nagarro

Efficient railcar operations with data integration

Streamlining data integration with Oracle Integration Cloud (OIC) platform

Client profile and business context

The client is one of the leading railcar pooling companies that runs a low-cost, reliable railcar fleet across North America for freight management. To maintain smooth operations and deliver the best possible services to its customer, the railcar pooling company requires technology to track and maintain its railcars and manage its ever-growing data volumes.

Nagarro has been the client's digital engineering partner for years, providing various integration services for its systems. Our two recent projects with the client included leveraging Oracle Integration Cloud (OIC) to integrate multiple databases spread across the entire organization and automating several processes for efficiently tracking and maintaining the railcar fleet.

With a deep understanding of the client's technology ecosystem, we proposed and executed three different projects that accelerated its digital transformation efforts.

Through these projects, we leveraged the Oracle Integration Cloud to help the client:

- **Automate goods receipt number (GRN) creation process**
- **Simplify integration of Oracle and SQL databases with third-party asset information application**

Our technological interventions helped the client improve operational efficiency by streamlining the railcar tracking and maintenance process and increasing data accuracy.

Challenges and Solutions

Automating goods receipt number (GRN) creation process

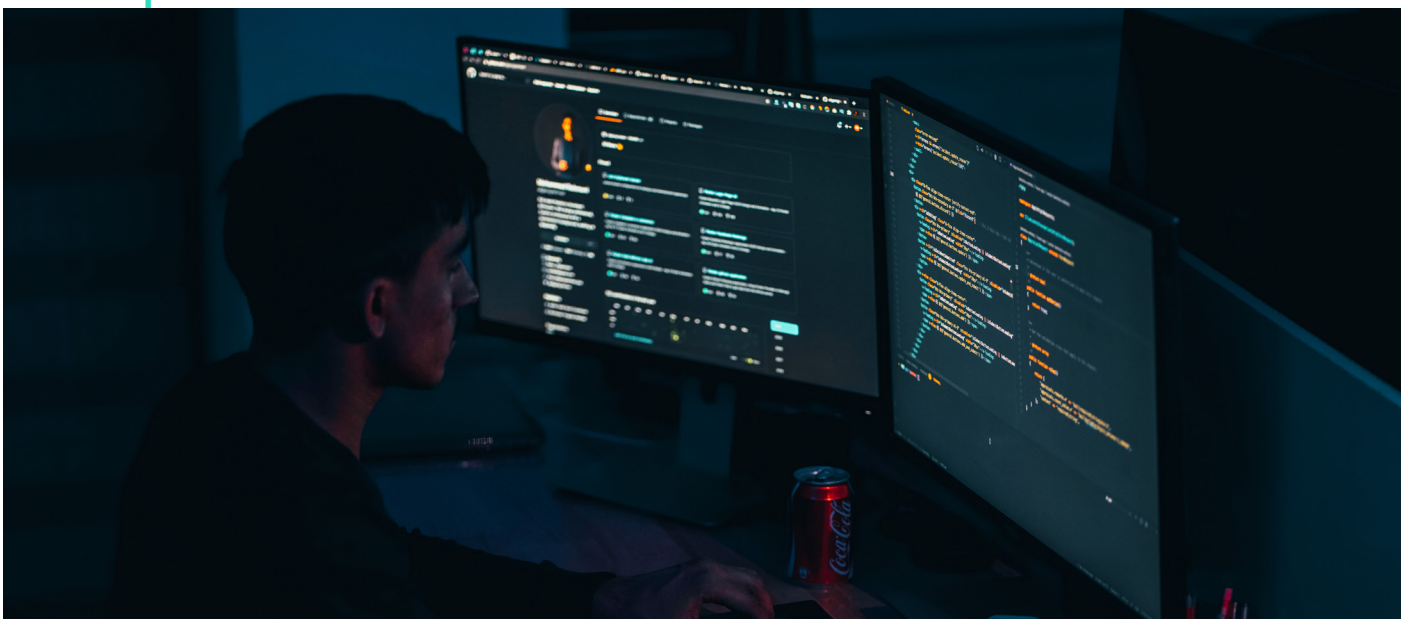
The client wanted to eliminate manual intervention from their goods receipt number (GRN) creation process. Project owners were raising GRN in the Oracle ERP system after the manual reconciliation of the data. The client wanted to reduce the error rate and make the process easier by removing the need to manually download data from the project server post verification against the purchase order. There was also a need to streamline the process for finding the purchase orders and their respective expense items corresponding to the data in MS Project.

They required a scalable solution integrating its MS project server and ERP with algorithms to match expense items and automate this process.

Robust solution based on Oracle Integration Cloud

Nagarro designed an OIC-based standardized, secure, and robust solution that supports the complex item matching logic. The project implementation included:

- Functional and technical consulting to evaluate the best approach for automating GRN creation via OIC integrations
- Designing and implementing an end-to-end solution for integrating the project server time reporting system with Oracle ERP. It further helped
  - Deliver complex reports for fetching missing data from Oracle ERP
  - Develop complex Item matching logic as Items from Project Server differ from Oracle ERP.
  - Design complex yet performance-optimized queries to fetch data from Oracle.
- Testing, change management, and production deployment for Oracle and middleware (OIC) components



Challenges and Solutions

Integrating Oracle and SQL with third-party asset information

TTX is migrating to Asset Information Center (AIC) for a user-friendly interface, improved performance, and helpful filters and parameters that make sorting out components easy and quick. To make the new application work seamlessly, the client needed to integrate data from different sources, including the SQL server and other applications sitting in SQL DB and Oracle ERP. The new application also required moving the existing data from the SQL server database to AIC.

TTX sought a scalable solution integrating multiple systems to work cohesively. For transferring vast data volumes to AIC, we broke the data into segments and carried out numerous integrations.

End-to-end integration solution for asset information

The team designed and implemented an end-to-end solution for integrating the AIC application with Oracle and Legacy SQL database. We provided technical consulting to evaluate the best approach and follow industry practices for integration via OIC middleware. This helped:

- Develop standard integrations for maintaining reusability
- Develop outbound interfaces to send supplier and item data for both master and transactional purposes
- Deliver complex BI/XML reports for fetching Oracle data
- Implement batching logic to handle millions of data records for initial loads
- Develop different inbound and outbound integrations for sending data in JSON/REST/File formats
- Design complex yet performance-optimized queries to fetch data from the existing SQL database.

Outcomes

Our solutions enabled efficient tracking and maintenance of around 160,000+ railcars. The implementations ensured a smooth integration enabling automated synchronization of data between systems. The system helped improve the quality of financial and operational data.

- **Smooth systems integration enables automated and fast generation of GRNs and data synchronization between systems**
- **Streamlined automatic transmission of Oracle and SQL databases to AIC**
- **Every operation is tracked, and notifications are generated for failures reducing the overall debugging effort**

The client replaced its existing application with AIC (Asset Information Centre) with the help of around 30+ OIC integrations developed under this project. They automated syncing data between the source system database with the new application AIC. This ensures that all the new data created in the source application automatically flows to the new application without any manual intervention.

OIC integrations helped transfer a high volume of data from the client's existing application to the AIC. These integrations helped securely move millions of records from different data sources while maintaining complete data integrity via OIC.

After the deployment, the client witnesses a significant decrease in maintenance and technology lifecycle management. The AIC application provides a seamless and enhanced user experience through advanced features for searching and sorting. This was made possible through OIC integrations that acted as middleware to provide data to the AIC application.