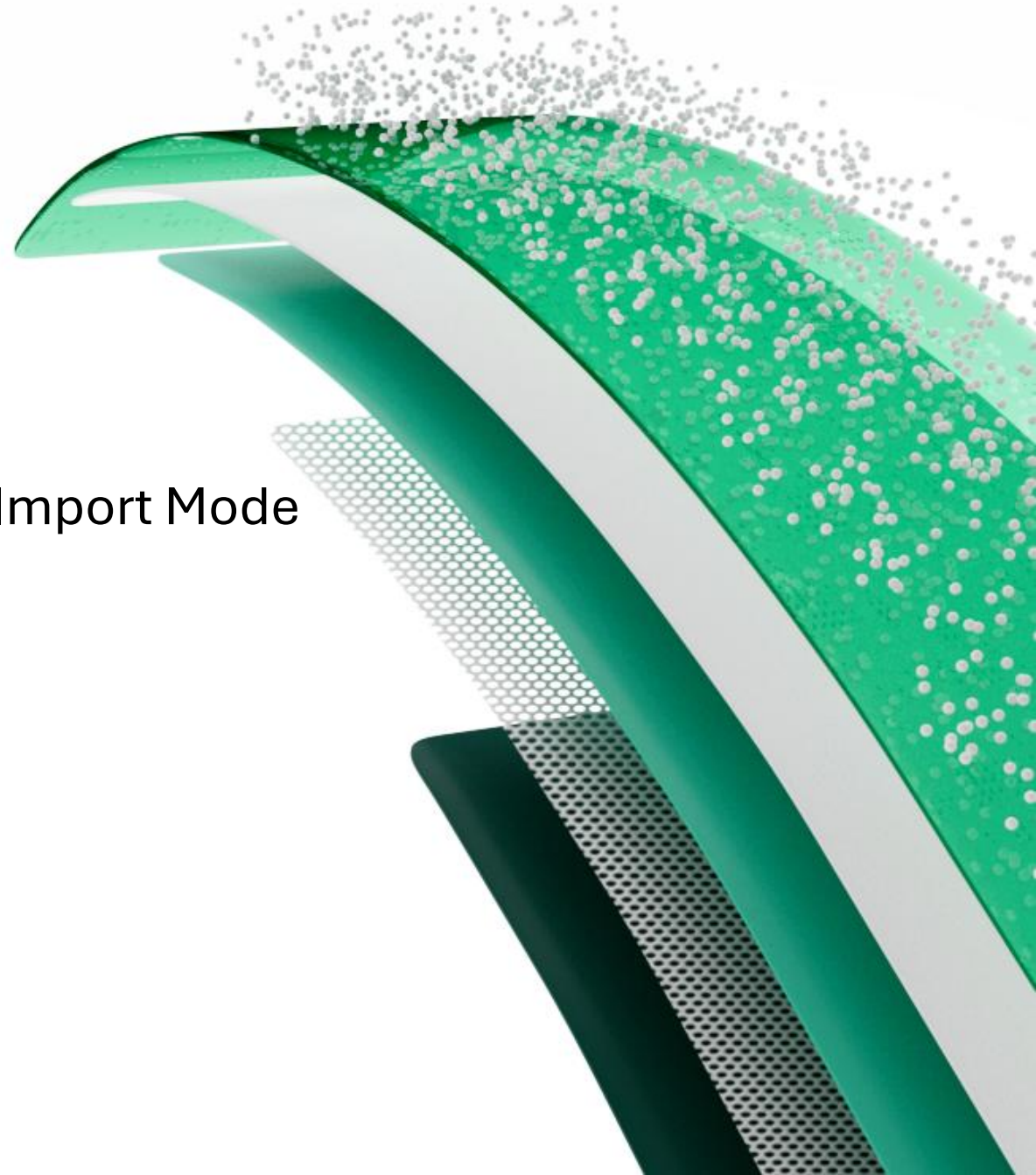


# What is Fabric

# Benefits of Fabric Mirroring

# Common Issues and Challenges with Snowflake

- Poor Report Performance: Direct Query and Import Mode
- High cost: compute and egress
- Proprietary Data Format
- Cross-platform data querying limitations



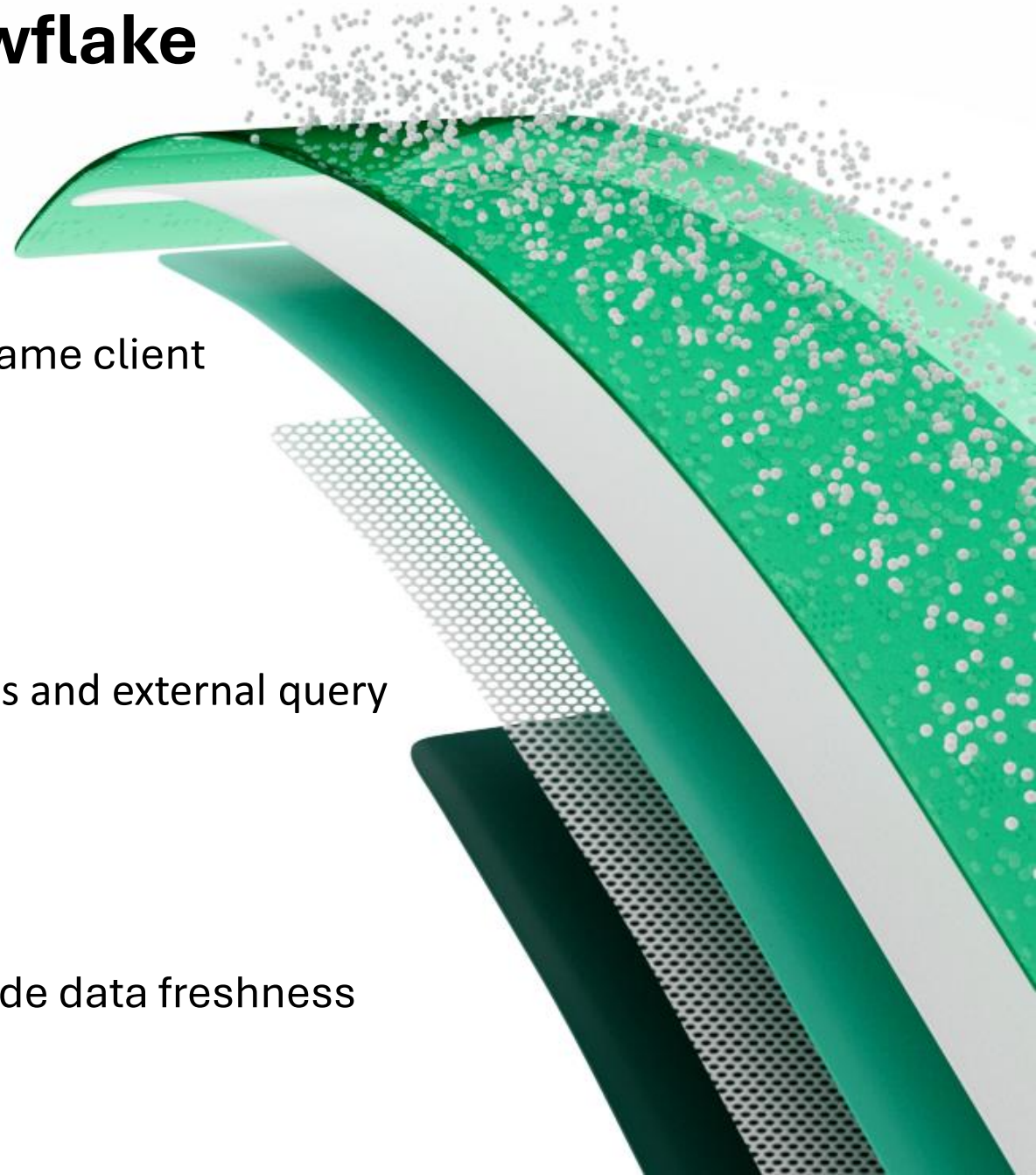
# Solution: Microsoft Fabric Snowflake Mirroring with Direct Lake

- **Snowflake Mirroring**

- Access and manage your mirrored DB within the same client
- Real-time data replication: no ETL, no code
- Cross-querying mirrored DBs, DWs, lake houses
- Data science experiences are unlocked
- Open Delta-Parquet format can be queried by Fabric's and external query engines

- **Power BI Direct Lake Mode**

- Performance of import mode with direct query mode data freshness
- Cost reduction: less compute and less egress



# Q&A

- What's the difference between Microsoft Fabric's mirroring and shortcuts?
- Is my data stored more than once?
- How other personas can benefit from mirrored data?
- What are replication latency factors with mirrored data?
- How's the cost reduction working with compute?
- How's the cost reduction working with egress?
- What other databases can be mirrored?
- How to make sure that Power BI is in Direct Lake Mode?
- How's data security implemented?





Coming soon

Seamlessly connect your **databases**  
**and data warehouses** to OneLake



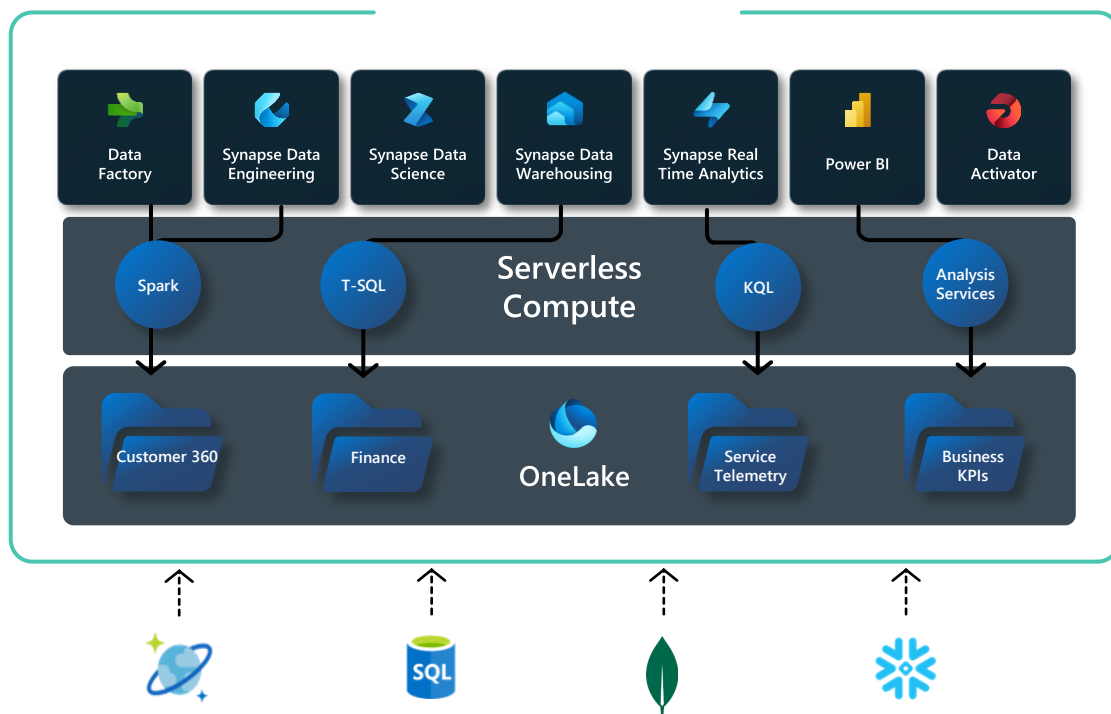
And More...

[aka.ms/FabricMirroringPreview](https://aka.ms/FabricMirroringPreview)

# Mirroring in Microsoft Fabric

## Simplify near real-time analytics

### Fabric compute engines



### Mirroring

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.

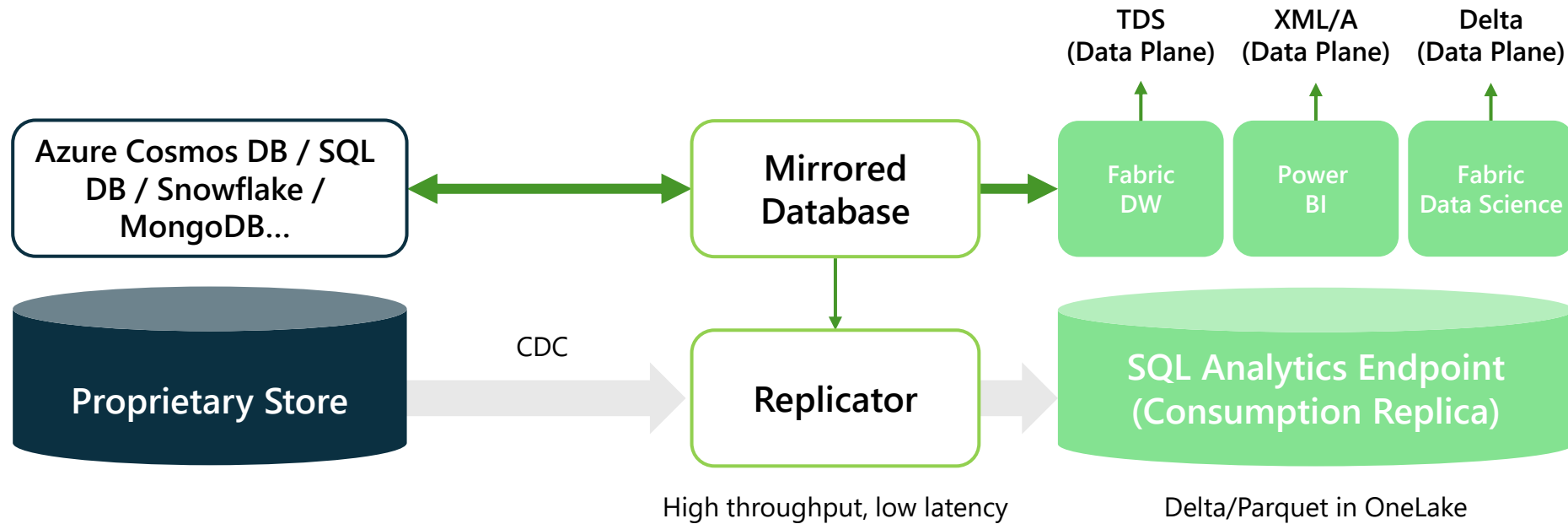
Data is replicated into OneLake in Delta format and kept up-to-date in near-real-time.

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.

# Mirroring architecture





# Roadmap

CY23



Azure Cosmos DB



Snowflake



Azure SQL DB

CY24 and beyond



ORACLE



teradata.

And More...

Demo





- Home
- Create
- Browse
- Data hub
- Monitoring hub
- Workspaces
- Mirroring\_Demo\_Work...
- Data Warehouse

New

Current workspace: Mirroring\_Demo\_Workspace\_Priyas

Items will be saved to this workspace.

Show less ^

Warehouse (Preview)

Sample warehouse

Data pipeline

Dataflow Gen2 (Preview)

Mirrored Azure SQL Database ...

Mirrored Snowflake ...

Mirrored Azure Cosmos DB ...

Mirrored SQL Server Database .

Recommended

**Priya\_Northwind\_Demo\_Workspace**

You frequently open this

Open

**Priya\_Demo\_workspace**

You frequently open this

Open

**My workspace**

You frequently open this

Open

**PriyaDemoWs**

You frequently open this

Open

**Getting s**

Learn how

Open

Quick access

- Recent
- Favorites

Filter by keyword

Filter

	Name	Type	Opened	Owner	Endorsement	Sensitivity	Location
	Mirroring_Demo_Workspace_Priyas	Workspace	4 minutes ago	—	—	—	Workspaces
	SQLDBMirror	Mirrored database	a day ago	Priya Sathy	—	Confidential\Micro...	PriyaDemoWs
	PriyaDemoWs	Workspace	a day ago	—	—	—	Workspaces

# Mirroring Private Preview Program

Submit your nominations

[aka.ms/FabricMirroringPreview](https://aka.ms/FabricMirroringPreview)

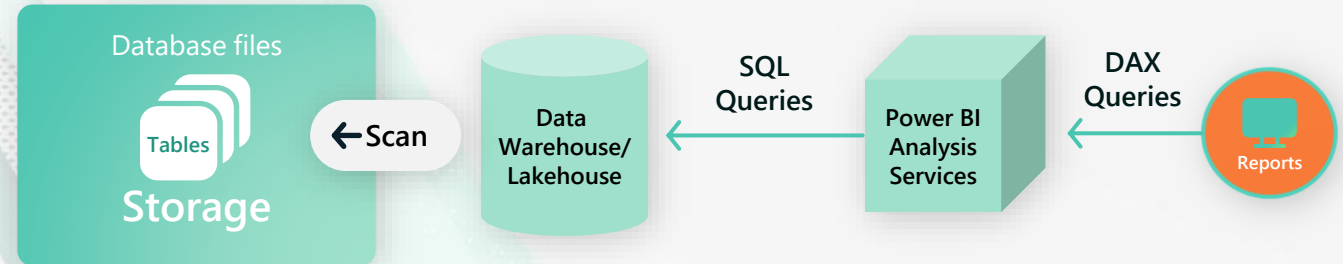
Private previewing opportunity is by invitation only, with full access provided to all nominations automatically at public preview in CY24.

# Power BI | Direct Lake Mode

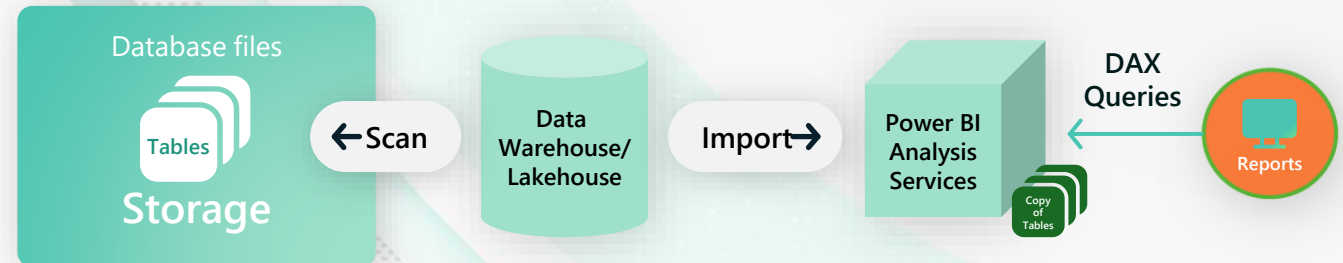
**Direct Lake** is a fast-path to load the data from the lake straight into the Power BI engine, ready for analysis

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 Power BI dataset

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



**Import Mode.** Fast, but latent and duplicative



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

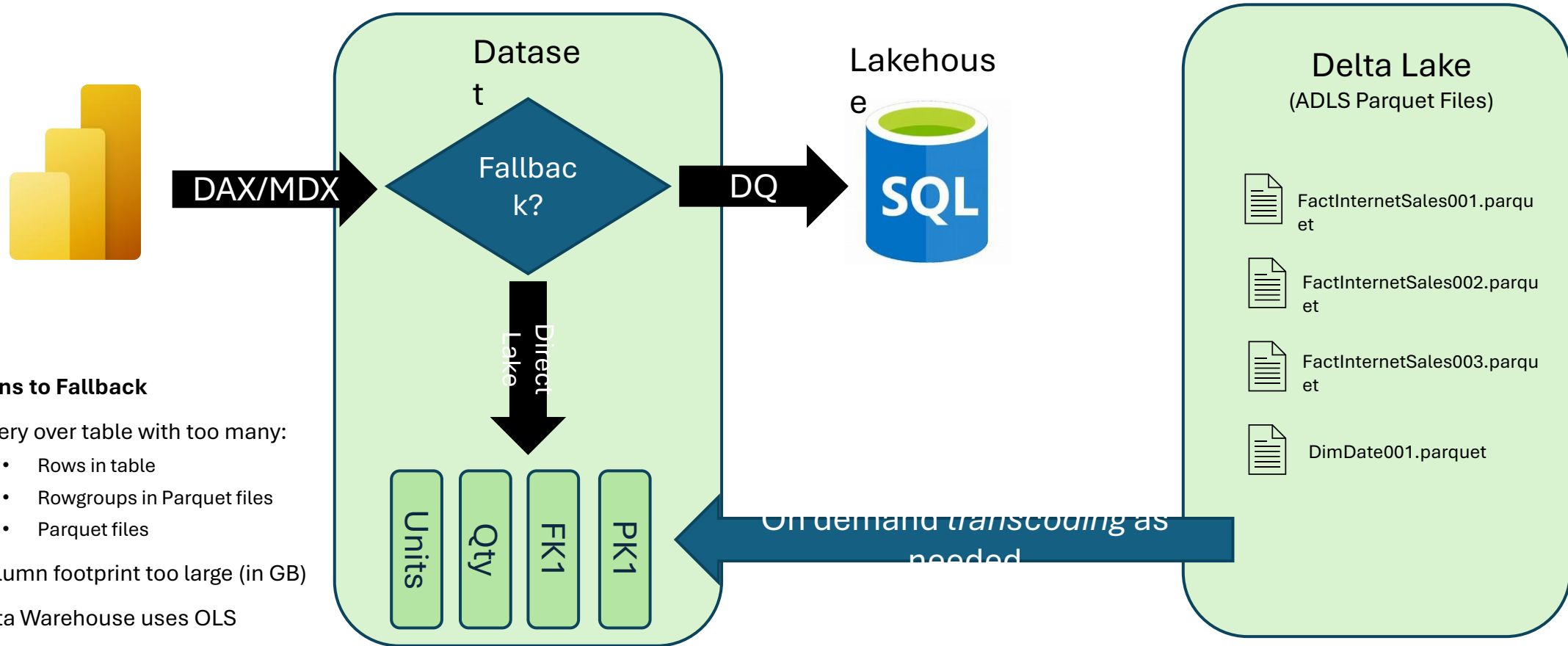


# Direct Lake Mode

- Dataset starts life with no data in memory
- Column data only *transcoded* from Parquet files when columns queried
- Multi-column tables can have mix of *transcoded* (resident) and non-resident
- Column data can get evicted over time
- Direct Lake fallback to SQL Server for *suitable* sub-queries
- “Framing” determines time-mark used for Direct Lake queries



# DAX to SQL Fallback



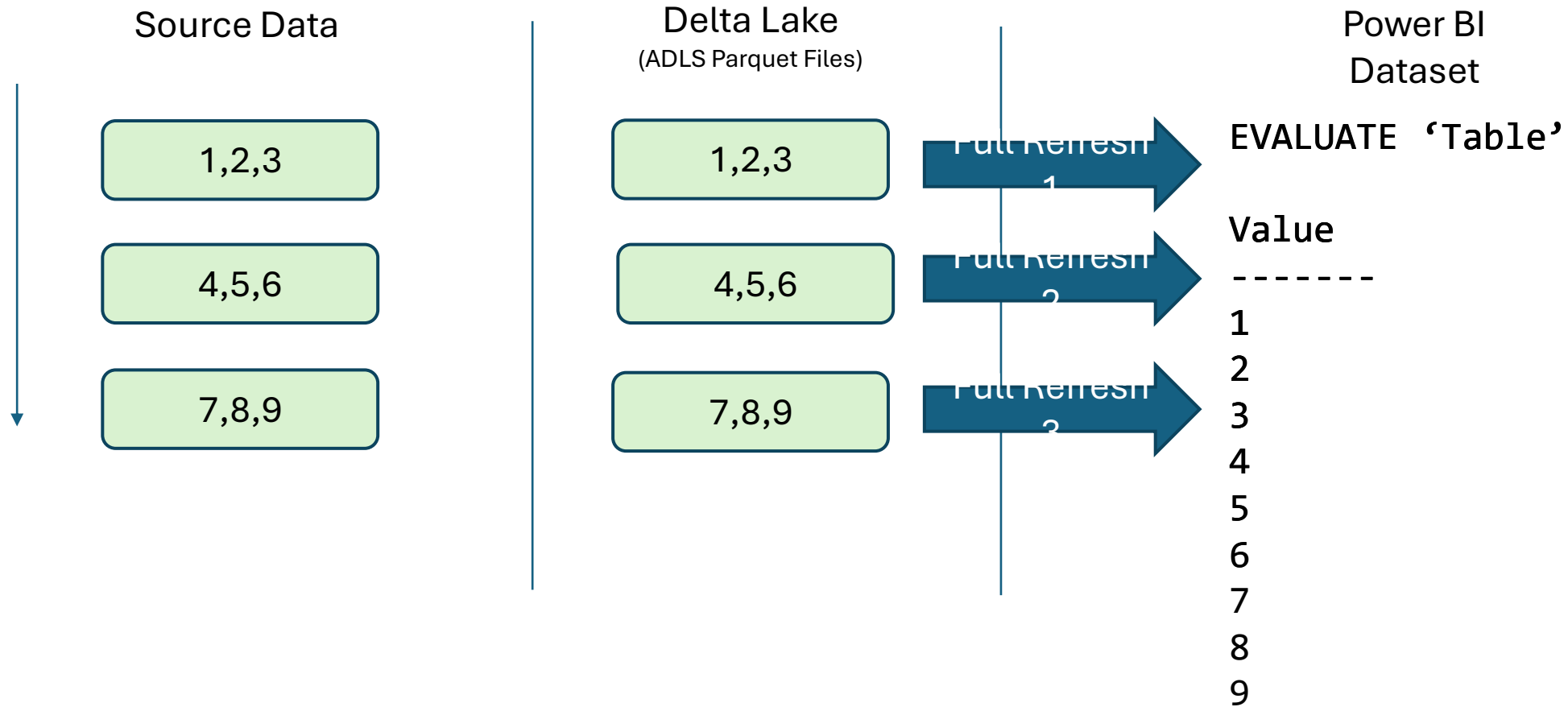
## Reasons to Fallback

- Query over table with too many:
  - Rows in table
  - Rowgroups in Parquet files
  - Parquet files
- Column footprint too large (in GB)
- Data Warehouse uses OLS

# Framing

- What is framing
  - "point in time" way of tracking what data can be queried by DirectLake
- Why is this important
  - Delta-lake data is transient for many reasons
- ETL Process
  - Ingest data to delta lake tables
  - Transform as needed using preferred tool
  - When ready, perform *Framing* operation on dataset
- Framing is near instant and acts like a cursor
  - Determines the set of .parquet files to use/ignore for *transcoding* operations

# DAX to SQL Fallback





# Microsoft Fabric

Data analytics for the era of AI



Data  
Factory



Synapse Data  
Engineering



Synapse Data  
Science



Synapse Data  
Warehouse



Synapse Real  
Time Analytics



Power BI



Data  
Activator



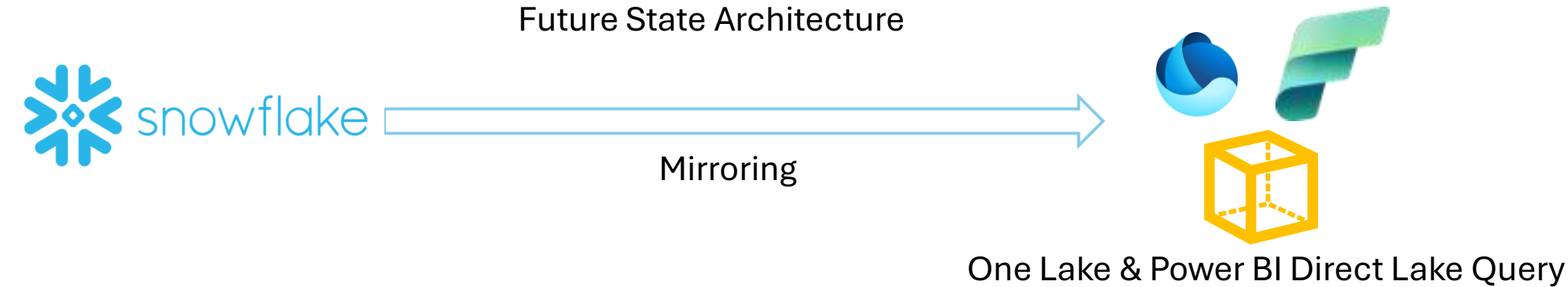
OneLake

# Fabric Mirroring Architecture

## Current State Common Architecture



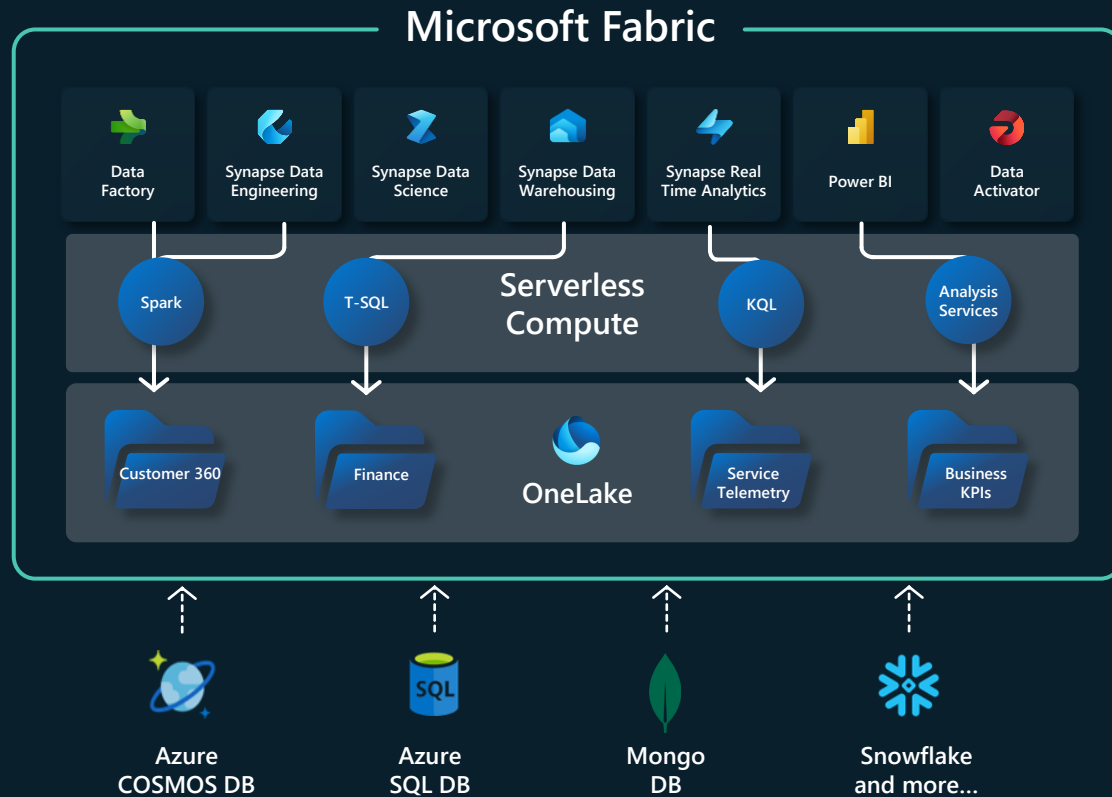
## Future State Architecture



# Mirroring in Microsoft Fabric

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