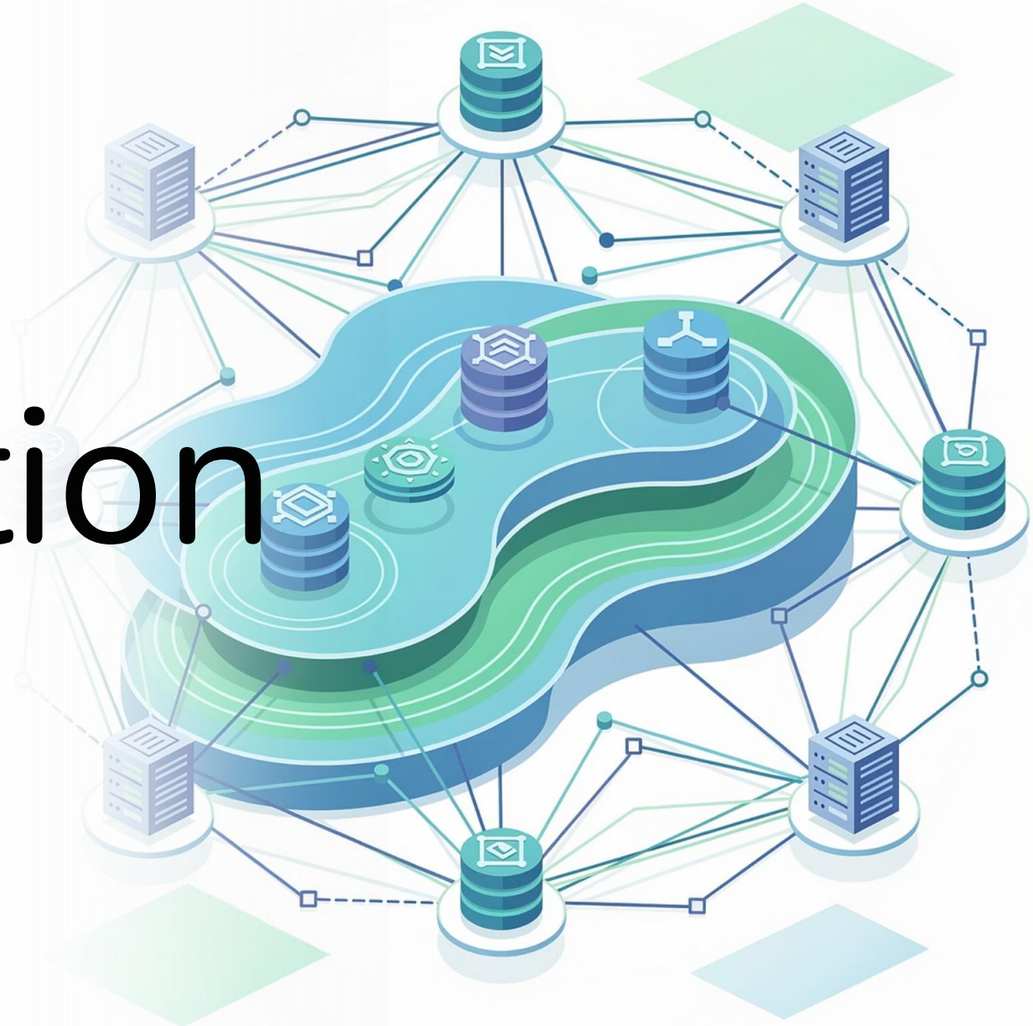
SECTION 3

Data Centralization

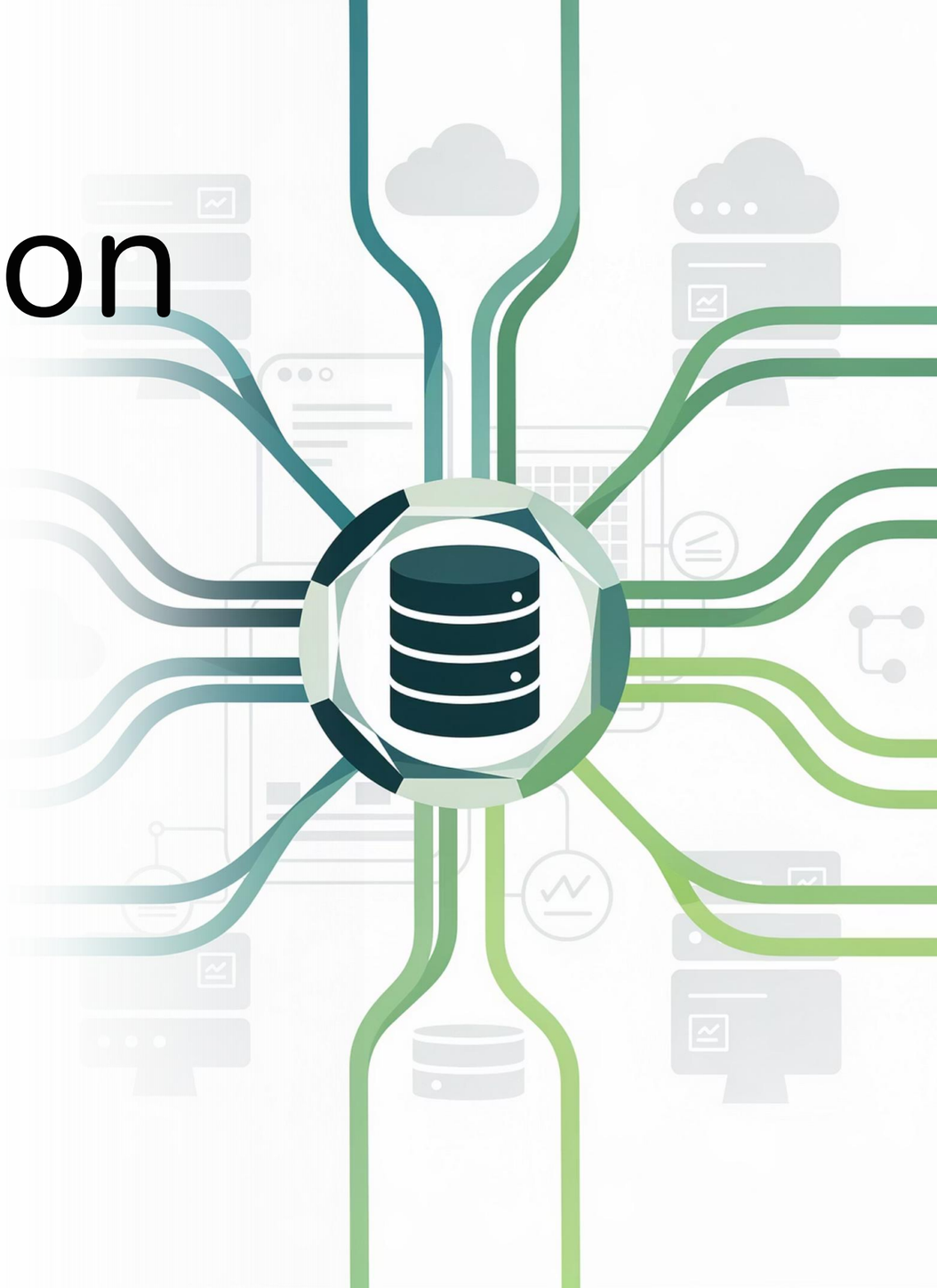
One lake. One copy. Zero ETL.



INTRODUCTION

Data Centralization

OneLake, Lakehouse & Shortcuts



> "One lake. One copy. Zero ETL."

Data Silos Are Expensive

The Old Way

- Sales data in one place
- Finance data somewhere else
- Supplier data on their blob
- Marketing data in yet another lake
- "Which version is right?"

The Cost

- Storage × N copies
- ETL pipelines to maintain
- Security applied N times

Every copy = cost, complexity, risk

An Analogy That Clicks

If you understand OneDrive, you understand OneLake.

OneDrive

- Your files
- One place for everything
- Share with anyone
- Automatic sync
- You already know how to use it

OneLake

- Your data
- One lake for all analytics
- Query from any engine
- Automatic governance
- Same simplicity, enterprise scale

How Your Data Workflow Changes

1

Before Fabric

- CSV → Import to Power BI
- Data stuck in .pbix file
- Refresh = full reload
- 1GB model limit
- "Where's the source file?"
- Build ETL pipelines

2

With Fabric

- CSV → Lakehouse → Direct Lake
- Data in OneLake, shared across org
- Refresh = Incremental Delta sync
- No practical limit
- Single source of truth
- Table Shortcuts (zero code)

Same skills. Better architecture.

Demo: The Missing Profit Margin

We'll walk through a live demonstration covering approximately 45 minutes of hands-on exploration.

01

Meet OneLake & the Lakehouse

Introduction to the core components

02

Upload data, convert to Delta

Transform raw files into Delta format

03

Shortcut Transformations

The magic happens here

04

Internal shortcuts & SQL queries

Connect and query across workspaces

05

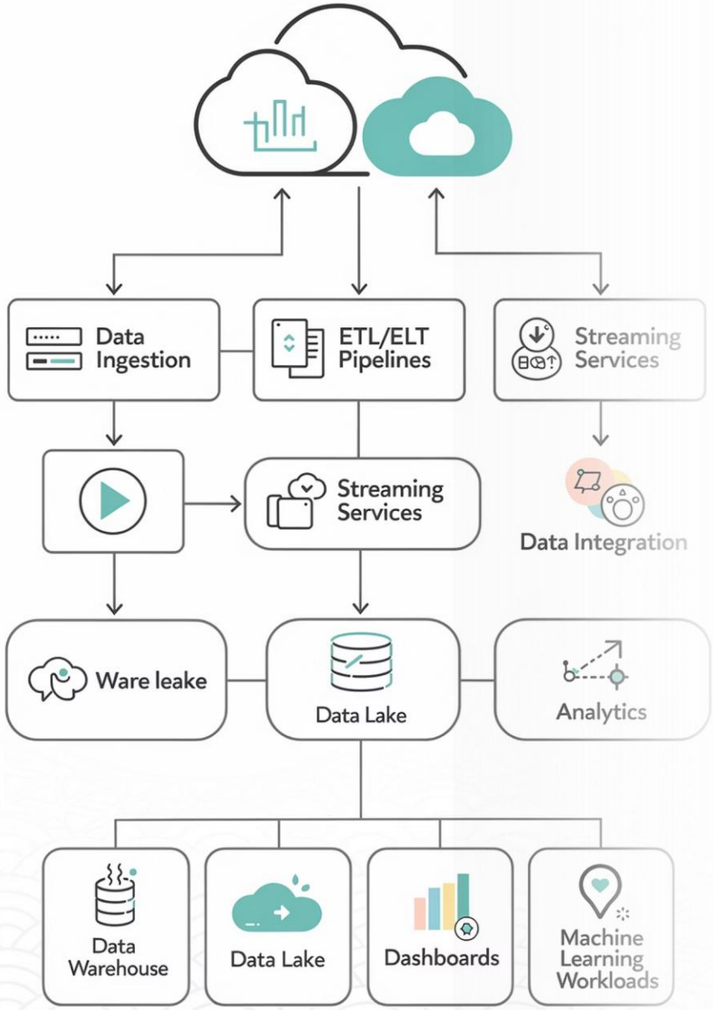
Lakehouse vs Warehouse

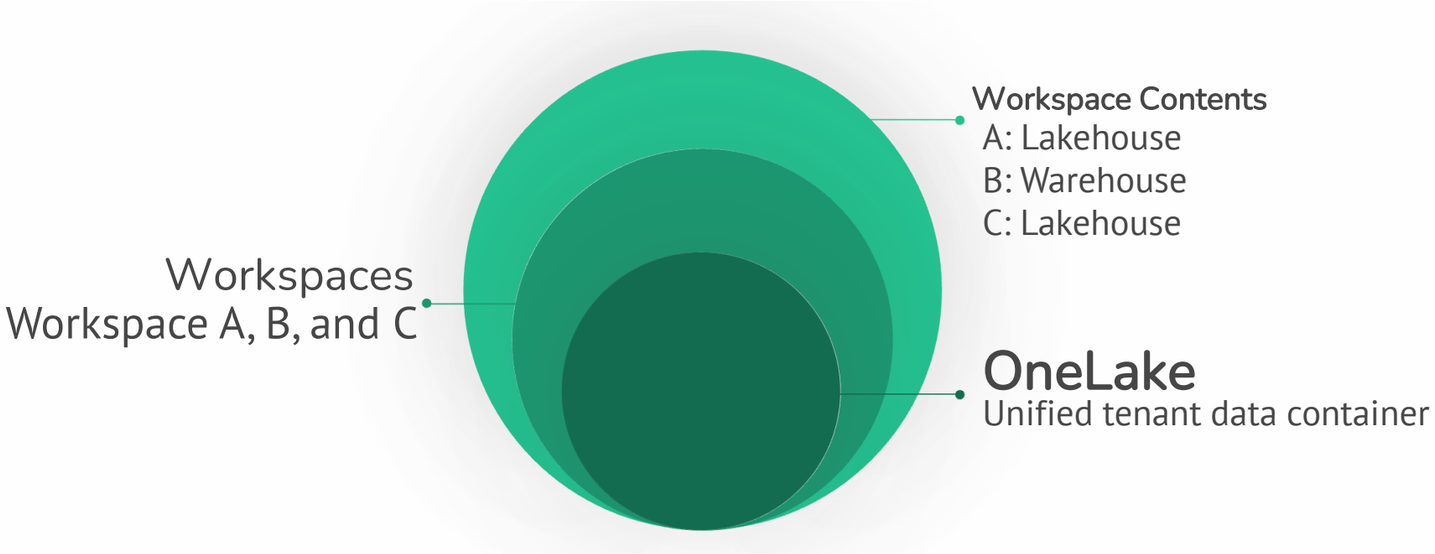
Understanding when to use each

Demo Time

OneLake Architecture

One ADLS Gen2 account per tenant, organizing all your data in a unified structure.





All data in Delta Parquet format. Open. Queryable. Governed.

What is Delta Lake?

Delta = Parquet + Superpowers

Parquet files

Columnar, compressed, fast

Transaction log

ACID transactions, no corruption

Time travel

Query data as of any point in time

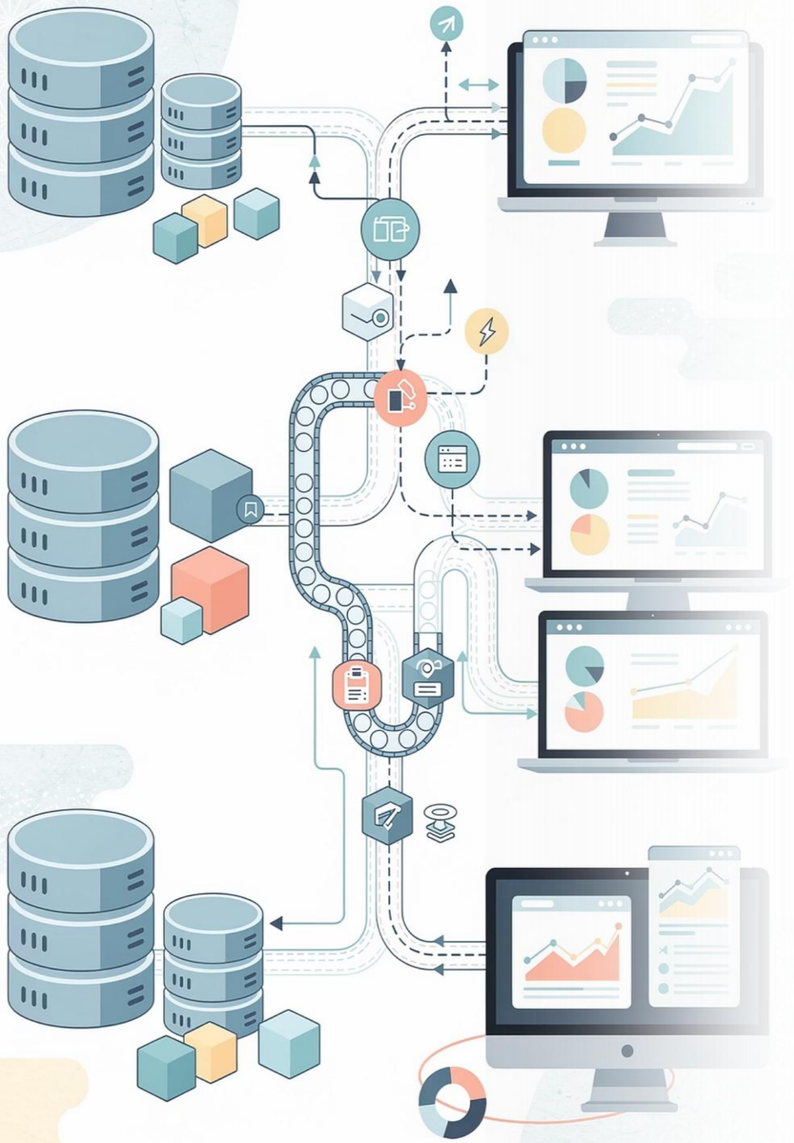
Schema enforcement

Catch bad data before it lands

Open format

Spark, SQL, Python, Power BI — all can read it

This is why everything in Fabric becomes Delta.



The Zero-ETL Solution

Traditional ETL

- Build a pipeline
- Schedule refreshes
- Handle errors
- Maintain forever

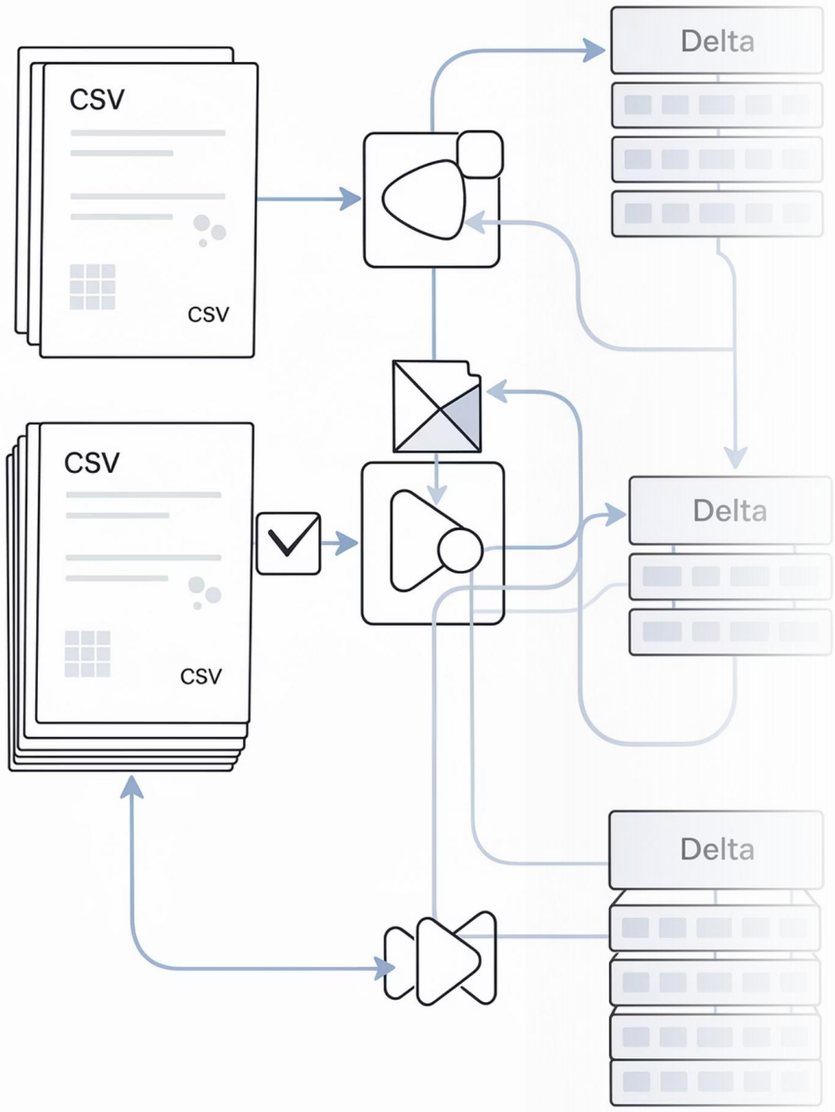
Shortcut Transformation

- Click "New Table Shortcut"
- Auto-syncs every 2 minutes
- Built-in monitoring
- Just... works

Supported: CSV, Parquet, JSON (+ compression)

Sources: Azure Blob, ADLS, S3, GCS, SharePoint, OneDrive, Dataverse

CSV → Delta in 60 Seconds



External CSV
Supplier's blob
Any cloud storage

Table Shortcut
1-click setup
Configure once
2-min auto-sync

Delta Table
Auto-converted
ACID transactions
Schema enforced

SQL Query
Instant access
No Spark needed
Power BI ready

No pipelines. No code. No maintenance.
When the source changes, your table updates automatically.

Three Flavors of Shortcuts

Type	Use Case	Data Movement
Internal	Reference another Lakehouse/Warehouse in Fabric	None—just a pointer
External	Connect to S3, ADLS, GCS, SharePoint, etc.	None—reads from source
Table Shortcut	CSV/JSON/Parquet → Delta table	Copies & converts (auto-refresh)

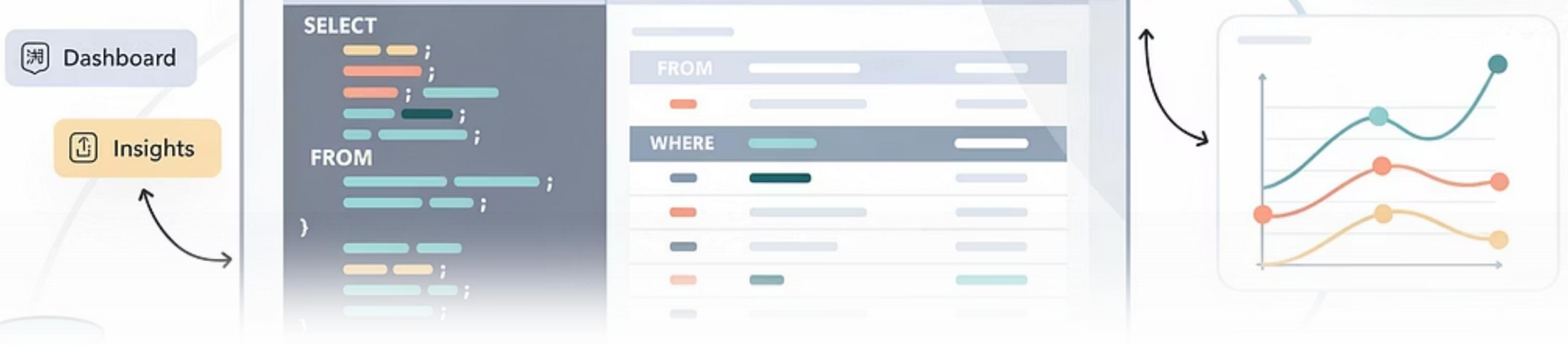
Internal & External: Zero copy, live reference

Table Shortcut: Copies once, syncs changes automatically

When to Use Which

Scenario	Lakehouse	Warehouse
Mix of structured + unstructured	✅	❌
Data engineering with Spark	✅	❌
Pure T-SQL development	Read-only	Full DML
Stored procedures & ETL	❌	✅
Data science / ML	✅	❌
Traditional star schema	Supported	Optimized

Both store data in Delta format in OneLake. Not either/or.



SQL Without Spark

Every Lakehouse automatically gets a SQL analytics endpoint.

Can Do

- SELECT queries
- CREATE VIEW
- Stored procedures (read-only)
- Query Delta tables

Can't Do

- INSERT, UPDATE, DELETE
- CREATE TABLE
- Full DML transactions
- Query raw files directly

Perfect for: Power BI, SSMS, any SQL tool

Need full T-SQL? Use a Warehouse instead.

Watch Out For

Shortcuts respect permissions
No access to source = no access via shortcut

Table shortcuts are read-only
Can't MERGE INTO or DELETE

Files must share schema
No schema drift in table shortcuts (yet)

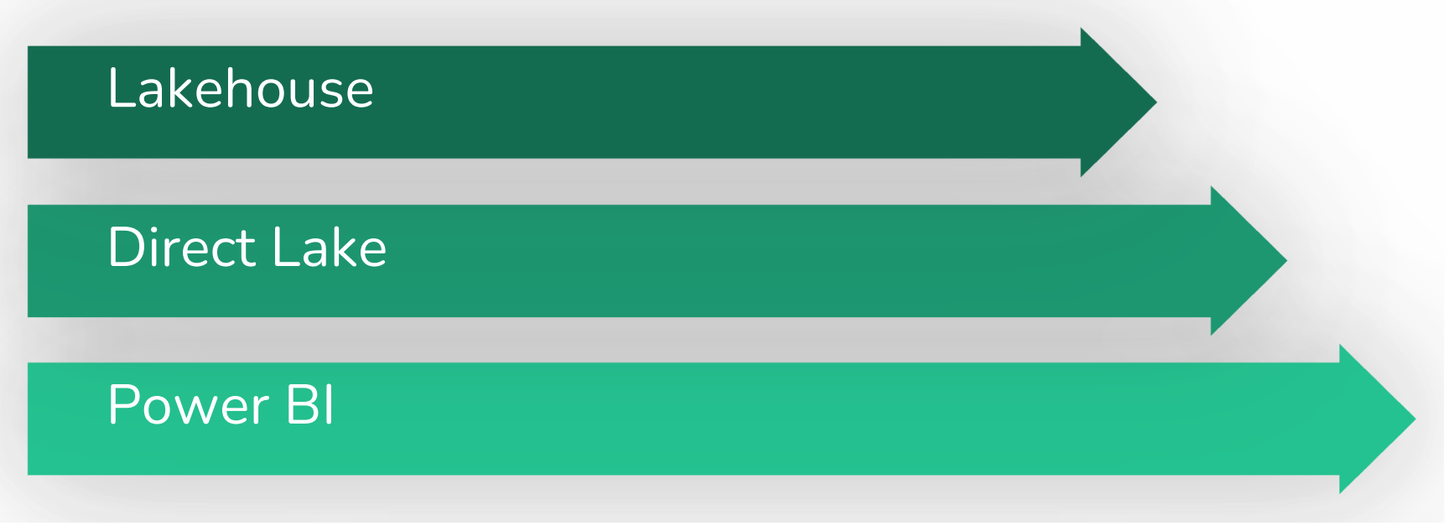
SQL endpoint is read-only
Use Warehouse for full DML

2-minute sync
Not real-time—close, but not instant

COMING UP

Connection to Direct Lake

In Section 05, we'll explore how Direct Lake enables Power BI to read directly from your Delta tables.



No import

No DirectQuery latency

Best of both worlds

We'll cover this in Section 05.

Your Action Items

Key insight: Put data in OneLake ONCE. Access it everywhere.

1. **Create a Lakehouse**
   Set up your first workspace and lakehouse environment
2. **Upload a file, convert to Delta**
   Experience the transformation process firsthand
3. **Try a Table Shortcut**
   CSV → Delta magic in action
4. **Query via SQL analytics endpoint**
   Connect with your favorite SQL tool

Resources:

- MS Learn: "OneLake shortcuts"
- MS Learn: "Lakehouse overview"

End of Section

Next up: Exploring more advanced capabilities in Microsoft Fabric