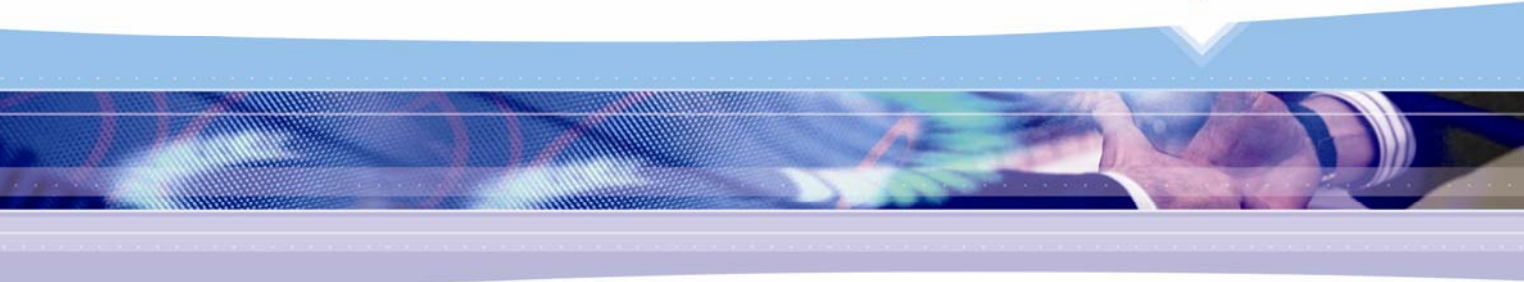


# Performance Practice Mentoring



## Client

Leading developer of E-commerce software solutions

## Challenge

The Client is a developer of E-commerce software that allows their customers to maximize sales with minimal time and effort through a WWW/Java based shopping cart solution. The company's great success and consequent growing customer base has led to more customers and larger implementations of their solutions. As such, the upcoming version needed to deliver not only new functionality, but also the highest levels of performance and scalability. The Client needed to establish a Performance Practice that would enable them to meet these demands, but needed to do so under considerable experience and resource constraints.

## Solution

The solution was a Luxoft Performance Testing Service.

A Luxoft Performance Consultant met with the Client's VP of Development. This initial meeting allowed the Luxoft Performance Consultant to understand the Client's previous efforts, their current efforts, their goals, and their plans. The Performance Consultant was then able to provide direction on how to best structure these efforts within current experience and resource constraints. From these discussions, Luxoft became involved in two efforts. The first was to create a large database that could be used for current and future performance and functional testing. The second was to provide Performance Test Mentoring.

## Large Database Population

Testing with realistic data is critical to achieving valid results from both performance and functional testing. From a performance perspective, this is especially important for systems built upon relational data stores. A Luxoft Database Architect was tasked with creating a large and representative data set which could be used for

## Project Facts:

- **Technologies**
  - WebLOAD
  - Java (J2EE)
  - Tomcat
  - JBoss
  - BEA WebLogic
  - Oracle
  - MySQL
  - MS SQL Server
  
- **Customer User profile**  
Online retailers
  
- **End-User profile**  
WWW / E-commerce customers
  
- **Team size**
  - 1 Performance Consultant
  - 1 Performance Analysts
  - 1 Database Architect
  
- **Duration**  
3 months

## Luxoft Case Study

performance and functional testing. This data set matched the characteristics of real customer data and was 200 times the size of the test data sets that had been used in previous releases. Using a variety of data loading techniques, the Database Architect was able to develop a flexible mechanism for generating large test data sets. This resulted in representative data that would allow the Client to identify problems that otherwise could not be found until after product release.

### Performance Practice Mentoring

Following database work, a Luxoft Performance Analyst worked with 2 QA team members in order to mentor them in the method of performance testing. More specifically, mentoring was provided in designing, writing, and running scripts in the open source version of WebLOAD. These scripts were designed to be representative of the day-to-day load distribution experienced by real deployments. Further mentoring was also delivered in gathering and analyzing the results that were obtained from WebLOAD. This enabled the Client's team to quickly discover where bottlenecks were occurring. Because of the Luxoft Performance Analyst's experience, the QA member's efforts were guided efficiently and in the most effective direction allowing the client to start addressing performance issues within the first week. This greatly accelerated the delivery of value from these efforts.

### Performance Team Augmentation

Following the initial mentoring practice, the needs of the Client changed as additional QA resources were required in the area of functional testing. At this point, the Luxoft Performance Analysts role transitioned from Mentoring to Team Augmentation, undertaking responsibility for the testing work and allowing the 2 QA team members to be shifted to other efforts. This gave the Client the flexibility to balance resources and ensure that both functional and performance testing needs were addressed.

### Performance Testing Outcomes

Due to the realistic data and load test scenarios, several critical performance problems and bottlenecks were identified during testing. For some of these, the Performance Analyst was able to resolve these issues with configuration changes to the database, JVM, and application server, thus avoiding the overhead of code changes. For others, the Analyst worked with development to diagnose the problems and design code and even architectural changes required to resolve the problems. These changes were then validated with the same testing infrastructure to ensure that the problems had been resolved and to identify the next bottleneck. Through these efforts, major performance improvements were achieved, leading to as much as a 200% improvement.

## Benefits

- Development of the Client's Performance Practice was rapidly accelerated
- A testing framework was established that will enable rapid future development
- High licensing costs were avoided through the use of open-source tools
- Real-world conditions were achieved in testing, leading to improved issue identification
- Dramatic performance improvements (up to 200%) were made prior to product release
- Resource flexibility avoided the need to cut efforts critical to project success