



Overview

BIAS provided a custom solution that included a J2EE, centralized global payment processing system that runs on Oracle Weblogic 11g and an Oracle 11g database. Flexible design allows the system to interface with multiple front-end and back-end systems with minimal changes.

Solution Components:

- Core JEE
- Java Encryption (JCE)
- JSF
- JMS
- JAXB
- Spring
- Shell Scripts
- Enterprise Scheduling
- XML
- XSLT
- Oracle DB
- Sybase DB
- DB2
- Mainframe
- Web Services
- WebLogic
- Linux
- C / C++
- PL/SQL

COMPANY PROFILE

This case describes a legacy migration project with a large logistics Company that provides transportation, e-commerce, and business services in the United States and internationally. This company appears on Fortune's list of top 500 Companies.

BUSINESS SITUATION

This Customer sought to replace the backend application for a twenty year old credit card payment processing system with an extensible, scalable solution that offered enhanced electronic payment capabilities on a global level. Current state functionality operated on a legacy technology platform that could not keep pace with electronic payment advances available in the marketplace. There were significant gaps effecting the customer experience and order to cash processing. In addition, not every business unit was on the system.

FOLLOWING WERE SOME OF THE KEY DRIVERS FOR THE SOLUTION:

- Flexible and agile payment processing system that allows the front end applications to be modified over time to improve the end user experience while imposing minimal changes to the back end.
- Centralized processing for Domestic and International payors to maximize volume discounting clearinghouses and reduce fees.
- Improved capability to monitor transactions.
- Improved capability to forecast revenue.
- Reduced maintenance costs.
- Real-time response time of 2 seconds or less.

TECHNICAL SITUATION

The legacy applications were written in C/C++ and COBOL and ran on both open and Mainframe systems. There were multiple systems that were independently operated and maintained. The payments processing engine interfaced with multiple internal Mainframe and RDBMS back-ends, as well as a limited number of financial institutions. Documentation was extremely limited and support was challenging. The system was inflexible - adding enhancements and new capabilities was impractical. Elements of the business were not served at all and were pressing for a payment processing solution to be competitive in the marketplace.

APPROACH

Current state documentation was not available for these systems. The initial challenge was to gain an understanding of the existing functionality and translate that to future state requirements. This was accomplished through interviews with the SME's and reverse engineering the legacy source code. This project adhered to an iterative approach to requirements development, software design and development.

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SOLUTION

Although there are third party vendors that offer these services, this Customer elected to move forward with a custom solution due to their extremely high transaction volume. The custom solution was a J2EE, centralized global payment processing system that runs on Oracle Weblogic 11g and an Oracle 11g database. Flexible design allows the system to interface with multiple front-end and back-end systems with minimal changes. The core capabilities of the system include:

- Exposes payment services through industry standard interfaces - Webservices, JMS etc, making it easy to develop and enhance front end applications
- Capability to process multiple payment types for Domestic and International transactions
- Flexible design - e.g. Extensively uses XML transformation (XSLT) to transform the data from external interfaces to canonical standard, making it easy to add new clients or make changes to the existing clients
- Very good performance due to extensive use of intelligent caching
- Real-time communication with external revenue control application to provide improved monitoring and forecasting

The Solution was developed and deployed in three phases spanning eighteen months. The initial phase was six months and delivered the capability to process International credit card payments. It also laid the platform foundation for the future releases. The next phase added the capability to process ACH payments for International Customers. The final release added the capability to process Domestic credit card transactions, effectively replacing the legacy application.

BENEFITS

The primary benefit of this project was to deliver a flexible, scalable and extensible payments processing engine on a global scale that requires minimal maintenance when front end systems are added or modified. Another important benefit was the reduction in transaction processing fees that was achieved by centralizing all payments processing onto a common platform.

Results

Reduction in transaction processing fees that was achieved by centralizing all payments processing onto a common platform.
