

Data &amp; AI

Fabric

# WinWire Announcement



## Optimizing Data Transformation and Reporting with Microsoft Fabric for Sprouts

### Win Summary & Customer Impact

Sprouts Farmers Market is a specialty grocery retailer headquartered in Phoenix, Arizona, focused on offering fresh, natural, and organic food products at affordable prices. With a mission to inspire healthier living for all, Sprouts emphasizes produce, vitamins and supplements, bulk foods, meat and seafood, and other healthy grocery items. The company operates hundreds of stores across the United States, serving health-conscious customers who value quality and transparency in their food sources. Sprouts stands out for its farmer's market-style shopping experience and commitment to sustainability and community well-being.

Sprouts Farmers Market's existing data infrastructure is facing significant performance and scalability limitations. Simultaneous data refreshes are causing delays in updating and retrieving data, which becomes more problematic as shared capacity usage increases. This affects the speed and reliability of accessing reports and datasets. Furthermore, the company's move toward finer data granularity—from weekly to daily data over a three-year span—has dramatically increased dataset size, leading to scalability issues. The integration of new data sources requires a robust and efficient data management solution. As a result, Sprouts is migrating to Microsoft Fabric to support increased data volume (from ~10 GB to ~85 GB), maintain current onboarding processes via Azure Synapse and Databricks, and enhance reporting capabilities using Fabric's Direct Lake Semantic Model.

### WIN SNAPSHOT

### SOLUTION

To eliminate the challenges around performance, scalability, and cost, we created a solution leveraging Microsoft Fabric that enables efficient data processing, seamless scalability, and cost-effective reporting at scale.

**Win Date:** Feb 2025

**Segment:**

Retail – Supermarket Chain

**Industry:**

Retail

**Fabric Revenue:**

\$500,000 USD

**Products:**

Microsoft Fabric

**Opportunity ID:**

**Partner Name and Logo:**

MAQ Software

**MAQ** Software

**1. Gold Table Creation (Notebook Execution)**

- Developed a Gold Notebook to create tables with day-level granularity for an extra year period.
- Implemented column renaming logic in the backend to ensure seamless schema alignment without manual intervention.

**2. Shortcut Creation in Lakehouse**

- Created a dedicated Lakehouse to manage Shortcuts for Gold tables stored in Azure Data Lake Storage (ADLS).
- Developed a script to:
  - Refer to a configuration table containing mappings of Shortcut names and corresponding ADLS paths.
  - Iterate through the config table and create Shortcuts dynamically for each specified dataset.

**3. Performance Optimization**

- Integrated V-Order optimization into the Shortcut creation script for faster query performance.
- Included a Vacuum command within the same script to clean up storage; scheduled to run weekly.

**4. Dataset and Model Preparation in Fabric**

- Created the dataset in Microsoft Fabric and performed the following model setup activities:
  - Imported all Shortcuts as tables in the Fabric data model.
  - Removed summarization, standardized datatypes, and applied formatting to each column.
  - Replicated relationships from the existing model to maintain business logic.
  - Recreated measures using original definitions to ensure continuity in reporting.

**5. Synapse Pipeline Enhancement**

- Enhanced the Synapse Pipeline to support end-to-end automation of the new data pipeline:
  - Daily execution of Gold Notebook to generate day-level tables for 2+1 years.
  - Dynamic creation of Shortcuts post table creation with V-order optimization.
  - Metadata refresh of the Fabric data model to reflect new tables and changes.
  - Execution of the pre-warming script to optimize performance post-refresh.

**6. 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:** Data model is scalable since there is no limit on the data model size for F256 SKU.
- **Performance:** We conducted a thorough audit of the data model to identify and remove unnecessary columns and tables. This involved analyzing measures used in business reports and finding their dependent columns to ensure that only relevant columns and tables were retained, improving performance.
- **Security:** Role-based access management and secure storage systems using key vault to protect sensitive data.
- **Cost-Efficiency:** Created the best possible architecture to minimize the cost without compromising the solution quality.
- **Reliability:** We followed consistent renaming of columns and tables in the model and Lakehouse. This involved creating a standardized naming convention that was applied uniformly across the Semantic model and Lakehouse.

## BUSINESS IMPACT

- **Extended Historical Insight for Better Decision-Making**  
Data availability at the day level for 3 years (compared to just 2 months earlier) empowers business teams with deeper historical trends and patterns, enabling more accurate forecasting, demand planning, and strategic decision-making.
- **Significant Cost Optimization**  
By leveraging the Fabric Direct Lake model, the cost to deploy and operate the 85 GB dataset is reduced by ~50%, from ~\$40,000/month (P4 Import Model) to ~\$20,000/month, providing substantial savings while maintaining high performance.
- **Scalability Without Limits**  
The new model supports unlimited data model size with the F256 SKU, ensuring that Sprouts can scale data operations seamlessly as business grows—future-proofing the analytics infrastructure.
- **Faster Data Refresh with Minimal Downtime**  
Data refresh time has reduced dramatically from hours to just 1-2 minutes,

which means near real-time data availability for reporting with minimal disruption to business users.

- **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 additional Sprouts projects.

## ARCHITECTURE DIAGRAM

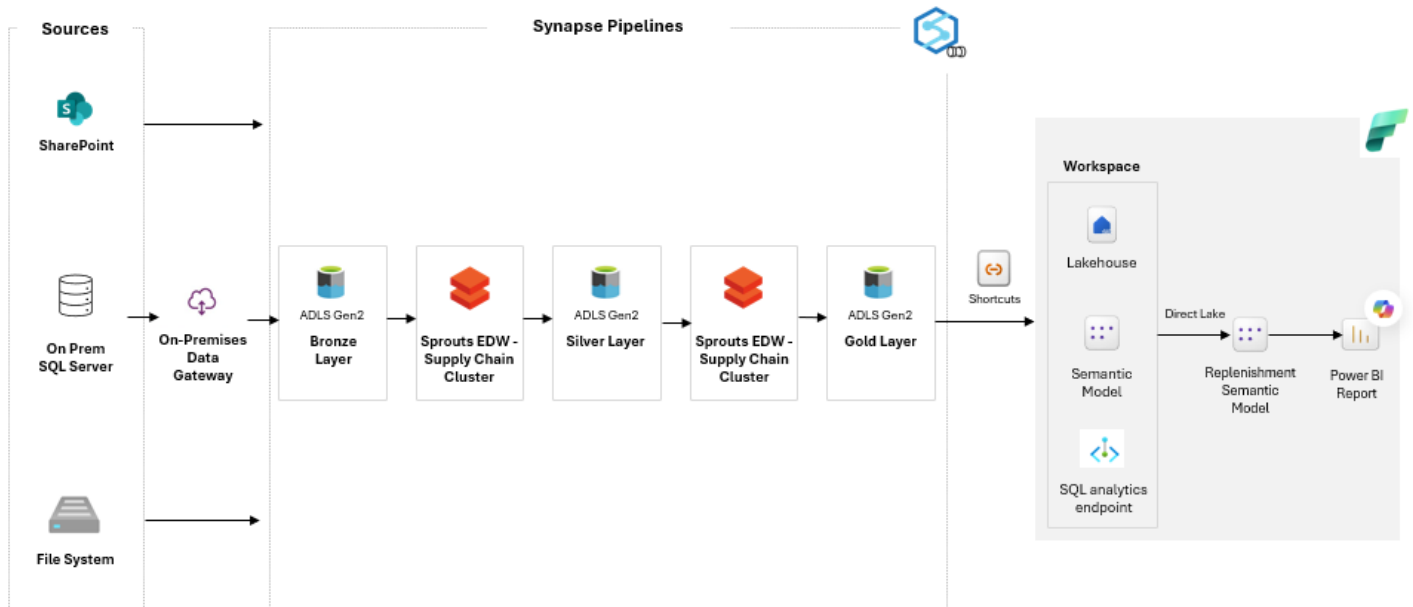


Figure 1: Architecture diagram of the developed solution

## WINNING TEAM

- **Data & AI Specialist,** Don Edrington
- **Apps Specialist,** Zach Ellis

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