Microsoft

Fabric Hands-on Day
Morning

<Presenter
Company name>

Microsoft

Thank you!

Agenda (times are approximate and will be fluid with the class)

Morning

09:00 AM – 09:15 AM	Welcome and session introduction
09:15 AM – 10:30 AM	Keynote – Microsoft Fabric Overview
10:30 AM – 10:45 AM	Break
10:45 AM – 11:00 AM	Environment setup
11:00 AM – 12:30 PM	Lab 1 Lakehouse end-to-end scenario
12:30 PM – 01:30 PM	Break for lunch

Afternoon

01:30 PM – 02:00 PM	Keynote – Microsoft Fabric Momentum & Roadmap
02:00 PM – 02:30 PM	Demo – Fabric "All around"
02:30 PM – 03:15 PM	Lab 2 Pick-choose your lab
03:15 PM – 04:00 PM	Break
04:00 PM – 04:30 PM	Continuation of Lab 2
04:30 PM – 05:00 PM	Q&A

Microsoft Fabric Hands-on Day
Meet your proctors

Proctor 1 Name
Proctor 1 Role & Company

Proctor 2 Name
Proctor 2 Role & Company

Proctor 3 Name
Proctor 3 Role & Company

Proctor 4 Name
Proctor 4 Role & Company
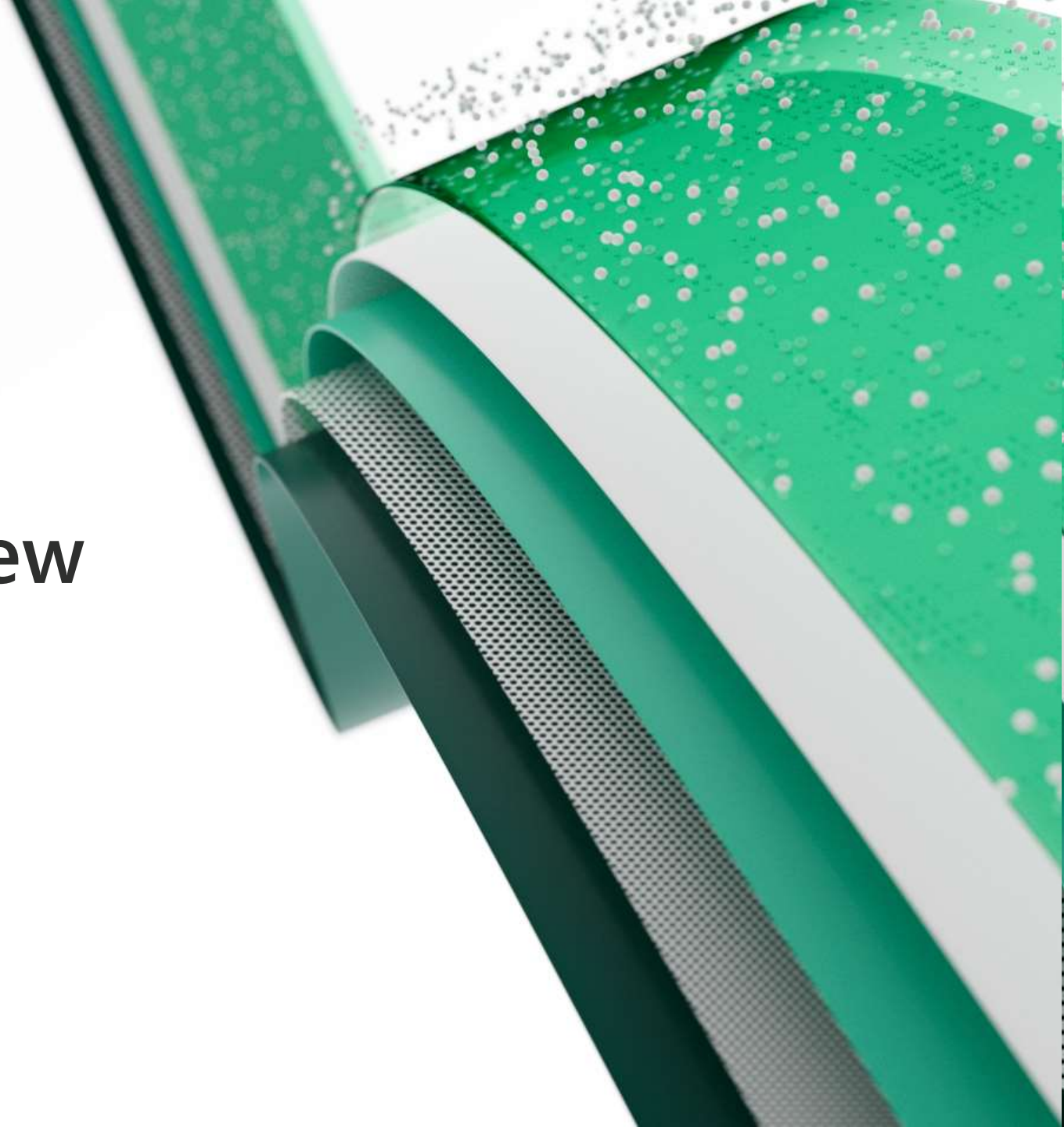
Proctor 5 Name
Proctor 5 Role & Company

Proctor 6 Name
Proctor 6 Role & Company
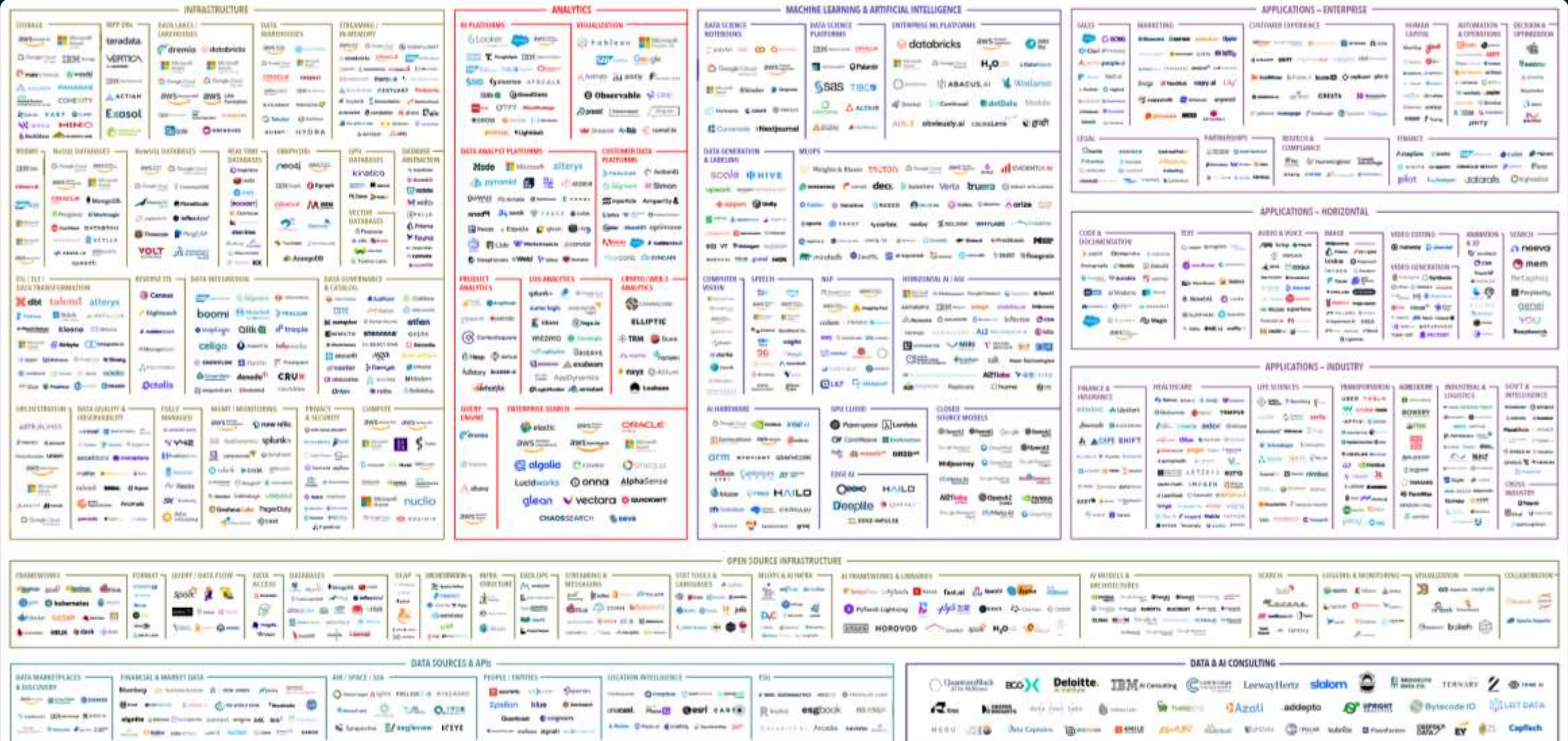
Microsoft Fabric Overview

A unified analytics solution for the era of AI

How do you translate data into competitive advantage?

The 2023 ML, AI, and Data Landscape

"**Simplify,**
I am the Chief Data Officer
and don't want to be the
Chief Integration Officer."

Every CDO, Every Enterprise

How do we achieve this Simplification ?

Data Access
"Lake-centric and open architecture"

A complete analytic platform in SaaS

Being more productive with AI & Copilot

Microsoft Fabric
Data analytics for the era of AI

From		To
One component	→	Unified stack
Single database	→	All the data
Gen AI wired in	→	Gen AI built in

1

Simplicity to access and manage your data

Lake-centric and open architecture

Today: Multiple siloed lakes with lots of duplication

IT ← Data movement → **Sales** ← Data movement → **Operations** ← Data movement → **Marketing**

Data movement

Data movement

Data movement

Data movement

← Data movement →
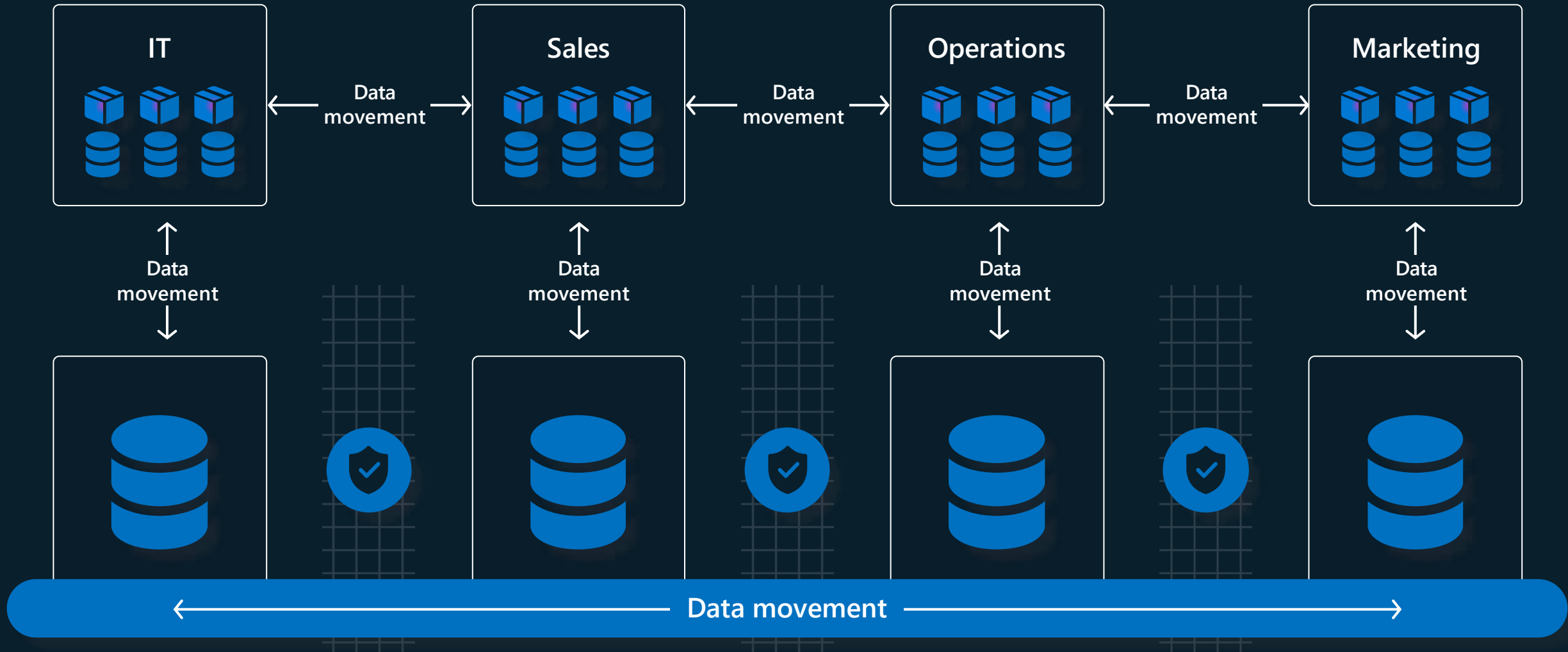
OneLake for all data
"The OneDrive for data"

OneDrive
for documents

OneLake
for data

OneLake provides a data lake as a service without you needing to build it

A single unified SaaS data lake
"No Silos"

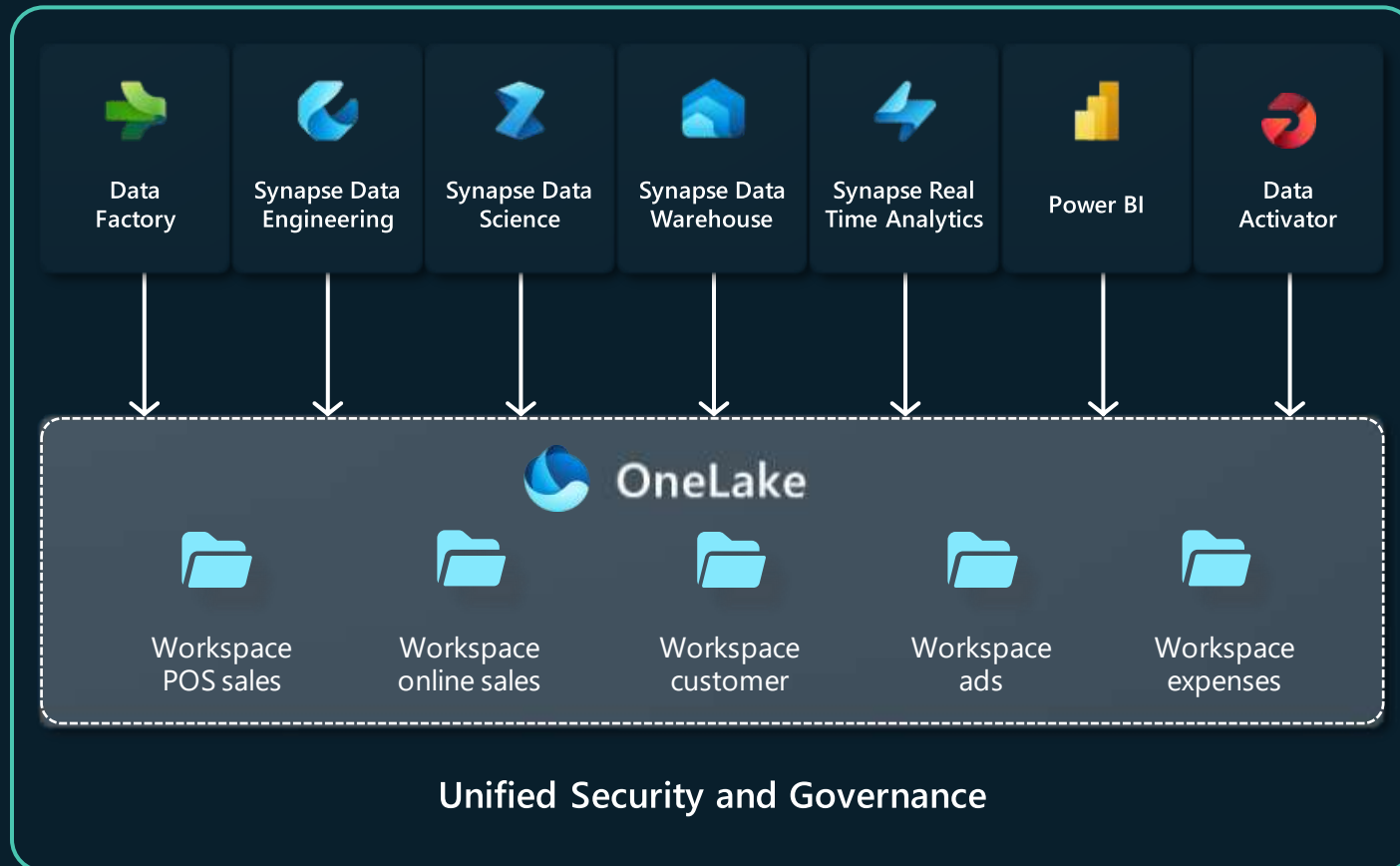| Data Factory	Synapse Data Engineering	Synapse Data Science	Synapse Data Warehouse	Synapse Real Time Analytics	Power BI	Data Activator

OneLake

Workspace POS sales　　Workspace online sales　　Workspace customer　　Workspace ads　　Workspace expenses

Unified Security and Governance

Provisioned automatically with the tenant.

Any data in OneLake works with out-of-the-box governance such as data lineage, data protection, certification, catalog integration, etc. All data is ultimately under the control of a tenant admin.

OneLake enables distributed ownership. Different workspaces allow different parts of the organization to work independently while still contributing to the same data lake. Each workspace can have its own administrator, access control, region and capacity for billing.
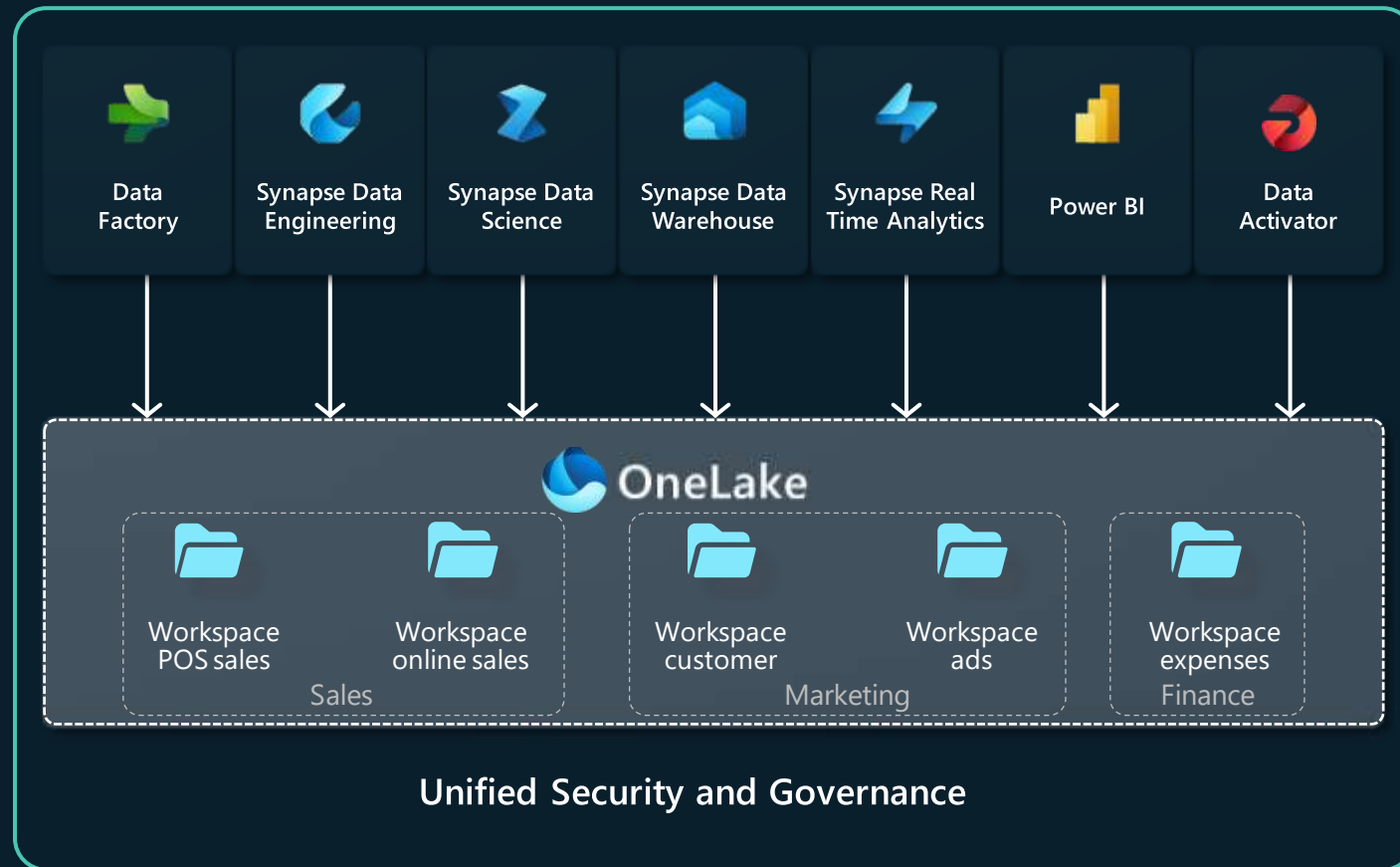
OneLake for all domains
OneLake gives a true data mesh as a service

Sales | **Marketing** | **Finance**

| Data Factory | Synapse Data Engineering | Synapse Data Science | Synapse Data Warehouse | Synapse Real Time Analytics | Power BI | Data Activator |

OneLake

| Workspace POS sales | Workspace online sales | Workspace customer | Workspace ads | Workspace expenses |
| Sales | | Marketing | | Finance |

Unified Security and Governance

Introducing domains as an integral part of Fabric: A domain is a way to logically group together all the data in an organization relevant to an area or field, according to business needs.

Domains are defined with domain admins and contributors who can associate workspaces and group them together under a relevant domain.

Federated governance can be achieved by delegating settings to domain admins, thus allowing them to achieve more granular control over their business area.
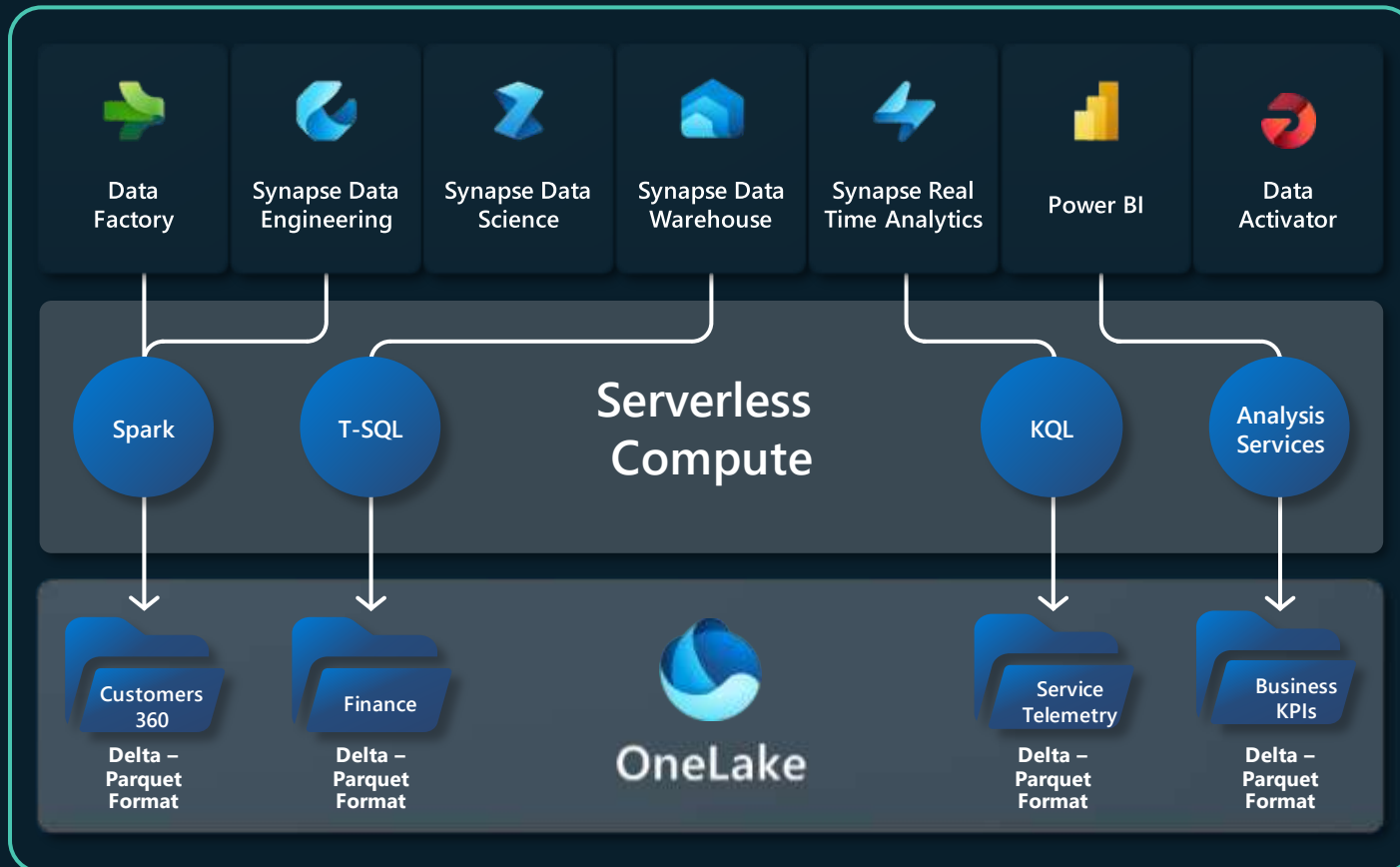
Domains simplify discovery and consumption of data across the organization, thus allowing business optimized consumption.

Avoid data swamps by endorsing certain data as certified or promoted, thus encouraging reuse.

One Copy for all computes

Real separation of compute and storage

Serverless Compute

| Data Factory | Synapse Data Engineering | Synapse Data Science | Synapse Data Warehouse | Synapse Real Time Analytics | Power BI | Data Activator |

Spark · T-SQL · KQL · Analysis Services

Customers 360 — Delta – Parquet Format
Finance — Delta – Parquet Format
OneLake
Service Telemetry — Delta – Parquet Format
Business KPIs — Delta – Parquet Format

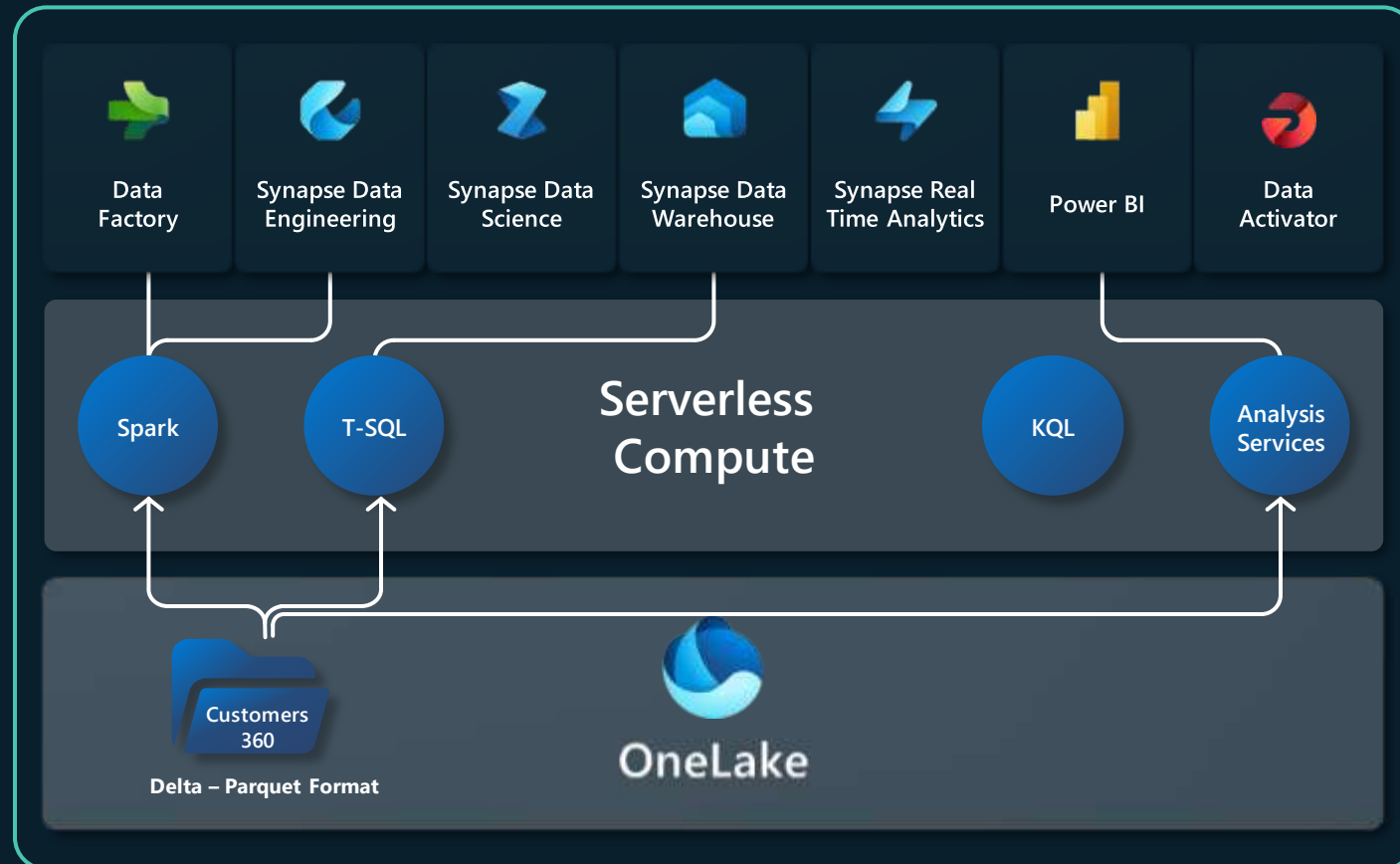All the compute engines store their data automatically in OneLake as data items.

The data is stored in a single common format.

Delta – Parquet, an open standards format, and it is the storage format for all tabular data in Fabric.

All the compute engines have been fully optimized to work with Delta Parquet as their native format.

One Copy for all computes

One copy of data can be read by all engines

| Data Factory | Synapse Data Engineering | Synapse Data Science | Synapse Data Warehouse | Synapse Real Time Analytics | Power BI | Data Activator |

Serverless Compute

Spark   T-SQL   KQL   Analysis Services

Customers 360

Delta – Parquet Format

OneLake

Once data is stored in the lake, it is directly accessible by all the engines without needing any import/export.
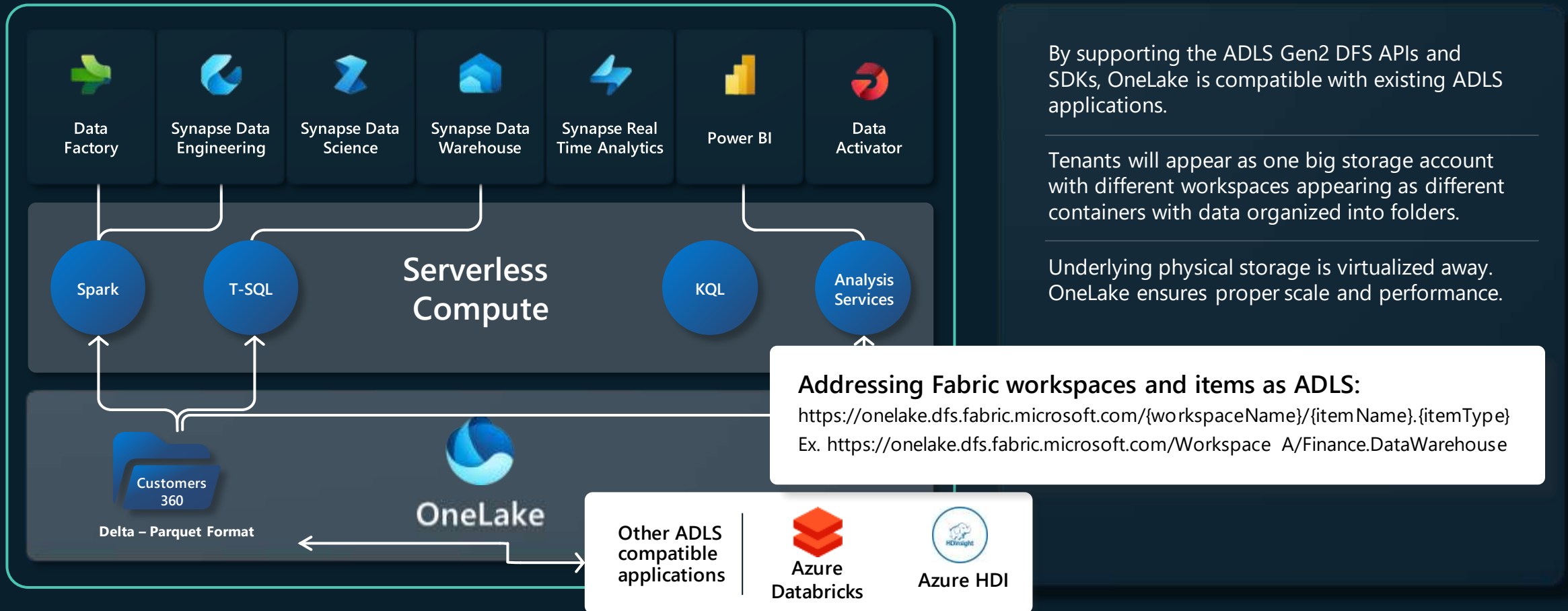
You are able to choose the right engine for the right job.

All the compute engines have been fully optimized to work with Delta Parquet as their native format.
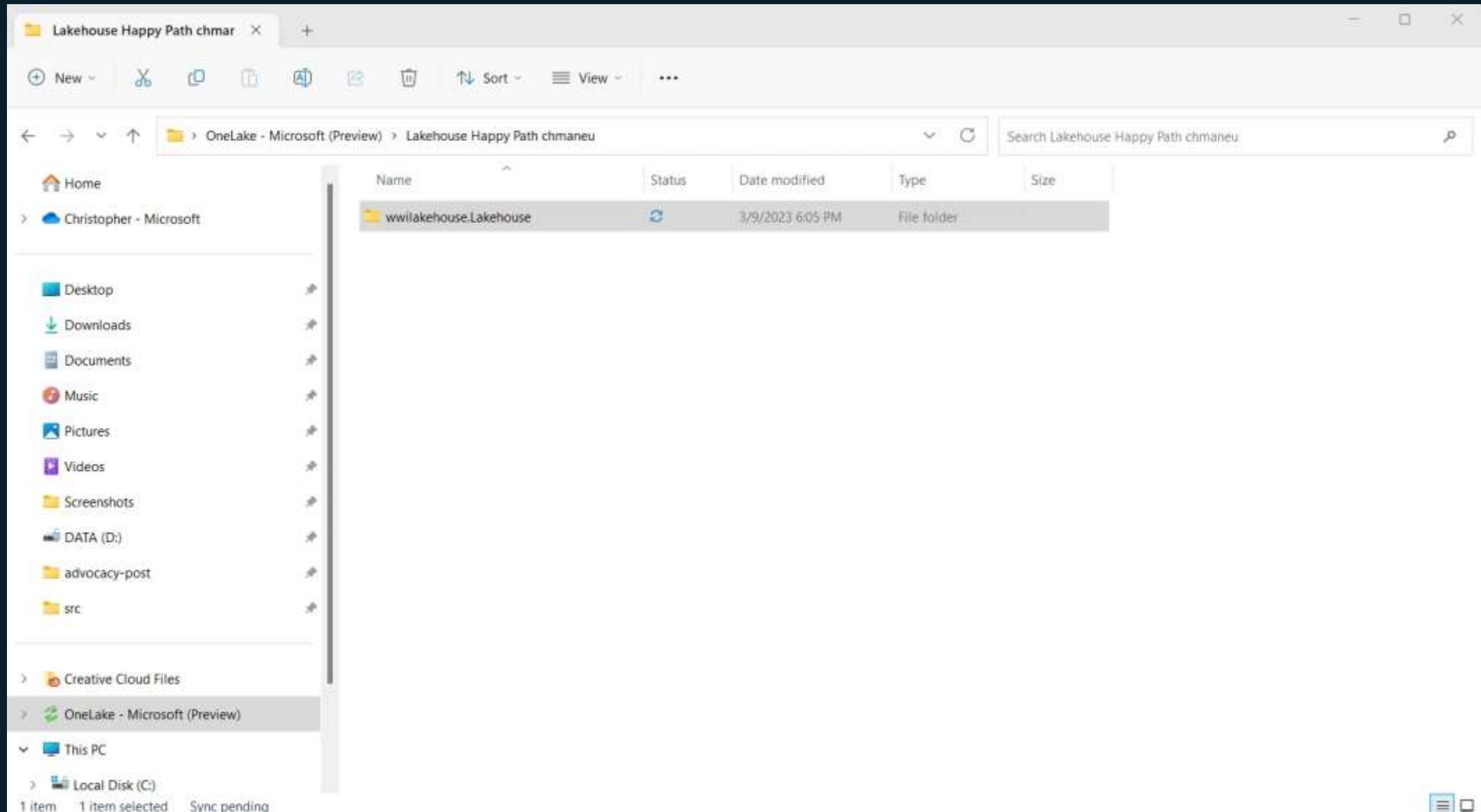
Shared universal security model is enforced across all the engines (coming soon).

Open Access to data in OneLake
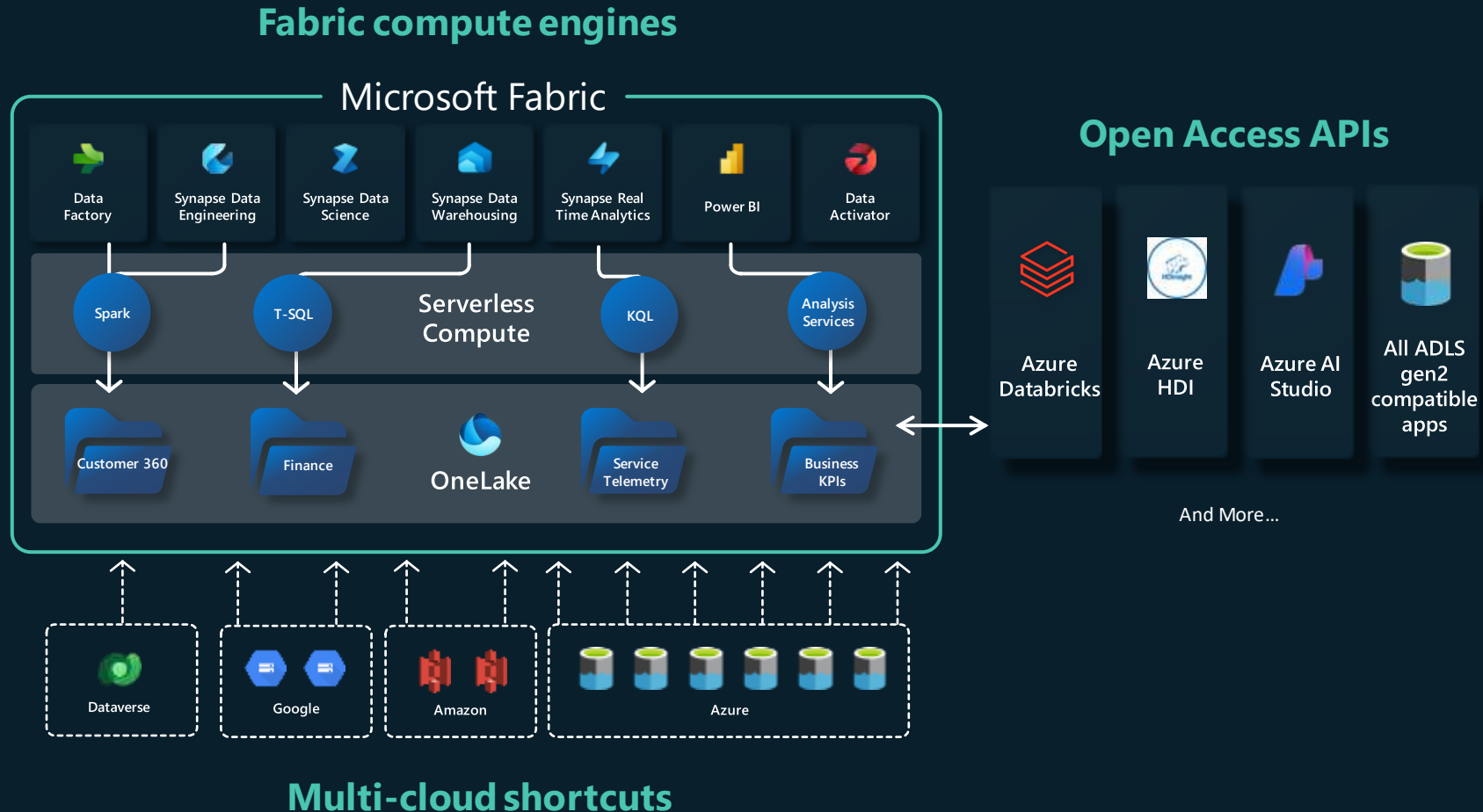## No lock-in with industry standard APIs and open file formats

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

Serverless Compute

Spark · T-SQL · KQL · Analysis Services

OneLake

Customers 360

Delta – Parquet Format

By supporting the ADLS Gen2 DFS APIs and SDKs, OneLake is compatible with existing ADLS applications.

Tenants will appear as one big storage account with different workspaces appearing as different containers with data organized into folders.

Underlying physical storage is virtualized away. OneLake ensures proper scale and performance.

Addressing Fabric workspaces and items as ADLS:
https://onelake.dfs.fabric.microsoft.com/{workspaceName}/{itemName}.{itemType}
Ex. https://onelake.dfs.fabric.microsoft.com/Workspace A/Finance.DataWarehouse

Other ADLS compatible applications

Azure Databricks · Azure HDI

Browse your OneLake from Windows Explorer

All roads lead to OneLake
Creating Data Gravity in OneLake

Fabric compute engines

Microsoft Fabric

| Data Factory | Synapse Data Engineering | Synapse Data Science | Synapse Data Warehousing | Synapse Real Time Analytics | Power BI | Data Activator |

Serverless Compute

Spark   T-SQL   KQL   Analysis Services

Customer 360   Finance   **OneLake**   Service Telemetry   Business KPIs

Open Access APIs

| Azure Databricks | Azure HDI | Azure AI Studio | All ADLS gen2 compatible apps |

And More...

Multi-cloud shortcuts

Dataverse   Google   Amazon   Azure

All roads lead to OneLake
Creating Data Gravity in OneLake

Fabric compute engines

Mirroring

Microsoft Fabric

| Data Factory | Synapse Data Engineering | Synapse Data Science | Synapse Data Warehousing | Synapse Real Time Analytics | Power BI | Data Activator |

Serverless Compute

Spark · T-SQL · KQL · Analysis Services

Azure COSMOS DB · Azure SQL DB · Mongo DB

And More…

OneLake

Customer 360 · Finance · Service Telemetry · Business KPIs

Open Access APIs

Azure Databricks · Azure HDI · Azure AI Studio · All ADLS gen2 compatible apps

And More…

Dataverse · Google · Amazon · Azure

Multi-cloud shortcuts

2

**Easy access to
analytics engines**

A **full Saas** service

Predictable Architecture patterns

Data Integration	Data Engineering	Data Warehousing	Real-time analytics	Data science	Business Intelligence

Data Lake

Governance and Administration

Analytics has very predictable patterns

Microsoft has all the products with the right scale needed to build a complete analytics system

Predictable Architecture patterns
Unified inside a single tool

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

OneLake

Analytics has very predictable patterns

Microsoft has all the products with the right scale needed to build a complete analytics system

Persona optimized experiences
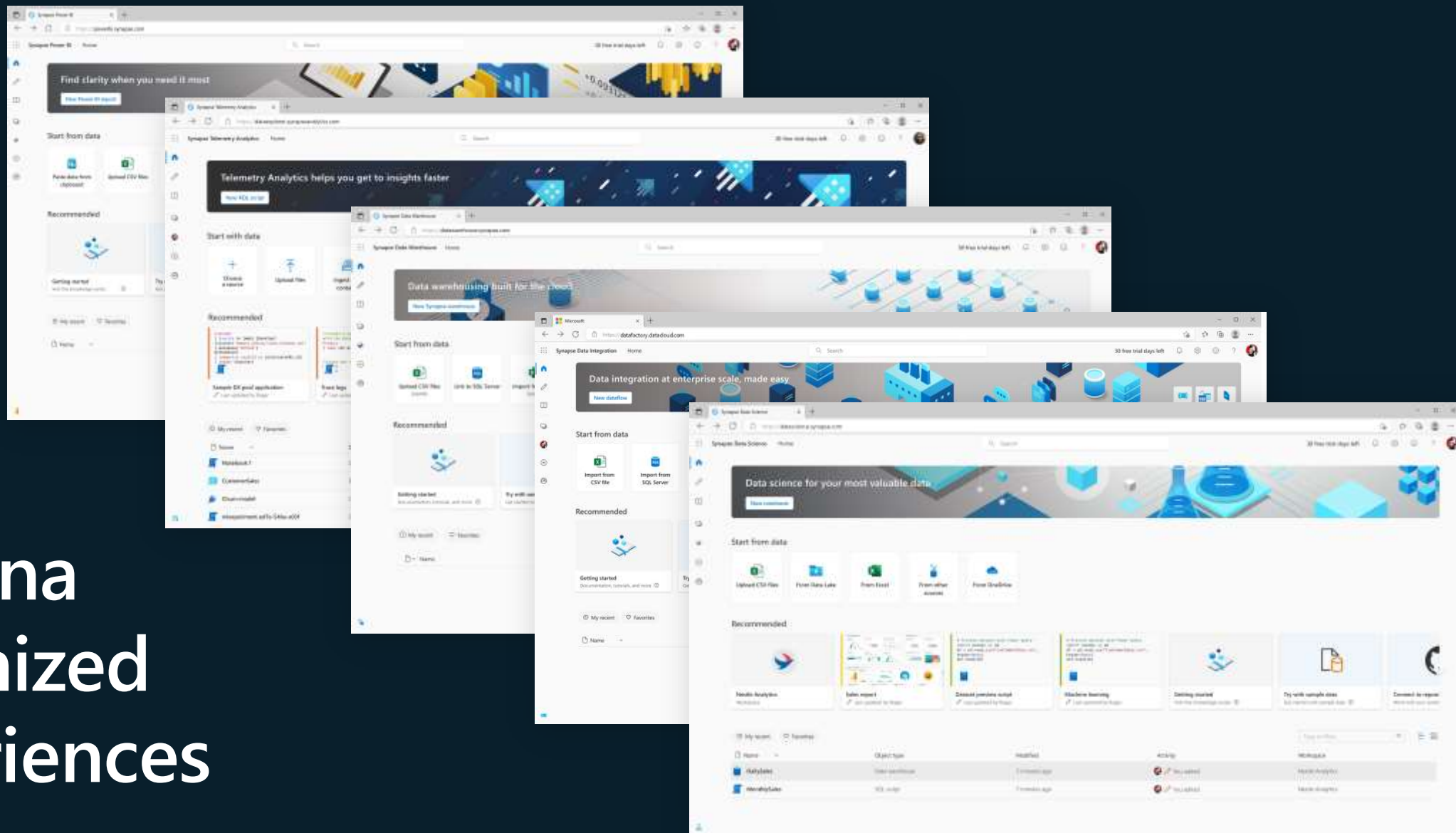
A SaaS solution

5x5

Frictionless onboarding

Instant provisioning

Quick results w/ Intuitive UX

Success by default

Minimal knobs

Auto-optimized

Auto-integrated

Centralized administration

Tenant-wide governance

Centralized security management

Compliance built-in

DEMO
Different persona and SaaS experience

One Copy for all computes
Real Separation of compute and storage

| Data Factory | Data Engineering | Data Science | Data Warehousing | Real Time Analytics | Power BI | Data Activator |

Serverless Compute

Spark · T-SQL · KQL · Analysis Services

OneSecurity

Customers 360 — Delta – Parquet Format

Finance — Delta – Parquet Format

OneLake

Service Telemetry — Delta – Parquet Format

Business KPIs — Delta – Parquet Format

One Security (coming)
Secure once and use everywhere

Shared universal security model is enforced by all the engines

More granular security can be defined once in OneLake. This includes column level security, row level security, data masking, etc.

Security definitions will flow across all shortcuts and will be enforced in all engines including non-Fabric engines
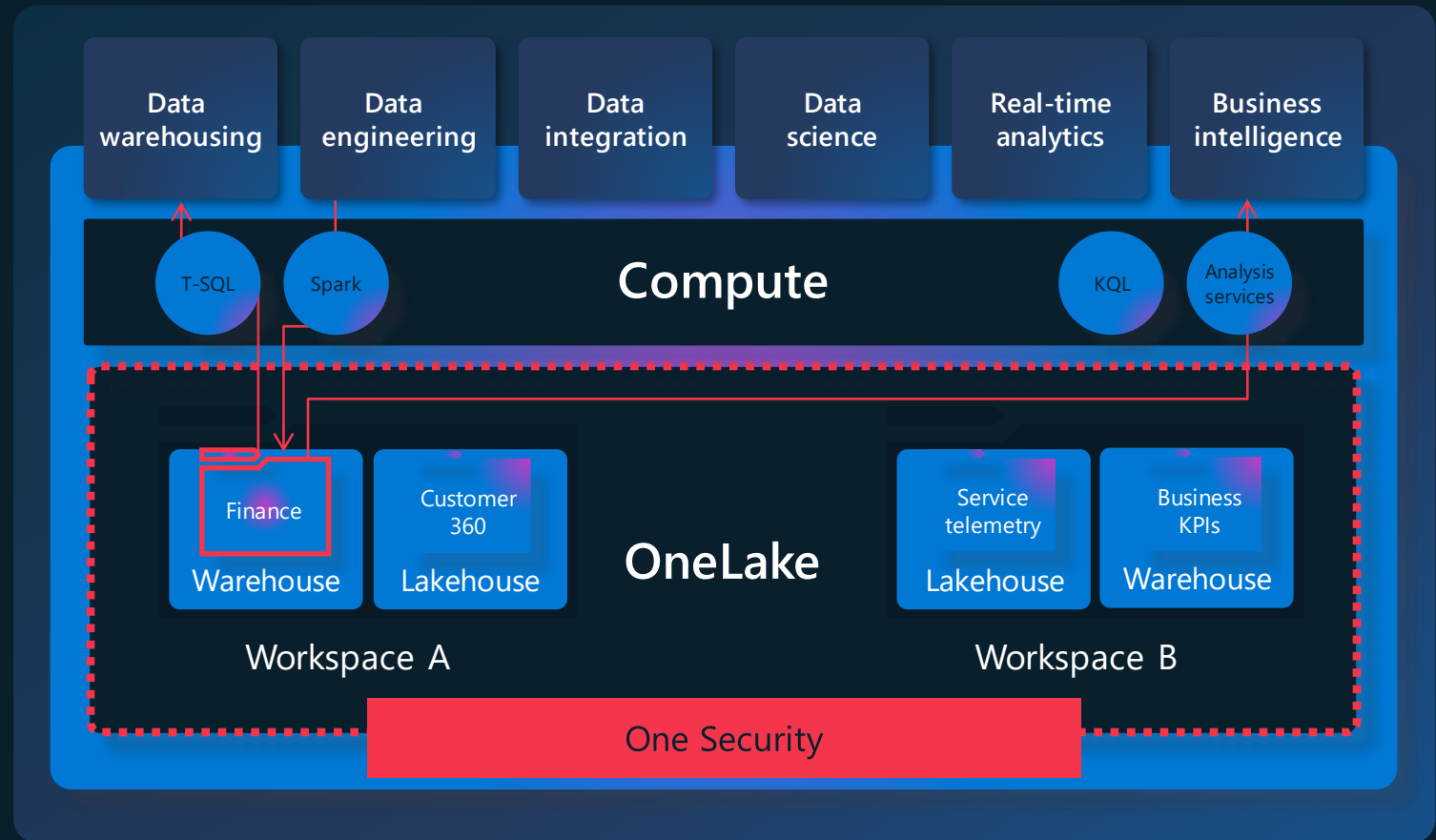
Universal compute capacities
"All in one"

Data Factory | Synapse Data Engineering | Synapse Data Science | Synapse Data Warehouse | Synapse Real Time Analytics | Power BI | Data Activator

Compute capacities

T-SQL | Spark | Event Streams | Data Activator | Pipelines | Cognitive Services | KQL | Analysis Services

OneLake
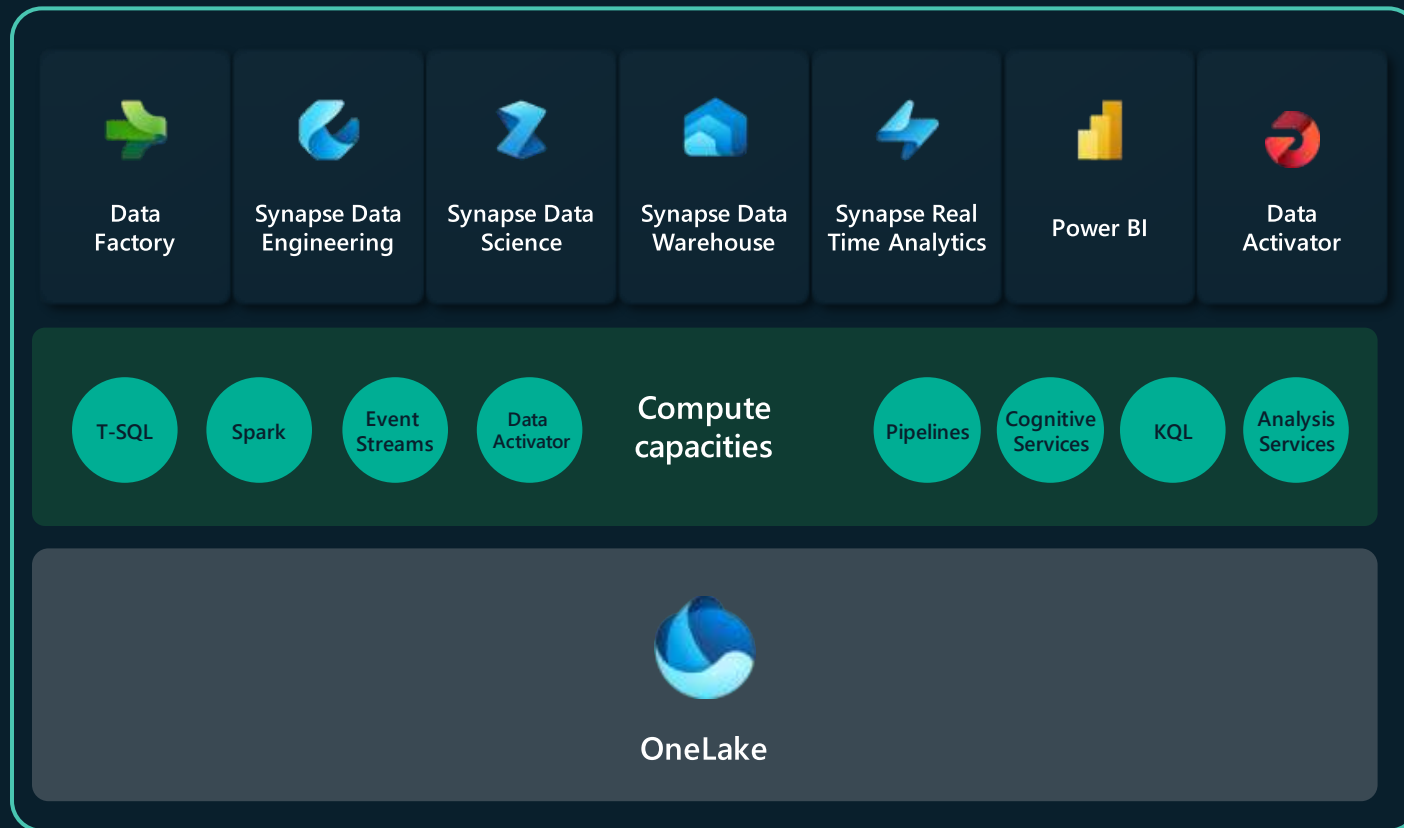
Microsoft Fabric comes with a rich set of compute engines

Universal Compute Capacities provide the power to the various engines

"All in One" – Each of the compute capacity can power all the engines

There is no need to size in advance the individual engines, or to split the capacity across
the engines

All Power BI Premium capacities are upgraded automatically to the Universal Compute Capacities, no additional purchase required

Universal compute capacities
Microsoft Fabric Capacity

A shared capacity that provides a set of capacity units (CUs) powering the compute for Data Warehouse, Data Integration, Data Science, Data Engineering, Real-Time Analytics, and Power BI.
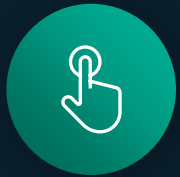
Simplicity of purchasing

No need to purchase separate compute for each workload

Flexibility in use

With no pre-allocation required, the same set of CUs can be used for any workload
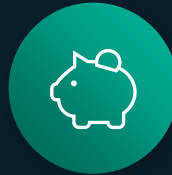
Cost savings

All CUs are pooled together and are not locked to an idle workload

Value optimization

Automatically adjust compute capacity with autoscale

Easier to manage capacity with smoothing

Transparent monitoring

Centralized dashboard to monitor usage and costs in Microsoft Fabric utilization and metrics app

Capacity Metrics
Tools for Admin usage monitoring

Unified Compute Capacities and Data Governance

Tenant wide visibility into capacity usage for all Trident workloads in one place

Identify resource usage trends across artifacts and operations

Monitor the impact of throttling to user experience to make scale-up decisions

View preview usage in parallel with production workloads to make data-driven capacity sizing decisions
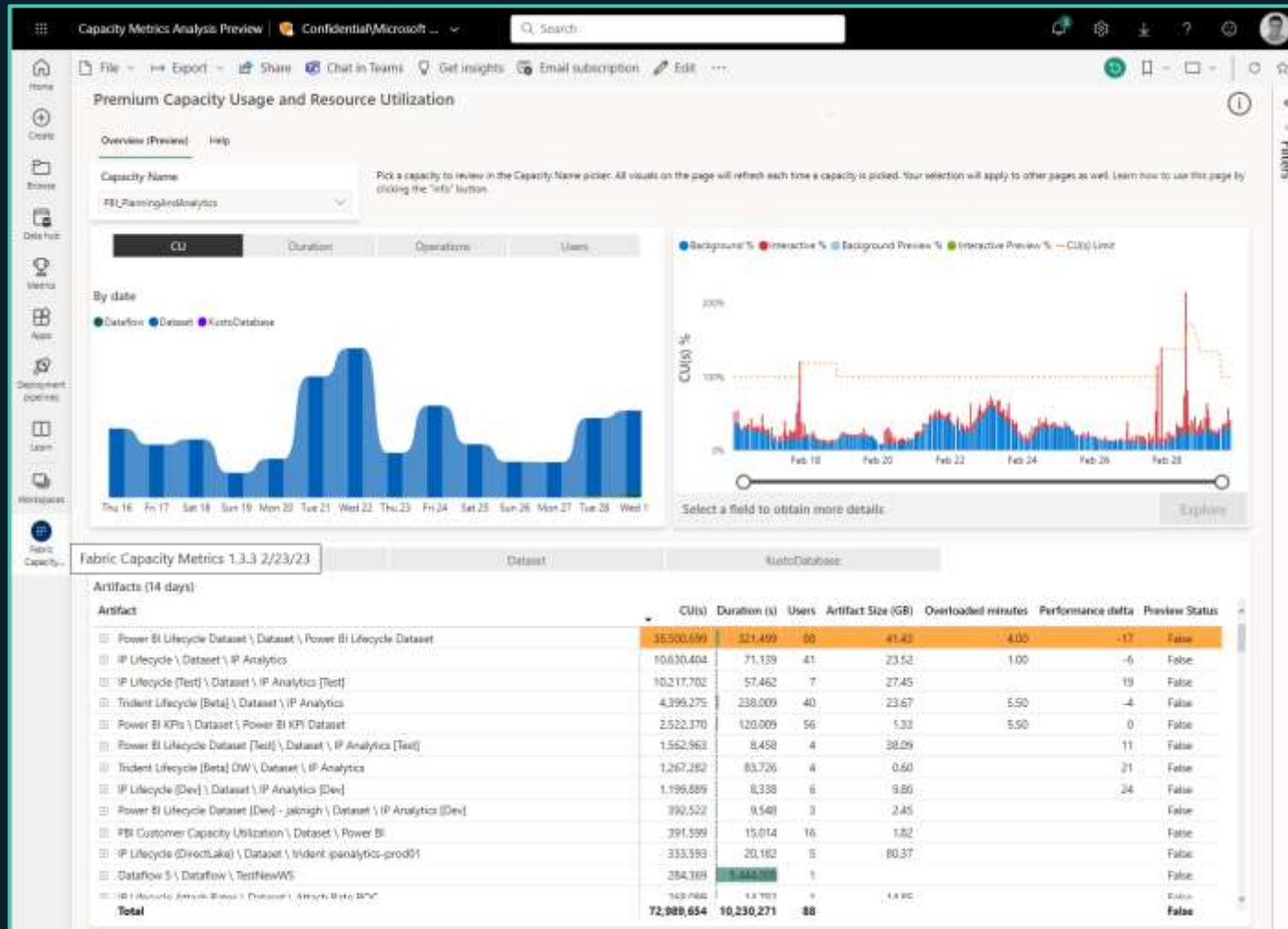
Power BI

When simplicity meets performance

"Direct Query Mode"
Slow, but real time

Database files
Tables
Storage
← Scan
Data Warehouse/ Lakehouse
SQL Queries
Power BI Analysis Services
DAX Queries
Reports
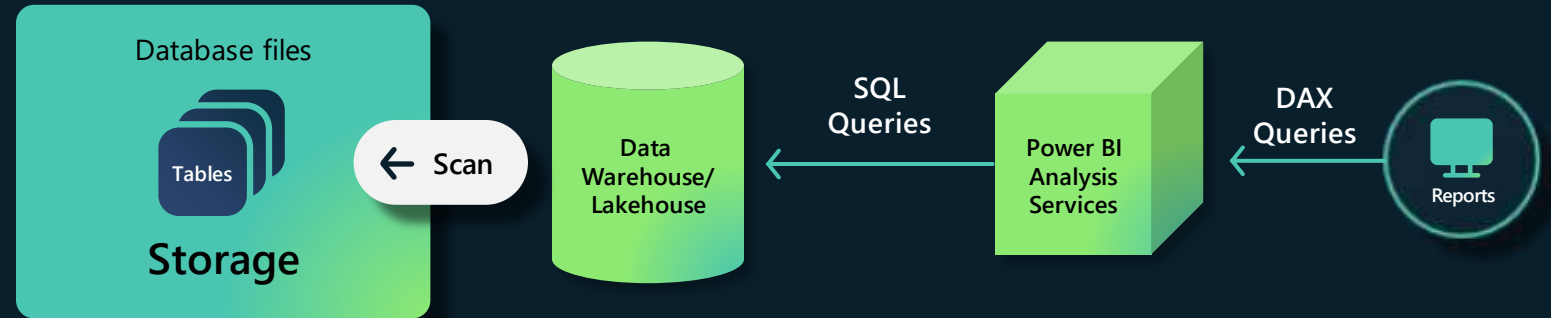
"Import Mode"
Latent & duplicative but fast

Database files
Tables
Storage
← Scan
Data Warehouse/ Lakehouse
Import →
Power BI Analysis Services
Copy of Tables
DAX Queries
Reports
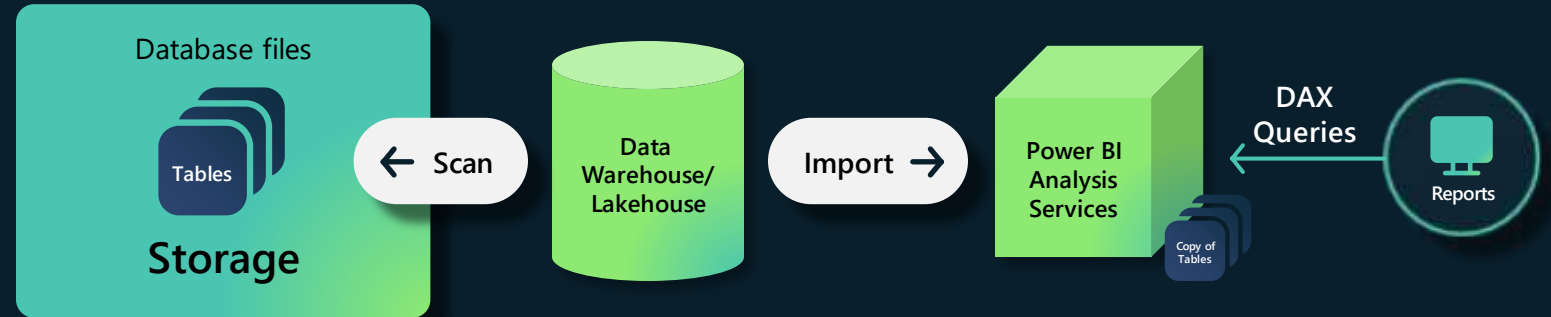
"Direct Lake Mode"
Perfect!

Parquet/Delta Lake
Tables
OneLake
←
Data Warehouse/ Lakehouse
Scan
Power BI Analysis Services
DAX Queries
Reports
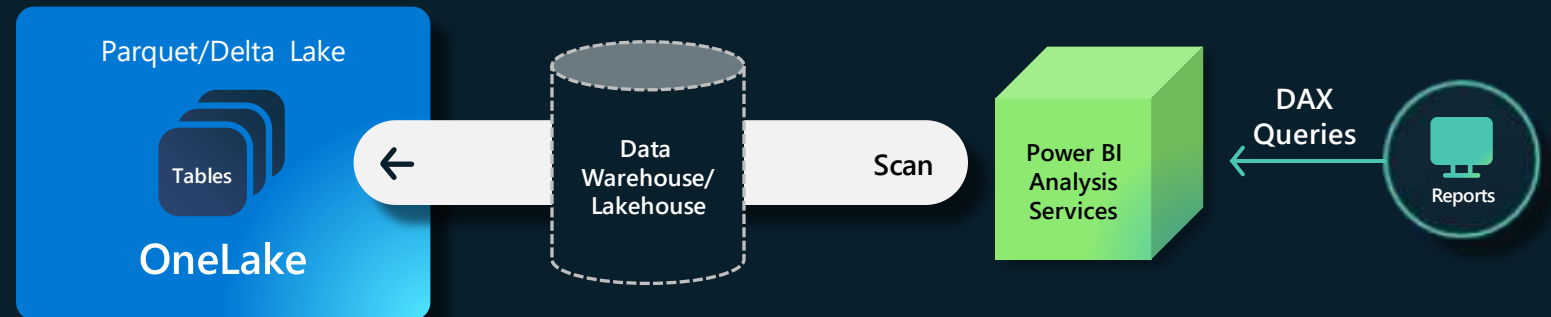
Lakehouse

Everything at once

3

Being more productive with AI tools & Microsoft 365

Fabric Copilots

Microsoft Fabric

The data platform for the era of AI

Accelerating Productivity with Copilots

Stay focused on unlocking value from your data with Copilots accelerating every experience

Generative AI on Your Data

Create AI plug-ins to deliver custom AI experiences for your data
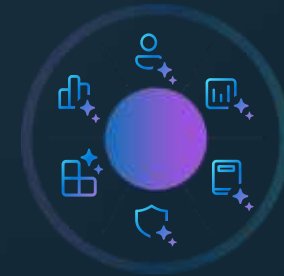
AI Driven Insights

Unlock deeper insights and drive action faster with best-in-class AI models

4
Licensing
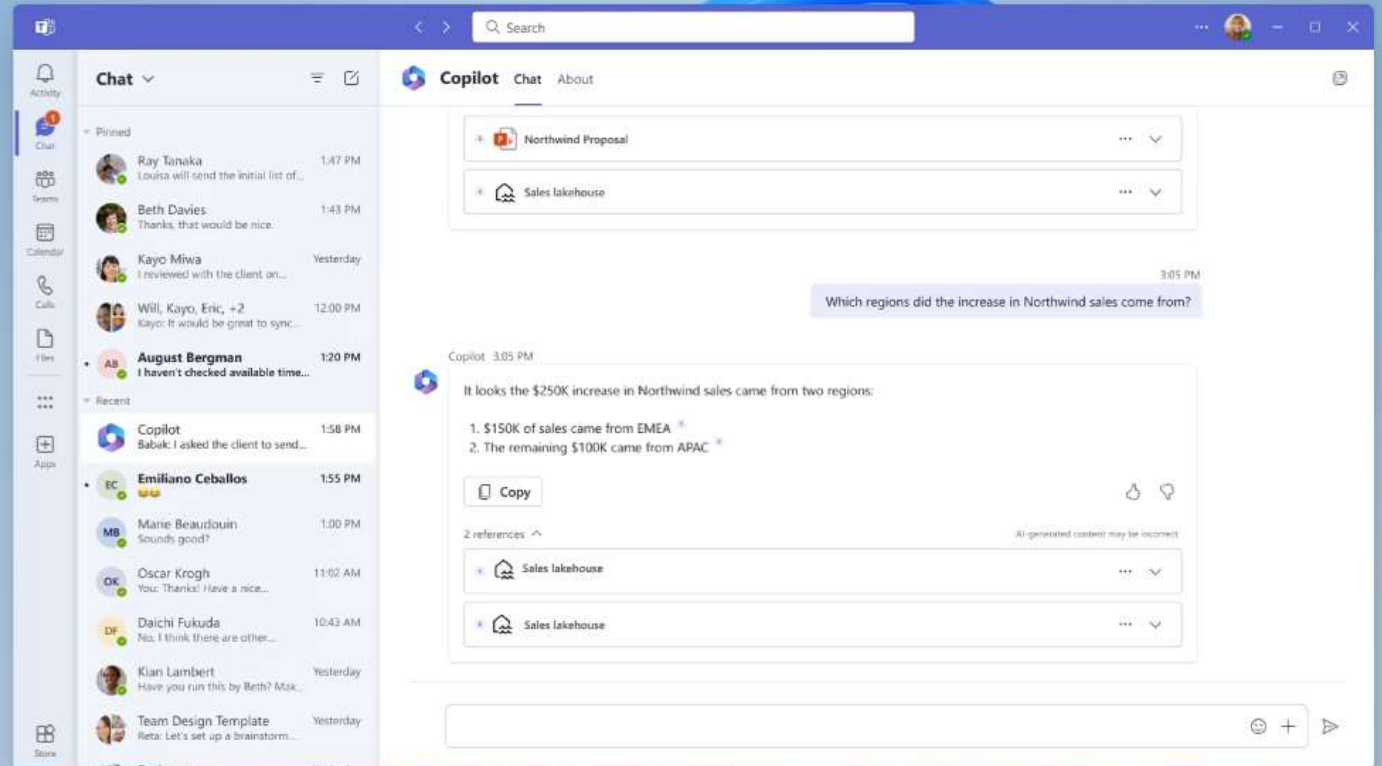
Fabric Licensing

Infrastructure

Capacity

Shared across all analytics workloads

Can be resized up, down and even paused

Attached to a specific region

Sold as Capacity Unit (CU), from 2 to 2048

$0.18/CU/Hour, Minimum 2 CU (only $9/day!)

Storage

You pay for the storage you consume.

Price varies from region to region

$0.023/GB/Month

Network

Cross-region data transfer charges,

Egress charges for multi-cloud shortcuts

+

Individual license

Each Fabric user needs a LICENCE. There are 3 types of LICENCE: Free, Pro and Premium.

Reader

FREE

CU > 64: Free

Creator

FREE

Pro (~$10/user/month)

PREMIUM $20/user/month   Enable Power BI Premium features

Microsoft Fabric

The data platform 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

Complete platform for all analytics workloads

Open at every layer, with no proprietary lock-ins

Empower business users with experiences deeply integrated in Microsoft 365

AI Copilots to accelerate productivity and discover insights

Microsoft

Thank you

Microsoft Fabric Hands-on day
Labs

This morning

Lakehouse end-to-end scenario

https://aka.ms/fabric-hod/lab1

Microsoft Fabric Hands-on day
Getting access to your environment

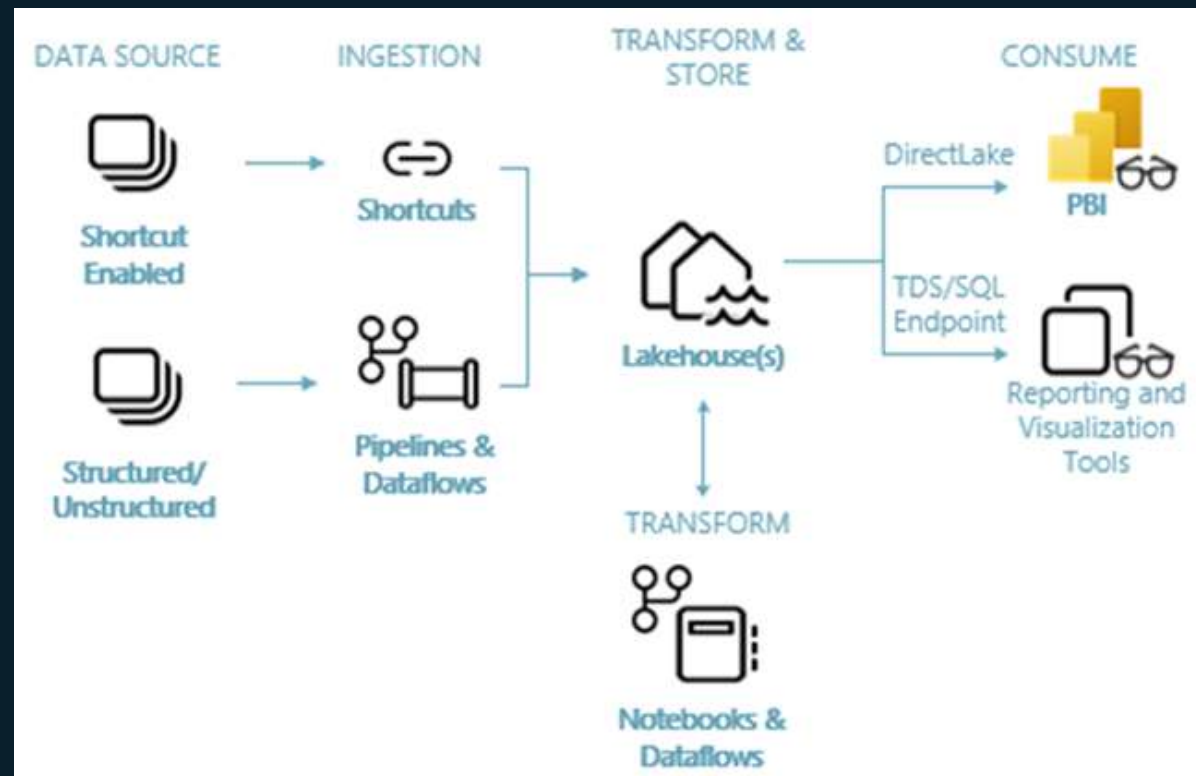\<Complete this section with instructions for your session\>

Lab 1 – Lakehouse end-to-end scenario
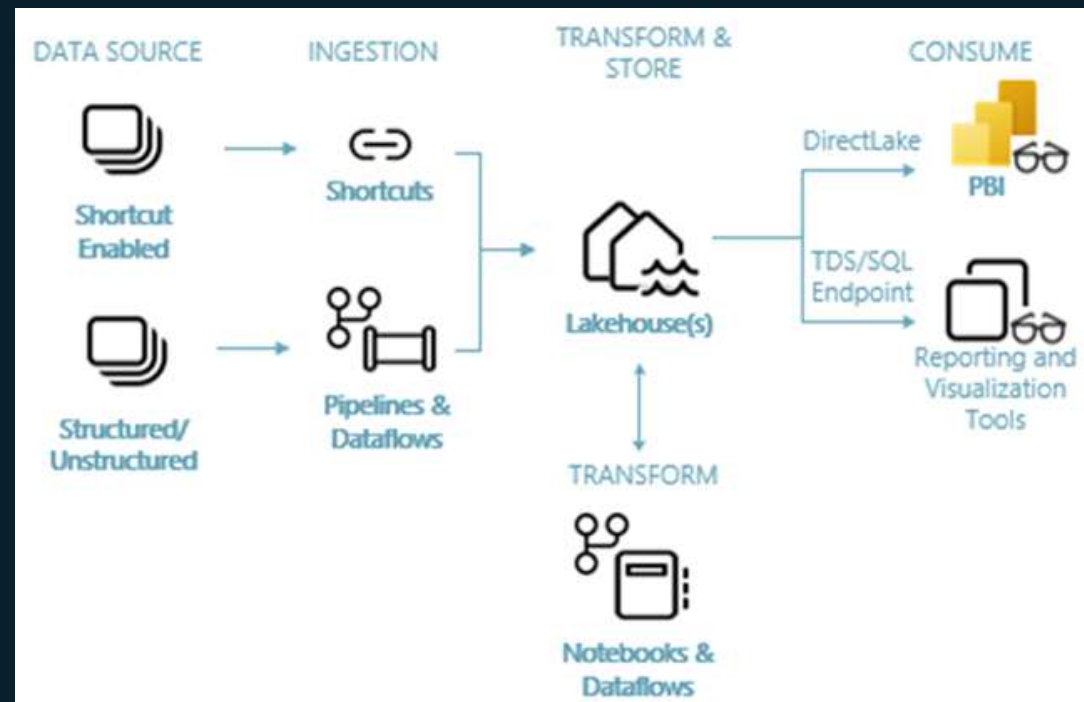## https://aka.ms/fabric-hod/lab1

Create a lakehouse

Ingest, Transform and load data into the lakehouse using Pipelines, dataflows and notebooks

Explore OneLake, OneCopy of your data across lake mode and warehouse mode

Connect to your lakehouse using TDS/SQL endpoint

Create Power BI report using DirectLake – to analyze sales data across different dimensions

Orchestrate and schedule data ingestion and transformation flow with Pipeline

Lunch break
Return at 01:30 PM