



Case Study: La Quinta Inns



Company Background

Dallas-based La Quinta Inns, a leading limited service lodging company, owns, operates or franchises over 370 La Quinta Inns and La Quinta Inn & Suites in 33 states. Their online website, LQ.com, offers customers the ability to check prices and availability as well as to book, modify, and cancel hotel reservations online.

Project Overview

La Quinta ported existing Java/J2EE objects running on BEA WebLogic 6.1 SP2 to JBoss Application Server 3.2.3. The total project took two developers a total of 8 man weeks to complete.

Primary Drivers for Project

- Eliminate future software license and increased support costs
- Selection of ‘best-of-breed’ technology offering

Actual Benefits Realized

- Elimination of future software license and increased support costs
- Improved performance
- Reduction in long-term hardware costs via improved server utilization
- Improved customer satisfaction from performance enhancements
- Comfort from knowing technical support comes from actual developers
- Tomcat support covered under JBoss support agreement

JBoss Support Services Utilized

- Advanced JBoss Training
- Documentation
- 24x7 Production Support for both the JBoss Application Server as well as Tomcat.

La Quinta Inns, a leading limited service lodging company, faces many of the same IT challenges as most companies – namely the need to improve or add new services that maintain or enhance the overall customer experience while simultaneously reducing costs. The solution for LQ.com, La Quinta’s consumer website, as it has been for a rapidly growing number of enterprises was Professional Open Source™. The Professional Open Source model provides enterprises the unique combination of solid and scalable technology, no-cost product licenses, and the safety and security of professional support services delivered directly by the core product developers.

Raven Zachary, Director of Internet Technology for La Quinta Inns was first introduced to JBoss™ in early 2002 when a trusted consultant recommended that he investigate the JBoss Application Server as an open source alternative to BEA™ WebLogic. “We had already made the decision to deploy our new web site on open source products like Apache and Tomcat in the Web tier. The next logical step for us was to do the same with our middle tier.” The decision to migrate to JBoss was made in the late summer of 2003 with an anticipated launch date of early 2004. La Quinta’s initial major driver for the move to open source in the middle tier was long-term cost savings. “We didn’t expect any short-term savings because we had already paid BEA for the initial product license and support. But our goal was to avoid paying future product license and increased support costs as our deployment grew. That was a primary factor in considering JBoss, although we quickly uncovered a number of other reasons to switch.”

The Proof is in the Benchmark

The first thing La Quinta needed to do was to determine if JBoss could perform under heavy loads and deliver the kind of performance that its customers demanded. “Customer service is such a critical factor in the hospitality industry – including the online portion of our business. Cost savings aside, we knew we couldn’t go with an open source platform if it meant negatively impacting performance or uptime” explained Zachary.

So La Quinta tested JBoss Application Server under a series of internal benchmark tests and compared it to BEA WebLogic. “We were impressed with the performance results right from the beginning,” said John Mathews, Senior QA Analyst, at La Quinta, who was responsible for the testing effort. La Quinta’s internal benchmark tests consisted of running each of their Java applications on both JBoss Application Server 3.2.3 and BEA WebLogic 6.1 SP2 under heavy load conditions and then measuring the resulting throughput, system utilization rates, transaction success/error rates, and transaction response times. Their internal testing showed that JBoss Application Server offered 16% more throughput under heavy loads, handled 14% more hits per second, and had almost 5% fewer transaction errors per second. But most striking of all were the top time-consuming transaction times. JBoss reduced transactions times by better than 50% on most of the LQ.com transaction applications. As Raven pointed out, “The JBoss Application Server not only held its own with regards to performance, we actually saw a performance improvement.”

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The improvement in performance required tweaking on the La Quinta back-end Central Reservation System. “When we first ran the JBoss benchmark tests, we ran across a problem with transaction response times under heavy load – or so we thought it was a problem. As it turns out, the performance from the JBoss Application Server shifted the bottleneck from the middle tier to the back-end. We needed to do some tweaks to our Central Reservation System running Informix in order to take advantage of the JBoss capabilities,” said Raven. “It was a confirmation at that point that we would benefit from moving the LQ.com middle tier from WebLogic to JBoss.”

Porting from WebLogic to JBoss

One of La Quinta’s original concerns was the workload necessary to port their existing Java applications running on WebLogic over to JBoss. Their concern centered mainly on the use of custom extensions for WebLogic clustering. “Although it was clear to us that JBoss was the right solution as far as cost containment and performance, we wouldn’t have made the switch this soon if it required a significant amount of development effort,” said Raven.

The porting process couldn’t have gone better for La Quinta. Pradeep Nair, La Quinta Internet Architect and the primary developer on the JBoss project, was pleasantly surprised. “The porting process was much easier than we originally anticipated. Whenever I ran into a question, the JBoss technical team was there to quickly answer my questions.” La Quinta experienced first-hand the benefits of the Professional Open Source™ model. This model ensured that La Quinta received the proper help right away and avoided the time-consuming support run-around. “The documentation was helpful and the few times that I needed to contact technical support, I was assisted by a very knowledgeable engineer,” said Pradeep.

All told, the project to switch to JBoss Application Server was completed in less than six weeks – by a single developer for the majority of the time. It wasn’t until the final two weeks of the project that a second developer was brought on board to help with JBoss configuration and tuning for production. “The entire experience with JBoss has been great. Initially drawn to the open source financial benefits, we were immediately sold on JBoss by their superior performance under heavy loads, the relative ease in porting over WebLogic applications, and the support we received from JBoss as we needed it,” said Pradeep.

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Handling Web Services

La Quinta offers customers the ability to perform a number of functions on their website – including locating hotels, checking availability and pricing, as well as confirming, modifying, and canceling hotel reservations. In the middle tier, they primarily use Stateless Session Beans that makes JDBC and socket calls to an Informix database that serves as the company’s Central Reservation System. In addition to the direct interface via the LQ.com website, La Quinta also has partnership deals with several other travel companies including Hotels.com, Expedia.com and WorldRes. These partners provided access to much of the same information on their web sites as visitors receive from visiting LQ.com. To accomplish this, La Quinta exposes their Java objects as Web Services, using Apache Axis (running in Tomcat) and The OpenTravel Alliance (OTA) XML Partner Connectivity specifications. Today, in fact, half of the total incoming transaction requests to JBoss arrive via Web services.

Going Live

Although satisfied by their internal benchmark test results, the real test for La Quinta was going live. “We’re always extremely careful about deploying anything new for LQ.com. Our website is an important part of our business. Downtime or even performance degradations can have a significant revenue impact. But we were comfortable putting JBoss into production because we knew we were working with a stable product that had passed our internal load tests. We also knew we had the support of the JBoss developers on call if we needed them,” said Raven. La Quinta is a customer of JBoss Inc.’s 24x7 Production Support services with an average two hour response time. JBoss Inc. support covers not only the JBoss Application Server but also all open source Java products in the JBoss Inc. suite – including Hibernate, JBoss Cache, JGroups, Nukes, and even Tomcat. “It’s reassuring to know that when we need support, we’ll be getting it from the core team of developers. And in our case, that support coverage includes not only the JBoss Application Server but also Tomcat. JBoss Inc. is the only company that we know of that offers 24x7 Production Support for Tomcat,” commented Raven.

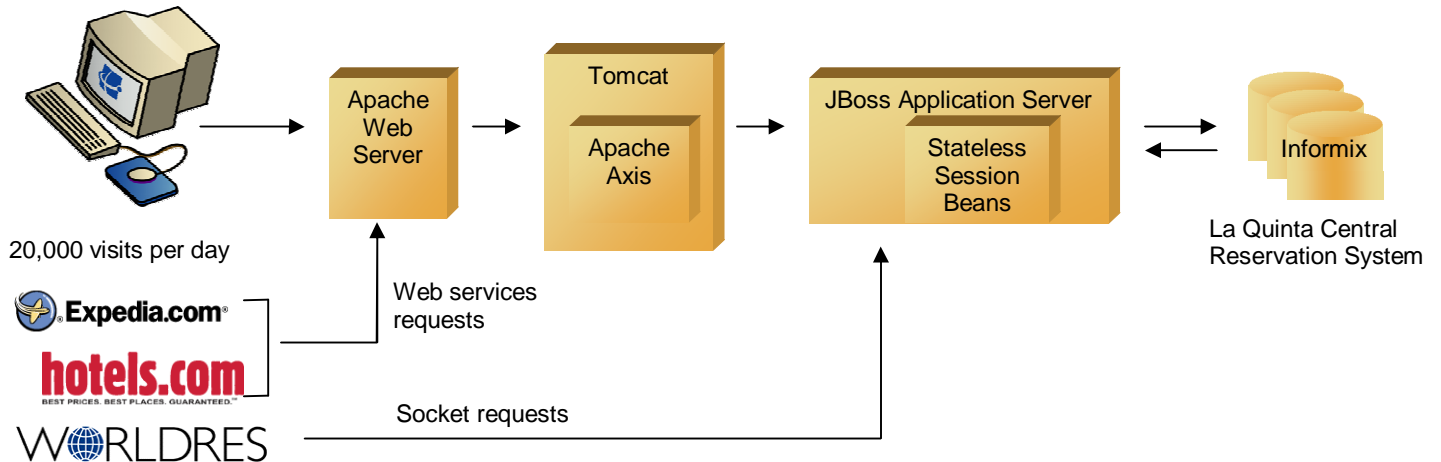
The LQ.com deployment running on JBoss Application Server went live on a Saturday morning in early March 2004. Mondays are the busiest day for La Quinta. “The JBoss migration was a success and in our first Monday using JBoss we experienced the busiest day ever for LQ.com,” said Raven. That Monday, LQ.com experienced 20,000 visits by 18,000 unique visitors, 191,000 page views, and more than 3,300 reservations (half of which were web services partner reservations). And they didn’t experience a single problem from their infrastructure. “Quite the opposite” said Raven. “Since we deployed JBoss, we’ve seen an increase in server

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performance and a decrease in server CPU utilization.” The latter was an unexpected benefit for La Quinta. “One of the benefits we didn’t take into account initially was the savings we will experience in hardware costs because of the overall efficiency improvements that JBoss brings.”

Breaking Down the La Quinta Configuration

La Quinta’s Web Tier consists of four (4) Sun Microsystems Sun LX50s with dual 1.4 GHz processors and 4 GB of RAM running Solaris 8 for Intel, Apache Web server (2.X), Tomcat (4.X), and Apache Axis 1.1. The middle tier consists of two (2) Sun Fire 280R servers with dual 800 MHz processors plus a third Sun Fire V240 server running dual 1 GHz processors. All three servers utilize 2 GB of RAM and run Solaris 8 for SPARC, with JBoss Application Server 3.2.3. The back-end consists of an Informix database with custom 4GL and ESQL/C application code (central La Quinta reservation system). JBoss to back-end connectivity occurs through JDBC and socket connections.



The Road Ahead

So what’s next for La Quinta? “We’ll continue to be a strong supporter of JBoss and other open source products moving forward,” said Raven. One thing is clear – JBoss delivered beyond what La Quinta expected. After initially investigating JBoss for cost savings benefits, they were quickly sold on the performance results under heavy loads. La Quinta was able to port all of their enterprise Java objects to JBoss quickly and easily with some assistance from the JBoss Inc. development support personnel. Since deploying JBoss, La Quinta has also experienced some unexpected benefits – namely increased server utilization and reduced future hardware costs.

Getting Started

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