Changing the Channel at HBO: Premier Entertainment Provider Switches to JProbe® to Dramatically Improve Application Performance

HBO's IT Applications group creates various types of internal applications that enable HBO staff to do their jobs more effectively. One application is called SCHEME. SCHEME is a rich J2EE application—it has a Swing-based GUI front end (deployed to users via Java Web Start), and a back-end architecture that uses EJBs, JMS, and works with a database. In production, the back-end runs on BEA WebLogic application servers on Solaris. SCHEME enables HBO to create interactive television programming more quickly and collaboratively.

The Challenge

It wasn't until SCHEME went into testing that the team started to see performance problems. When the application was tested with a full sized database and several users, the application's general performance slowed to a crawl. In addition, the team realized that the performance-tuning tool on hand would not be able to diagnose the problem. It wasn't designed to work with application servers, nor would it profile code fully in the modern JRE being used. The team needed to upgrade quickly. SCHEME's technical lead led the evaluation process to choose a new J2EE code tuning tool suite.

The basic requirement was a suite that provided complete profiling, memory debugging, thread analysis and code coverage. The tools also had to work with WebLogic and support Solaris and their chosen JDK. JProbe was one tool that seemed to fit the bill.

"I've been a fan of JProbe® for a long time—I even have my own personal copy," said the technical lead. "But I wasn't going to impose my preference on the team. We planned to evaluate the top three performance tuning toolkits and choose the best one for our group."

The Quest Solution

Because the application was in testing, it wasn't the ideal time to evaluate tools. The team needed to "overload" the evaluation by actually searching for the problem. SCHEME's technical lead reasoned that the tool that pinpointed this particular real-world performance problem most quickly would likely be the best one for solving other performance problems. The team also decided to test with their standard set of use cases, for completeness.

Each senior developer installed one performance tuning tool in their development environment and configured it to work with their own local WebLogic application server and database. The development environments were fairly consistent. As the results came in, JProbe became the clear choice. The team suspected that the performance bottleneck had something to do with the application's use of the database. Architecturally, the design was sound—the application mapped one particular EJB to a table in the database, while other EJBs were also in use. However, JProbe graphically showed the full ramifications of the design of one particular EJB. An inordinate amount of time was being spent in the code of one large entity bean—it assembled and made a very complex query to the database, which was effectively a bottleneck for the entire application.

The solution? Get out of the EJB framework for this data-loading task and hand-code loading data from the database. The team replaced the large EJB query with a much simpler data access object and eliminated the performance bottleneck. "JProbe helped us reduce the load time of the application data from seven minutes down to about 40 seconds," explained the technical lead. "JProbe quickly zeroed in on the primary performance hotspot and helped us evaluate possible solutions. We will undoubtedly use all of the tools in the JProbe Suite."

Overview

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- SCHEME Technical Lead, HBO

HBO®

Headquarters

New York, NY

Services

Television network and cable service

Critical Needs

J2EE code tuning tool suite to improve SCHEME Java application performance

Solution

JProbe Suite

Results

- Rapid identification of code-related performance problems
- Impact of performance enhancements are measured more quickly
- Production-ready applications are deployed more quickly

QUEST SOFTWARE®

The Bottom Line

JProbe proved itself at HBO, helping the IT Applications group fix a tricky performance bottleneck that cropped up unexpectedly. “Now that we have JProbe in-house, we can start using it earlier, during development,” mused the technical lead. “Even though our application now performs well, there are undoubtedly memory-related optimizations we should make, and analyzing for thread-correctness will also improve the reliability of SCHEME. We will undoubtedly use all of the tools in the JProbe Suite.”

HBO also realized the development cost savings of using a tool that enables inexperienced developers to find any kind of code-level performance problem quickly versus one that takes longer to learn and requires more time and effort to pinpoint the true source of the problem. “One important criteria for us in selecting a tool was ease of use. We have a number of less-experienced developers, and it was important that they be able to pick up the tool, and without extensive training or documentation, be able to track down performance or memory problems.” The return on investment of JProbe becomes more obvious when one considers the comparative cost of a typical “brute force” solution (adding hardware and processing power to the server cluster).

About HBO

Home Box Office (HBO) is America’s most successful premium television network, whether measured by operating performance, subscribers, awards, ratings or critical acclaim. Its two 24hour services, HBO and Cinemax, have grown to serve approximately 38 million U.S. subscribers. Offering blockbuster movies, innovative original programming, provocative documentaries, concert events and championship boxing, HBO is the highest-rated premium cable service during the day and in prime time. Cinemax, the second highest rated premium service, features award-winning documentaries and more than 1,600 movie titles a year.

About Quest Software, Inc.

Quest Software, Inc. delivers innovative products that help organizations get more performance and productivity from their databases, applications and Windows infrastructure. Through a deep expertise in IT operations and a continued focus on what works best, Quest helps more than 18,000 customers worldwide meet higher expectations for enterprise IT. Quest Software can be found in offices around the globe and at: **www.quest.com**

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