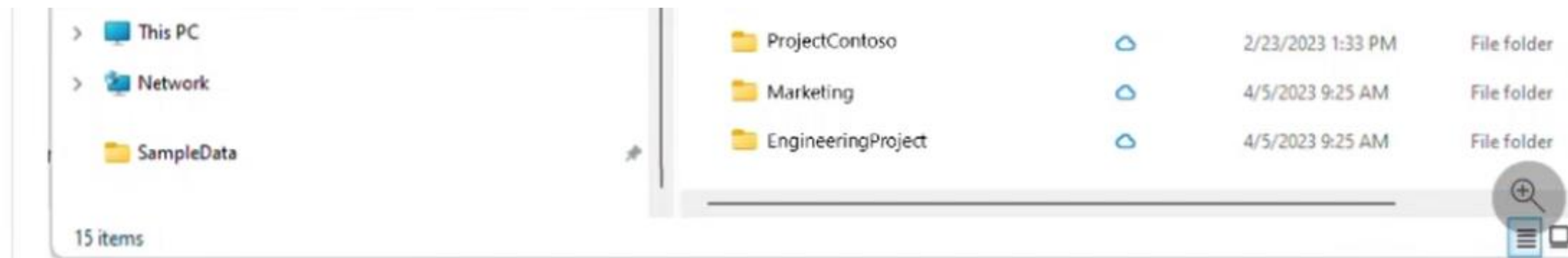
Show 5 more



# OneLake File Explorer

Filter by title

- OneLake documentation
- > Overview
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- > Secure and manage data
- > OneLake file explorer for Windows
  - OneLake file explorer overview
  - Release notes
  - Discover data in the OneLake data hub
  - OneLake compute and storage consumption



**Important**  
This feature is in preview.

When you create, update, or delete a file via Windows File Explorer, it automatically syncs the changes to OneLake service. Updates to your item made outside of your File Explorer aren't automatically synced. To pull these updates, you need to right-click on the item or subfolder in Windows File Explorer and select Sync from OneLake.

## Installation instructions

OneLake file explorer currently supports Windows and has been validated on Windows 10 and 11.

To install:

1. Download the [OneLake file explorer](#).
2. Double-click the file to start installing.

The storage location on your PC for the placeholders and any downloaded content is `\\%USERPROFILE%\OneLake - Microsoft\`.

Once you have installed and launched the application, you can now see your OneLake data in Windows File Explorer.

## Limitations and considerations

- Workspace names with the "/" character, encoded escape characters such as %23, and names that look like GUIDs

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Module  
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[OneLake in Microsoft Fabric documentation - Microsoft Fabric](#)  
OneLake is included with every Microsoft Fabric tenant and is designed to be the single place for all your analytics data. Find resources.

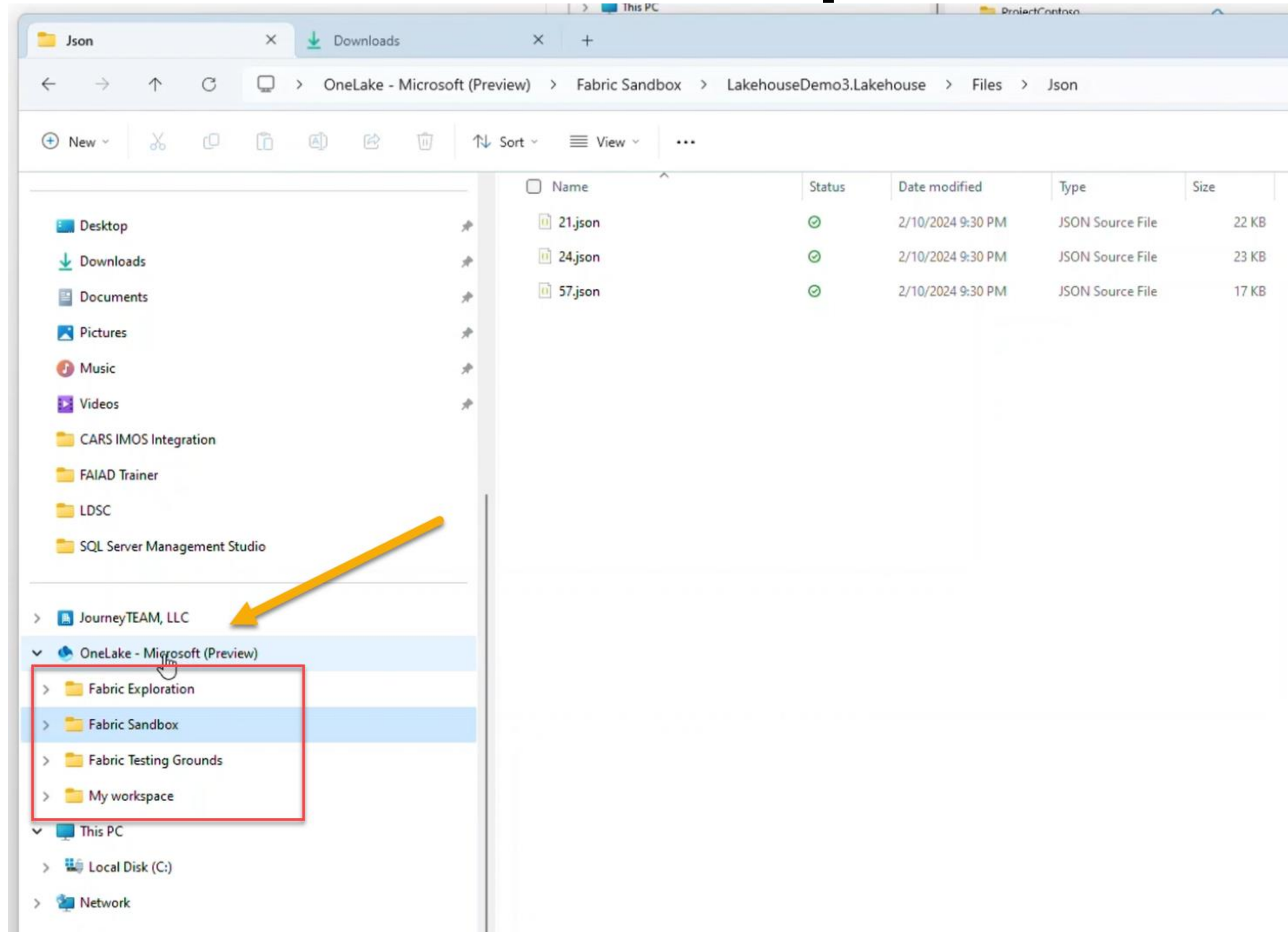
[Create a lakehouse with OneLake - Microsoft Fabric](#)  
Learn how to create a lakehouse and load data into it with OneLake; you can also add data in bulk or schedule data loads.

[What is OneLake? - Microsoft Fabric](#)  
OneLake is included with every Microsoft Fabric tenant and is designed to be the single place for all your analytics data. Learn more.

[Show 5 more](#)



# OneLake File Explorer



# Workspace within Fabric

The screenshot shows the Microsoft Fabric interface for a workspace named "Fabric Sandbox". The top navigation bar includes "Power BI Fabric Sandbox" and a search bar. The left sidebar contains navigation options: Home, Create, Browse, OneLake data hub, Apps, Metrics, and Monitoring hub. The main content area features a toolbar with buttons for "+ New", "Upload", "Create deployment pipeline", "Create app", and "Manage access". Below the toolbar is a table listing workspace items.

Name	Type	Owner	Refreshed	Next refresh
BusinessDataLake	Lakehouse	Brad Soderman	—	—
BusinessDataLake	Semantic model (...)	Fabric Sandbox	2/3/24, 9:57:04 PM	N/A
BusinessDataLake	SQL analytics end...	Fabric Sandbox	—	N/A
BusinessMetrics	Warehouse	Brad Soderman	2/3/24, 10:55:45 PM	N/A
BusinessMetrics	Semantic model (...)	Fabric Sandbox	2/3/24, 9:52:44 PM	N/A



# Workspace within Fabric

**Power BI Fabric Sandbox** Search

**New**  
Current workspace: Fabric Sandbox  
Items will be saved to this workspace.

**Data Activator**  
Monitor data to trigger alerts and automated actions so your organization adapts to changing conditions in real time.

- Reflex (Preview)** Monitor datasets, queries, and event streams for patterns to trigger actions and alerts.
- Reflex sample (Preview)** Monitor datasets, queries, and event streams for patterns to trigger actions and alerts with sample data.

**Data Engineering**  
Create a lakehouse and open your workflow to build, transform, and share your data estate.

- Lakehouse** Store big data for cleaning, querying, reporting, and sharing.
- Notebook** Explore data and build machine learning solutions with Apache Spark applications.
- Environment (Preview)** Set up shared libraries, Spark compute notebooks and Spark job definitions.

**Data Factory**  
Empower your organization to get value from data faster than ever.

- Dataflow Gen2** Prep, clean, and transform data.
- Data pipeline** Ingest data at scale and schedule data workflows.

# Workspace within Fabric

Home | LH2 | Search

Home | Get data | New semantic model | Open notebook

A SQL analytics endpoint for SQL querying and a default Power BI semantic model for reporting is being created and will be updated with any tables added to the lakehouse.

Explorer

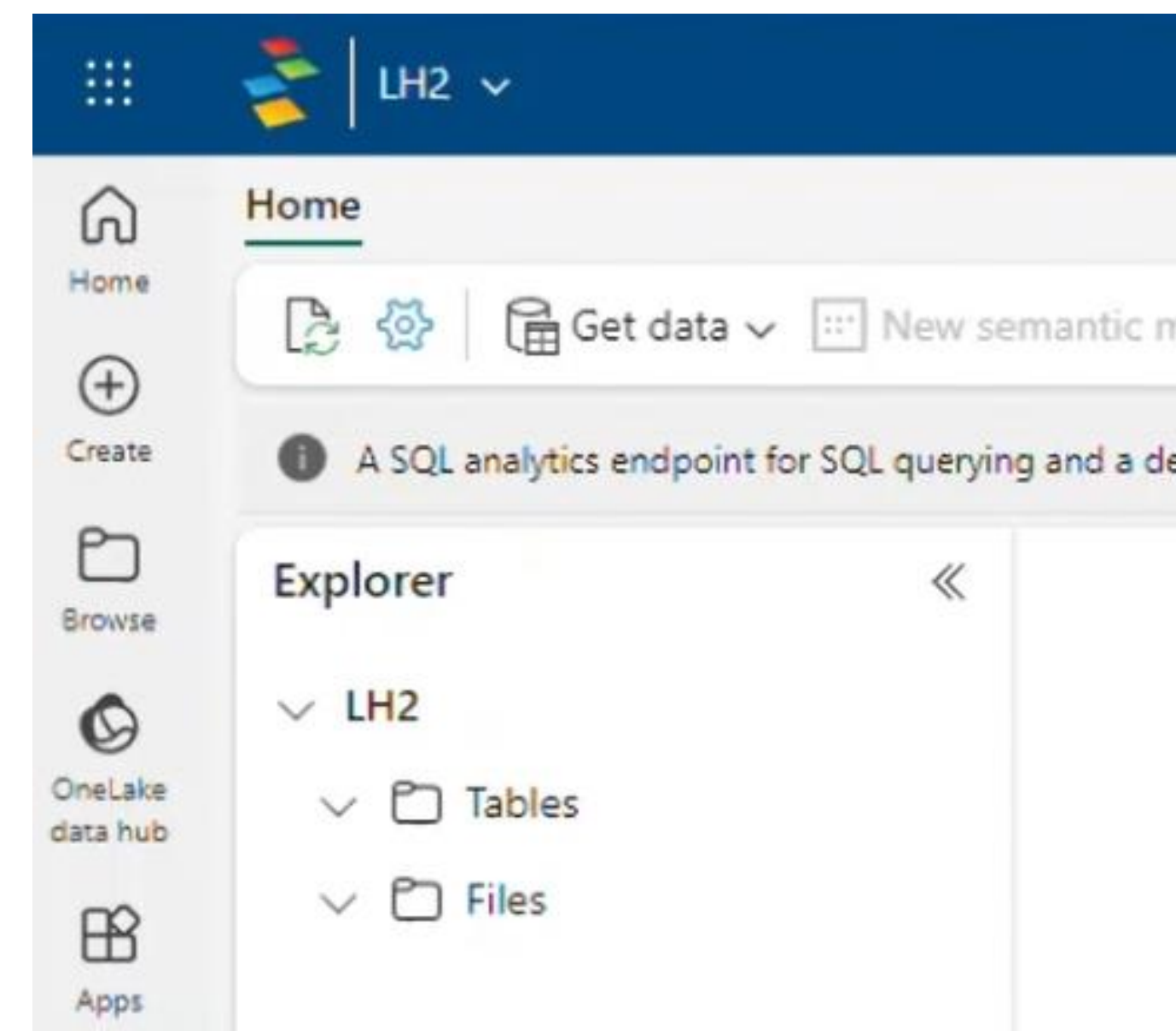
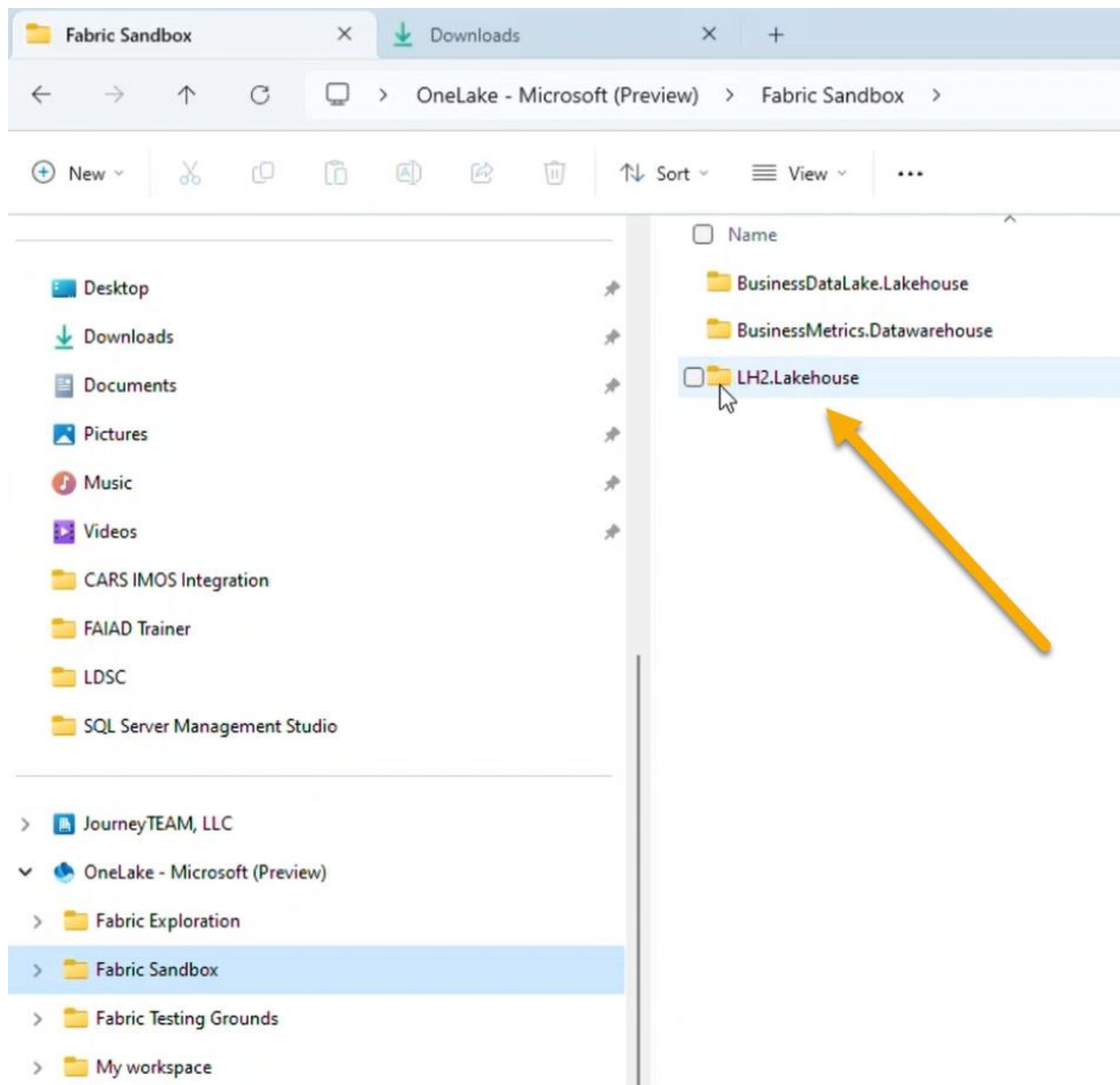
- LH2
  - Tables
  - Files

Get data in your lakehouse

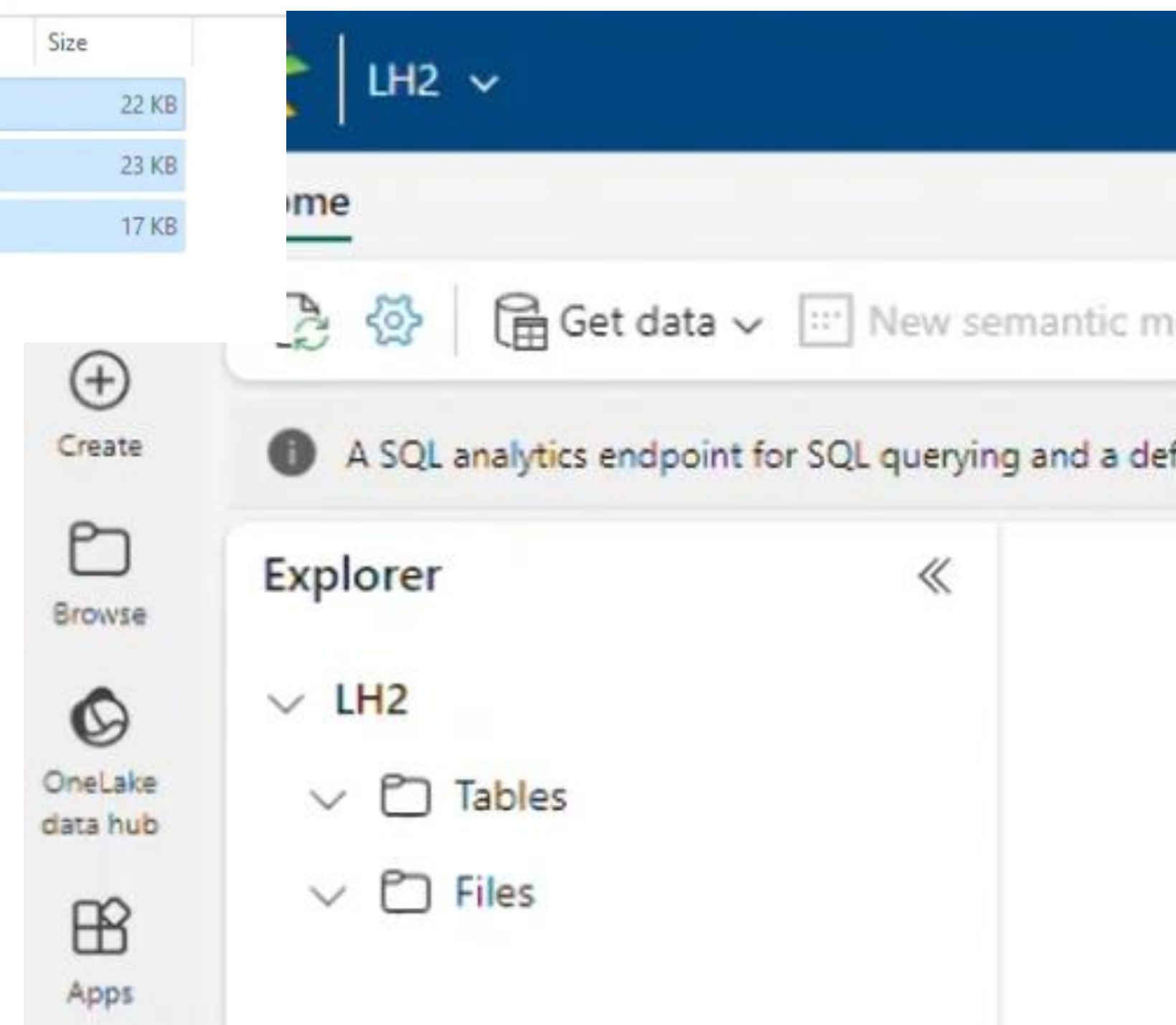
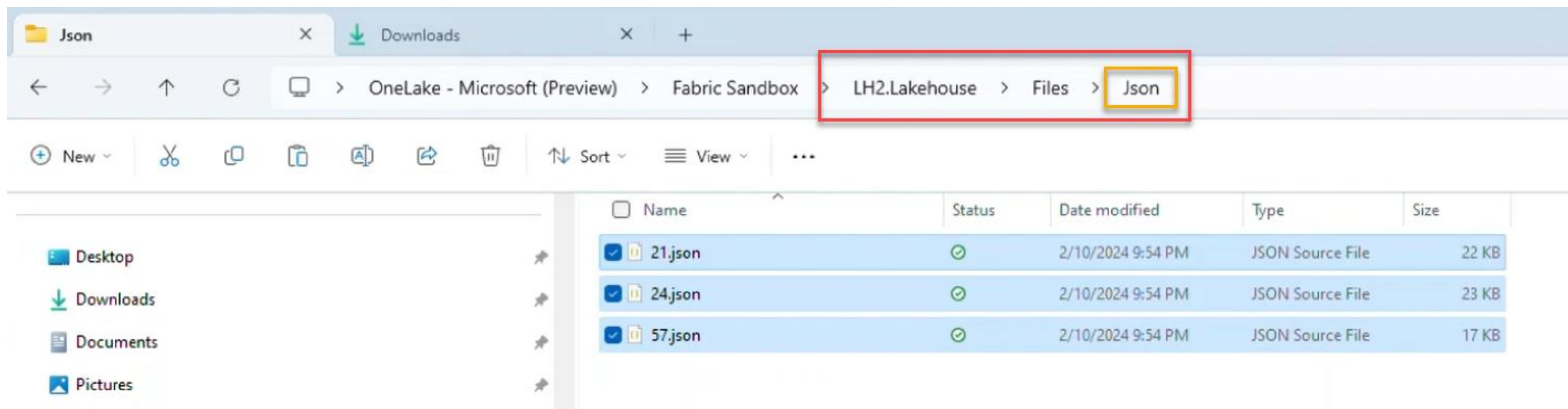
- New Dataflow Gen2
- New data pipeline
- Open notebook
- New shortcut



# Comparison: New Lakehouse



# Let's add some files via File Explorer





# Let's refresh the workspace

The image displays a side-by-side comparison of a local File Explorer window and the Fabric workspace Explorer. Both windows show a folder named 'Json' containing three files: 21.json, 24.json, and 57.json. The File Explorer window on the left shows the local file system path: OneLake - Microsoft (Preview) > Fabric Sandbox > LH2.Lakehouse > Files > Json. The Fabric workspace Explorer on the right shows the path: LH2 > Files > Json. A red box highlights the 'Json' folder in the File Explorer address bar, and a yellow box highlights the 'Json' folder in the Fabric workspace Explorer. A mouse cursor is hovering over the '21.json' file in the Fabric workspace Explorer.

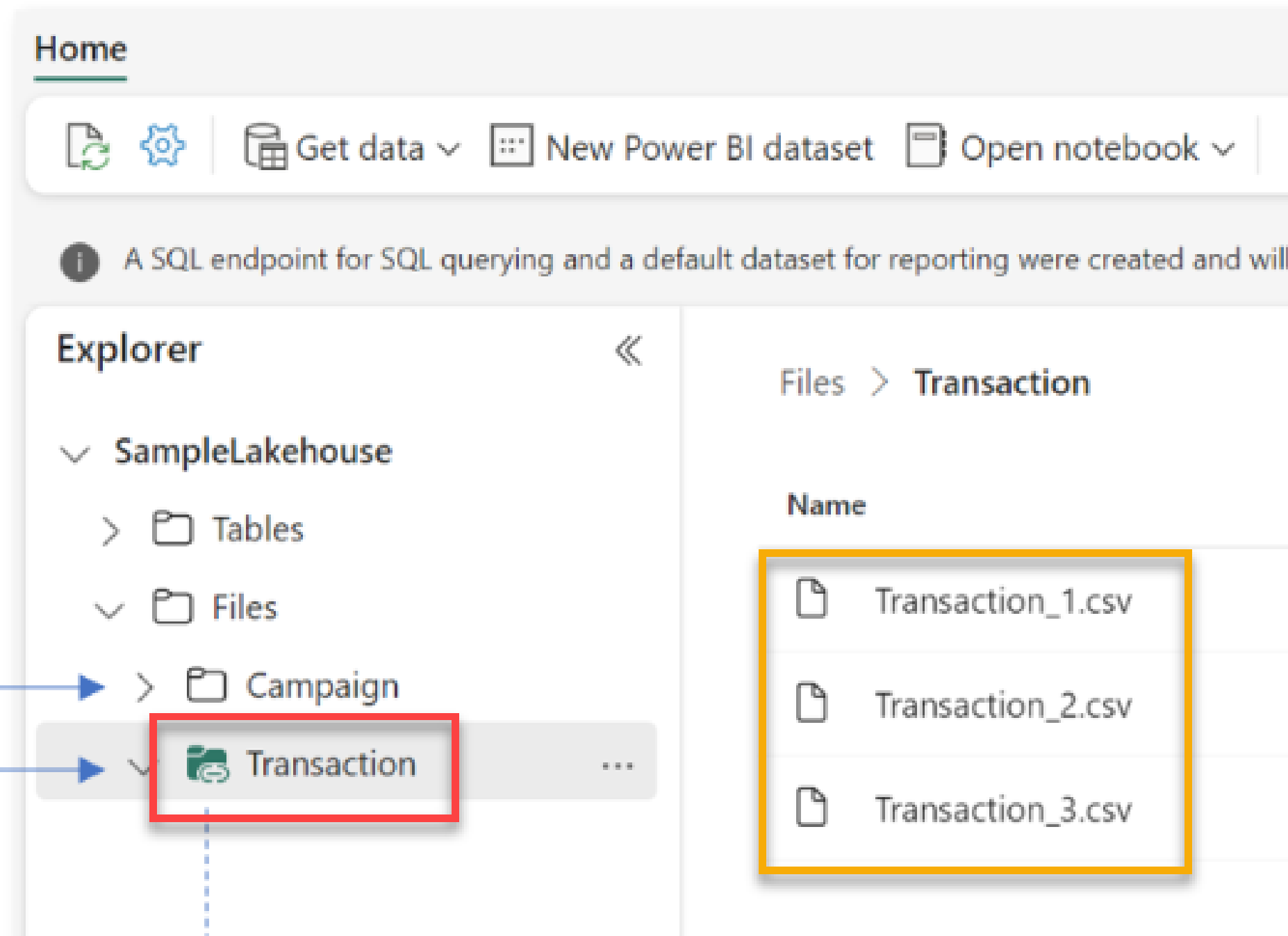
Name	Status	Date modified
21.json	✓	2/10/2024 9:54 PM
24.json	✓	2/10/2024 9:54 PM
57.json	✓	2/10/2024 9:54 PM

Name
21.json
24.json
57.json

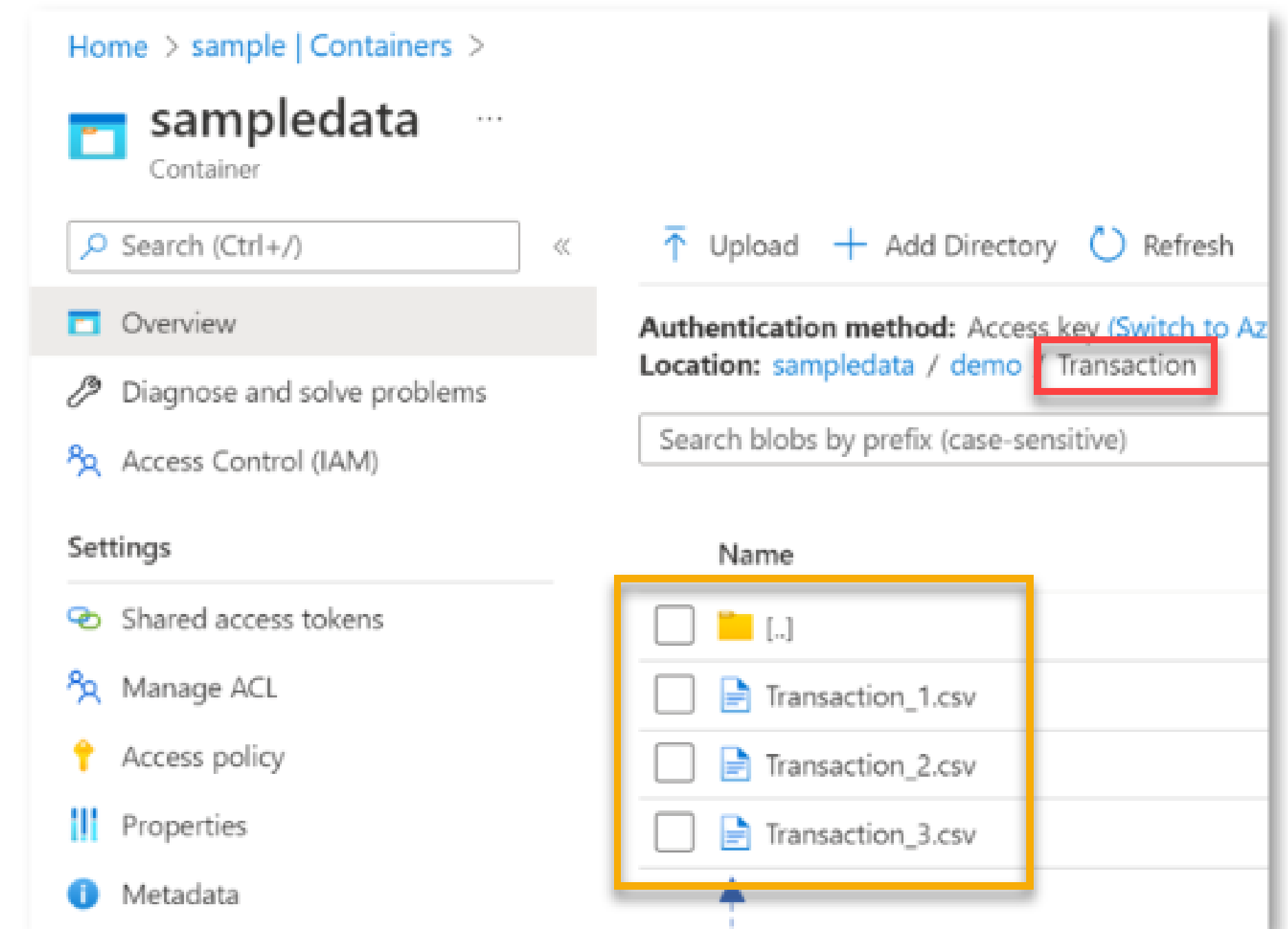
**2-WAY SYNC BETWEEN FILE EXPLORER  
AND THE FABRIC WORKSPACE**

# Shortcuts

## Fabric Lakehouse



## ADLS Gen2 Account



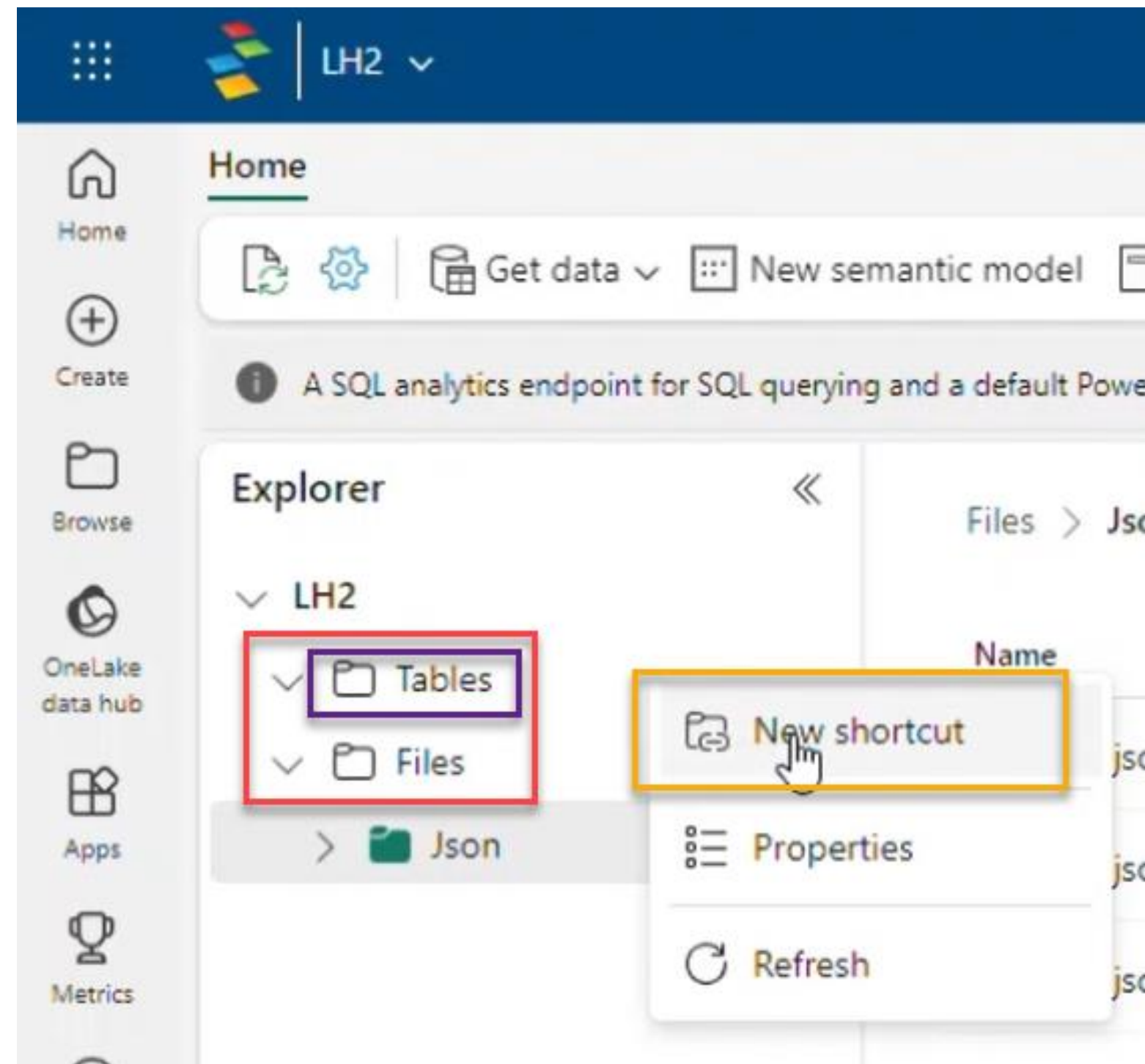
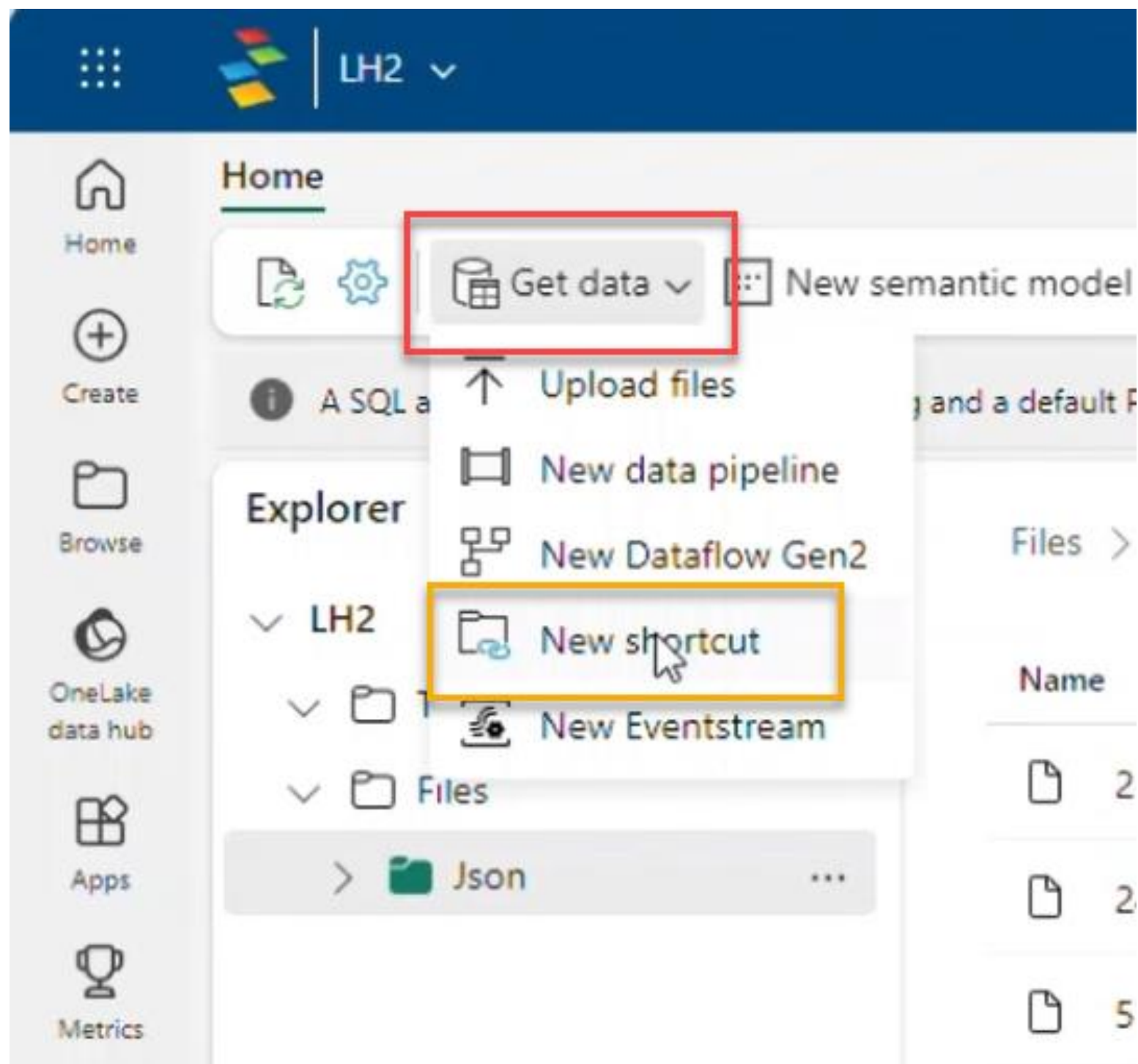
Local Data

Shortcut to ADLS

Resolved Shortcut Location



# Creating a shortcut





# Creating a shortcut

## New shortcut ✕


Use shortcuts to quickly pull data from internal and external locations into your lakehouses, warehouses, or datasets. Shortcuts can be updated or removed from your item, but these changes will not affect the original data and its source.

### Internal sources


Microsoft OneLake 

Fabric 

### External sources

Amazon S3 

AWS

Azure Data Lake Storage Gen2 

Azure



# Creating a shortcut

## Select a data source type

⚠ When accessing this shortcut using a dataset or T-SQL, the identity of the calling item's owner is used to authorize access rather than the user's identity. [Learn more](#)

ℹ LH2 is located in the region **West US**. Any data sourced through this shortcut will be processed in the same region.

Find and connect to the data you want to use with your shortcut.

**All** | My data | Endorsed in your org | Favorites | Filter by keyword | Filter

Name	Type	Capacity region	Owner	Location	Endorsement	Sensitivity
LH2	Lakehouse	West US	Brad Soderman	Fabric Sandbox	-	-
<b>BusinessMetrics</b>	Warehouse	West US	Brad Soderman	Fabric Sandbox	-	-
BusinessDataLake	Lakehouse	West US	Brad Soderman	Fabric Sandbox	-	-
WorldWideLakehouse	Lakehouse	West US	Connor Merkley	Fabric Testing Groun...	-	-
DataFactoryLakeHouseDEMO	Lakehouse	West US	Brad Soderman	My Workspace	-	-
SalesKQLDB	KQL Database	West US	Brad Soderman	My Workspace	-	-
DemoWarehouse	Warehouse	West US	Brad Soderman	My Workspace	-	-
DataflowsStagingWarehouse	Warehouse	West US	Brad Soderman	My Workspace	-	-

Previous

**Next** | Cancel

# Creating a shortcut

## New shortcut

- ⚠ When accessing this shortcut using a dataset or T-SQL, the identity of the calling item's owner is used to authorize access rather than the user's identity. [Learn more](#)
- ℹ LH2 is located in the region **West US**. Any data sourced through this shortcut will be processed in the same region.

Find and connect to the data you want to use with your shortcut.

OneLake

- BusinessMetrics
  - Tables
    - dbo
      - Sales**

Select the table and files that you want to include in your shortcut.

Previous

Next



# Viewing a shortcut

Home

Get data | New semantic model | Open notebook

A SQL analytics endpoint for SQL querying and a default Power BI semantic model for faster reporting were created and will be updated with any tables added to the lakehouse.

Explorer

- LH2
  - Tables
  - Sales**
  - Files
  - Json

Sales

	123 ProductNo	ABC ProductDesc	ProductCost	123 ProductSold
1	1443	Green Tshirts	19.99	5

# Viewing the source

The image shows two screenshots of the Power BI interface. The top screenshot shows the 'BusinessMetrics' workspace with a 'Data preview' window. The bottom screenshot shows the 'LH2' workspace with a 'Sales' table view.

**Top Screenshot: BusinessMetrics workspace**

- Header: BusinessMetrics, Search, Trial: 23 days left
- Navigation: Home, Reporting
- Actions: Get data, New SQL query, New visual query, New report, New measure
- Explorer: Warehouses, BusinessMetrics, Schemas, dbo, Tables, Sales (highlighted), Views, Functions, Stored Procedures, guest
- Data preview table:

	123 ProductNo	ABC ProductDesc	e <sup>x</sup> ProductCost	123 ProductSold
1	1443	Green Tshirts	19.99	5

**Bottom Screenshot: LH2 workspace**

- Header: LH2, Search
- Navigation: Home
- Actions: Get data, New semantic model, Open notebook
- Message: A SQL analytics endpoint for SQL querying and a default Power BI semantic model for faster reporting were created and will be updated with any tables added to the lakehouse.
- Explorer: LH2, Tables, Sales (highlighted), Files, Json
- Sales table view:

	123 ProductNo	ABC ProductDesc	ProductCost	123 ProductSold
1	1443	Green Tshirts	19.99	5



# Updating the source

The screenshot shows the Power BI interface. At the top, there is a navigation bar with the 'BusinessMetrics' dropdown menu highlighted by a red box. Below this is a search bar and a notification area indicating a trial period of 23 days left. The main workspace is divided into an 'Explorer' pane on the left and a 'Data preview' pane on the right. The 'Data preview' pane shows a table with 3 rows and 4 columns: 'ProductNo', 'ProductDesc', 'ProductCost', and 'ProductSold'. A red box highlights the second row of the table, which contains the following data:

	123 ProductNo	ABC ProductDesc	e <sup>x</sup> ProductCost	123 ProductSold
1	1445	Black Hoodie	49.99	10
2	1444	Yellow Socks	9.99	8
3	1443	Green Tshirt	19.99	5

# Viewing changes in the shortcut

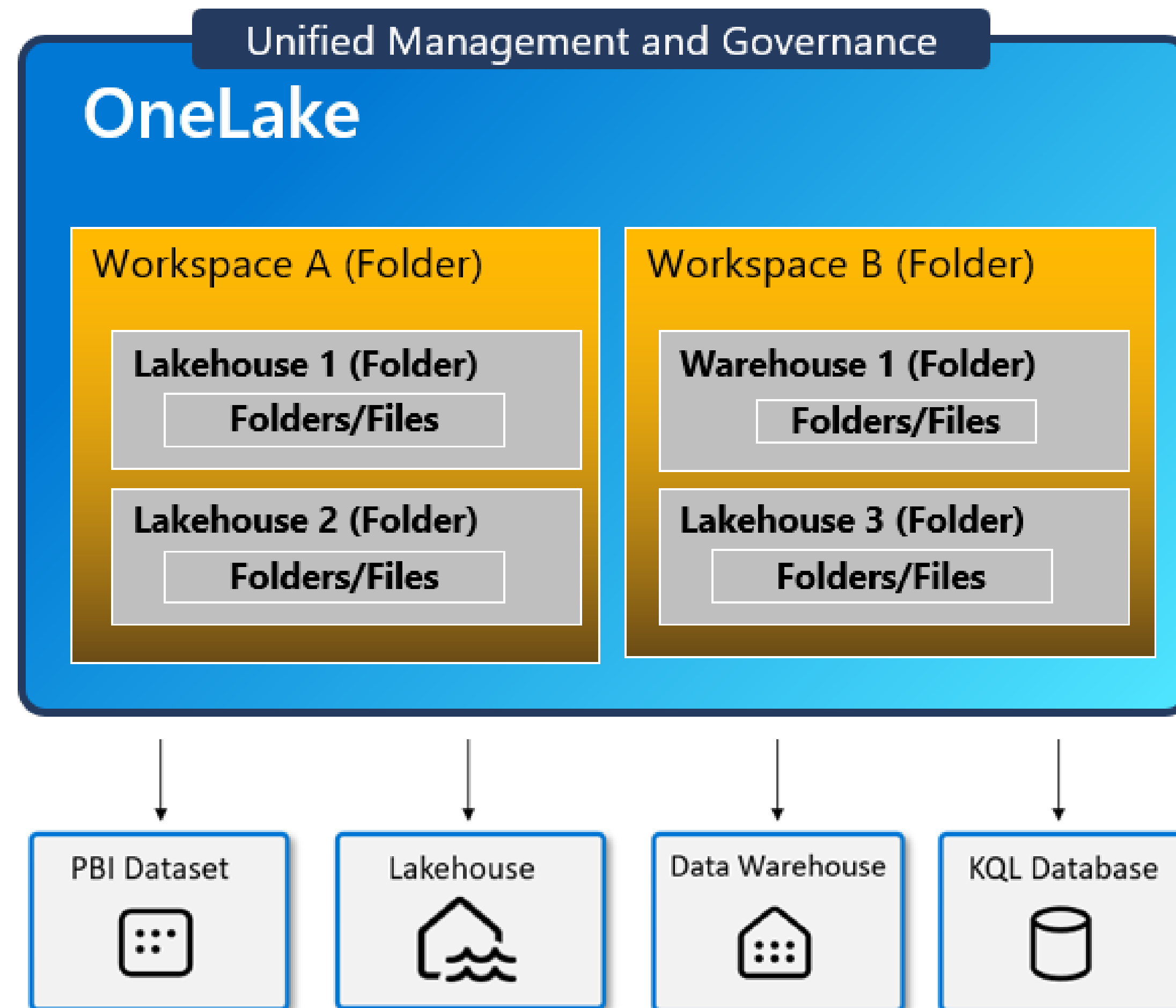
The screenshot shows the Microsoft Power BI interface. At the top, there is a search bar and a dropdown menu labeled 'LH2'. Below this is the 'Home' ribbon with several icons, including a refresh icon which is highlighted with a red box. A notification message states: "A SQL analytics endpoint for SQL querying and a default Power BI semantic model for faster reporting were created and will be updated with any tables added to the lakehouse." The 'Explorer' pane on the left shows a tree view with 'LH2' expanded, containing 'Tables', 'Sales', 'Files', and 'Json'. The 'Sales' table is selected and its data is displayed in a table view. A red box highlights the second and third rows of the table, specifically the 'ProductSold' column values 8 and 5, indicating a change from the previous state.

	123 ProductNo	ABC ProductDesc	ProductCost	123 ProductSold
1	1445	Black Hoodie	49.99	10
2	1444	Yellow Socks	9.99	8
3	1443	Green Tshirts	19.99	5



# Security in Microsoft Fabric

- Continuous
- Configurable
- Automated
- Evolving



Synapse Data Engineering Fabric Testing Grounds

Search

Trial: 59 days left

Home

Create

Browse

OneLake data hub

Monitoring hub

Workspaces

Fabric Testing...

Data Engineering

### Fabric Testing Grounds

+ New Upload Create app Manage access

Filter by keyword Filter

Name	Type	Owner	Refreshed	Next refresh	Endorsement	Sensitivity	Include
01 - Create Delta Tables	Notebook	Connor Merkley	—	—	—	—	
02 - Data Transformation - Business Aggregates	Notebook	Connor Merkley	—	—	—	—	
DF_Source_To_Lakehouse	Dataflow Gen2	Connor Merkley	2/12/24, 7:53:22 PM	N/A	—	—	
DP_Source_To_Lakehouse	Data pipeline	Connor Merkley	—	—	—	—	
Fabric_Demo	Lakehouse	Connor Merkley	—	—	—	—	
Fabric_Demo	Semantic model (...)	Fabric Testing Gro...	2/18/24, 11:06:56 PM	N/A	—	—	
Fabric_Demo	SQL analytics end...	Fabric Testing Gro...	—	N/A	—	—	
Orchestration_Pipeline	Data pipeline	Connor Merkley	—	—	—	—	
Profit Reporting	Report	Fabric Testing Gro...	11/6/23, 7:48:22 AM	—	—	—	<input type="checkbox"/>
WorldWideLakehouse	Lakehouse	Connor Merkley	—	—	—	—	
WorldWideLakehouse	Semantic model (...)	Fabric Testing Gro...	11/6/23, 7:48:22 AM	N/A	—	—	
WorldWideLakehouse	SQL analytics end...	Fabric Testing Gro...	2/28/24, 3:37:49 PM	N/A	—	—	





Synapse Data Engineering Fabric Testing Grounds

Search

Trial: 59 days left

Home Create Browse OneLake data hub Monitoring hub Workspaces Fabric Testing... Data Engineering

Fabric Testing Grounds

+ New Upload Create app Manage access Workspace settings

Name	Type	Owner	Refreshed	Next refresh	Endo
01 - Create Delta Tables	Notebook	Connor Merkley	—	—	—
02 - Data Transformation - Business Aggregates	Notebook	Connor Merkley	—	—	—
DF_Source_To_Lakehouse	Dataflow Gen2	Connor Merkley	2/12/24, 7:53:22 PM	N/A	—
DP_Source_To_Lakehouse	Data pipeline	Connor Merkley	—	—	—
Fabric_Demo	Lakehouse	Connor Merkley	—	—	—
Fabric_Demo	Semantic model (...)	Fabric Testing Gro...	2/18/24, 11:06:56 PM	N/A	—
Fabric_Demo	SQL analytics end...	Fabric Testing Gro...	—	N/A	—
Orchestration_Pipeline	Data pipeline	Connor Merkley	—	—	—
Profit Reporting	Report	Fabric Testing Gro...	11/6/23, 7:48:22 AM	—	—
WorldWideLakehouse	Lakehouse	Connor Merkley	—	—	—
WorldWideLakehouse	Semantic model (...)	Fabric Testing Gro...	11/6/23, 7:48:22 AM	N/A	—
WorldWideLakehouse	SQL analytics end...	Fabric Testing Gro...	2/28/24, 3:37:49 PM	N/A	—

Filter by key

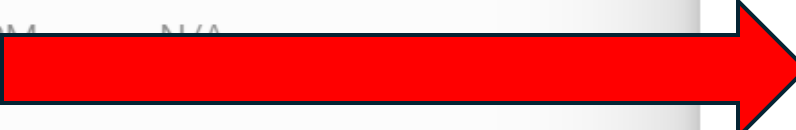
Add people Fabric Testing Grounds

Admins, members, and contributors have edit and view access. Viewers only have view access. [Learn more](#)

Connor Merkley

Enter name or email

- Viewer Add
- Member
- Contributor
- Viewer



Fabric\_Demo Lakehouse Connor Me

- Fabric\_Demo
- Fabric\_Demo
- Orchestration\_Pipeline
- Profit Reporting
- WorldWideLakehouse
- WorldWideLakehouse
- WorldWideLakehouse

Open  
Delete  
Settings  
Add to Favorites  
View lineage  
View details  
Manage permissions  
Share  
Recent runs



### Grant people access

Fabric\_Demo

People you share this Lakehouse with can open it and its SQL endpoint and read the default dataset. To allow them to read directly in the Lakehouse, grant additional permissions.

**Additional permissions**

- Read all SQL endpoint data ⓘ
- Read all Apache Spark ⓘ
- Build reports on the default dataset

**Notification Options**

- Notify recipients by email

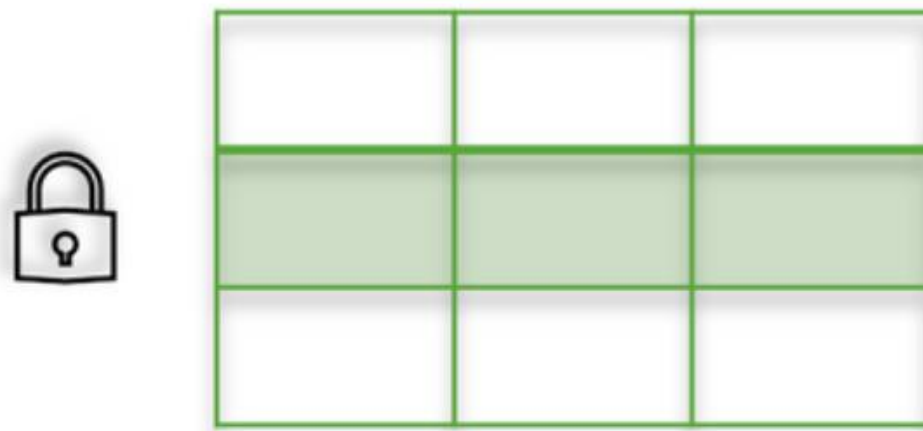
ⓘ Depending on which additional permissions you select, recipients will have different access to the SQL endpoint, default dataset, and data in the lakehouse. For details, view lakehouse permissions documentation.

Grant Back



## Microsoft Fabric Warehouse and SQL Endpoint

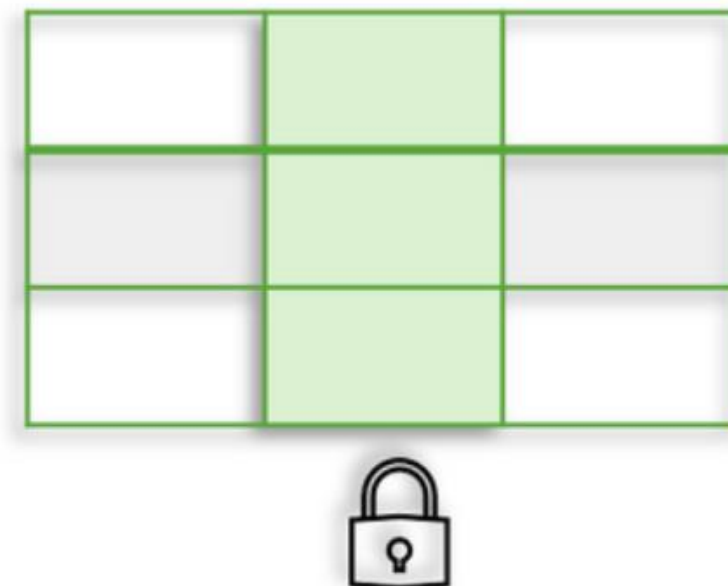
### Row Level Security



```
CREATE SECURITY POLICY [policy_name]
ADD FILTER PREDICATE [sch].[ivtf_fn_name](..)
ON [schema].[tablename] WITH (STATE = ON)
```



### Column-Level security



```
GRANT SELECT ON schema.TABLE(col1,col2) TO User
```

## Granular security

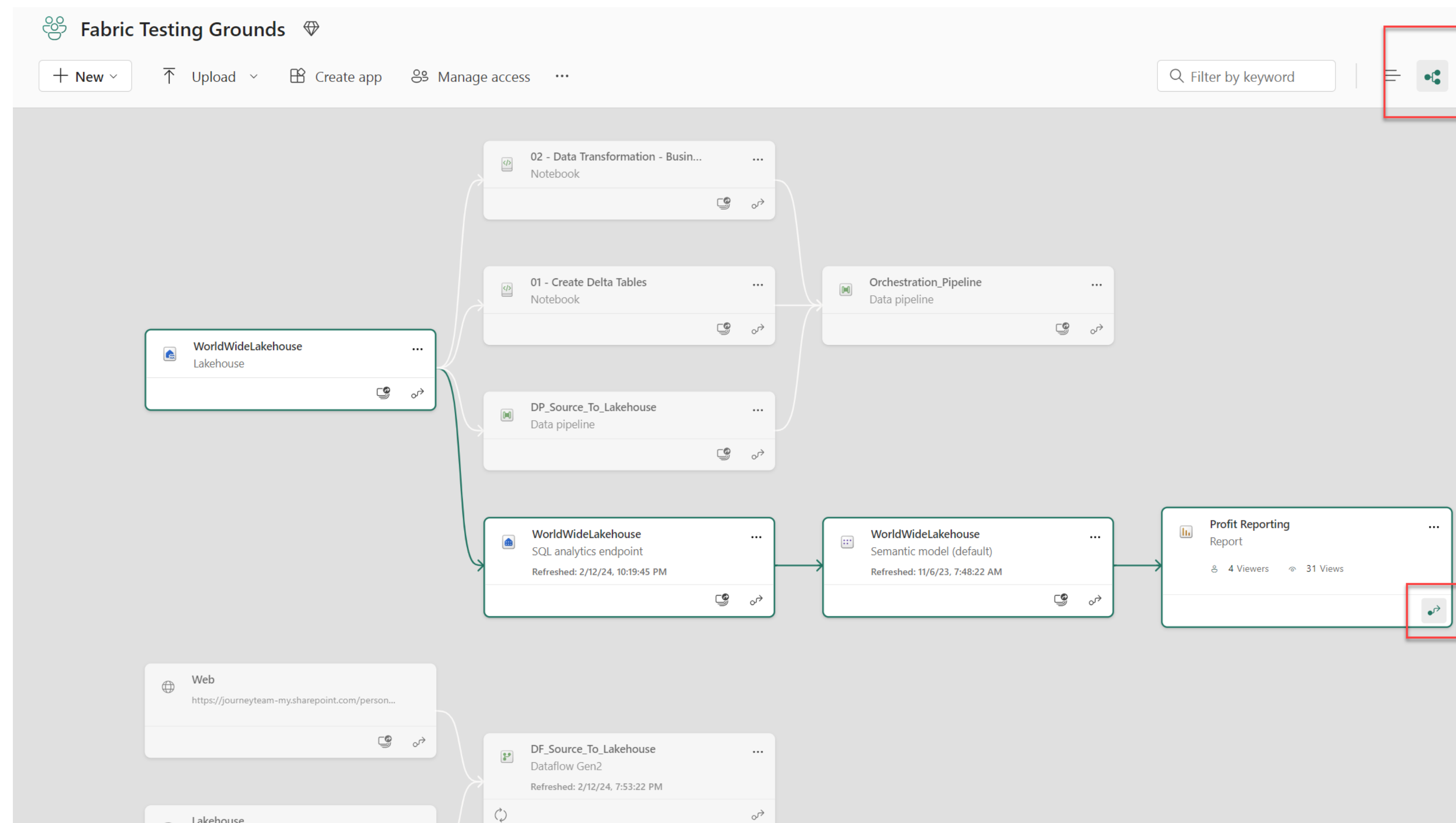
Workspace roles and item permissions provide an easy way to assign coarse permissions to a user for the entire warehouse. However, in some cases, more granular permissions are needed for a user. To achieve this, standard T-SQL constructs can be used to provide specific permissions to users.

Microsoft Fabric data warehousing supports several data protection technologies that administrators can use to protect sensitive data from unauthorized access. By securing or obfuscating data from unauthorized users or roles, these security features can provide data protection in both a Warehouse and SQL analytics endpoint without application changes.

- **Object-level security** controls access to specific database objects.
- **Column-level security** prevents unauthorized viewing of columns in tables.
- **Row-level security** prevents unauthorized viewing of rows in tables, using familiar `WHERE` clause filter predicates.
- **Dynamic data masking** prevents unauthorized viewing of sensitive data by using masks to prevent access to complete, such as email addresses or numbers.

# Data Lineage

- Ability to view lineage of all assets in Fabric workspace
  - Able to highlight the lineage of specific assets.
- Able to see upstream and downstream dependencies when making changes.





# Data Endorsement

• 2 types of Endorsement is available for data assets.

• Promotion

• Certification

The screenshot displays the OneLake data hub interface. At the top, there's a search bar and navigation icons. Below, a 'Recommended' section shows six data asset cards with endorsement status: 'Product MAU, DAU, and NPS' (Certified), 'Marketing insights' (Promoted), 'Marketing' (Certified), 'Top features' (Certified), 'Customer feedback' (Certified), and 'AppAccessSettings' (Promoted). A red box highlights these endorsement labels. Below this is a table of all data assets with columns for Name, Type, Refreshed, Owner, Location, Endorsement, and Sensitivity. A red box highlights the 'Endorsement' column in the table.

Name	Type	Refreshed	Owner	Location	Endorsement	Sensitivity
Sales FY21	Dataset	7m ago	Tim Deboar	Contoso workspace	Certified	Highly Confidential\Contos...
Marketing DB	Datamart	38m ago	Daichi Fukuda	New product insights	Certified	—
Client Logs Db	KQL Database	2h ago	Emiliano Ceballos	Azure data	Promoted	Confidential\Contoso FTE
Top Campaigns	Dataset	7h ago	Mikhail Kotov	Azure data	—	Public
Dataflow for triggers	Dataset	Yesterday at 11:12 AM	Marie Beaudouin	Contoso workspace	—	—
Daily Sales	Lakehouse	June 18 at 9:02 AM	Oscar Krogh	Contoso workspace	Certified	Non-Business
Contoso DB	Warehouse	May 23 at 3:00 PM	Marie Beaudouin	Big data	Promoted	—
Test datamart	Datamart	May 15 at 5:13 AM	Tim Deboar	Events	Certified	Public
Primary dataflow	KQL Database	April 29 at 8:45 PM	Oscar Krogh	Big data	—	—
Contoso DB	Lakehouse	April 11 at 11:56 AM	Ruth Bengtsson	Contoso workspace	Certified	Confidential\Contoso FTE

# Client Success Story

## Mid-Large Size Construction Company

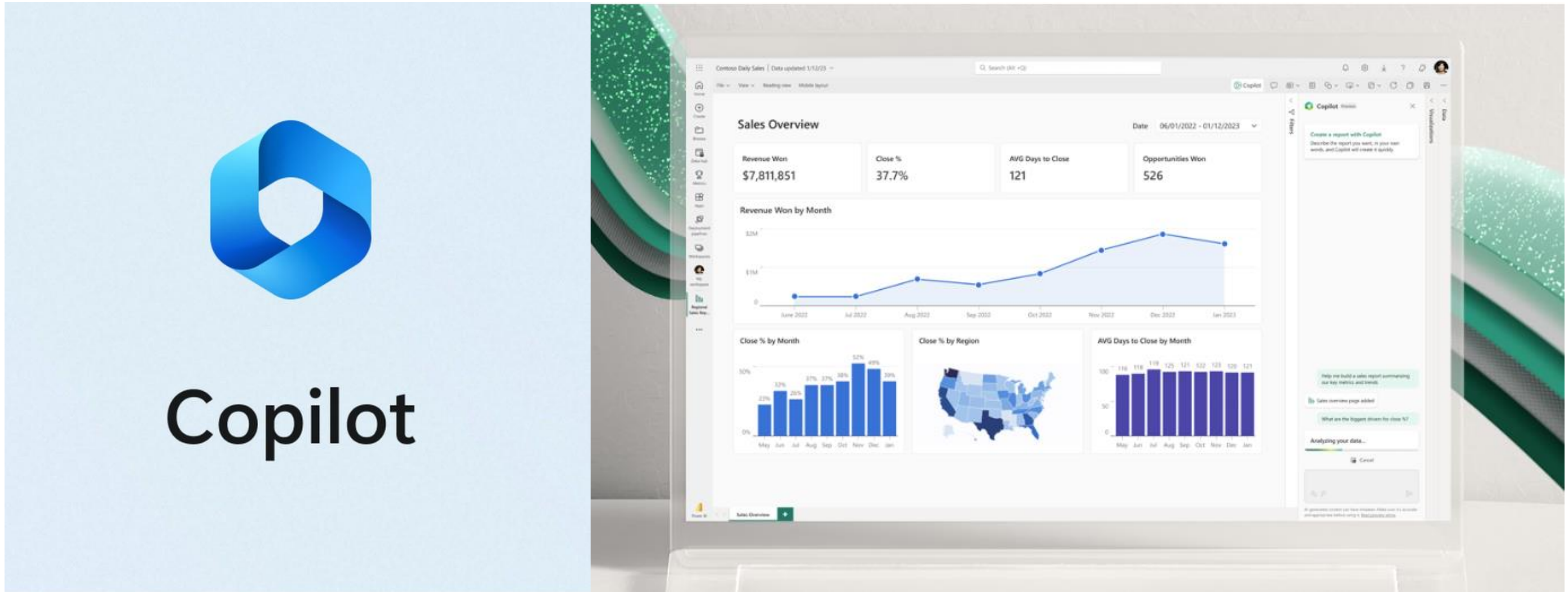
- Spending upwards of \$15k/Month for Analytic data needs
- Using a handful of different Azure data tools
- Hard to implement data governance across their data estate



- Both Power BI and Fabric costs included in their premium capacity license - Cost savings up to \$10k/month
- Consolidated resources into one workspace
- Data from source to target all handled and stored on the OneLake



# Microsoft Fabric meets Copilot



# Want to learn more?

## Microsoft Fabric: Analyst In A Day







# Questions





**We love feedback!**  
Please complete  
the session survey **for an  
extra giveaway raffle ticket!**





# Thank You!

Let's Connect:

Connor Merkley

Brad Soderman

[info@journeyteam.com](mailto:info@journeyteam.com)

