Joe Griffin & Mark Carrington

Implementing Azure Data Solutions in Microsoft Dataverse

Arisaig, 12:00PM

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- Authored several XrmToolBox tools:
- https://www.xrmtoolbox.com/plugins/MarkMpn.SQL4CDS/
- https://www.xrmtoolbox.com/plugins/MarkMpn.SQL4CDS
- https://www.xrmtoolbox.com/plugins/Data8.ActivityCascadeRules
- Lego hoarder

Agenda

- Data abundance in the cloud-first world: Outlining the challenges
- How does Microsoft Dataverse / Dynamics 365 fit in?
- Azure Data Solutions Overview
- Demo
- What else is available?
- Q&A

Scottish Summit Template

Key Challenges with Data Abundance

Processes

Businesses are tasked to store, interpret, manage, transform, process, aggregate and report on data from multiple on-premise/cloud systems.

Consumers

There are a wider range of consumers using different types of devices to consume or generate data

Variety

Organisations need to contend with multiple data types to process and store, both structured and non-structured.

Technologies

Many vendors, offering competing solutions

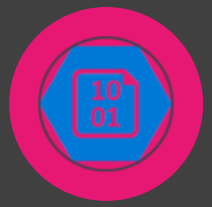
Relevance

How relevant is this for Microsoft Dataverse?

- There are several reasons why an effective Azure data strategy is necessary:
  - Depending on the size/longevity of your deployment, you could be sitting on a goldmine of data; all you need is an Azure pickaxe to start leveraging some valuable benefits. 😆⛏
  - Licensing cost changes focuses attention on data retention and lift/shifting data out of the application once it's past it's used by date.
  - CRM is just one "data plank" within your organisation; moving this out into Azure allows you to combine, merge and enhance this data with other sources across your organisation
- Microsoft provide several solutions to easily get your data out into Azure, so why not give it a try?
  - Azure Data Export Service: https://docs.microsoft.com/en-us/power-platform/admin/replicate-data-microsoft-azure-sql-database
  - Data Lake Export: https://docs.microsoft.com/en-us/powerapps/maker/common-data-service/export-to-data-lake
  - TDS (i.e. SQL) Endpoint: https://docs.microsoft.com/en-us/powerapps/developer/data-platform/dataverse-sql-query

AWESOME PORTOFOLIO

Key Technologies Available



Azure Storage Accounts

- Scalable, flexible and secure storage for any type of solution.
- Beneficial for archival or static data storage.
- Use when:
  - You need a **low cost, high throughput** data store.
  - You need to store **No-SQL** data.
  - You **do not need to query** the data directly.

Azure Data Factory

- Modern Extract, Transform & Load (ETL) tool, with verbose logging capability.
- Successor solution to SQL Server Integration Services (SSIS) packages.
- Use when:
  - You want to **orchestrate the batch movement** of data.
  - You want to connect to a **wide range of data platforms**.
  - You want to **transform or enrich** the data in movement.
  - You want to **integrate with SSIS packages**.

Data Lake Store

- Storage solution for “big data” analytics processing.
- Integrates alongside Azure Databricks, HDInsight, and Microsoft Dataverse.
- Use when:
  - When you need a **low cost, high throughput** data store.
  - **Unlimited storage** for **No-SQL data**
  - When you **do not need to query** the data directly.

Azure Synapse Analytics

- Provides a modern, cloud data warehouse supporting simple or complex data warehousing needs.
- Use when:
  - You require an integrated **relational** and **big data** store.
  - You need to manage **data warehouse** and **analytical workloads**
  - You need **low-cost storage**.
  - You require the ability to **pause and restart the compute**.
  - You require a solution that can scale **elastically**

Azure Databricks

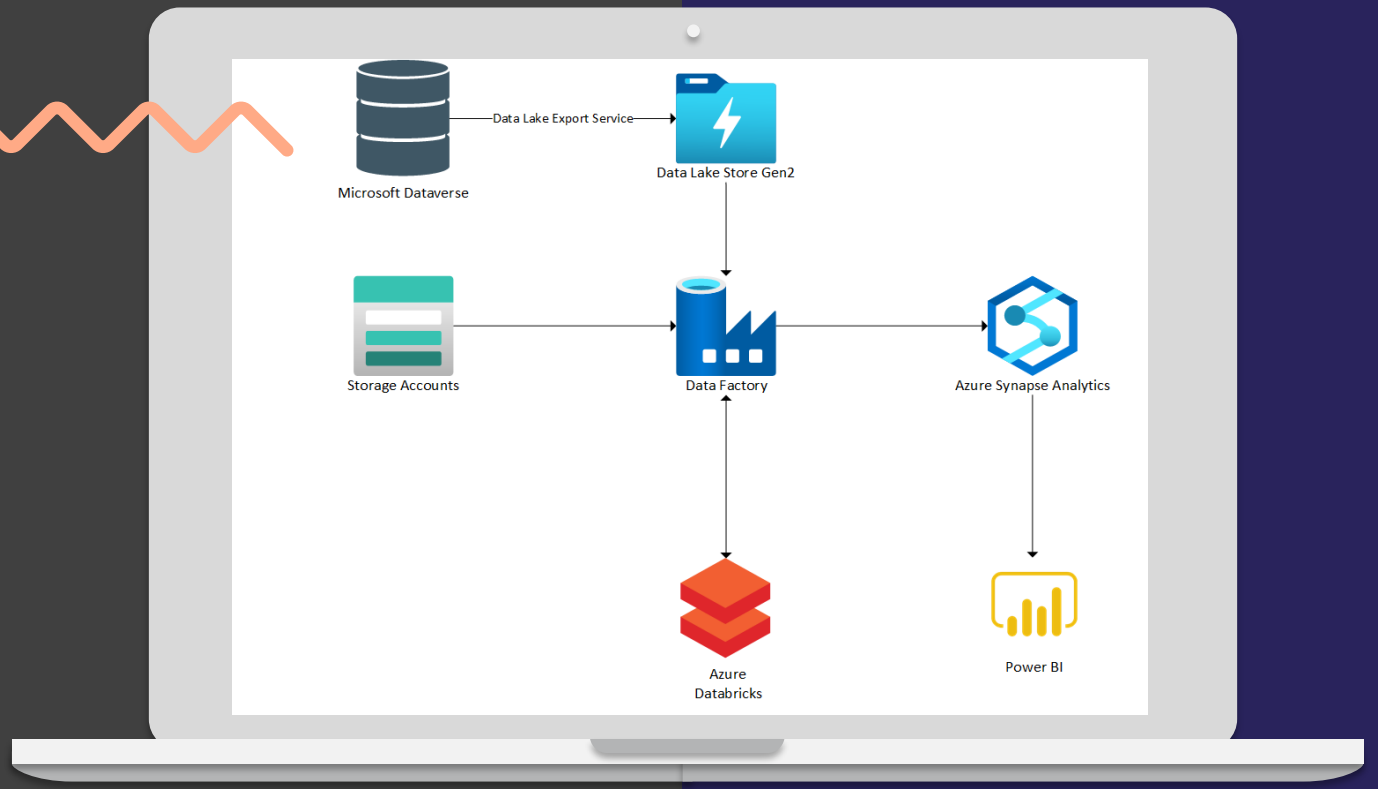
- Expansive data analytics platform, designed for data-intensive applications that require significant compute resources
- Designed to ease the deployment of a Spark based cluster.
- Use when:
  - You require the **fastest processing** for a **Machine Learning (ML) solution**.
  - You need to **collaborate** between **data engineers** and **data scientists**
  - **Enterprise security** via **Azure Active Directory** is required.

Azure Purview

- Data governance and classification tools
- Supports both cloud and on-premise
- Use when:
  - You need **visibility** over your entire data estate
  - You are working with **highly sensitive data categories**
  - You need to provide **self-service** capabilities for **tagging**, **documenting** and **annotating** data sources

Demo:
Overview

- Best way to understand something is to see it in action 😉
- In our demo today, we will show how various Azure services can be used to enrich Account data, using information gleamed from the Companies House API



Demo: Process Overview

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Demo

Other Available Technologies

Azure Cosmos DB

- Globally scalable NoSQL database, designed for modern app development.
- Provides **global distribution** for both structured and unstructured data stores.
- **Millisecond query response** time.
- **99.999% availability** of data.
- **Worldwide elastic scale** of both the storage and throughput
- **Multiple consistency levels** to control data integrity with concurrency

Azure SQL Database

- Cloud version of SQL Server, providing near/total feature parity with the on-premise version of the product.
- Also available in other vendor variants (MySQL, MariaDB & PostgreSQL)
- Use when:
    - You require a **relational** data store.
    - You need to manage **transactional workloads**
    - You need to manage a **high volume on inserts and reads**
    - You need a service that **requires high concurrency**
    - You require a solution that can scale **elastically**

Azure Stream Analytics

- Provides a fully managed, real-time service for analysing and processing streams of data.
- Integrates alongside IoT streaming data and Azure Event Hub.
- Work with data via a SQL-like language, the Stream Analytics Query Language.
- Use when:
    - You require a **fully managed event processing engine.**
    - You require **temporal analysis of streaming data.**

Azure HDInsight

- Similar to Azure Databricks, provides an open-source analytics service within the cloud, that leaves frameworks such as Hadoop, Apache Spark, Apache Kafka and more.
- Eases the deployment and management of clusters, as a Platform as a Service (PaaS) offering.
- Use when:
    - You need a **low cost, high throughput** data store.
    - You need to store **No-SQL** data.

Closing Remarks

- Getting started with Azure is easier than ever before and won't necessarily break your bank account in the process.
- Azure has the capabilities to quickly extend out your Dynamics 365 / Microsoft Dataverse deployment, allowing you to generate deep insights from your data in the process.
- Data Factory can deliver ETL capabilities that far exceed SSIS or other vendor solutions, such as KingswaySoft or Scribe Online.

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Q&A

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Thank You