

Case Study

Operational Data Hub with an Azure Data Engineering Solution

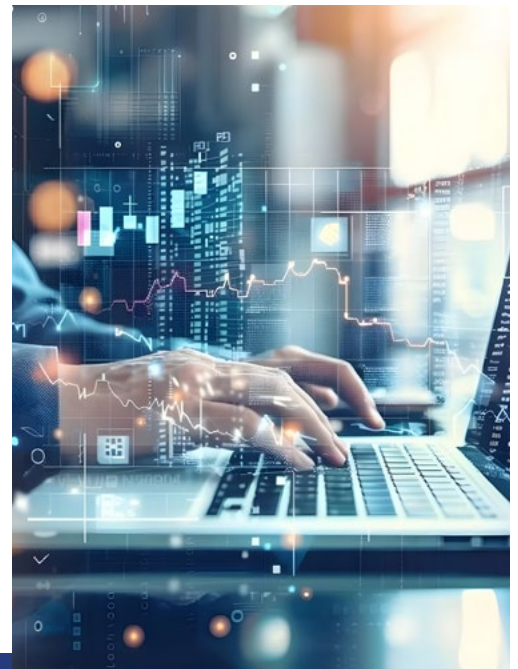
COMPANY

The client is one of the leading providers of comprehensive home and community-based health services to complex populations who require specialized care. With a network of over 10,000 clinical providers and pharmacists, the client is serving 400,000 people daily across 50 states, making a notable impact on the nation's health services industry.

CHALLENGES

Due to the lack of an operational data hub in Azure, the client encountered significant challenges with their data integration, data quality and accuracy maintenance, and data analysis. Key challenges include:

- Faced difficulty integrating data from multiple sources, which resulted in inconsistent data.
- Inconsistent and inaccurate data imported from multiple SQL databases reduced the quality of the data.
- Due to a lack of sufficient tools, data validation and proofing, the reporting & analysis became more challenging.
- Extracting insights and making decisions based on trend analysis were difficult due to a lack of centralized historical data maintenance.





SOLUTION

V-Soft's experts, with best practices in Azure data engineering services, successfully implemented a results-driven Azure solution to efficiently process and store data. The solution included:

- Utilized the Medallion or multi-hop architecture data design pattern to logically organize data in a lakehouse, improving the structure and quality of data as it flows through each tier of the architecture (Bronze => Silver => Gold layer tables).
- Development of a metadata driven framework enabling effortless data ingestion from multiple sources.
- Leveraged watermark values, incrementally fetched delta data from the source systems.
- The Azure Data Factory was used for table ingestion and Azure Databricks notebooks executed from ADF were used for transformation and ingestion.
- Enabled the Unity catalog in Azure Databricks, ensuring data lineage and access control.

RESULTS

- Quick and minimal effort to ingest data into the Operational Data Hub (ODH).
- Enhanced synchronization between data platform and BI workloads, with a greater degree of handshake in between.
- Achieved effective data integration, data quality, data security, and democratized data access.
- Improved timeline improvement on reports access to make quick decisions.

100% Data Accuracy and Integration

80% Timeline Improvement

95% Democratized Data Access

Technologies Used

- Azure Data Lake Storage Gen-II
- Azure Data Factory
- Azure Data Bricks
- SQL Server Database
- Azure Logic Apps
- Azure Key Vault.