

CASE STUDY

CITISTREET HITS THE ROAD RUNNING WITH RED HAT

Founded in April 2000 as a joint venture between Citigroup and State Street Corporation, CitiStreet is one of the largest and most experienced global benefits providers. In terms of participants, the company ranks second in its business serving over 11 million participants from corporations, government agencies, multi-employers, and unions. CitiStreet's assets under administration total nearly \$200 billion while its assets under management come to \$1.93 trillion.

Dedicated solely to employee benefit services, CitiStreet has over 17,000 plans for defined contribution, defined benefit, and health and welfare plans. These include retirement recordkeeping and administration, investment services, education programs, and counseling and financial advice. The company employs 2,500 benefits experts.

Through open source software, CitiStreet finally gained control of its Web infrastructure. No longer encumbered by costly software licensing fees, CitiStreet could now expand its online business.

FAST FACTS

Industry: Financial

Geography: North Quincy, Massachusetts (also New Jersey, Florida, and Australia)

CHALLENGE

CitiStreet faced increasing volume on its Web applications, both from an expanding client base and increased utilization of the Web by the plan participants they service. An earlier migration—from a C-based solution to Enterprise Java—had been successful but now required ongoing improvement. CitiStreet needed to future-proof its Web infrastructure and stay on budget.

SOLUTION

Software: JBoss Application Server 3.2, Red Hat Enterprise Linux 4, Sun Java Virtual Machine 5.0

Hardware: HP ProLiant DL series servers (DL 580s and DL 360s)

Services: JBoss Consulting, JBoss On-site Training, JBoss Platinum Subscription, Red Hat Professional Services, Red Hat Support delivered through HP

BENEFITS

- Significantly increased hardware resources without incurring any software licensing costs
- Hundreds of thousands of dollars in additional cost savings per year with subscriptions to Red Hat Network and JBoss Operations Network
- Improved performance and user experience on CitiStreet website
- A resilient, highly-available, secure infrastructure to support long-term business growth
- High-quality and responsive 24x7x365 support from knowledgeable, technical staff

OPPORTUNITY

In 2001, CitiStreet first realized its Web infrastructure may not support its growing business and migrated from a C-based system to Enterprise Java, which would be less expensive,

more responsive, and more scalable. CitiStreet chose BEA WebLogic as its runtime application platform. At the same time, CitiStreet also made the decision to move off Sun Solaris to Red Hat Advanced Server 3.0 (now known as Red Hat Enterprise Linux), for their DNS servers.

By 2004, it was apparent that the new infrastructure would once again need to be upgraded to support CitiStreet's rapidly growing participant base, which had reached 6 million and was generating nearly 200,000 participant sessions and 26 million hits per day on their benefits recordkeeping portal. CitiStreet needed to expand capacity, failover redundancy, and fault-tolerance to support their existing customers and prepare for future ones.

That meant CitiStreet needed to increase the number of servers they were using. In addition, CitiStreet needed to move fast on the development side without compromising application quality or reliability. Barry Strasnick, CitiStreet CIO, explained: "It was important that we find a solution that was scalable, cost-efficient, stable, and crisp while maintaining high quality. The ability to avoid vendor lock-in, accessibility to the code, and developer support were all key factors we were looking for."

SOLUTION

An experienced technologist, Strasnick had been keeping an eye on open source software, which he knew would come with instant savings by eliminating upfront software license costs. He noted, "One of our corporate goals is to have the best possible response time for customers at the lowest possible cost."

A domino effect

The potential cost savings, combined with CitiStreet's experience with Red Hat, proved to

Strasnick that open source software was ready for prime time. As the linchpin of CitiStreet's new Web infrastructure, the application server became the critical technology decision. It was evident that the cost of additional BEA WebLogic licenses would prohibit Strasnick's IT team from realizing their ambitious infrastructure growth plans. For Strasnick, there was only one possible choice: JBoss Application Server.

"We had been monitoring JBoss since its inception, and were at a point where we felt comfortable switching from an expensive, proprietary middleware vendor to the much lower-cost, open source JBoss Application Server," he explained.

With that decision made, Strasnick realized CitiStreet was at an important crossroads. Given that the company outgrew its first migration in such a short period, he determined that this migration needed to be easily scalable in future. Strasnick noted, "Since we were going to change our application server and move to open source, we thought we may as well set a new standard and move everything over to open source."

The next most apparent software to replace was the operating system. Red Hat Enterprise Linux 4 was the natural choice, given CitiStreet's experience with the software and the company. Strasnick stated, "We chose Red Hat over other Linux options because of a combination of the superior user community, better hardware vendor support, and more hardware driver availability."

Partners at every turn

The implementation kicked off in August 2004. Development support was critical for CitiStreet, particularly given the short timeline they had to work with. CitiStreet engaged with JBoss for on-site training, which included three days of intense,

hands-on training from JBoss technical experts for CitiStreet's team of over 100 Java developers. The company also took advantage of JBoss consulting services designed to help jumpstart and accelerate the migration process.

"It was helpful to have consulting from JBoss and have developers physically on-site to review code and provide feedback on our progress," said David Lee, enterprise architect. "This was a very valuable part of our JBoss experience."

In addition, CitiStreet employed Red Hat Professional Services for both conversions and tuning efforts. Red Hats Professional Services offers more than 100 Red Hat Certified Engineers (RHCEs) to help clients design, install, and configure open source technology throughout the architecture stack. "We are very happy with the level of technical competence, which we consider extremely important, of the individuals involved," said Strasnick.

CitiStreet's new Web infrastructure went into production in February 2005 with JBoss Application Server running on Red Hat Enterprise Linux. In addition, CitiStreet runs Apache web servers, Sybase and Oracle database servers, DB2 servers, and COBOL servers on top of Red Hat Enterprise Linux. To support this new production environment, CitiStreet purchased subscription support from both JBoss and Red Hat.

Strasnick commented, "The overall JBoss solution costs less, and they do a better job of supporting us while Red Hat provides a superior product. As a result, we continue in our evolution to move all production boxes to that environment. We are comfortable moving the vast majority of our mission-critical applications to JBoss [Application Server] and Red Hat [Enterprise Linux]."

Red Hat and JBoss, an unbeatable pair

The company's migration to Red Hat and JBoss solutions took place before Red Hat acquired the middleware provider in June 2006. Happy with his separate decisions to incorporate both Red Hat and JBoss software into his stack, Strasnick is very pleased with the recent acquisition. Strasnick noted, "JBoss and Red Hat were just a natural fit."

He further elaborated, "The good news is that CitiStreet didn't see large problems with either entity pre-acquisition. We look forward to continued optimal performance of JBoss Application Server and Red Hat Enterprise Linux."

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BENEFITS

JBoss Application Server and Red Hat Enterprise Linux are now corporate standards at the global benefits provider. From implementation to deployment, the quality of support, cost savings, and reliability of Red Hat and JBoss have been consistent and beneficial for CitiStreet. Now, with JBoss as a division of Red Hat, two great entities have combined. Strasnick commented, "The acquisition of JBoss by Red Hat will only benefit our future management, development, and deployment."

Upfront and long-term cost savings

The Red Hat and JBoss solution reaped immediate cost savings for CitiStreet. In fact, CitiStreet didn't spend a single dollar in licenses even though it began running JBoss Application Server on more servers than it

ever ran on BEA WebLogic. Now that all core revenue-generating applications, such as their defined contribution and Health and Welfare applications, are running on JBoss Application Server, CitiStreet estimated it has saved and will continue to save hundreds of thousands of dollars every year through cost-efficient hardware resource deployment. The money CitiStreet has saved from hardware and software purchases “is used to both enhance our capabilities and minimize the costs we have to pass on to our customers,” said Strasnick.

Moving to Red Hat Enterprise Linux enabled CitiStreet to also save on licensing costs as well as utilize dual-core Intel Xeon-based servers from HP, which proved to be more cost-effective in the long run, providing greater capacity at a lower cost.

Responsive, customer-focused support services

Quality support available from Red Hat and JBoss, around the clock, has also been a huge benefit for CitiStreet. Easy access to support representatives has given CitiStreet great confidence in the products. While JBoss and Red Hat provide excellent technology, Strasnick is most happy to be working with a customer-focused company, much like CitiStreet. He noted, “I like the services model because all my money goes into implementation and support.”

Knowledgeable technical experts

JBoss and Red Hat technical experts were fully engaged to help CitiStreet during every step of the development, migration, and deployment process. Strasnick commented, “All our contacts have been with technically knowledgeable people, whether it is technical support, sales, or senior management. We were pleased with support during deployment, and we continue to

be pleased with the level of support we receive.”

An evolving business backed by an open infrastructure

CitiStreet has put into place a resilient, highly-available Web infrastructure that serves their needs today with room to scale in the future as their participant base continues to grow. In fact, CitiStreet’s experience with Red Hat and JBoss has convinced Strasnick and his team to consider other tiers in their IT infrastructure that may be suitable for open source, including the database layer.

Best of all, Strasnick no longer has to worry about vendor lock-in. Having experienced firsthand the difficulty of expanding CitiStreet’s Web infrastructure with a proprietary vendor, Strasnick has been extremely happy with his decision to move to open source.

Though CitiStreet subscribes to the highest service levels of Red Hat and JBoss support—which are becoming more tightly integrated following the acquisition—Strasnick is comforted to know that his team has access to the code. “With proprietary software, I have to worry about disrupting my infrastructure if I need to take it out and then find a replacement for it. With open source, the code is in our hands,” he explained.

A valued technology partner

The community, support and availability, and financial stability Red Hat offered made it an attractive technology partner for CitiStreet. With JBoss now a division of Red Hat, Strasnick is confident he made the right decision. He concludes, “CitiStreet depends on Red Hat and JBoss for our operations every day. We have realized the value of open source for the enterprise, especially in the areas of cost-savings, performance, and security.”

