Fabric Options for Dynamics 365 Business Central

Integrating ERP solutions for business intelligence.

Agenda

Introductions

Who am I and who I work for

Introduction to Microsoft Fabric

This section will introduce Microsoft Fabric, its purpose, and relevance in data management. Some my already know this content, but for those who are new to Fabric, this section will help you to gain an understand of the components we will be discussing in the rest of the presentation.

Key Benefits of Fabric

We'll explore the benefits of leveraging Fabric for your data warehousing needs.

Benefits for Data Warehousing

Discussing how Microsoft Fabric enhances data warehousing capabilities and efficiency.

Integration Technologies

Examining integration technologies for Dynamics 365 Business Central within Fabric.

Best Practices for Data Handling

Highlighting best practices for data extraction and transformation processes.

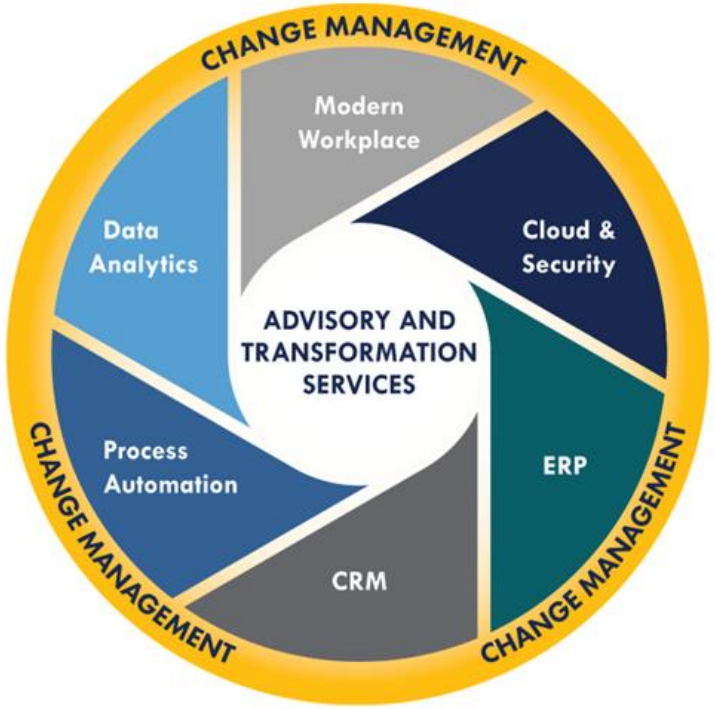
Chris Hetzler

- Experienced Solution Architect and Senior Manager.
- Over 17 years of experience with Microsoft.
- Expertise in Dynamics, Fabric, Power Platform, and Azure.
- Master degrees in Software Engineering and Data Science.
- Active contributor to industry knowledge through blogging and social media.
- 20+ Microsoft certifications, including Fabric Analyst and Fabric Engineer (DP-600 & DP-700) and Dynamics 365 Business Central Developer (MB-820)

- LinkedIn - https://www.linkedin.com/in/thehetz/
- Blog – https://www.thehetz.com/blog
- Edie Bailly – https://www.eidebailly.com/microsoft

Eide Bailly, LLP

EIDE BAILLY TECHNOLOGY CONSULTING



FOUNDED IN 1917

RANKED TOP 25 FIRM IN THE NATION

OVER 40 OFFICES IN 14 STATES

Who is Eide Bailly?

- $621 Million Revenue
- 4000+ Employees
- 50+ Offices
- 100+ Years of Success
- 260+ Technology Business Consultants
- 400+ Certifications
- Nationally Recognized
- Strategic Partnerships

Fabric Featured Partner

Microsoft

MICROSOFT IN A DAY PROGRAM

Microsoft

Delivery Partner

Fabric Analyst in a Day

Microsoft Solutions Partner

Data & AI

Azure

Specialist

Analytics

Contact us: [Business Intelligence Viability: 2-Hr Assessment – Microsoft AppSource]

Introduction to Microsoft Fabric

Comprehensive Data Management

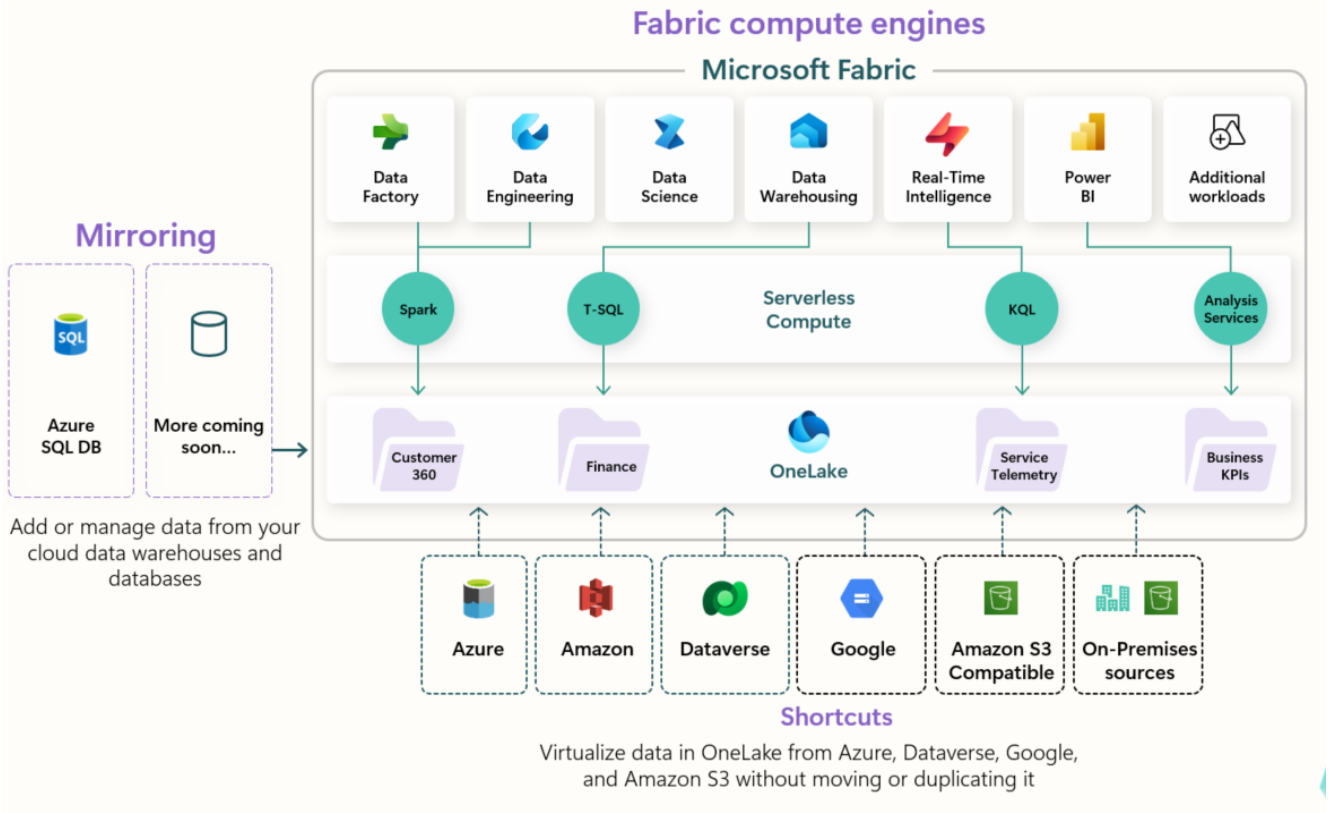
Microsoft Fabric provides a complete solution for managing data across various platforms. This ensures higher efficiency and control over data assets.

Enhanced Analytical Capabilities

The platform enhances analytical capabilities, allowing businesses to derive insights effectively. This empowers informed decision-making across the organization.

Streamlined Operations

With robust data warehouses, operations become streamlined, leading to improved productivity. This results in faster data processing and accessibility.



Key Benefits of Microsoft Fabric

Simplified Data Integration

Microsoft Fabric streamlines the integration process from various data sources, making it efficient and user-friendly. In this case, data from Business Central.

Enhanced Data Quality

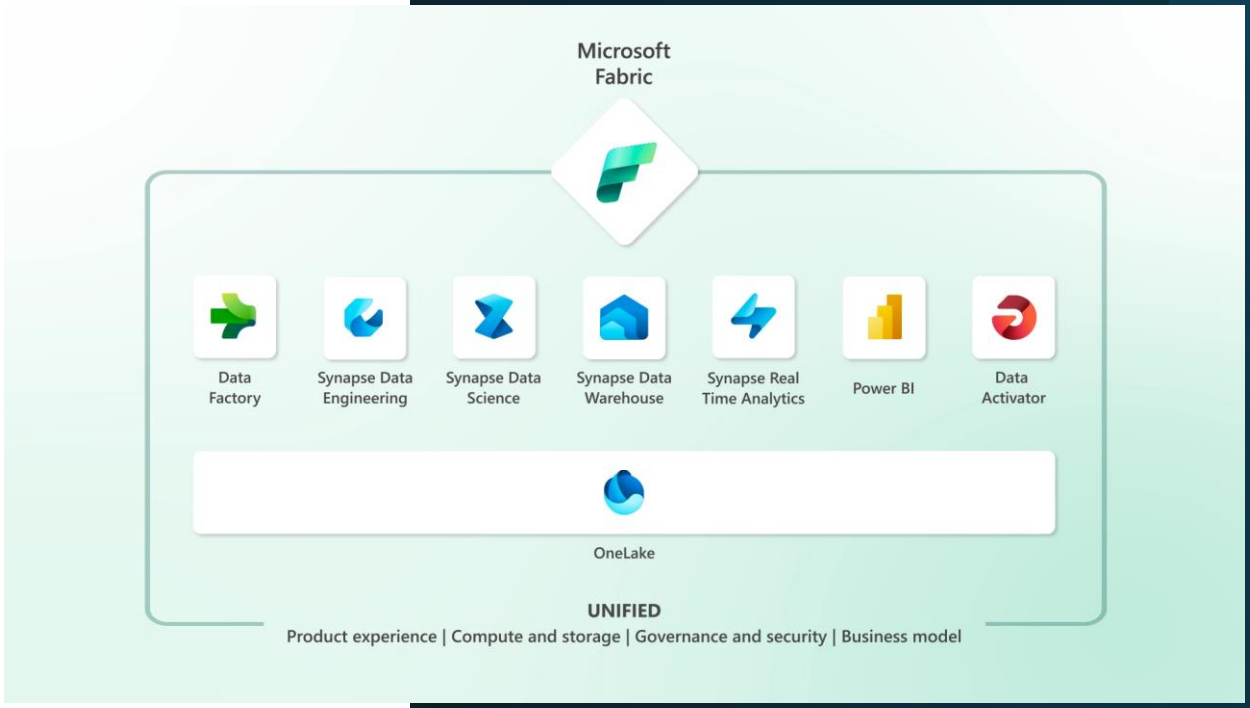
It improves data accuracy and reliability, ensuring that businesses can make informed decisions. Better monitoring is possible through streamlined and simplified mechanisms.

Power BI Support

Microsoft Fabric provides tools for advanced analytics, empowering organizations to uncover valuable insights.

Fostering Collaboration

It encourages teamwork among data professionals, enhancing productivity and innovation.



Data Warehousing

Real-World Effectiveness

Microsoft Fabric has proven effective in real-world data warehousing scenarios. Organizations have seen tangible improvements in their data management. They have also realized operational efficiencies through more effective collaboration.

Successful Implementations

Various organizations successfully implemented Microsoft Fabric to enhance their data operations. We will cover a Microsoft case study, as well as a case study from Eide Bailly. Eide Bailly now has 18 clients live on Fabric data warehouses. Medallion architectures are proving to be game changing for our clients.

Business Success

The adoption of Microsoft Fabric has led to improved business outcomes. Enhanced data practices drive overall organizational success. The efficiencies that Eide Bailly's clients have realized will be summarized during our case study overview.

Real-World Example from Microsoft:

Executive Summary

Australian rail freight operator Aurizon wanted to modernize its data warehouse to improve cost efficiency and scalability and enable predictive maintenance. Joining the Microsoft Fabric preview program and taking advantage of its data streaming functionality and AI and machine learning capabilities is helping it achieve these goals.

Data Warehousing

A significant percentage of Aurizon's cost base is associated with buying and maintaining assets. Using data and analytics to increase efficiency around maintenance is a critical element of its cost-saving strategy. The company's data also presents many opportunities for optimization around crew rostering, yard management, scheduling, and daily operations.

Predictive Maintenance

Microsoft Fabric can achieve this by providing Aurizon with a unified product that integrates every aspect of its data estate via an open software as a service (SaaS) analytics and AI platform. The Power BI integration in Microsoft Fabric helps ensure datasets no longer need to be imported and can instead be accessed using Direct Lake in Power BI. In short, they are loaded from a data lake straight into the Power BI engine—ready for analysis.

Eide Bailly Case Study:

Mi-One® Brands

Challenge Faced

Mi-Pod was struggling with a data warehouse which they did not understand, build in a technology which they did not understand (Azure Synapse). Proprietary vendor implementation of ADLS and Synapse for Business Central ETL processes.

Adoption of Microsoft Fabric

The company implemented Microsoft Fabric to centralize their data engineers and their data analysts. They have also reduced maintenance costs and downtime.

Unified View

With Microsoft Fabric, Mi-Pod gained a comprehensive view of their data, ETL processes, and reports. Staff have a “single pane of glass” to look through when it comes to their data estate.

Business Central Integration Options

BC2ADLS

Includes all the components needed to get up and running with a Fabric OR Azure Data Lake / Synapse integration. Included are a Business Central App and Fabric notebook. Leverages Lakehouse storage in Fabric for files and tables. Differential loads and custom fields supported.

Dataverse Shortcut

Business Central includes an integration with Microsoft Dataverse. This can be enabled and Dataverse can be shortcut to within Fabric. Not as user friendly or as straight forward as BC2ADLS, but it is built into BC and simple.

Business Central Web APIs

Unless custom APIs are developed these are quite limited in the data they will supply. These could be an option for very simple reporting requirements, however.

Integration Technologies: BC2ADLS

Components within Microsoft Fabric

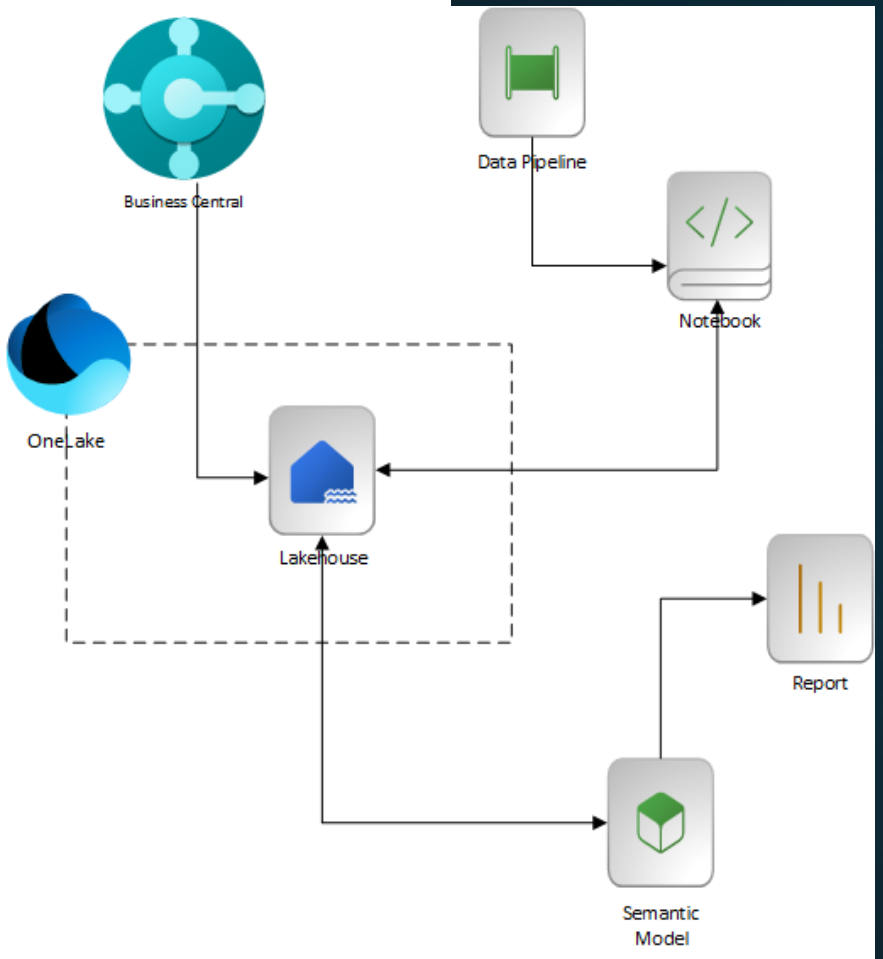
Microsoft Fabric Pipelines, Notebooks, Lakehouse, Semantic Model, and Power BI reports are all parts of this solution.

Role of Pipelines

Pipelines allow for the transformation and loading of data efficiently. They are essential for ETL operations. The pipeline in our solution schedules the notebook and semantic model refresh.

Importance of Notebooks

Notebook simplifies data preparation and transformation. It streamlines the data integration process and enables fine-grained control over the transformation process when moving from file to table storage within the Lakehouse.



BC2ADLS Project: https://github.com/Bertverbeek4PS/bc2adls

Integration Technologies: BC2ADLS

Easy to Configure

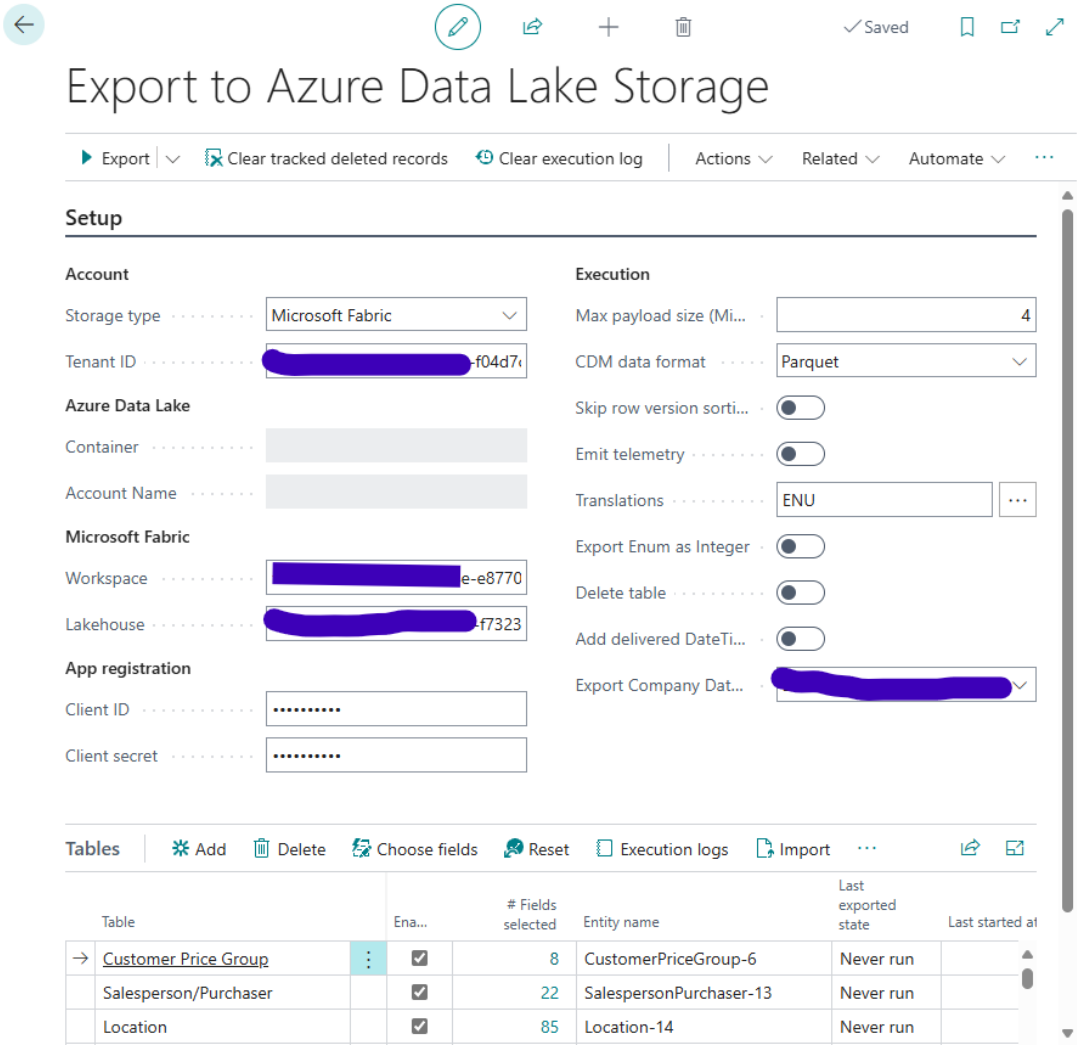
The BC2ADLS App installs from AppSource. You do need to configure an Entra Application for the authentication. Always supply the GUIDs for the tenant, workspace, and Lakehouse ids.

Intuitive Interface

Follows the normal design patterns for BC pages and forms. Allows for streamlined configuration, maintenance, and customization.

Data Extraction from Dynamics 365 Business Central

Data replication into the Fabric Lakehouse is scheduled via the Business central Job Queue. After the initial data load, only the deltas are replicated into Fabric Lakehouse file storage.



Load in incremental data and merge with existi

```
%%pyspark
import json
import os
import glob
from pyspark.sql.types import *
from pyspark.sql.utils import AnalysisException
from pyspark.sql.functions import col
from pyspark.sql.functions import desc
file_list = []

for entry in os.scandir(folder_path):
 if entry.is_dir():

    for filename in glob.glob(folder_path + entry.name + '/*'):
        table_name = entry.name.replace("-","")
        if table_name == "SalesInvoiceHeader112":
            ContainsCompany = False
            df_new = spark.read.option("minPartitions", no_Partition).format("
            file_list.append(filename) #collect the imported filed in a list f

            f = open(folder_path_json + entry.name +".cdm.json")
            schema = json.load(f)
            # Parse the schema to get column names and data types
            column_names = [attr["name"] for attr in schema["definitions"][0][
            if '$Company' in column_names:
                ContainsCompany = True
            column_types = [attr['dataFormat'] for attr in schema["definitions
            for col_name, col_type in zip(column_names, column_types):
                if col_type == "String":
```

Integration Technologies: BC2ADLS

Pyspark Notebook

Transforms the data extracts and moves it from Lakehouse files, into Lakehouse tables.

Semantic Model

Uses the tables from the Lakehouse to model the relationships within the data and present that modeled data to Power BI for reporting.

Integration Technologies: Dataverse

Native integration within Business Central

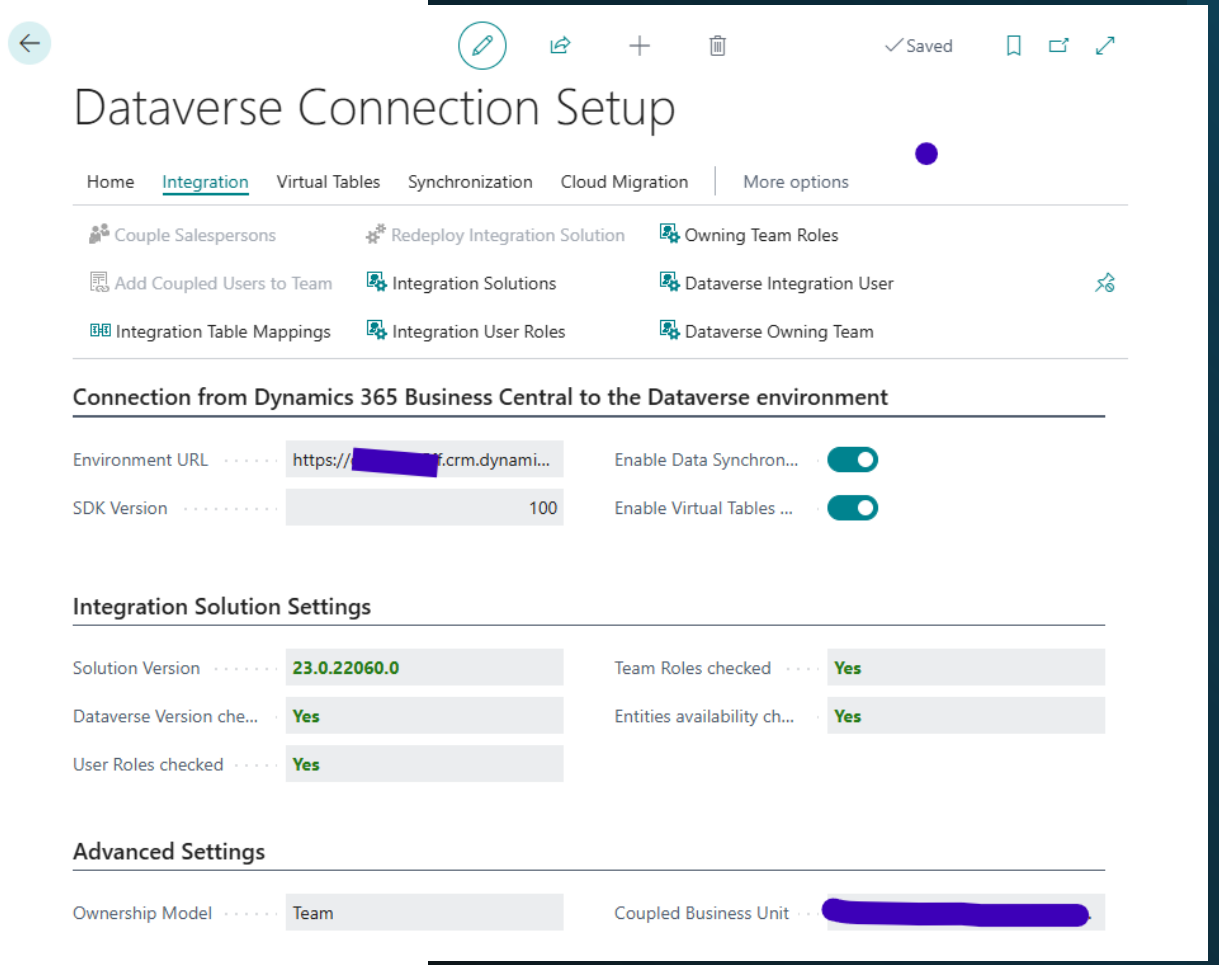
Configured with assisted setup and is the base integration for the Dynamics 365 Sales integration.

Shortcut within Fabric Lakehouse to Dataverse

A shortcut within the Lakehouse makes a data source appear as if it was in the Lakehouse itself, however the data is never copied from the source system.

Base or Reference objects only

Entities such as Vendor, Customer, Payment Terms, Shipping methods, etc. are supported out of the box. Others may be added but the process is a bit cumbersome and takes some time getting used to.



Integration Technologies: Dataverse

Fabric Shortcut

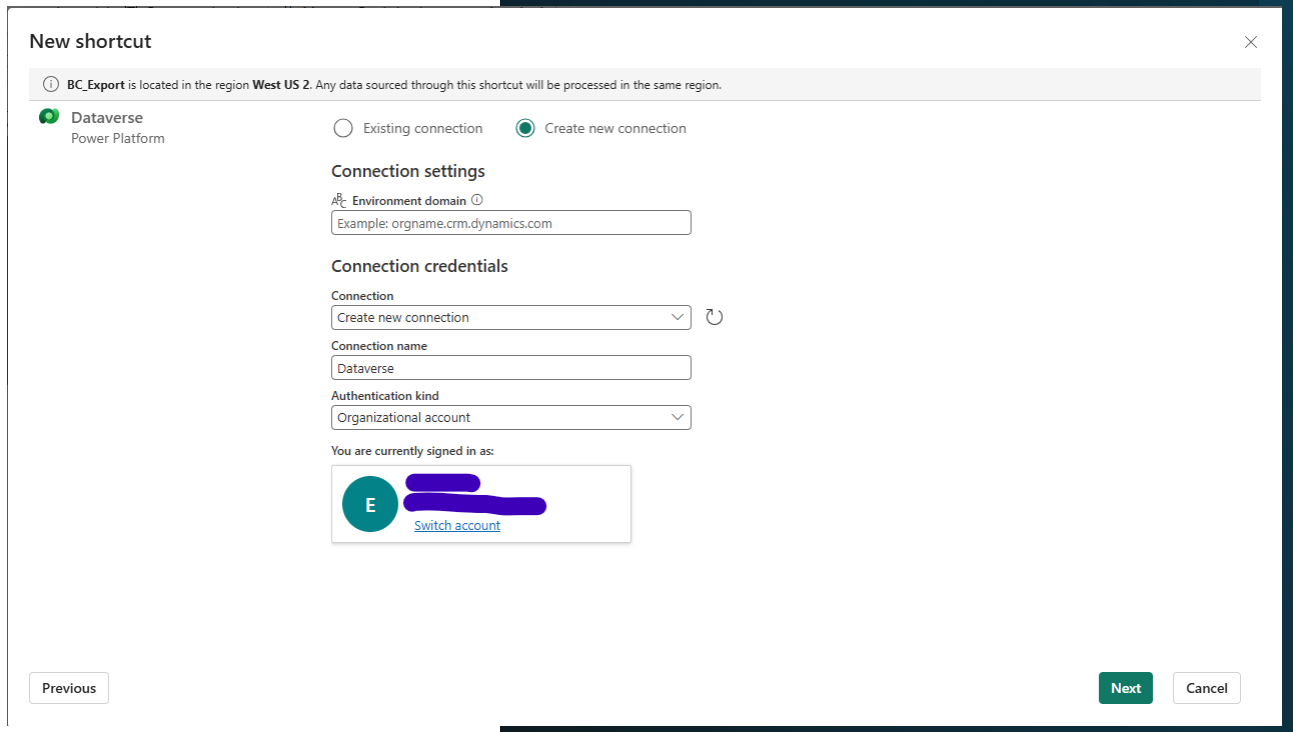
Easily created within the Lakehouse. Select Get data -> Shortcut.

Dataverse Link

The Dataverse first needs to be configured with a link to Fabric from the Analyze area within the Environment's Admin portal.

Security

Since Fabric and Dataverse are tied to the same Entra Tenant, the surety within Dataverse will be honored by Fabric when users query the Dataverse data exposed via the shortcut.



Integration Technologies: Web API

Fabric Pipeline

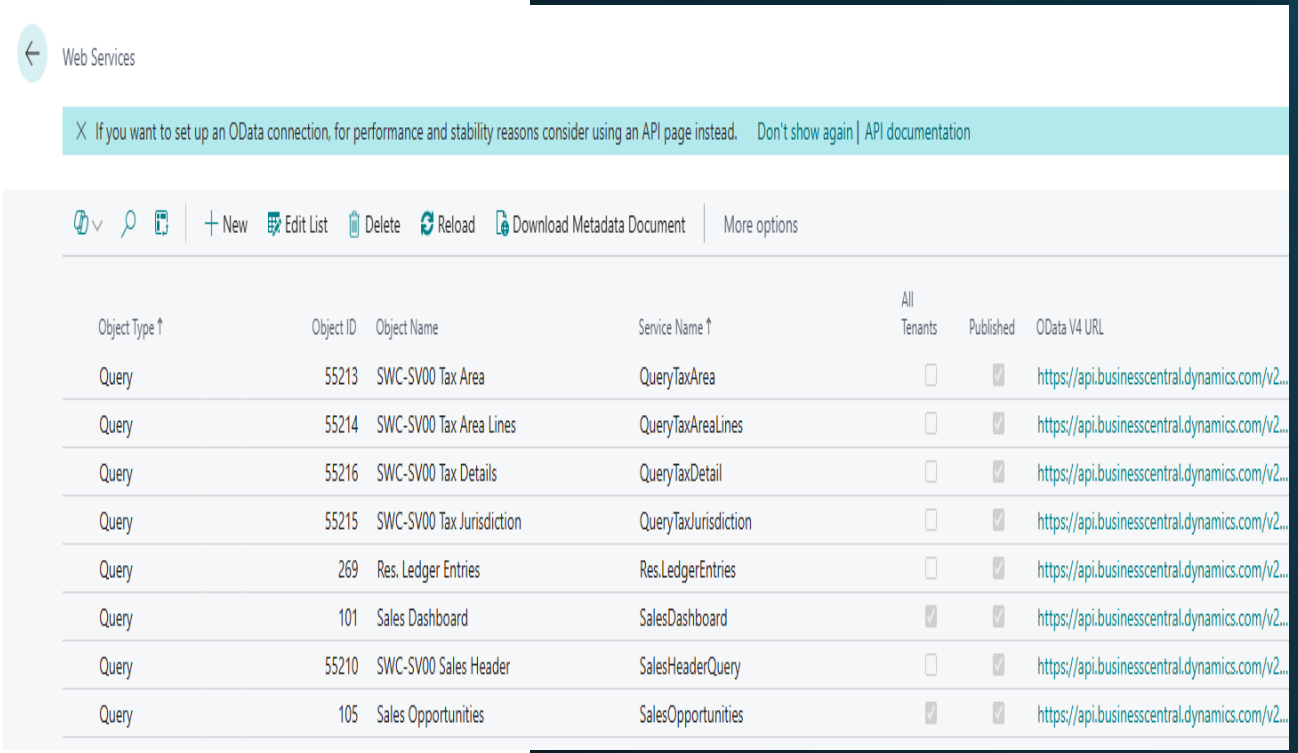
An Azure Function App needs to be created for calling into the Business Central Web APIs. Then a Fabric Pipeline can leverage this function to interact with the BC APIs in near real-time.

Lakehouse

The Pipeline can write the data retrieved from the function to either files or tables within the Lakehouse. Once tables are populated, a semantic model can be created / refreshed.

Security

Since the Azure function will be calling into Business Central Web APIs, an Entra Application is needed. This “service account” will be the calling user, so permissions are not guaranteed to be honored and only the Fabric Workspace security will be honored.



Object Type	Object ID	Object Name	Service Name	All Tenants	Published	OData V4 URL
Query	55213	SWC-SV00 Tax Area	QueryTaxArea	☐	☑	https://api.businesscentral.dynamics.com/v2...
Query	55214	SWC-SV00 Tax Area Lines	QueryTaxAreaLines	☐	☑	https://api.businesscentral.dynamics.com/v2...
Query	55216	SWC-SV00 Tax Details	QueryTaxDetail	☐	☑	https://api.businesscentral.dynamics.com/v2...
Query	55215	SWC-SV00 Tax Jurisdiction	QueryTaxJurisdiction	☐	☑	https://api.businesscentral.dynamics.com/v2...
Query	269	Res. Ledger Entries	Res.LedgerEntries	☐	☑	https://api.businesscentral.dynamics.com/v2...
Query	101	Sales Dashboard	SalesDashboard	☑	☑	https://api.businesscentral.dynamics.com/v2...
Query	55210	SWC-SV00 Sales Header	SalesHeaderQuery	☐	☑	https://api.businesscentral.dynamics.com/v2...
Query	105	Sales Opportunities	SalesOpportunities	☑	☑	https://api.businesscentral.dynamics.com/v2...

Simple Data Extraction Workflow

Introduction to Data Extraction

Extract from Business Central using BC2ADLS, Dataverse, or Web APIs. Transform using a Fabric Notebook or Pipeline. Land the data in a Fabric Lakehouse using a pipeline. Refresh the semantic model using the pipeline or a scheduled refresh of the model.

Utilizing Microsoft Fabric Tools

Pipelines and Notebooks are the main transformation tools in play with a Business Central integration. Data is staged within the Lakehouse using files and / or tables.

Considerations for Streamlining

Leveraging the out-of-the-box functionality of the tools can ease the learning curve and reduce maintenance costs long term. Adding additional functionality within the transformations steps can lead to issues with maintenance, since those maintaining the solution will need this functionality documented.

Performance Tuning in Fabric

Importance of Performance Tuning

Performance tuning maximizes the capabilities of Microsoft Fabric. It is crucial for effective data management.

Optimization Techniques Overview

If you are implementing a Medallion Architecture, stage your data in the Bronze layer Lakehouse before moving to the Silver or Gold Warehouse within Fabric.

Scheduling Strategies

All the techniques and tools discussed require scheduling of the data extraction. Ensuring that the schedules do not overlap and do not overload the systems curing peak business hours is critical to success.

Monitoring Mechanisms

Microsoft provides a Fabric Capacity monitoring app for use within your environment. I strongly encourage its use to ensure you understand which services (Notebooks, Pipelines, etc.) are consuming your capacity and when.

Using Reporting Tools in Microsoft Fabric

Integration with Reporting Tools

Microsoft Fabric seamlessly integrates with multiple reporting tools to boost efficiency. This integration supports diverse data sources and formats. Power BI is the default tool; however, Tableau can be leveraged as well via the Lakehouse SQL endpoint.

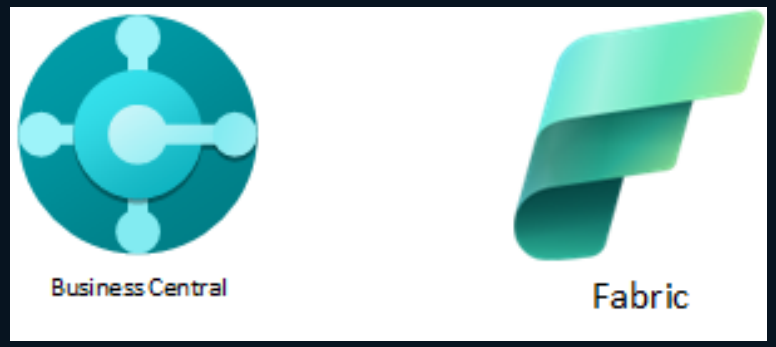
Drill-Through in Data Visualizations

When leveraging Power BI, analysts and dashboard users can drilldown into the underlying Business Central data. This allows for deep understanding of any areas within the data of concern.

Copilot within Fabric

Copilot is now available to users on any paid capacity within Fabric. Until recently, this was only available to users on an F64 capacity. Copilot will assist with building reports, building notebooks, and creating SQL queries within Data Warehouses, to name only a few of its capabilities within Fabric.

Conclusion and Key Takeaways



Transform Data Strategy

Effective use of Microsoft Fabric can revolutionize your data warehousing approach. Ease of configuring multiple data sources for cross source data mining and “mashup” reporting.

Integration Benefits

Combining Microsoft Fabric with Dynamics 365 enhances functionality and efficiency.

Optimize Data Management

Implementing best practices will lead to improved data management protocols and team collaboration. Cross functional groups will also become more self-sufficient.

Enhance Business Intelligence

Utilizing the right tools can significantly boost your business intelligence capabilities.

Q & A