

SUCCESS STORY



TAKING FLIGHT, THE LEGACY DATA STORE TO ELEVATE OPERATIONAL EFFICIENCY FOR AN AIRLINE COMPANY USING STRIIM

PROJECT OVERVIEW

Indium supported the client in migrating their legacy Operational Data Store (ODS) which was running in Eastern Standard Time (EST) into the new Enterprise Operational Data Store (EODS) that operates in Coordinated Universal Time (UTC) using the Striim platform. Additionally, Indium added new data sources in the EODS, developed new APIs to facilitate communication between different sources, and created Tableau reports & dashboards to aid the business user.

SOLUTION DELIVERED

Data Migration, CDC via Striim

CLIENT DOMAIN

Airlines & Aviation

KEY HIGHLIGHTS

- Due to the integration capabilities of Striim, the real-time data availability time decreased from 20 minutes to 2–6 minutes.
- 24*7 global support enabled the client to achieve increased productivity and cut down system downtime.

ABOUT CLIENT

The client is a leading provider of aircraft and aviation operating solutions. The company's services include aircraft, crew, commercial and military charter, maintenance, insurance freighter aircraft, and humanitarian mission aircraft to major airlines globally.

BUSINESS REQUIREMENTS

- The client's legacy ODS had issues with concurrent processing and real-time API services. Hence, the data needed to be migrated from six legacy databases in ODS using the Striim as the Change Data Capture (CDC) tool to EODS for further analysis.
 - To convert the operation from EST to UTC. Though the primary reason for the change was to establish a standardized time zone in the Cargo-Airline industry, this would also provide the customers and clients with seamless local services in take-off/ landing time, reports in real-time, etc.,
 - Internal and external business users required reports accessible online with utmost security. Due to this, there was a need to deploy Tableau reports available online & bridge servers for a secure connection between all the data sources and produced Tableau reports.
 - To develop new APIs with increased reusability, security, and access control to protect sensitive data and enable communication between systems and optimize data sharing.
- AIMS - Flight and Crew schedule management Application for building optimized or cost-efficient crew schedules to effectively manage day-to-day operations.
 - CMS - Catering Management System for organizing, managing, processing, and tracking all activities related to catering services of the flights.
 - RampView - Ground Task Management Application to aid supervision and monitoring of ground operations of the flights.
 - Trax - Aircraft Maintenance Application to help in MRO (Maintenance, Repair, and Overhaul) and other airline fleet management activities.
 - Middleware - Temperature Readings application to help in checking the health of the aircrafts.
 - Sable - Weight and Balance Management application to ensure balanced mass in cargo and passenger aircraft to optimize loading and reduce fuel consumption.
- Earlier the client was using SQL Server Integration Services (SSIS) and IBM MQ Middleware to carry out data migration tasks and exchange information between applications. However, there were too many dependencies and concurrent processing issues.
 - To address the above problem, Indium leveraged Striim data replication pipelines to migrate data from the ODS to the EODS and accommodated Primary Key relationship transformations across tables for the applications, each of which had its own unique set of challenges, including data duplication, complex transformations, and unique primary key patterns.

SOLUTION HIGHLIGHTS

- Indium built physical and logical data models connecting all the below data sources to create a visual representation of how each of these data sources interact with each other. This visualisation helped in determining how various types of data could be stored, retrieved, shared, and updated.
- Various applications running on oracle & MySQL databases that were migrated to EODS include:
 - Handled complex primary key column of the AIMS application table which involved changing primary key scenario after a set of inserts, update, and delete operations from the source oracle database.
 - Set the time zone of the new EODS to UTC as per the client's need and added new data sources to the EODS, around 250 new tables based on the operational reporting needs, on Tableau.

- Created around 200+ new APIs and Striim integrations using .NET to facilitate easier connections, movement, and data transformations between data sources.
- Earlier, SQL Server Reporting Services was utilised to provide a variety of interactive reports. However, there were a lot of data visualization limitations. Hence, we carried out dashboard wireframing and KPI identification for Tableau dashboards and reports to provide a clear and concise representation of essential data and insights to facilitate quick and informed decision making.
- Enabled backup to prevent data loss as well as validated the accuracy of the integrations and reports after reporting the data to the new data sources.

BUSINESS IMPACT

- Indium provides 24*7 STRIIM global maintenance support for easy data recovery, reduce downtime, and to provide uninterrupted services.
- Migration from ODS to EODS improved the database performance multifold as the data store can provide real-time information which can further be visualized using Tableau. This will help the client in addressing any operational issues and at the same time make the best business decisions.
- After data integration using Striim, the real-time data availability was achieved for every 2-6 minutes which was earlier taking 20 minutes when SSIS and the middleware were utilized.

TECH STACK



ABOUT INDIUM

Indium Software is a fast-growing Digital Engineering company, focused on building modern solutions across Applications, Data, and Gaming for its clients. With deep expertise in next-gen offerings combining data and applications, Indium offers a wide range of services including Product Engineering, Low-Code development, Data Engineering, Ai/ML, Digital Assurance, and end-to-end Gaming services.



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