

# Microsoft Fabric介紹

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- 解決方案架構師
- 雲馥數位

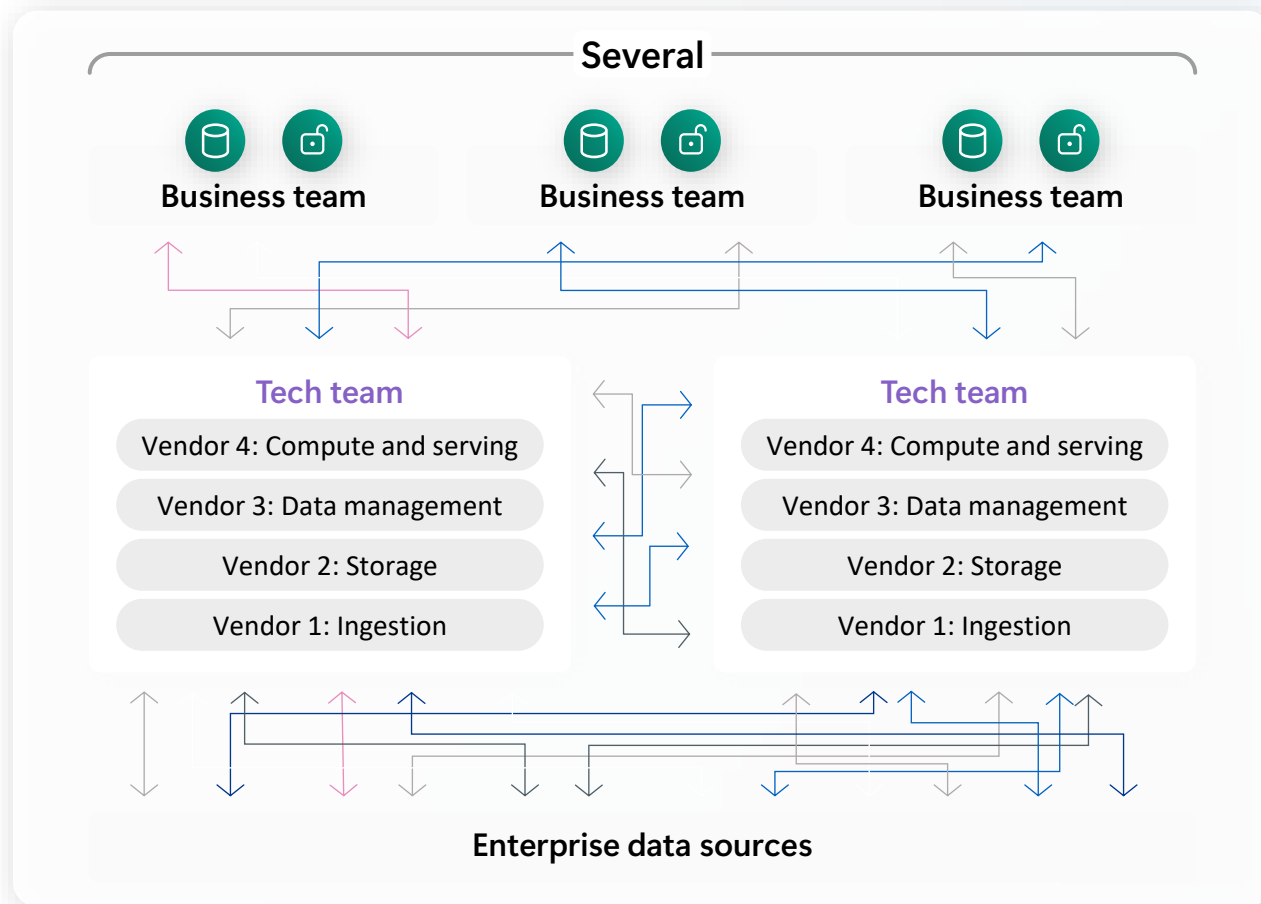
# Agenda

- 產業現況
- Microsoft Fabric介紹
- Microsoft Fabric及Power BI授權
- Demo
- 成功案例
- 需求訪談
- 下一步

# 產業現況

# AI只會加劇你現有的資料問題

「一個複雜、自然演變的資料資產」



1

低效能的資料複製與基礎架構

2

供應商服務之間的互通性有限

3

資料外洩風險

4

供應商擴散

# 現今數據現況

我擁有哪些**資料**?

這些資料**值得信任**嗎?

能否存取取作出**正確決策**所需的資料?

我該如何加速數據的**商業洞察**?

我的**合規風險**有多大?

資料治理

資料安全

資料所有權

# 強化資料資產時面臨高度複雜性

The image displays a vast collection of logos for companies and technologies, organized into several main categories:

- INFRASTRUCTURE:** Includes logos for storage (AWS, IBM, VAST), data lakes (Dremio, Databricks), databases (MongoDB, AWS, Oracle), and various cloud providers (AWS, Azure, Google Cloud).
- ANALYTICS:** Features visualization tools like Tableau and Power BI, and data science notebooks like Jupyter and Databricks.
- MACHINE LEARNING & ARTIFICIAL INTELLIGENCE:** Lists companies like Databricks, Scale AI, and Hivework, along with various AI observability and security tools.
- APPLICATIONS — ENTERPRISE:** Shows logos for customer experience, human capital, and automation & operations, including companies like HireVue and UiPath.
- APPLICATIONS — HORIZONTAL:** Includes code documentation, text, audio & voice, and video generation tools.
- APPLICATIONS — INDUSTRY:** Displays logos for finance & insurance, healthcare, life sciences, and transportation.
- OPEN SOURCE INFRASTRUCTURE:** Lists various open-source frameworks and tools like PyTorch, TensorFlow, and Apache Spark.
- DATA SOURCES & APIs:** Shows logos for data marketplaces and various APIs.
- DATA & AI CONSULTING:** Features logos for consulting firms like Deloitte, PwC, and Accenture.

Version 1.0 - March 2024 © Matt Turck (@mattturck), Aman Kabeer (@AmanKabear11) & FirstMark (@firstmarkcap) Blog post: matturck.com/MAD2024 Interactive version: MAD.firstmarkcap.com Comments? Email MAD2024@firstmarkcap.com

# 現代化的資料與分析架構，加速資料價值創造



低效能的資料複製與基礎架構



供應商服務之間的互通性有限



資料外洩風險



供應商擴散



單一、全組織的資料湖，促進負責任的資料探索與使用



整合資料庫的統一資料來源，助力更智慧的決策與擴展性



端到端的可視性與治理，降低風險並維持信任



統一的資料平台，簡化並集中管理，同時降低成本

# Microsoft Fabric介紹



# Microsoft Fabric

AI時代的統一資料平台

From

多種分析服務

分散且未連接的資料源

孤立的應用程式

外加式生成式AI

To

統一的技術棧

資料源集中

完整資料資產

內建生成式AI

Microsoft Fabric empowers every business user



# Microsoft Fabric

暫停 (k)

0:00 / 3:18



# 完整的分析平台

作為**軟件即服務 ( SaaS )** 平台，Fabric自動集成和優化，集中式管理和治理，讓企業能夠簡單註冊，就獲得龐大的商業價值。

## 完整的 分析平台

一切統合

SaaS化

安全且受治理



Data  
Factory



Real-Time  
Intelligence



Databases



Analytics



Industry  
Solutions



Power BI



Partner  
solutions



Copilot in Fabric



OneLake



Microsoft Purview

# Fabric 統一容量

Fabric 統一數據集成、數據工程、數據倉庫、商業智慧，僅須購買一個容量，即可使用所有功能，不再需要根據不同的業務添購不同的服務，大大簡化採購及管理的過程。

The screenshot displays the Microsoft Fabric interface for the 'Contoso Operations' workspace. The main area shows a data pipeline with three tasks: 'Streaming data in...' (5 items), 'Data track' (9 items), and 'Store streaming da...' (8 items). The 'Data track' task is connected to 'Streaming data in...' and 'Store streaming da...'. The 'Store streaming da...' task is connected to 'Data track' and 'Near real-time dat...' (3 items). The right sidebar shows 'Event analytics' and 'Tasks' (4 Tasks: Streaming data ingest, Store streaming data, Data track). Below the pipeline is a table of tasks.

Name	Type	Task	Owner	Refreshed	Next refresh	Endorsement	Sensitivity	Included in app
CustomerServiceInteractions	Lakehouse	Store streaming ...	Patrick Baumgartner	—	—	—	Confidential/Micros...	○
CustomerServiceInteractions	Semantic model (de...	Store streaming ...	Contoso Operations	6/12/2024, 3:46:58 AM	N/A	—	Confidential/Micros...	○
CustomerServiceInteractions	SQL analytics endpo...	Store streaming ...	Contoso Operations	—	N/A	—	Confidential/Micros...	○
Deliveries	Eventstream	Streaming data i...	Tessa Kloster (PALMER)	—	—	—	Confidential/Micros...	○
Deliveries	Real-Time Dashboard	Near real-time d...	Tessa Kloster (PALMER)	—	—	—	Confidential/Micros...	○
Delivery_kqs	KQL Queryset	Data track	Gilles LHerault	—	—	—	Confidential/Micros...	○
Delivery_lh	Lakehouse	Store streaming ...	Gilles LHerault	—	—	—	Confidential/Micros...	○
Delivery_lh	Semantic model (de...	Store streaming ...	Contoso Operations	4/5/2024, 1:44:20 PM	N/A	—	Confidential/Micros...	○

# OneLake

OneLake = Microsoft Fabric 的「資料湖底層」，所有人的資料都將存在一個onelake中，是所有工作負載共用的底層儲存層（Storage Layer），根據儲存量去計費，隨用隨付。

OneLake  
為核心且  
開放

OneLake

單一副本

各層級保持開放



Data  
Factory



Real-Time  
Intelligence



Databases



Analytics



Industry  
Solutions



Power BI



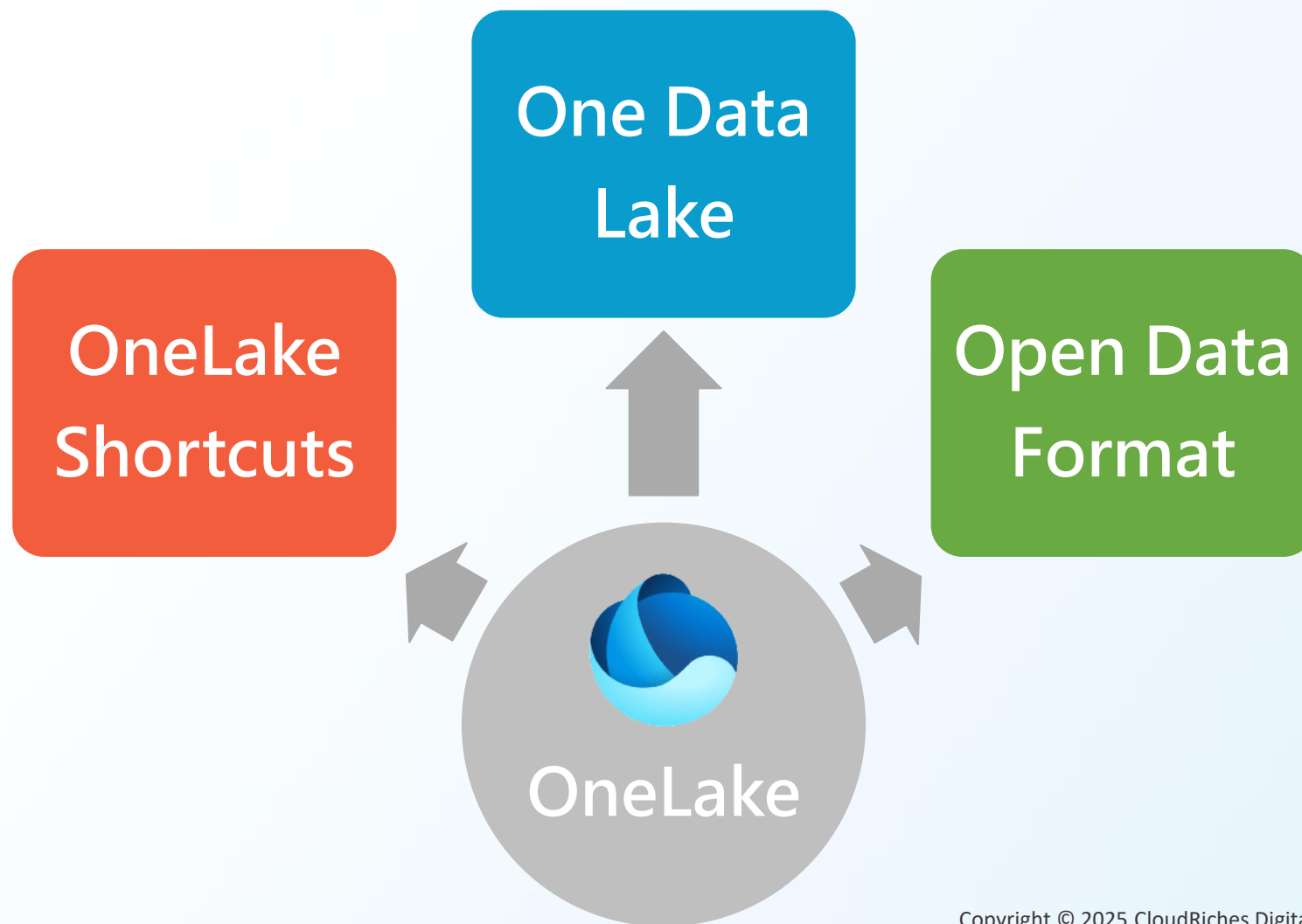
Partner  
solutions



OneLake

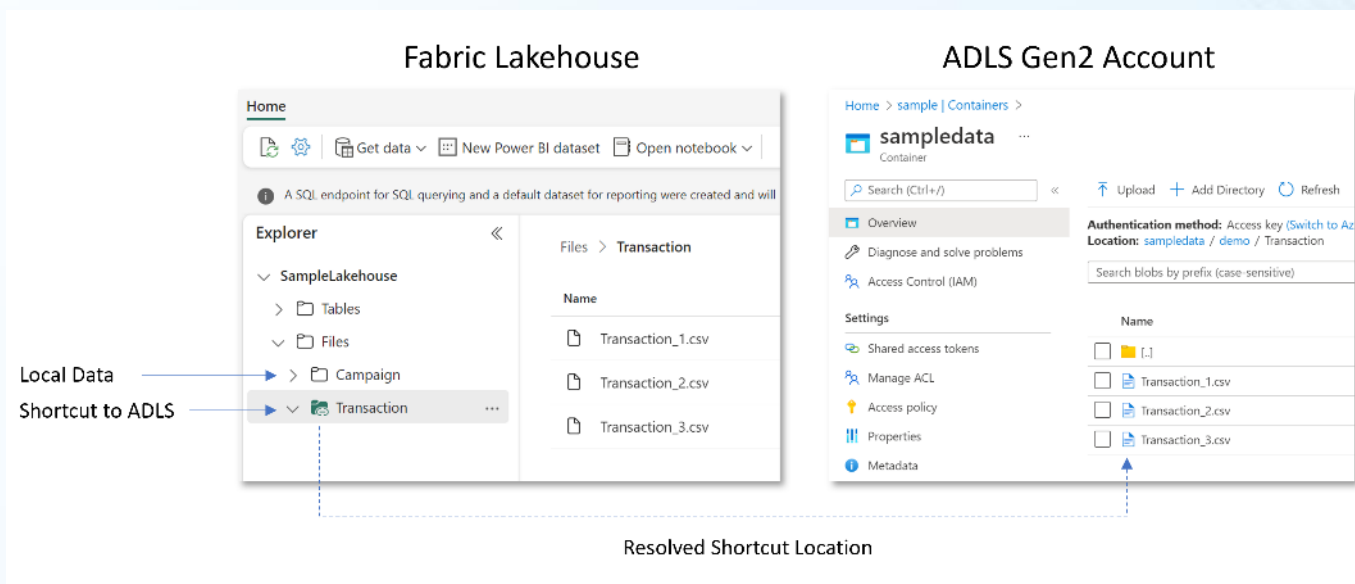
智慧型AI基礎

# OneLake三大關鍵概念



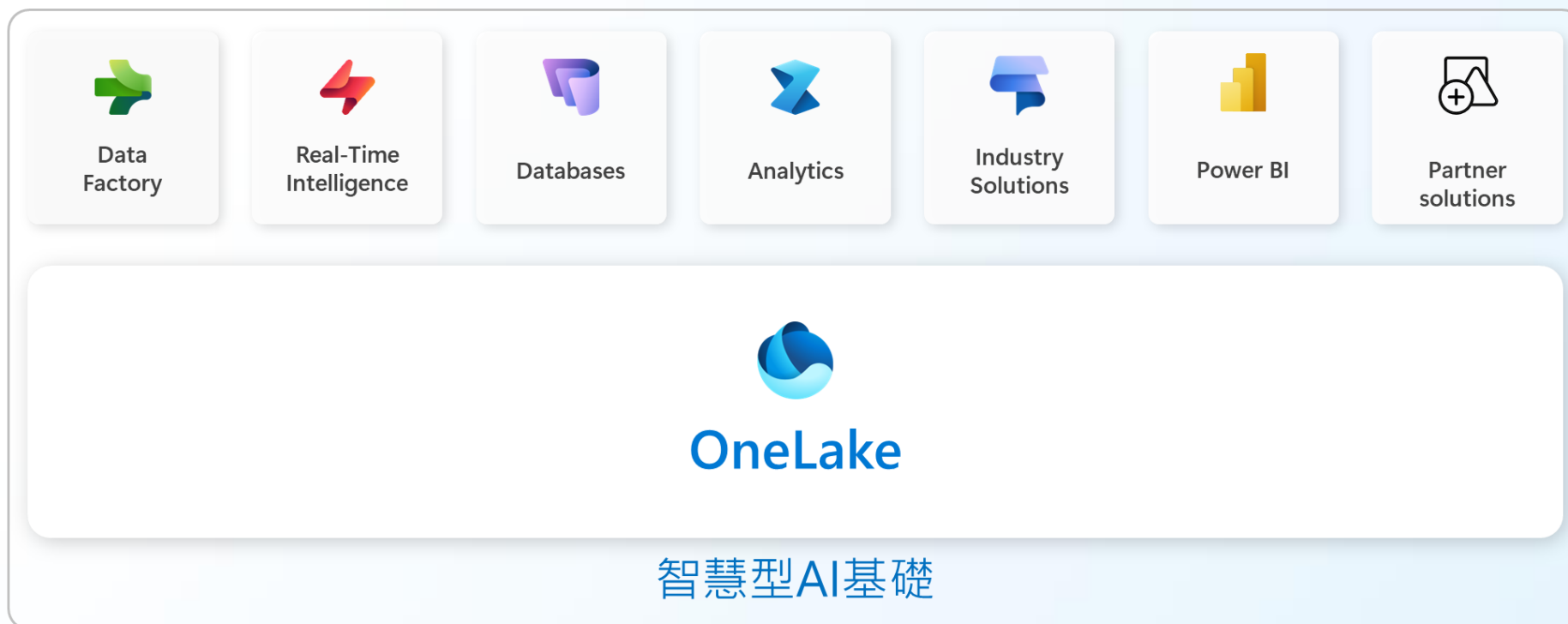
# OneLake Shortcuts

OneLake 的目標是讓使用者在**單一份資料**中提供最大的價值，而不需要移動或複製資料。您不再需要為了與另一個引擎一起使用，或為了分析其他來源的資料，而複製資料，進而消除資料的孤島效應。



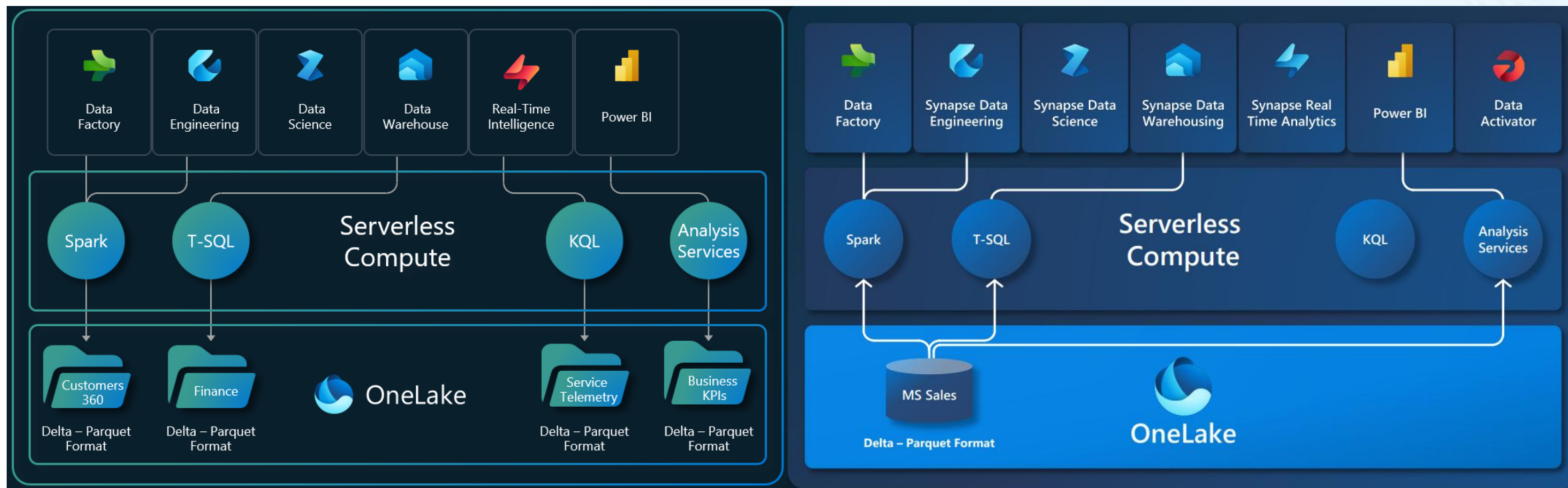
# One Data Lake

所有 Fabric 工作負載 ( Data Factory、Data Engineering、Data Science、Data Warehouse、Power BI 等 ) 都共用同一份儲存，解決不同開發人員自己創建存儲帳戶的混亂和**數據孤島**問題。一個Tenant就是一個Onelake，不需要也不能去配置或購買第二個onelake



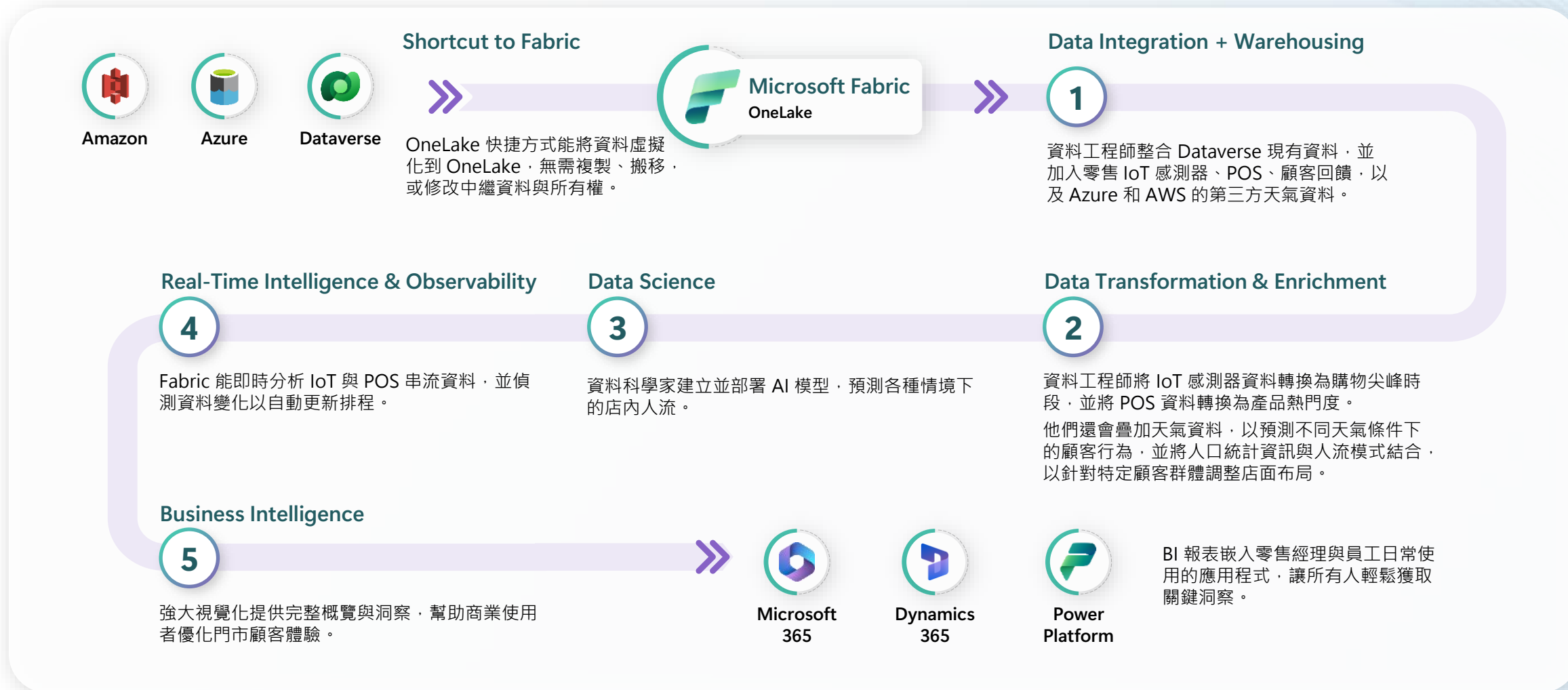
# Open Data Format

使用 Fabric 時，OneLake 會將資料以**統一**的一種格式進行儲存，並且透過 SaaS Fabric 的服務，我們不需要針對不同的引擎建置環境/驅動引擎，所有皆可直接於 Fabric 中使用



# 零售業示範案例

## Microsoft Fabric工作負載實際運作



Synapse Data Warehouse

https://dxt.powerbi.com/groups/c3740587-4abf-4220-aa77-f253369c3d28/list?experience=data-warehouse

Microsoft DXT | Synapse Data Warehouse | Contoso Outdoors

Trial: 10 days left

Home | Create | Browse | OneLake data hub | Real-Time data hub | Workspaces | Contoso Outdoors

Contoso Outdoors

Create deployment pipeline | Create app | Manage access | Workspace settings

+ New | Upload

Source control | Filter by keyword | Filter

**Real-Time Data Fe...** (Get data, 4 items) | **Batch Data Load** (Get data, 2 items) | **Anomaly Detection** (Track data, No items) | **Lakehouse** (Store data, 9 items) | **Data Clensing** (Prepare data, 1 item) | **Forecasting & Enri...** (Develop data, 1 item) | **Analyze and train** (Analyze and train data, 3 items) | **AI Models** (Analyze and train data, 1 item) | **Reporting & Visual...** (Visualize data, 6 items) | **Track** (Track data, 3 items)

**General**

Task flow details

This task flow guides you through the completion of high-level data processing tasks within Fabric and the items typically assigned to them.

Edit

**Tasks**

10 Tasks

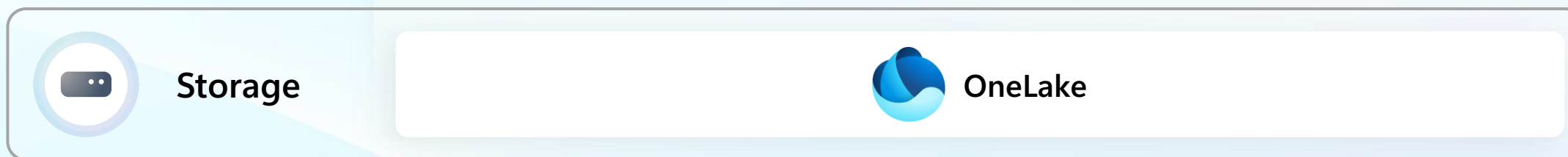
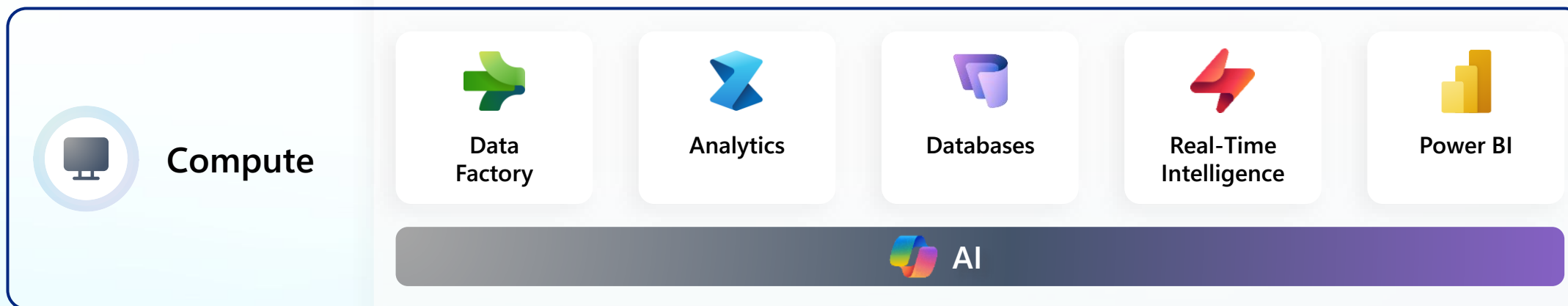
- Batch Data Load
- Lakehouse
- Analyze and train
- Data Clensing

Name	Git status	Type	Task	Owner	Refreshed	Next refresh	Endorsement	Sensitivity	Included in app
aisample-superstore-forecast	Unsupported	Experiment	Analyze and t...	Patrick Baumgar...	—	—	—	Confidential\Mic...	⊙
aisample-superstore-forecast-Sarimax	Unsupported	ML model	Analyze and t...	Patrick Baumgar...	—	—	—	Confidential\Mic...	⊙
Contoso_OutdoorsDataLake	Synced	Lakehouse	Lakehouse	Patrick Baumgar...	—	—	—	Confidential\Mic...	⊙
Contoso_OutdoorsDataLake	—	Semantic model ...	Lakehouse	Contoso Outdoors	10/31/23, 1:08:56 AM	N/A	—	Confidential\Mic...	⊙
Contoso_OutdoorsDataLake	—	SQL analytics en...	Lakehouse	Contoso Outdoors	2/4/24, 3:28:14 PM	N/A	—	Confidential\Mic...	⊙

Data Warehouse | main | Last synced: 6/17/2024 at 3:54 AM | 4e173a50

# Microsoft Fabric及 Power BI授權

# Microsoft Fabric 商業模式概覽



# Microsoft Fabric 容量模型簡介

帳單依兩項決定：**配置的運算量**與**使用的儲存量**，而非為每個工作負載單獨管理運算資源。



## Compute

共享容量池，支援 Microsoft Fabric 的所有功能。

隨用即付 或 一年保留



## Storage

單一OneLake儲存所有資料

隨用即付 (\$ per GB/ 月)

Note: For more information, see the [Microsoft Fabric licensing concepts documentation](#)

# Fabric容量計價

Fabric 容量各區域定價不同，下表為美國西部 2 區參考價。可於 [Azure 入口網站](#) 購買，詳見 [Fabric pricing page](#)。

1 CU pay-as-you-go price at US West 2

*\$0.18/hour*

SKU	Capacity unit (CU)	Pay-as-you-go (monthly)	Reservation (monthly) <i>~40.5% saving over Pay-as-you-go</i>
F 2	2	\$262.8	\$156.334
F 4	4	\$525.6	\$312.667
F 8	8	\$1,051.2	\$625.334
F 16	16	\$2,102.4	\$1,250.667
F 32	32	\$4,204.8	\$2,501.334
F 64	64	\$8,409.6	\$5,002.667
F 128	128	\$16,819.2	\$10,005.334
F 256	256	\$33,638.4	\$20,010.667
F 512	512	\$67,276.8	\$40,021.334
F 1,024	1,024	\$134,553.6	\$80,042.667
F 2,048	2,048	\$269,107.2	\$160,085.334

## Note:

- 1 CU PAYGO monthly rate calculation:  $\$0.18 \times 730 = \$131.4$ . F2 =  $\$131.4 \times 2 = \$262.8$
- 1 CU RI monthly rate calculation:  $\text{Round} (\$0.18 \times (1 - 0.405) \times 730 \times 12,0) / 12 = \sim \$78.166\dots$ . F2 RI =  $\sim \$78.166\dots \times 2 = \sim \$156.334$

- Power BI Pro license is required for all Power BI Premium ("P") and Fabric Capacity ("F") SKUs to publish Power BI content to Microsoft Fabric. Enabling content consumers to review and interact with Power BI reports without additional paid per-user licenses is available at P1 and above (and F64 and above).

# Power BI and Fabric licensing



## Power BI Pro or Premium per user licensing

- Allows you to publishing Power BI content within the Power BI or Fabric
- Allows you to share Power BI reports with users who have Power Pro or PPU user licenses
- PPU grants access to premium features and the ability to access content in PPU workspaces



## Fabric licensing

- Allows you to share Power BI reports with users who only have free accounts (F64 or higher)
- Grants you access to Power BI Embedded
- Grants you access to Power BI Report Server

## Licensing scenario

- An org has 20,000 employees across the world
- They want everyone to access Power BI reports but estimate only 1,000 employees will create reports
- They also estimate they consume ~F128 worth of CUs

## Licensing requirement

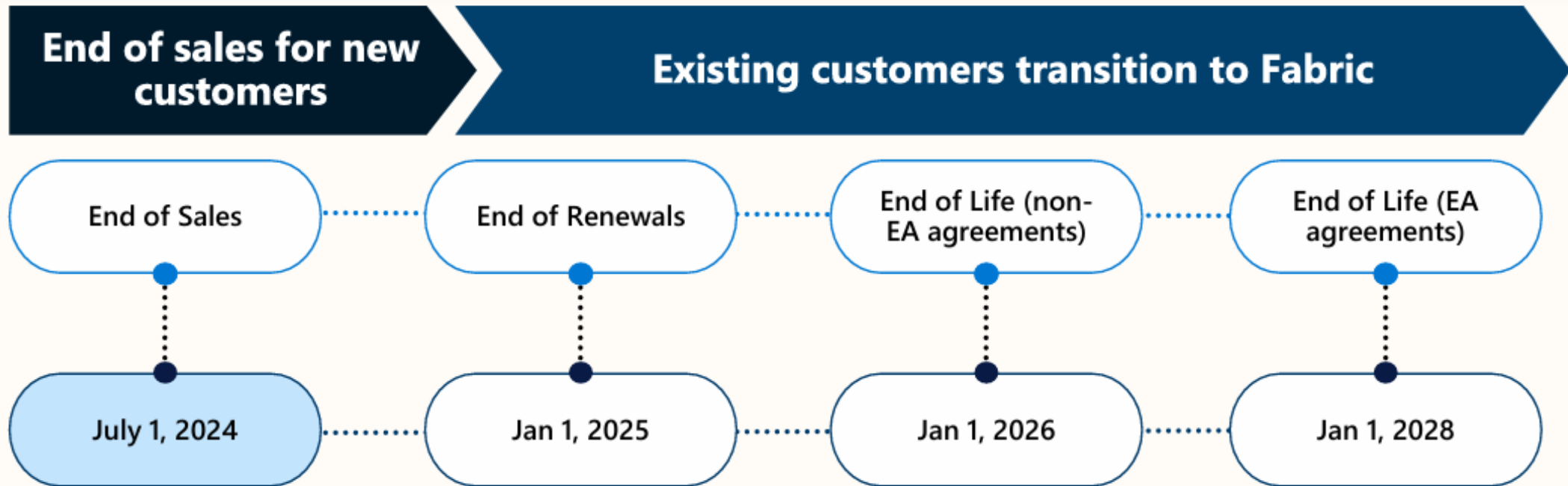
- For their report creators, they need to be licensed with Power BI Pro
- They also need an F64 or higher to host reports that will be shared with free accounts

Licensing Scenario: Fabric and Power BI

Power BI Pro licenses	\$10 user/month
Number of users licensed with Power BI Pro	1,000 users
Fabric add-on	~\$10,000 per month for F128
Total cost	\$20,000 per month
Total cost without Fabric	\$200,000 per month minimum

# Transitioning Power BI Premium capacity to Fabric

Power BI Premium per capacity SKUs (P-SKUs) are being retired and customers should transition to a Microsoft Fabric SKU at the time of their next renewal. **The Power BI Premium product capabilities will not change and there is no immediate action required.**



For additional documentation on the Power BI Premium per capacity transition to Fabric, please see here: <https://aka.ms/P-SKU-Blog>



# Translating Microsoft Fabric SKUs

Power BI Premium per capacity SKUs	
SKU	PBI vCore
P1	8
P2	16
P3	32
P4	64
P5	128



Microsoft Fabric SKUs	
SKU	CU
F2-F32	2-32
F 64	64
F 128	128
F 256	256
F 512	512
F 1024	1024

## Benefits of Microsoft Fabric SKUs

- MACC eligibility
- Pay-as-you-go option
- Smaller starting SKU options

## Migrating to F-SKUs

- Simply reassign workspaces to the new F-SKU capacity
- Bulk reassign to save time

For additional documentation on the Power BI Premium per capacity transition to Fabric, please see here: <https://aka.ms/P-SKU-Blog>



# Consuming shared content with Fabric and PPU

	Users with this license type can view/access the content		
	Pro	Microsoft Fabric	Premium Per User
If you create/share BI content in this type of workspace	Pro	No	Yes
	Microsoft Fabric	Yes	Yes
	Premium Per User	No	Yes

- In a Pro workspace, users with Power BI Pro license can collaborate with other users with Power BI Pro and Premium Per User licenses.
- To view content in a Premium Per User workspace, a user must have a Premium Per User license. The content created by a Premium Per User licensed user can only be shared with other users that have a Premium Per User license, unless that content is specifically put on a workspace hosted on a Fabric capacity.
- When workspaces are in Fabric capacity, users with Power BI Pro or Premium Per User may distribute content to users who don't have a per user license.

# Feature<sup>1</sup> availability across licenses

Feature	Power BI Pro	Power BI Premium per user	Microsoft Fabric
<b>Collaboration and analytics</b>			
Mobile app access	•	•	•
Publish reports to share and collaborate	•	•	
Paginated (RDL) reports		•	•
Consume content without a per-user license			•
<b>Data prep, modeling, and visualization</b>			
Model size limit	1 GB	100 GB	400 GB
Refresh rate	8/day	48/day	48/day
Connect to 100+ data sources	•	•	•
Create reports and visualizations with Power BI Desktop	•	•	•
Embed APIs and controls	•	•	•
AI visuals	•	•	•
Advanced AI (text analytics, image detection, automated machine learning)		•	•
XMLA endpoint read/write connectivity		•	•
Dataflows (direct query, linked and computed entities, enhanced compute engine)		•	•
Analyze data stored in Azure Data Lake Storage		•	•
<b>Governance and administration</b>			
Data security and encryption	•	•	•
Metrics for content creation, consumption, and publishing	•	•	•
Application lifecycle management		•	•
Multi-geo deployment management			•

<sup>1</sup>Select features for comparison purposes – not inclusive of all functionality available across each SKU.

# Demo

Contoso Daily Sales | Data updated 1/12/23

File Home Insert View

Search (Alt+Q)

Export

### Sales Overview

Date: 06/01/2022 - 01/12/2023

Revenue Won \$7,720,093	Close % 28.3%	AVG Days to Close 84	Opportunities Won 334
----------------------------	------------------	-------------------------	--------------------------

#### Revenue Won by Month

Month	Revenue Won (\$M)
June 2022	0.2
July 2022	0.2
Aug 2022	0.8
Sep 2022	0.5
Oct 2022	0.8
Nov 2022	1.4
Dec 2022	1.8
Jan 2023	1.5

#### Close % by Month

Month	Close %
May	23%
Jun	32%
Jul	26%
Aug	37%
Sep	37%
Oct	38%
Nov	51%
Dec	47%
Jan	37%

#### Close % by Region

#### AVG Days to Close by Month

Month	AVG Days to Close
May	116
Jun	117
Jul	117
Aug	121
Sep	114
Oct	112
Nov	109
Dec	102
Jan	96

Keep it Adjust Try again Delete

**Copilot** Preview

Create a report with Copilot  
Describe the report you want, in your own words, and Copilot will create it quickly.

Help me build a sales report summarizing our key metrics and trends

Sales overview page added

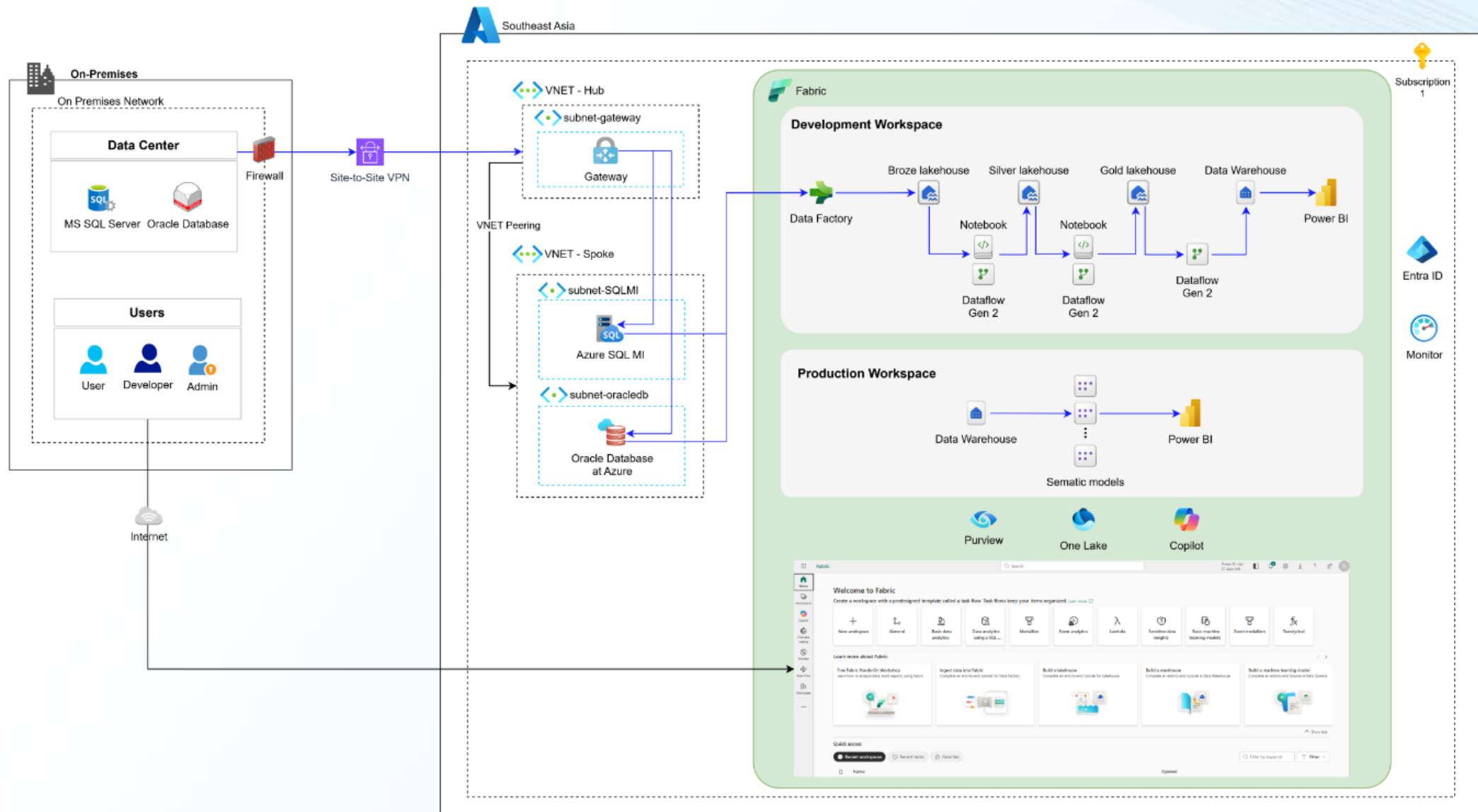
Ask a question or type / for suggestions

AI-generated content can have mistakes. Make sure it's accurate and appropriate before using it. [Read preview terms](#)

to finding insights and creating reports,

# 成功案例

# 架構方案 (1/2)



# 架構方案 (2/2)

The screenshot displays the Microsoft Fabric workspace interface. At the top, the workspace name is 'FabCon'. The main area shows a data pipeline with the following steps: 'Bronze data' (Lakehouse), 'Initial process' (Prepare data), 'Silver data' (Lakehouse), 'Further transform' (Prepare data), 'Golden data' (Lakehouse), 'Copy' (Prepare data), and 'AnalyticWH' (Warehouse). The 'Copy' and 'AnalyticWH' steps are highlighted in a green box labeled '可視化資料存放' (Visualization data storage). To the right, there are two additional components: 'Visualize' (Visualize data) and 'Analyze and train' (Analyze and train data). The 'Visualize' component is highlighted in a yellow box labeled '可視化' (Visualization), and the 'Analyze and train' component is highlighted in a pink box labeled 'AI代理' (AI Agent). Below the pipeline, a table lists the items in the workspace.

Name	Status	Type	Task	Owner	Refreshed	Next refresh	Endorsement	Sensitivity	Included in app
AnalysisReportEUS2		Report	Visualize	FabCon	11/18/2025, 5:26:45 PM	—	—	—	No
AnalyticLH		Lakehouse	Golden data	Selina Hsiao	—	—	—	—	
AnalyticLH		SQL analytics end...	Golden data	Selina Hsiao	—	—	—	—	
AnalyticWH		Warehouse	AnalyticWH	Selina Hsiao	—	—	—	—	
Bronze		Lakehouse	Bronze data	Selina Hsiao	—	—	—	—	
Bronze		SQL analytics end...	Bronze data	Selina Hsiao	—	—	—	—	
copyjob1		Copy job	Copy	Selina Hsiao	—	—	—	—	
copyjobeastus2		Copy job	Copy	Selina Hsiao	—	—	—	—	

# 需求訪談

# 需求調查表

## 基本調查

1. 是否有使用Microsoft M365、Azure、Power BI等服務?
2. 若使用M365或Power BI，請提供目前購買的授權版本及用戶數。

## 資料來源

1. 請提供現況環境說明、資源規格、使用率及架構圖。
2. 若有多個資料來源，請分別回答以下問題：
  - 資料庫位於地端或雲端?
  - 資料庫類型及版本
  - 硬體規格
  - 資料報表與欄位屬性 (請提供sample data及欄位說明)
  - 是否為關聯表單? 表單Schema定義是否一致?
  - 有多少筆資料? 歷史資料量需要回溯多遠?

## 架構方案

1. 是否指定資源建置區域 (如：日本東、東南亞)?
2. 是否有合規性要求或公司規範需符合 (如：網路安全、防資料外洩等)?
3. 除購買Microsoft Fabric/ Power BI授權外，是否需要雲馥協助建立資料ETL/ ELT、資料分析、資料視覺化流程?
4. 請填寫[Microsoft Fabric SKU Estimator](#)，並將詳細參數設定及估算結果存為PDF檔。
5. 請提供權限劃分設計邏輯及人員清單。

# Microsoft Fabric Workshop Agenda (3hr)

## Topic 1 : Microsoft Fabric簡介 (50分鐘)

- 1-1 功能說明
- 1-2 操作介面
- 1-3 七大工作負載
- 1-3 Data Pipeline vs. Dataflow Gen2
- 1-4 Lakehouse vs. Warehouse

## Topic 2 : Copilot in Fabric (20分鐘)

- 2-1 Copilot in Fabric簡介
- 2-2 Copilot in Fabric設定
- 2-3 資料工廠中的Copilot
- 2-4 資料倉儲中的Copilot
- 2-5 即時智慧中的Copilot
- 2-6 監視Copilot用量及計費

## 中場休息 (10分鐘)

## Topic 3 : Power BI Desktop (50分鐘)

- 3-1 為AI準備資料
- 3-2 AI數據架構
- 3-3 已驗證的答案
- 3-4 AI指示
- 3-5 使用Copilot提升問答性能
- 3-6 優化Copilot的語意模型

## Topic 4 : 應用案例及展示 (20分鐘)

## Topic 5 : Q & A (10分鐘)



*Thank you & Contact us !*

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