

Back Office Processing for a Global Investment Banking and Asset Management Company

Overview

The client is one of the largest European global investment banking, wealth management & asset management companies. They had relied on a legacy third party application to manage connectivity with DTC and ADP for back office processing. The company needed a scalable system that would process millions of transactions per day, integrate with both systems without any manual intervention and provide detailed reports on the transactions. Nagarro built a message (MQ) based and web-based system that fulfilled all the requirements and removed the dependency on third party application and manual intervention. It resulted in savings of more than \$1M per year.

Problem Description

In order to facilitate the electronic transfer of interests in securities, the client is required to send stock trading instructions to The Depository Trust Company (DTC) to settle accounts with other DTC participants. The client had been using a legacy third party tool for the back office processing of these stock transactions, which required manual intervention and data entry. This made the process inefficient and slow, as the booking of the trade had to be done twice. The problem is compounded by the fact that there are thousands of transactions happening per day that need to be reported before a cut-off time – increasing chances of human errors and manual intervention costs. The

client was looking to remove the dependency on the legacy application, eliminate the need for manual intervention, and develop a scalable integration application that could automate the data interchange process with the DTC with high reliability and speed.

Solution

Nagarro worked with the client to understand the business requirements, data formats and current infrastructure. Nagarro's team then developed detailed requirements and technical specifications that would form the basis of the new application. Based on these specifications, Nagarro designed a message (MQ) based system for back office integration via XML format with DTC and ADP systems and a custom web-based solution for detailed reporting. The system was designed with IBM MQ for the source and destination system and Tibco EMS topics and bridges for the processing for high scalability to handle the millions of transactions per day. This allowed distributed processing on multiple topics and asynchronous persistence to the Oracle database. The web based reporting application was designed to interact directly with the database for near real time status on the instructions.

Specific modules of the system included:

- Internal Message Gateway: Receives messages from source system (stock trading system), performs business validations and publishes the messages to multiple topics in a round robin mode for distributed processing.

- Acknowledgement Sender: Subscribes to the topic and sends the acknowledgement (including errors, if any) back to the source system.
- External Gateway: Subscribes to the topic, formats the message and sends the formatted message to the MQ for the destination system (DTC / ADP).
- Acknowledgement Handler: Gets the acknowledgements (including errors) from the MQ of the destination system (DTC / ADP) and publishes it to the topic for the Matcher.
- Matcher: Matches the incoming acknowledgement with the instructions sent earlier. It then publishes the matching results on a topic.
- Source System External Gateway: Gets the matching results, formats it and sends it to the Source System (Stock trading system).
- Reporting: Provides detailed near real time reports on the status of the transactions

Benefits

- Integrated system to allow seamless transfer of data from Stock trading systems to DTC and ADP for back office processing
- Improved efficiency from eliminating manual intervention steps
- Highly scalable and flexible system to handle millions of transactions per day
- Savings of more than \$1M per year



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