

# Performance Testing

## MOTIVATION

*Organizations depend on software applications. They are the engine that drives their business. Applications enable customers, partners and employees to perform many diverse and business-critical transactions. So these systems must perform as expected and be accessible when needed.*

## The Customer



Our Client Barclays is a British multinational banking and financial services company headquartered in London. It is a bank with operations in retail, wholesale and investment banking, as well as wealth management, mortgage lending and credit cards. It has operations in over 50 countries and territories and has around 48 million customers. As of 31 December 2011 Barclays had total assets of US\$2.42 trillion, the seventh-largest of any bank worldwide.

In Today's real time environments especially in banking industry, where customer base is increasing day by day and to fulfill their needs

Banks have to respond accordingly. To insure all the business activities run smoothly and to increase customer confidence performance testing activities from time to time are required to insure the stability, validity and max throughput, to insure that all the growing customer needs can be fulfill in efficient manner.

In March 2014, Barclays has shown interest in Xcelliti for Performance Testing of the middle ware upgraded Architecture in Barclay's environment handling load from multiple channels used by the bank users to facilitate bank's customers.



## SITUATION

The Aim of performance testing exercise was to determine how fast some aspect of a system performs under a particular workload? Thus In-order to make sure that the middleware ought to perform well enough to be used by the minimum of 1000 users in simultaneously manner, performing different critical transactions by each user. A proper performance testing cycles was required to perform with different channels and Banking host before handing over to the real time users.



# Our Approach

The first step that Xcelliti's Consultants took was to familiarize themselves with the upgraded architecture of the middleware and its intended functionality. This was accomplished by talking to and working with development and testing team, by reviewing requirements, demo of the system and by performing manual testing activities.

Once having an understanding of the architecture the second step our consultant took was the development of a web-based simulator which is used to pump transactions request of different Channels to Middleware. The idea of

web-simulator was to put Load from **HP Load Runner** on middleware via solitary application (that include transactions of different channels) rather than generating load from each channel separately.

Once the overall testing strategy had been established the following tasks were performed:

- Design a performance testing plan
- Create test data taking with consideration to any identified end-user scenarios
- Create test scripts from **HP Load Runner**
- Coordinate servers and monitor networks
- Identify system performance issues
- Provide detail test report

Our consultants were able to successfully identify and address the application's live performance issues consequently eliminating the burden of resolving the issues for the in-house IT department.

Our client was satisfied with the project, and therefore selected Xcelliti as their preferred vendor for running performance testing projects throughout the organization.

## KEY CHALLENGES:



*Our Client was not used to performance testing as a part of system development.*

*Our client did not have any test scenarios and expected results*

*The middleware did not have any user interface*

*Backend or external system responses was not consistent*

*To extract time of complete round trip and middleware independently*

## Achieved from Performance Testing

The focused area of performance testing includes Middleware Intrinsic Processing time, Overall processing time, Average Response Time, Transactions per Second, Hits per Second and Transaction Response Time; to determine the relative issues and behavior of application in different load modes that is beneficial in terms of:

- Identified and eliminated performance bottlenecks to tune for better performance.
- Enhanced banking services, allowing thousands of customers to perform transaction easily and deliver an efficient service to customers.
- Increased customers' satisfaction level, improving efficiencies in terms of response time and service level.
- Resolved issues with the production architecture and configuration before users were impacted
- Identification of a potential business risks and the Opportunity to address design flaws in the application.
- Identified behavior under various workload patterns including normal load conditions, excessive load conditions, and conditions in between Resource utilization in terms of the amount of CPU, RAM, network I/O, and disk I/O resources application consumes.
- Gained a true picture of end-to-end performance, which enabled better-decision making and functionality changes.

