Data & AI

Fabric

WinWire Announcement

aptean

Optimizing Data Processing and Reporting with Microsoft Fabric for Aptean

Win Summary & Customer Impact

Aptean is a global provider of industry-specific software solutions, catering to various sectors such as manufacturing, distribution, and food & beverage. Their solutions help businesses streamline operations, improve efficiency, and enhance customer experiences.

Aptean has developed a data engineering solution for their customer but was facing significant challenges in managing their data processing workflows. The solution struggled to handle large-scale data, leading to inefficiencies and process delays. Additionally, the client used Import Model Semantic Models to build their reporting layer, resulting in frequent refresh issues and high operational costs. These factors caused substantial latency in data processing and refresh cycles, hindering timely business insights.

To address these challenges, we transitioned the data processing to Fabric Notebooks, providing a more scalable and efficient solution. Fabric Notebooks allowed the client to manage large data volumes with improved performance and flexibility. Furthermore, we replaced the Import Model Semantic Models with Direct Lake Semantic Models, which drastically reduced refresh times and operational costs. 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 Lakehouse architecture, performs necessary transformations, and supports reporting and analytics (refer to Figure 1). The solution included:

1. Data Ingestion

- Raw data is stored in Azure SQL VM.
- Configuration tables are maintained in Azure Storage Account.

Win Date:
March 2025

Segment:
Software Services

Industry:
Enterprise Software & Information Services

Fabric Revenue:
$250,000

Products:
Microsoft Fabric

Opportunity ID:

Partner Name and Logo:

- Data from Azure SQL VM is ingested into the Bronze Lakehouse.
- The Bronze Lakehouse serves as the raw data storage layer, holding unprocessed data for further transformations.
- Configuration data from the Storage Account is also transferred to the Bronze Lakehouse.

2. Data Transformation

- ETL pipelines are used to cleanse, normalize, and apply basic transformations on the raw data.
- The processed data is moved from the Bronze Lakehouse to the Silver Lakehouse, where fact and dimension tables are created.
- 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.

5. Semantic Model Creation

- A Semantic Model is built on top of the Gold Lakehouse using Direct Lake mode to define relationships, measures, and calculations, optimizing data for reporting.

6. Reporting

- Reports and dashboards are created in **Power BI** by connecting to the Semantic Model.
- The generated reports are embedded into the customer **portal** using **Power BI Embedded API**.
- 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 ensure minimal latency in data transformations and reporting.
- **Security:** Role-based access management and secure storage systems using key vault 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 our Data Validation Framework and CertyFAST tool (formerly Whiz) to maintain high data integrity and quality.
- **Faster decision making:** The solution not only streamlined data processing but also eliminated the high latency, delivering faster insights with enhanced reliability.
- **Optimized Reporting & Visualization**: Developed interactive Power BI dashboards, improving user experience and decision-making.

EXPANSION

Scaling Across Departments

- Expanding the Fabric-based solution usage to Aptean's additional projects.

ARCHITECTURE DIAGRAM

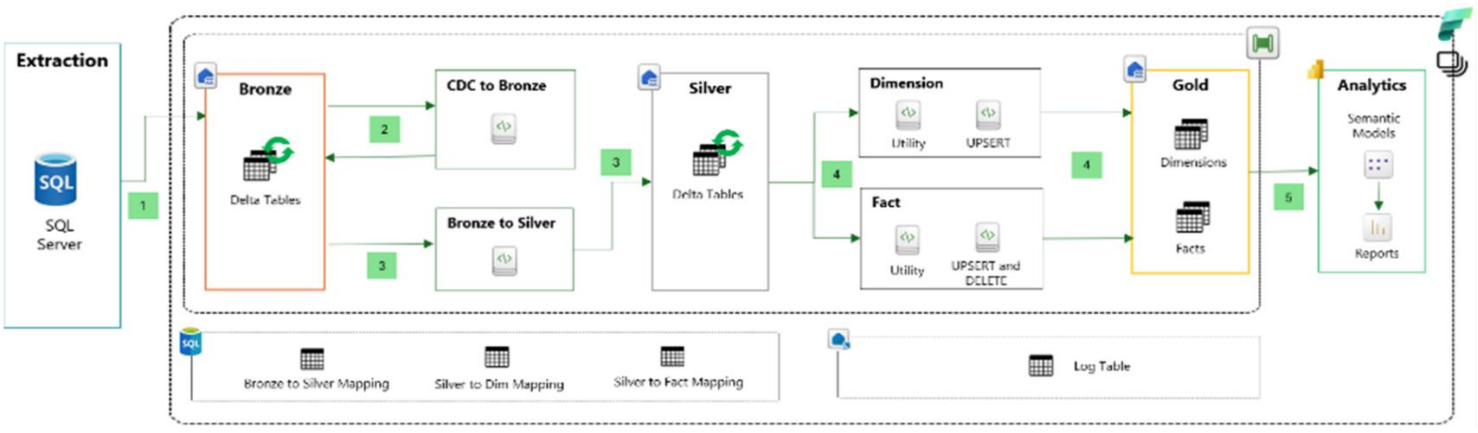

Figure 1: Architecture diagram of the developed solution

WINNING TEAM

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- **Infra Specialist,** Douglas Turnure

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