

Where Are We Going?

- What Is Microsoft Fabric?
- Fabric: Revolution or Evolution?
- Architecture & Key Concepts
- Wrap Up

What is Microsoft Fabric?

- It is a Browser Based User Interface Extension to the Power BI UI
- Exposes Mostly Pre-Existing Tools (ADF, Power BI, Synapse, Apache Spark)
- Focused on Building Solutions Using Azure Data Services
- Adds New Features to Simplify Data Sharing & Governance

Experience

OneLake, Shortcuts, OneSecurity, Delta Lake

What is Microsoft Fabric's Goal?

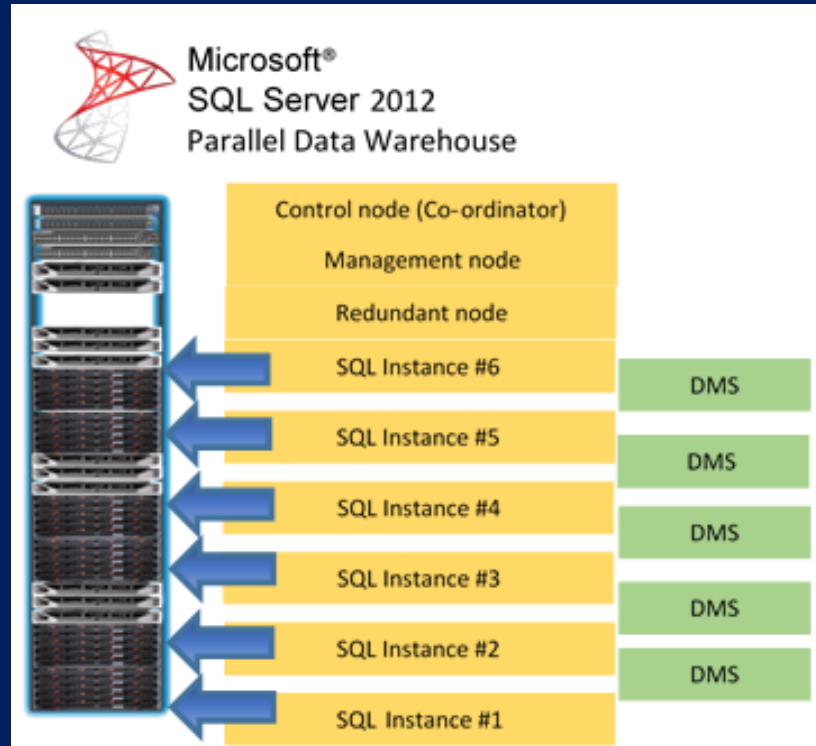
- Enable End Users (Self Service)
- to Easily Create
- Complete Data Centric Solutions
- Using Azure Data Services



It's Not About the Bits and Pieces.

Origin of Fabric

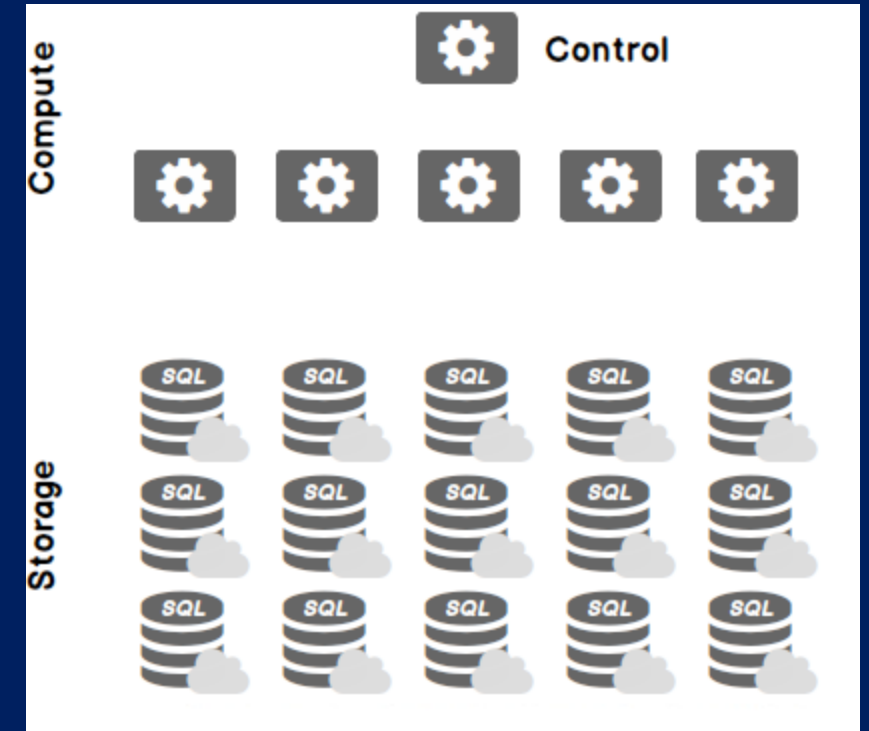
SQL Server → Parallel Data Warehouse (PDW) → Azure SQL DW (Until 2018) → Azure Synapse



<https://blog.coeo.com/mattsimpson/2014/02/17/pdw-shallow-dive-part-1>

On Prem
SQL Server
(1 Machine)

On Prem **Appliance**
SQL Server Scaled Out
(x Machine)s

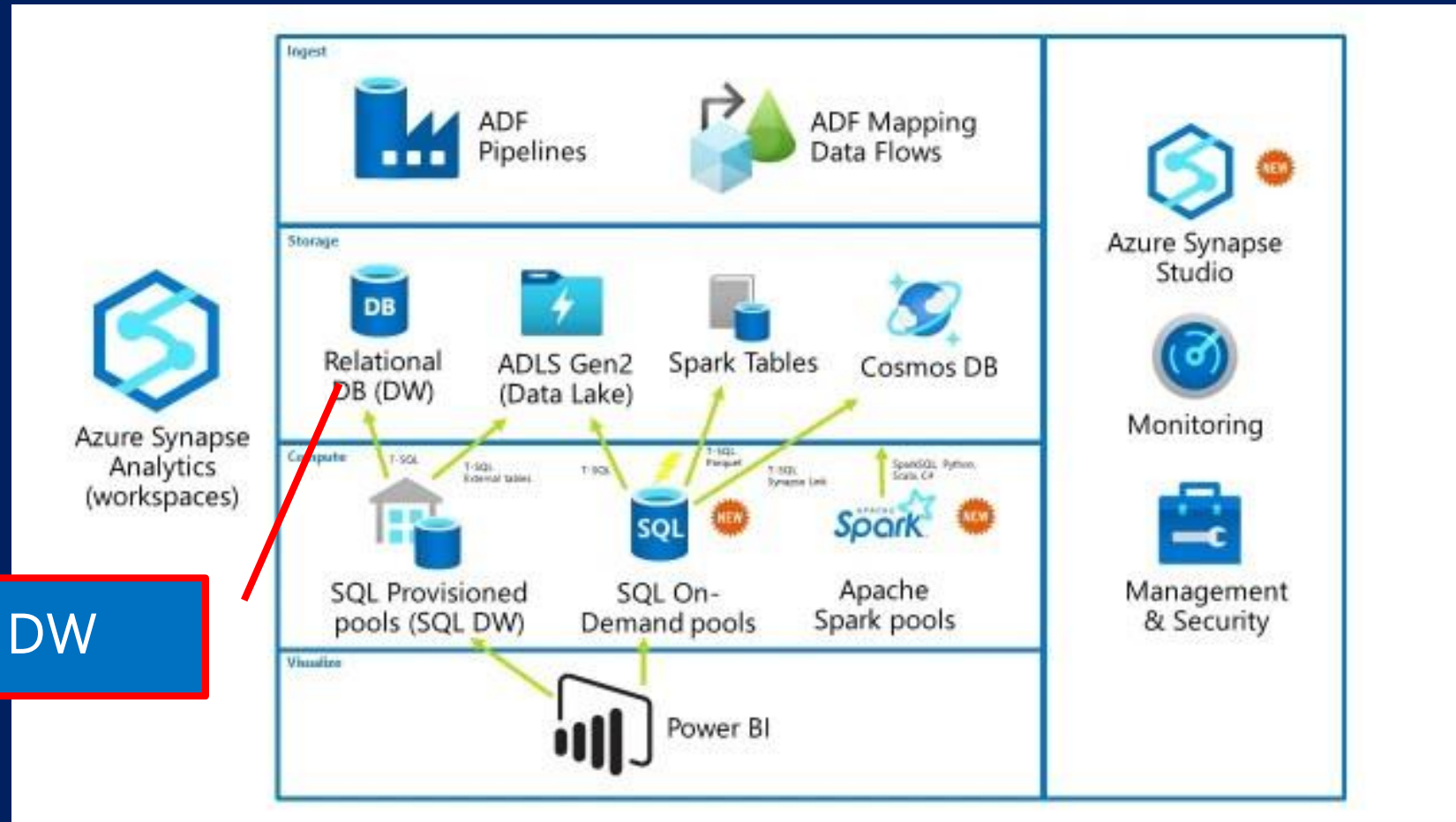


<https://www.sqlshack.com/introduction-azure-sql-data-warehouse/>

Azure Cloud Service
SQL Server Scaled Out
(x Machine)s

What is Azure Synapse?

➤ The Step Before Fabric - Until 2023.



Azure DW

Fabric Architecture

Apache Spark (Data Engineering)



- Open-Source
- Data Lakehouse (Delta Tables) – DW
- Python (PySpark), R, Scala, Spark SQL
- Is NOT a Relational Database

- Notebooks
- Spark Jobs to Run Tasks
- Can support reading and writing many formats.
- Spark and Custom Microsoft ML Models for AI



Azure Synapse Warehouse

- Engine: Scaled Out SQL Server
- Microsoft T-SQL Language Support
- Not an open standard.
- Functions & Stored Procedures

- Supports SSMS and Azure Data Studio.
- Primarily used for Gold layer, i.e. exposed to users.

Delta Lake

Data Science/AI/ML

Semantic Model for Power BI

SQL Analytics Endpoint (SQL Read Only) 






Data Engineering = Build End to End Solution (Task Flow)



Fabric Concepts

Fabric Workspace – Virtual Container

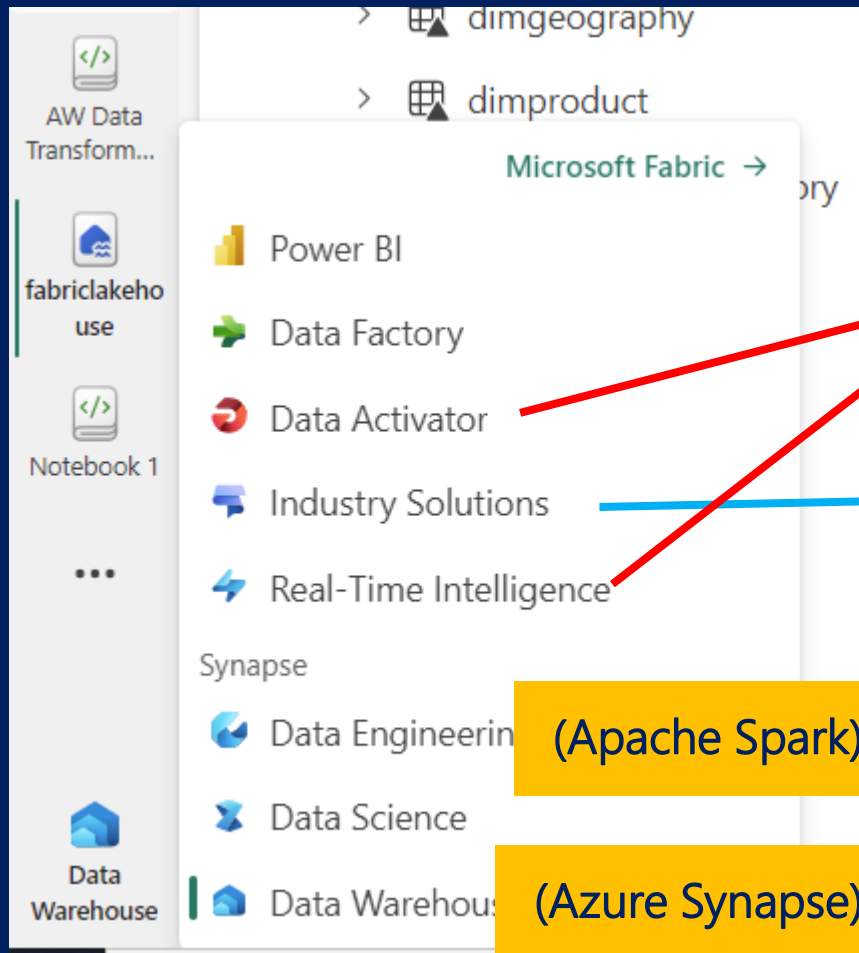
Workspace

	Name ↑	Type
	awlakehouse	Lakehouse
	awlakehouse	Semantic model...
	awlakehouse	SQL analytics en...
	Notebook 1	Notebook
	pipeline1	Data pipeline

- Sets boundaries for contained objects.
- Can secure access.
- Groups objects such as those used for a specific solution.
- Typically, this is the first thing you will create.

Experiences

Experiences



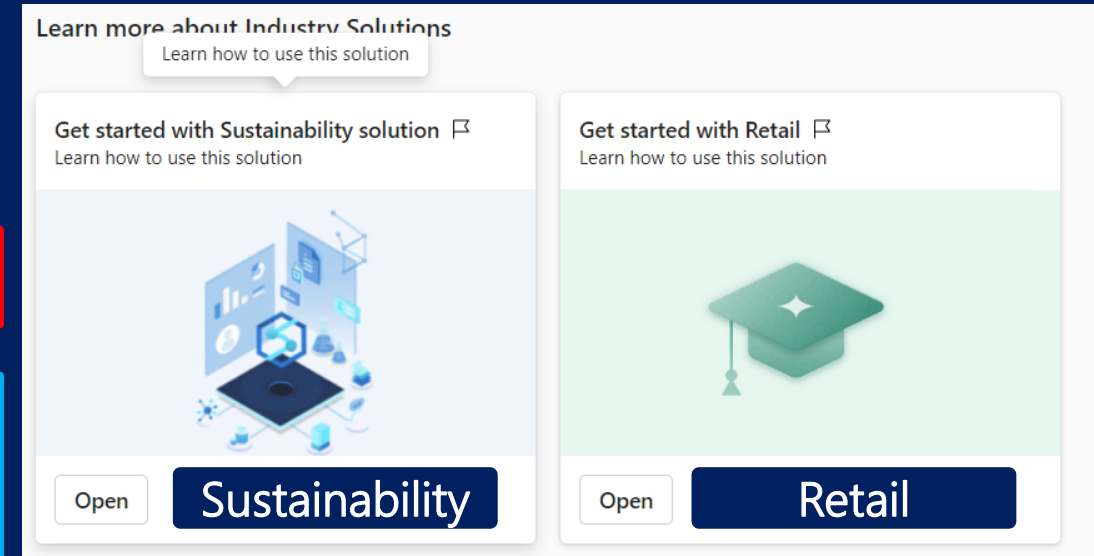
Streaming

Jump Start
Business
Specifics End to
End Solutions

(Apache Spark)

(Azure Synapse)

Industry Solutions



Evolution or Revolution?

➤ Answer: Evolution of Azure Synapse

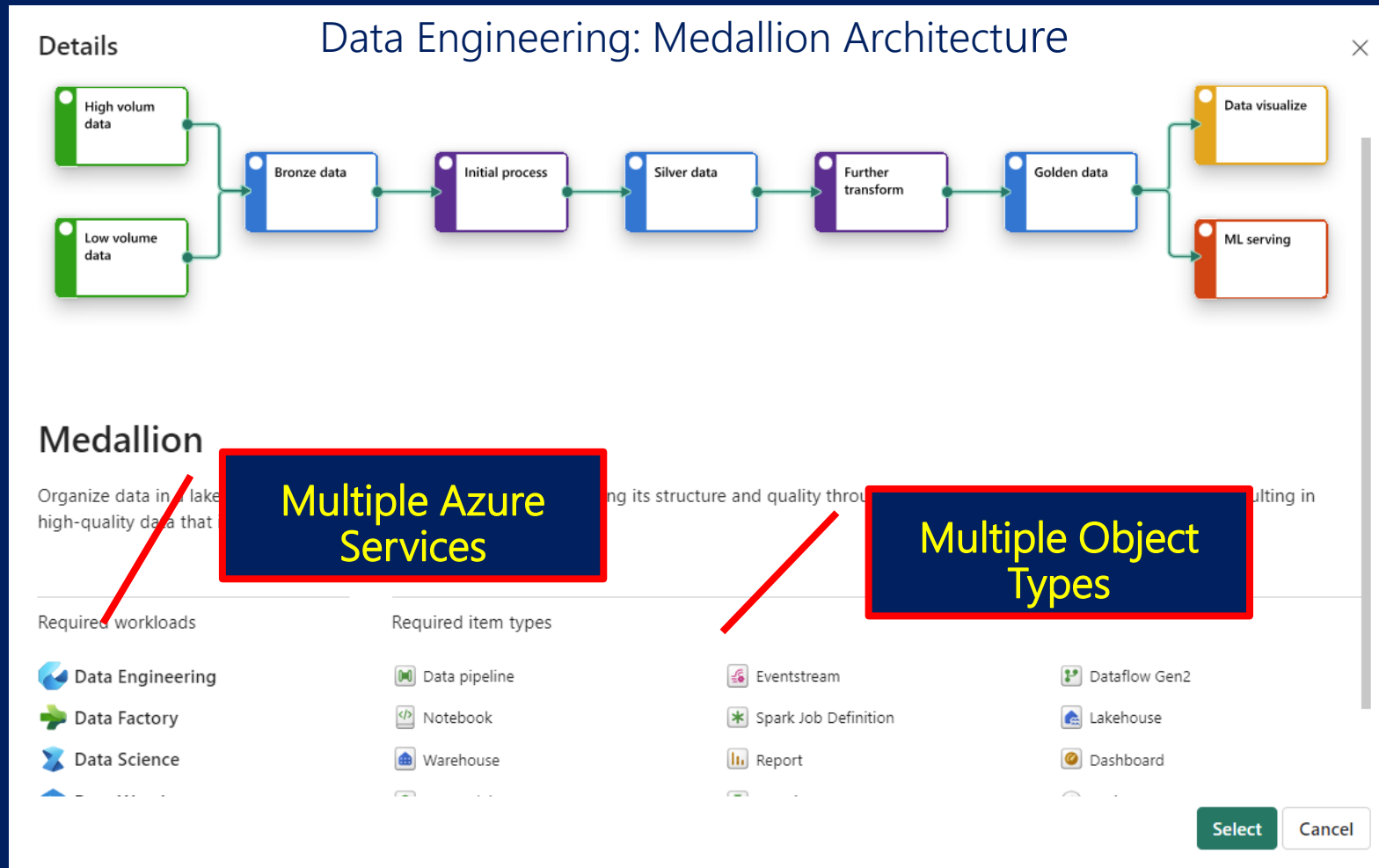
Fabric is a User Interface Over Mostly Existing Services
Plus some Powerful New Concepts.

You Can Leverage Existing Knowledge

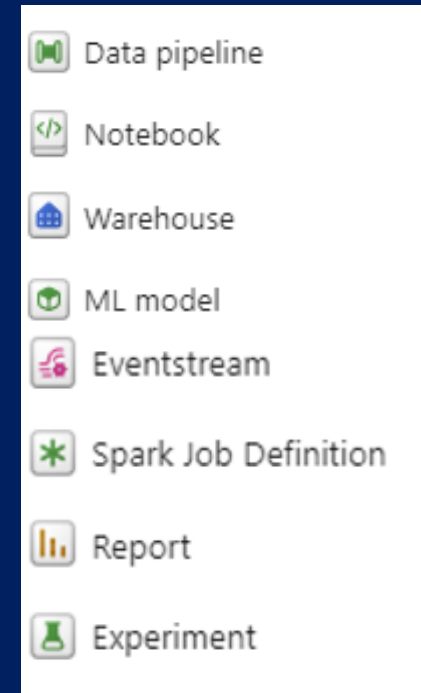


Experience vs. Object

Experiences



Object Types



Just a few of the types

Redefining Established Terms

Term		Fabric Meaning	Standard Meaning
Lakehouse	✓	A Set of related objects which includes a Data Lake, Delta Tables, a Power BI Tabular Model (Semantic Model) and an Azure Synapse Database view of the Delta Tables.	Delta Tables usually defined to relate to each other as in a Star Schema. A Data Warehouse on Spark.
Data Warehouse	✓	An Azure Synapse Database view of the Delta Tables stored in a Fabric Lakehouse.	Lakehouse = Spark Data Warehouse (Delta Lake)
Semantic Model	✓	Power BI Tabular Model	A Star Schema
SQL Analytics Endpoint	✓	An Azure Synapse Service used to Query Data in either a Fabric Lakehouse or a Synapse Data Warehouse using SQL Server T-SQL.	Databricks SQL Endpoint is a service that supports Spark SQL queries.
Synapse Data Engineering	✓	Apache Spark Tools	Azure Synapse ETL
Dataflows (Gen2)	✓	Power BI Power Query	None
Spark Jobs	✓	Fabric Specific Object that allows you to run Spark code such as a Python script on demand or per a set schedule.	Only visible in the Spark UI, shows the actual execution of Spark code. Not the same as a Fabric Spark Job.
Realtime Analytics	✓	Azure Event Hub + Kusto Database (KQL)	General concept.
KQL (Kusto Query Language)	✓	Microsoft Proprietary Query Language used to Query Event Hub Data Streams.	None
KQL Database	✓	Fabric Database that Stores Streaming Data that Can Be Queried with KQL.	None

Wrapping Up

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Thank You!