Data & AI

Fabric

WinWire Announcement

Optimizing Medallion architecture with Microsoft Fabric for Medline

Win Summary & Customer Impact

Medline Industries is the largest provider of medical-surgical products and supply chain solutions, serving healthcare providers across the continuum of care. Medline's products and services are used in various settings, including hospitals, surgery centers, long-term care facilities, and home healthcare. The company is also a major supplier of medical supplies to the consumer market.

The company is looking to leverage data stored in SAP source systems to build a Medallion architecture for data consumption. Their current architecture involved building bronze, silver and gold models in SAP Hana Studio – They were looking to migrate this model architecture to ADLS and Fabric Cloud in order to provide better BCDR, refresh downtime and prepare a future-proof model that will allow them to enforce security and governance on data and artifacts along with enabling data citizens with Microsoft Fabrics latest features for data modelling, data science, reporting and AI/ML.

To suggest a suitable architecture, we transitioned data processing to Fabric and Databricks notebooks, providing a more scalable and efficient transformation and handling of data and intermediate models in the Medallion Architecture. Fabric Notebooks allowed the client to manage large data volumes with improved performance and flexibility. This transformation streamlined the entire data processing pipeline, enhancing performance and delivering faster, more reliable insights.

WIN SNAPSHOT

SOLUTION

We designed a robust and efficient data pipeline that integrates raw and configured data into ADLS Gen2 tables in a Medallion architecture, performs necessary transformations via Fabric notebooks, and supports reporting and analytics (refer to Figure 1). The solution included:

Win Date:
Mar 2025

Segment:
Software Services

Industry:
Enterprise Software & Information Services

Fabric Revenue:
$250,000

Products:
Microsoft Fabric

Opportunity ID:

Partner Name and Logo:

1. Data Ingestion

- Raw data is ingested from SAP SLT replication systems into Azure Data Lake Storage Gen2 containers using SAP Datasphere Replication flows and Azure Synapse SAP CDC Connector.
- Configuration tables to track delta changes are maintained along with calculated column definitions.
- Define refresh cadence for tables to ingest incrementally (every 15 mins / hourly / daily) and only update snapshot tables monthly.

2. Data Transformation

- ETL pipelines are used to cleanse, normalize, and apply transformations on the raw data.
- Designed a Data Processing framework to incrementally process data from Bronze to Silver.
- Created separate transformation notebooks to incrementally process data from Silver to Gold.
- Final business logic and transformations are applied on the silver data.
- Data is aggregated, joined, and stored in the Gold Lakehouse.
- The Gold Lakehouse holds fully curated, business-ready datasets.

3. Reporting

- Reports and dashboards are created in **Power BI** by connecting to the Semantic Model.
- Role-based access management is applied to ensure users view only the data they are authorized to see.

KEY IMPLEMENTATION DRIVERS

- **Scalability:** The architecture is designed to handle increasing volumes of data without compromising performance.
- **Performance:** Direct Lake mode and optimized ETL pipelines (DAG approach) ensure minimal latency in data transformations and reporting.
- **Security:** Leveraging One Lake Catalog for artifact management to protect sensitive data.
- **Cost-Efficiency:** Leveraging cloud-based services and serverless components reduces infrastructure and operational costs.
- **Reliability:** The solution follows best practices in data processing and storage to ensure data consistency and availability.

BUSINESS IMPACT

MAQ Software

- **High Data Accuracy:** Implemented a data ingestion and processing framework with Bronze, Silver and Gold as per Medline standards to maintain high data integrity and quality.
- **Faster Decision-Making:** The solution not only streamlined data processing but also eliminated the high latency issue, delivering fast and reliable insights.
- **Optimized Availability of Models**: Improving latest model availability for data analysis and decision-making.

EXPANSION

Scaling Across Departments

- Expanding the Fabric-based solution usage across other departments within Medline.

ARCHITECTURE DIAGRAM

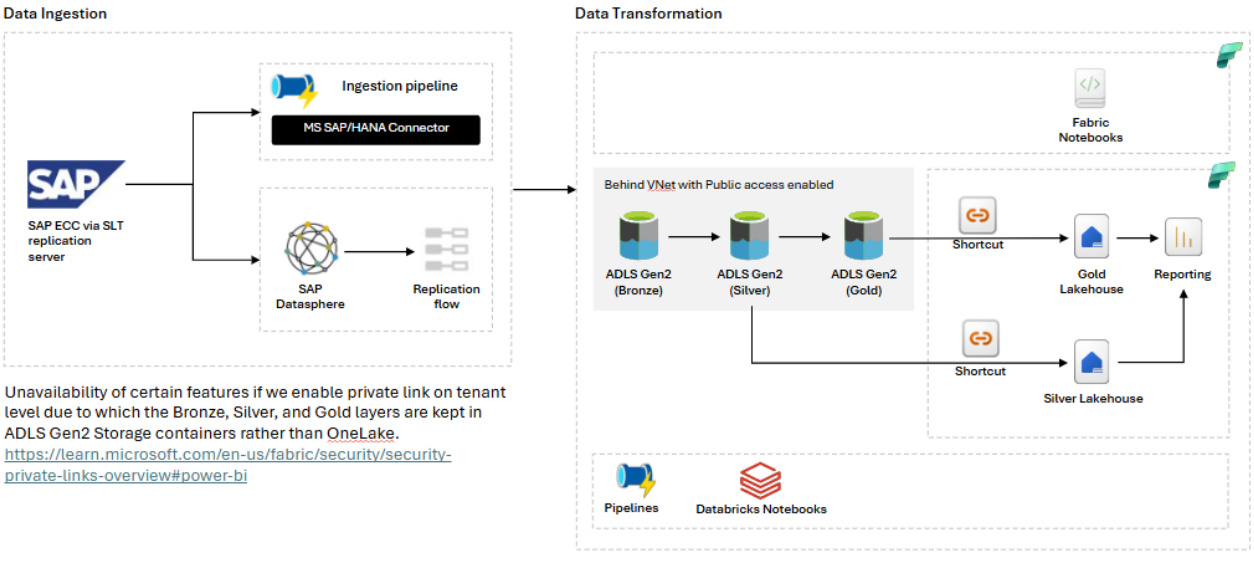

Figure 1: Architecture diagram of the developed solution

WINNING TEAM

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