

# Optimizing Healthcare Data Flow: Integrated and Automated Enterprise Data Processing for a large Regional Blue

## Overview

A large regional health plan in the northeast, US, struggling with manual, isolated, and error-prone processes, strategized on an integrated data transformation solution, aiming to reduce manual intervention and bring forth efficiency, quality, and timely execution in their data utilization.

## Business Challenge

The customer encountered significant challenges in executing the data unification and data leverage end to end leading to a delayed, fragmented, isolated, inaccurate and manual data reporting at different levels of consumption. The manual and inter-dependent processes, involving various isolated systems like source-connectors, foundational marts, and modern cloud warehouses like Snowflake, were hampered by manual errors and inefficiencies, necessitating a streamlined automation solution.

## Solution Deployed

- A sophisticated automation solution was developed, when the Domain Model - Connector Factory Source is refreshed with the mart's data.
- Automation of invoking foundational mart pipelines is developed with AWS services populating the cloud-native data lake.
- Automation addressed data refresh, deduplication, and pipeline execution for data loads.
- AWS services were integrated to validate messages, trigger the data transfer pipelines based on availability, retrieve and merge messages from the data staging areas, and pre dedupe or load data to cloud warehouses.



## Value Delivered

- Operational Efficiency: The solution significantly reduced manual intervention, delivering quality output with minimal, if any, errors.
- Time Savings: The automated processes saved 8-10 hours per execution end to end.
- Cost and Resource Effectiveness: The business experienced a reduction in manual errors and received timely failure notifications, making data operations/support more efficient.
- Technological Cohesion: The isolated systems were interconnected using a loosely coupled microservices architecture, enhancing inter-system coherence and efficiency.
- In-depth source data discovery and analysis.
- Agile approach in delivering successful data load into the secure data lake.
- Designing and building robust data ingestion pipelines and data orchestration.
- Creation of a unified, authentic enterprise-level repository.

## Impact

The implementation of an end-to-end automated solution not only streamlined the data flow and analytic report generation processes but also strategically positioned the health plan to harness enhanced insights, make informed decisions, and stay ahead in the market. The solution has marked a significant step towards realizing a vision of automated, error-free, efficient data processing and management in the healthcare Payer sector.