



Case Study: NLG



Company Background

NLG is one of the nations largest online and offline leisure travel companies. Each year, they send hundreds of thousands of people around the world to warm up, cool off, explore new cultures, or just relax. The company is privately held and has over 1,500 employees and annual sales of approximately \$1 billion.

Project Overview

Creation of a new travel booking system that displays the best pricing options for complex group travel requests. Project involved creation of 4 transactional and 4 administrative applications. System currently handles up to 500,000 individual transactions per hour on a farm of 60 dual-processor servers.

Primary Drivers for Project

- Cost savings by avoiding BEA or IBM software license costs

Actual Benefits Realized

- Savings of over \$1 million in license costs to date plus avoidance of paying future license costs as production environment grows
- Expedited time-to-market by leveraging JBoss Inc. Training and RightStart support services
- Agility from having access to source code that allows them to address bugs on their own time schedules
- Stable, reliable, and extremely scalable technology

JBoss Support Services Utilized

- Advanced JBoss Training
- Documentation
- RightStart Development Support covering JBoss, Tomcat, and Hibernate.

NLG, one the leading worldwide leisure travel companies, quickly realized that buying software licenses for a large scale deployment would have been cost prohibitive. In late 2002, NLG began the process of building a system that would change the way the company sourced travel products. Historically, NLG relied on wholesalers to bundle individual travel components such as air, rental car, and hotel reservations. In order to expedite transaction response times via the Web, NLG decided to build their own dynamic packaging system (DPS) that would allow both Web-based customers and its team of agents to find the best real-time pricing for complex travel packages in seconds rather than minutes.

Because of their high volume, Jamie Cash, Director of Technical Architecture for NLG, quickly realized that standardizing on a non-open source application server like BEA WebLogic would have been extremely costly: “Based on our current deployment of 60 servers and 120 CPUs, going with WebLogic would have cost our company well in excess of \$1 million in license costs not including yearly support and maintenance costs. We saved our company well over \$1 million by choosing JBoss instead of BEA WebLogic”.

“We saved our company well over \$1 million by choosing JBoss instead of BEA WebLogic” - Jamie Cash, Director of Technical Architecture, NLG

The Move to Professional Open Source

Cost savings was the clearly the initial driver for investigating JBoss. It was a top-down decision for NLG: “About 20 months ago, our CTO, Ken Surdan, and I decided that open source software made financial sense for our business so we set out to find an open source J2EE solution”. That’s how they came across JBoss. At that time, NLG had developed several J2EE applications that were running on BEA WebLogic. Building a large system based on JBoss at a time when JBoss was relatively unknown could have been considered a gamble at that time. “Not for us” said Jamie. “We were careful upfront to stay close to the standards and avoid vendor-specific extensions whenever possible. We knew that if JBoss couldn’t perform under heavy loads when production launch time arrived, we could always port our applications over to a commercial application server. That’s the beauty of J2EE. And fortunately, JBoss proved to be extremely scalable both technically and economically”.

Building a large-scale, complex travel reservation system from scratch with a small team would be a challenge for any company. NLG initially hired a consulting company and quickly began to hire developers with JBoss experience. In addition, Jamie and his team came to rely heavily on JBoss Inc.’s support offerings to reduce the learning curve for JBoss. “We attended a public JBoss training session hosted by one of the core JBoss developers that was phenomenal! It required a relatively small investment for such an incredible return. And it was clear that the training was delivered by a real JBoss expert and not by somebody who just read the text book the day before”. NLG also purchased a JBoss Inc. RightStart Development Support contract to help with bugs and also to provide architectural assistance. “The JBoss support team was a tremendous help. We might have been able to figure everything out on our own but we saved so much time and money by having the real product experts help us to develop and optimize our applications.”

Going Live

NLG wrote their first line of code for the new DPS project in November of 2002 and launched the initial application in April of 2003. Considering the complexity of their new packaging system, this expedited development timeline was “somewhere between very aggressive and absolutely insane”. The Professional Open Source™ model from JBoss greatly aided the team: “We really benefited from getting support directly from the core development team. That helped us to avoid the many support layer calls that we experienced with other commercial software vendors. We were able to develop and optimize our applications much more quickly thanks to the JBoss support team.”

The initial deployment was limited to bookings and searches for only one or two travel destinations with the rest was still being handled by legacy providers. Their goal was to transfer 30% of their destinations over to the new J2EE-based system by the end of 2003. Things went much better than expected and NLG was able to transfer bookings and searches for 97% of all destinations before year end. Today, all searches and bookings for all destinations are handled by the DPS system.

“We were able to develop and optimize our applications much more quickly thanks to the JBoss support team” – Jamie Cash, NLG

Deployment Details

Because of the complexity of the searches and bookings, each high-level request actually results in a significant number of lower-level transactions. The DPS system breaks down each high-level request (for example, all hotel/car/hotel combinations for a particular city for a given date), completes each lower-level transaction, and then packages the resulting data to send back to the client. NLG currently averages about 10,000 to 20,000 high-level searches per hour resulting in anywhere between 250,000 to 500,000 individual transactions per hour. All of these transactions are handled by Message Driven Beans running with the JBoss container. NLG has 4 primary transactional applications plus 4 additional administrative applications. The administrative applications include a rules processing system that allows the business community to edit business rules and change search parameters.

NLG’s production environment currently consists of a 60 Dell dual-Xeon processor server farm that is load-balanced via an Alteon web switch. They expect to increase the server farm to 100 servers by year end. All servers use Red Hat Linux (primarily version 9) as the operating system. The environment is stateless and not clustered. The Web Tier, which makes the initial requests to the DPS system, runs on Microsoft. All of the administrative applications utilize JBoss Application Server and Tomcat as the stack. The transactional part of DPS consists of 4 logical tiers with Message Driven Beans running within JBoss acting for queuing and pooling/parallelization. All internal communication messaging is XML over HTTP. JMS is used heavily throughout. NLG has also recently converted most of their persistence to Hibernate, another JBoss Inc. Professional Open Source project.

The Benefits of Professional Open Source

NLG was one of the early companies to bet the success of a large scale deployment on JBoss Application Server. Their forward-looking approach has clearly paid off for the company as they have experienced the following benefits:

- **Significant cost savings.** Based on their current production environment of 120 CPUs, NLG would have paid a commercial software vendor like BEA or IBM in excess of \$1 million just in software license revenue plus another 20%+ in support and maintenance costs. They used a portion of this savings to purchase JBoss Inc. training and RightStart Development Support but easily saved the company in excess of \$1 million so far. They also have eliminated the need to pay for software licenses and additional support and maintenance as they continue to add CPUs to their production environment.
- **Quick Support Issue Resolutions.** NLG relied on the JBoss Inc. support team to answer questions and aid in the optimization of JBoss during the development process. “One of the best features of JBoss support is that it is delivered by the core developers themselves. We knew whenever we called; we would immediately talk to someone who could help us. We didn’t have to waste time being passed around through different support levels”.
- **Flexibility to Solve Problems Themselves.** “One of the biggest advantages of open source for us is the ability to resolve an issue ourselves if necessary.” By having access to the source code, users of open source products can more easily identify and correct bugs themselves. “If we were using WebLogic or WebSphere and we ran into a serious bug, we’d have no choice but to wait for them to fix the bug and issue a patch. We would be at their mercy. With open source, we know we have the ability to create our own patches on our own timelines. That’s extremely important to us”.

- **Excellent technology that passes the ‘Pop the Hood’ test.** One of the great strengths of JBoss is the large and active developer community that contributes and tests code. “By being a truly open product, the community can easily ‘pop the hood’ and take a look at what’s inside. It’s easy to understand the real performance characteristics and to pick at and understand the limitations.” The community’s contributions help greatly in identifying and then improving upon weaknesses ever improving the product over time. “We have become great advocates of open source projects like JBoss that have evolved into best-of-breed products”.
- **Peace of Mind.** JBoss has proven to be extremely scalable and reliable in large-scale production environments. “Our entire business has relied on JBoss for the past year and we have been extremely satisfied with the performance and reliability. JBoss has allowed us to scale both technically and economically.”

NLG has clearly benefited from choosing JBoss and the Professional Open Source model. We’ve already adopted JBoss Application Server, Tomcat, and Hibernate as core components of our DPS system. We’ll continue to evaluate other JBoss Inc. products as well as other open source projects. The benefits of open source are significant to our business”.

Getting Started

If you’d like to learn more about how JBoss Inc. can save your company money, please contact us via our website at www.jboss.com or call one of our sales offices below:

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