

Dynamics data in Synapse Link for Dataverse

- Transitioning from Export to Data Lake to Synapse Link

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This is a series of TechTalks...



Today

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1. Synapse Link for Dataverse overview
 2. **Architecture patterns and virtual data warehousing**
Explore patterns and get started with virtual data warehousing using Synapse Link.
 3. **Explore Cloud Data Warehousing** and ingesting data from lake to cloud MPP warehouse, transforming data using TSQL, and incremental data ingestion.
 4. **Explore Lakehouse architecture**, reading and transforming data using spark notebooks.

Agenda

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1. Upgrade to Synapse Link (Recap from previous)
 2. Architecture pattern & transition guidance
 3. Virtual Data warehousing with Synapse Link
 4. Step by Step demo
 5. Q&A

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Transition

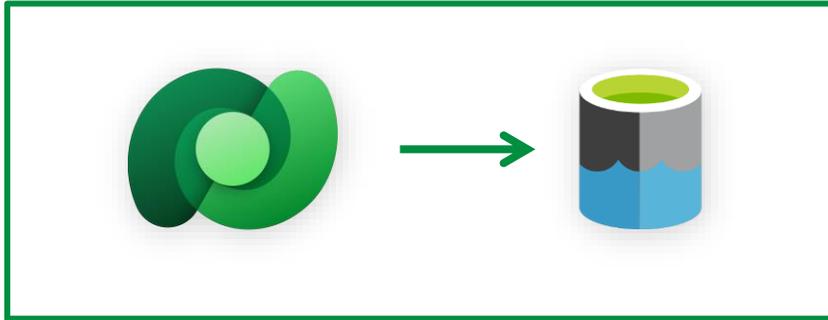
Upgrade to Synapse Link

Business benefits

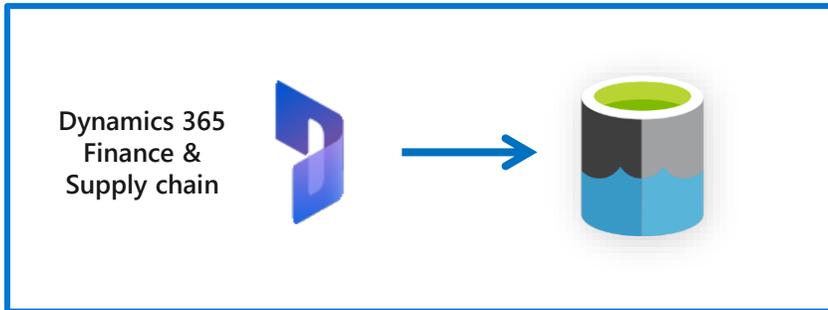
Expected effort and timelines

Previously : Synapse Link & Export to Data Lake

Synapse Link for Dataverse



Export to Data lake



Synapse Analytics helps working with data using SQL and other tools



Power BI for data visualization and story telling

One experience to integrate all Dynamics data for Analytics

Synapse Link for Dataverse



One experience to integrate all your data for Analytics



Synapse Analytics helps working with data using SQL and other tools



Power BI for data visualization and story telling

This is an evolution and unification of our approach across Dynamics products

Unlock AI driven insights and action with Link to Fabric

Dataverse Link to Fabric



One experience to integrate all your data for Analytics



Microsoft Fabric combines Synapse Analytics, Power BI and more into a single, unified experience on the cloud

Upgrading to Synapse Link provides a path to innovations in Microsoft Fabric

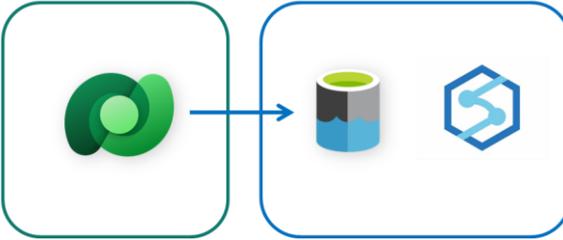
Extend your investments to AI driven insights & action

This is an evolution and unification of our approach across all Dynamics products

Legacy data integration services

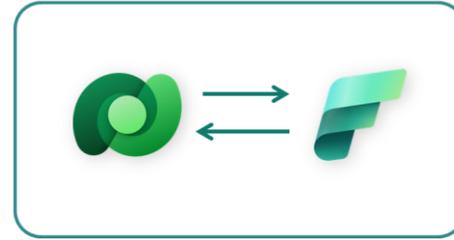
- Data Export Service (DES)
- Bring your own DB (BYOD)
- Export to Data Lake

Synapse Link for Dataverse



Generally available

Link to Microsoft Fabric



In public preview

Upgrade to Synapse Link*

Low code insights & action

Simplify data integration &
Reduce total cost of ownership

Data shapes remain the same –
no need to re-build

No-ETL, no-copy, two-way
integration enables Low code makers

AI driven insights & action with built-
in Copilots

* Existing customers have until 1-Nov-2024 to transition from Export to Data lake to Synapse Link. We advise new customers to use Synapse Link

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Architecture patterns and transition

Common analytics architecture patterns and transition strategy from export to data lake to Synapse link and Microsoft Fabric

Overview of common analytics architecture patterns



#1 Virtual data warehousing

(Reading data from data lake using TSQL views and SPs)



2 Lakehouse

(Reading and transforming data using spark notebooks)



3 Cloud Data warehousing

(Ingesting data from lake to cloud MPP data warehouse, transform data using TSQL)



4 Integration using TSQL

(Incremental ingestion of data to relational DB (SQL Server) or third party DW)

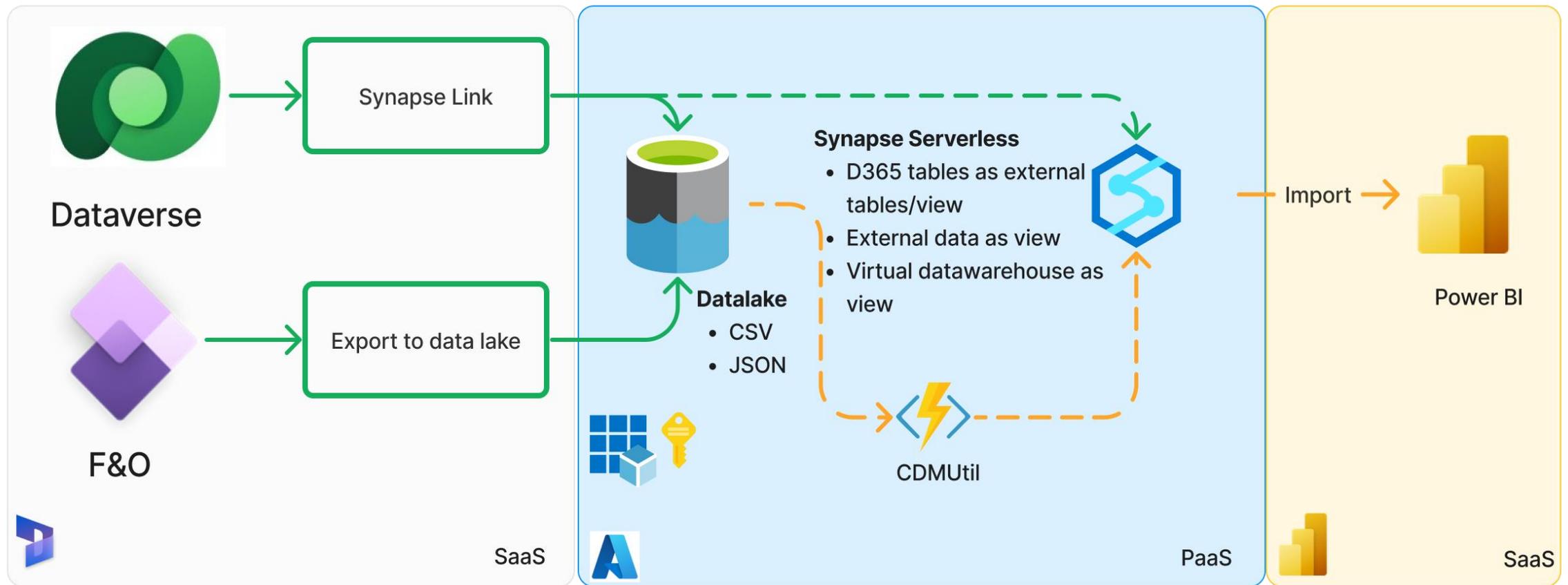
Click on the links above to go to the relevant section.

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Virtual data warehouse

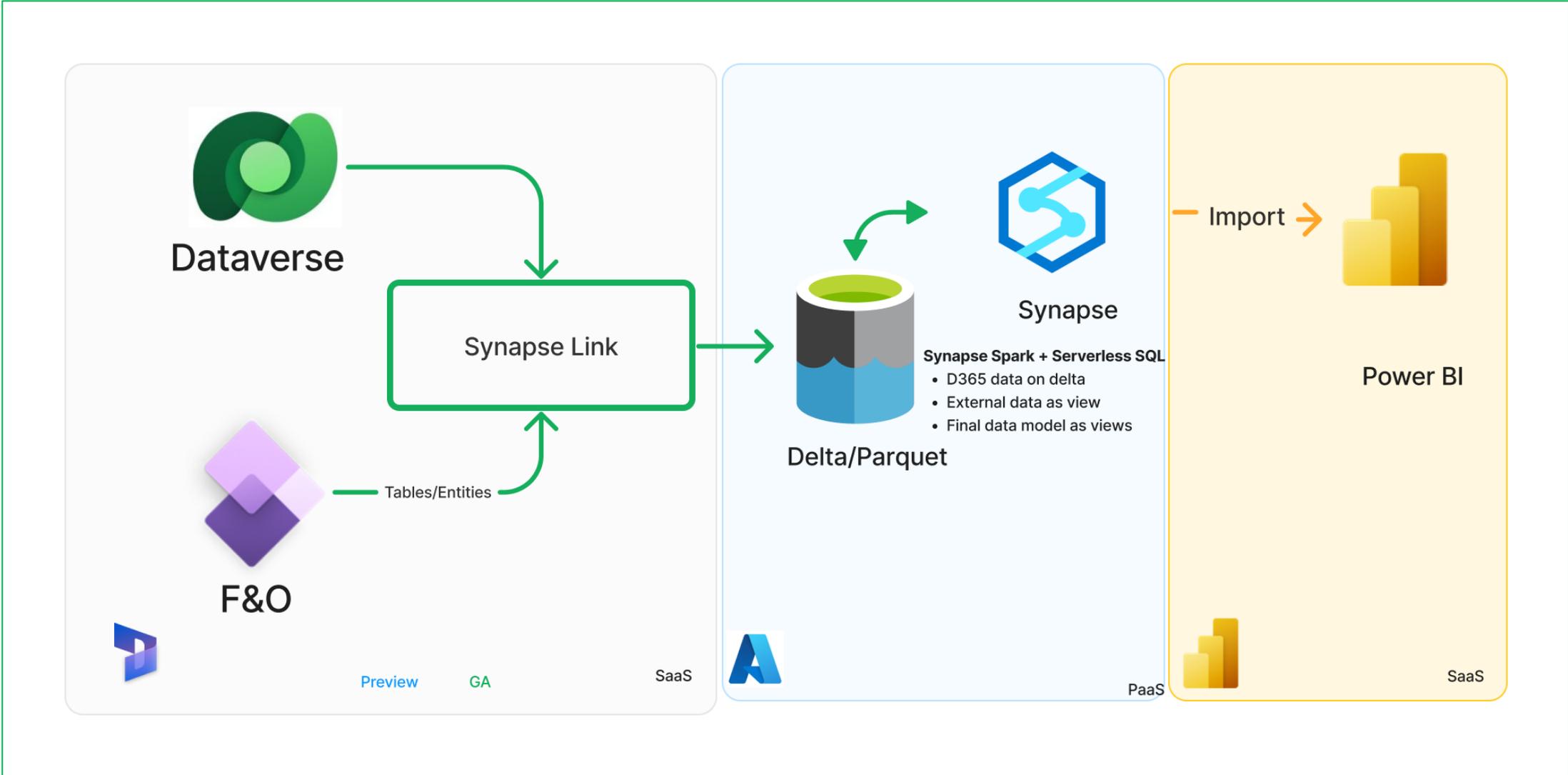
How you can upgrade your virtual data warehouse from Export to Data lake to Synapse Link

#1 Virtual data warehousing: Synapse Link & Export to data lake, with Synapse Serverless



Previous pattern

#1 Virtual data warehousing : Synapse Link (BYOL) with Synapse Spark & Serverless SQL



New pattern with Synapse Analytics

Step-by-step: Transition virtual datawarehousing using Synapse Spark + Serverless

Prerequisites	#	Steps
Extract Synapse serverless objects, use SSDT tool to automate. (Other than F&O tables views created by CDMUtil)	1	Create a new SQL database in Azure Synapse Serverless.
	2	Create VIEWS in the new database for tables/entities.
	3	Deploy additional objects on new database
Setup Synapse Link for finance and operations apps data: Link	4	Update downstream applications to new serverless db.
Configure Azure Synapse Workspace and Spark Pool Link	5	Validate end-to-end solution

Tool to get started quickly:

Considerations

When creating the VIEWS within the serverless database you can add audit column names as those in the Export to data lake feature, this will reduce the effort on updating pipelines etc... that use those columns.

Demo: upgrade your virtual data warehouse

Upgrade to Synapse Link: Total cost of ownership

A cost comparison for Operational reporting with near-real time reporting*

	Export to data lake	Synapse Link for Dataverse
Start-up & configuration - Additional software licenses - System configuration - Data migration/initialization - Development and validation		Simpler configuration experience
Operating Costs - Data integration - Azure storage staging area - Data pipelines - Data ingestion into SQL or Dwh - Development/ maintenance	Azure storage Synapse Analytics (SQL query) Data Factory jobs SQL or Data warehouse storage Mts. of data pipelines	Azure storage costs - ~60% less due Synapse analytics (spark) - +\$300-\$3,000 mo*
Operating Costs – Reporting - Power BI datasets - Reporting	Synapse analytics (SQL Query) Power BI capacity	

Operational reporting cost comparison

	Export to data lake (CSV)	Synapse Link for Dataverse (Delta)
Data storage	Total DB – 615 GB Varies by table, ex. INVENTTRANS: 1.3GB	Total: 98 GB (6x compression) INVENTTRANS: 360MB (6x compression)
Operating Costs – data integration	Data Factory jobs SQL or Data warehouse storage Mts. of data pipelines	Synapse analytics (spark) - +\$300-\$3,000 mo*
Operating Costs – Query and reporting	Synapse query - \$10,630 /month (1)	Synapse query - \$ 1,701 /month (2) (6x reduction)

NOTE 1: Synapse Query charges based on total data processed, which in this case was 2,126 TB (@\$5/TB)

- NOTE 2:** 10x query cost reduction due to
1. 10x data compression
 2. Delta/parquet format is more efficient Partition elimination

What are the benefits – deep dive

Area	What is changing	Effort	Value add
Admin and setup experience	LCS to Power platform maker portal for setup and add tables	Admin user training	Data from <u>all Dynamics apps</u> available in a simple experience
Tables available to use	Tables must have row version change tracking enabled Common OOB already enabled	One-time small X++ effort to extend missing OOB or custom tables	# of table limit is not applicable Default support for large memo fields
Change tracking mechanisms	CDC to Row version change tracking	No effort	Lower impact on operational database Full refresh is not needed to recover from failure/Database failovers/ movements
Integration with Synapse and Microsoft Fabric	No need of CDMUtil	Saved effort	Configures & connects Synapse workspace and Microsoft Fabric
Data format	Data format changes from CSV to delta lake BYOL – Customer Synapse Spark for delta conversion	No effort	Faster queries, smaller files, no update conflicts Integrated with Microsoft Fabric data platform for the age of AI
Data transformation/ETL	Adapt to any small audit field changes in ETL and data locations as applicable	Low effort to adapt	
Incremental data Integration	Adapt to Synapse link folder structure and audit fields and incremental logic	Low effort – adjusting the incremental pipelines to new Fasttrack guidance and sample available	Simpler logic to process full and incremental data with single pipeline
BI & Reporting	No change expected		

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Call to Action

Plan to transition

Learn more from community and Microsoft Team

Frequently Asked Questions

Call to Action

1. Learning

- a. Learn about the upgrade and improvements (overview + session)
- b. Configure a test environment and give it a try
- c. Review patterns and transition guidance <https://aka.ms/TransitionToSynapseLink>
- d. Join the community <https://aka.ms/SynapseLinkforDynamics>

2. Plan transition

- a. If you are using Export to data lake – plan for transition
- b. If you are planning to go live soon – adopt Synapse Link from start

3. Realize benefits of transition

- a. Simplify reporting with Delta
- b. Optimize your architecture with Microsoft Fabric

Resources

Documentation

- Synapse Link
 - [Azure Synapse Link - Power Apps | Microsoft Learn](#)
 - [Create an Azure Synapse Link for Dataverse with your Azure Synapse Workspace - Power Apps | Microsoft Learn](#)
 - [Export Microsoft Dataverse data in Delta Lake format - Power Apps | Microsoft Learn](#)
 - [Choose finance and operations data in Azure Synapse Link for Dataverse - Power Apps | Microsoft Learn](#)
 - [Use managed identities for Azure with your Azure data lake storage - Power Apps | Microsoft Learn](#)
- Microsoft Fabric
 - [Dataverse direct integration with Microsoft Fabric - Power Apps | Microsoft Learn](#)
 - [Microsoft Fabric documentation - Microsoft Fabric | Microsoft Learn](#)
- **Yammer group**
 - [Viva Engage- Synapse Link for Dynamics](#)

Video

- Dataverse
 - [Dynamics 365 Bites - Synapse Link for finance and operations apps - Getting started \(preview\) | August 2023](#)
 - [\(2747\) Build 2023: Dataverse integration for Microsoft Fabric - YouTube](#)
- Microsoft Fabric
 - [\(2747\) Microsoft Fabric: Satya Nadella at Microsoft Build 2023 – YouTube](#)
 - [Microsoft Fabric Launch Digital Event \(Day 1\) – YouTube](#)



Thank you!
See you at the next episode