Legacy Transformation

Legacy Transformation to Model Driven Architecture

The Challenge:

- The generated code for the web application was extremely dependant on storing data in the session for each user and this was leading to a performance shortfall when the load on the system increased. This data included Application specific data common to all users.
- The data stored in the session was not persistent in nature and hence the application could not be cloned so as to handle the increased loads.
- Additionally, the invocation of CTG was through a set of custom classes that the tool provided and these classes were also not tuned to handle heavy loads.

CLIENT BENEFIT

"Transformation of a legacy CICS environment to new generation architecture for increased performance."

The Solution:

THBS developed two pilot applications for the customer in order to ensure the application handled increased loads on the system. The details of the applications are as below:

- A specific use case of the application was modeled and a standard based J2EE application was developed as a pilot. Access to the CICS layer was enabled through CTG using the APIs provided by CTG itself. Data stored in the user session was kept to the CTG itself. Data stored in the user session was kept to the minimum and intelligent caching mechanisms were used to store the Application specific static data rather than storing them in the session for each user The data stored in the session was persistent in nature in order to enable cloning of the application. Security was enabled through RACF as earlier. The Distributed CICS (DCICS) product from IBM (part of TxSeries 4.2) was used to run the COBOL transactions in the offshore environment in Bangalore.
- For the second application, the business logic present in COBOL transactions were converted to Java code (standard classes as well as EJBs) and these classes along with the GUI code (as developed for the first application) were part of a web application deployed on WebSphere with the classes contacting Oracle using JDBC. For security, THBS suggested the implementation of a web application deployed on WebSphere with the classes contacting Oracle using JDBC.

BUSINESS CHALLENGE

The firm has a web based application for customers to manage their credit insurance policies. The business logic for the application is present on an S390 machine and is distributed among CICS based COBOL transactions and Stored Procedures (contacted from the COBOL transactions) in an Oracle database present on the S390. The web application was developed using a 3rd party code generation tool which enabled access to the CICS layer through the CICS Transaction Gateway (CTG). The web application is deployed on WebSphere. Security in the application is enabled through passing the user credentials to RACF deployed on the S390.

- For security, THBS suggested the implementation of a standard role based access mechanism in Java.

Both applications delivered a significant increase in performance under load and throughput during stress testing that was conducted. The customer decided to go with the first approach for the whole application and THBS were asked to implement the solution. THBS had to design the system such that the shift to a non CICS implementation could be implemented painlessly.

The Role
THBS implemented the architecture and design for the entire application. The design for the system was drafted using Rational Rose. The implementations through to testing activities were conducted in an onsite-offshore model to enable speed and cost effectiveness.

Resource Usage:
Two senior THBS consultants spent 3 weeks at the customer's site initially to decide on the scope of the applications and to set-up the offshore infrastructure by sending the relevant modules offshore for development of the applications. The pilot applications were developed offshore with a team of five engineers. Once the development was complete a senior consultant spent 2 weeks at the customer's site setting up the environment and helping the customer to run tests on the pilot applications.

Once the client decided on the approach, senior consultants from THBS spent 4 weeks onsite to come up with the architecture and design of the application and to get design reviews and approvals. During the implementation phase, a team of 8 engineers worked out of the THBS Bangalore labs on the project. A THBS consultant was present onsite to liason with the customer and resolves any issues. This phase was broken down into iterations where a set of use cases were developed and delivered in each iteration in an agile fashion. During system testing, two THBS engineers onsite assisted the customer in testing the system. The offshore team was available for bug-fixing and tracking activities. Post system testing, the THBS team supported the system from offshore for a period of three months.

Technologies:
Platform
AIX 4.3.3, Windows NT

Software
WebSphere 4.2, WSAD 4, CICSTransaction Gateway (CTG) 4.0, TxSeries 4.2 for Distributed CICS (DCICS), IBM Visual Age for COBOL

About THBS

Torry Harris Business Solutions is a US base IT service provider with development facilities in India and China. The company started in 1998, has for several years delivered a large variety of middleware services to enterprise clients around the world. Now, with a large pool of highly skilled technologists and rapidly growing, the company remains focused on middleware and integration space, implementing large projects across the US, Europe, the Middle East, the Far East, APAC and ANZ region as well. The company is committed to Service Oriented Architecture (SOA), which it sees as the logical movement to follow the phenomenon of distributed computing in late nineties, where THBS was clearly the market leader in implementing onsite/offshore delivery model.

For more information, write to us at info@thbs.com or soa@thbs.com.

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