



DST HEALTH SOLUTIONS - 2007 RED HAT INNOVATION AWARD WINNER

FAST FACTS

Category	Joint Red Hat / JBoss Deployment
Winner	DST Health Solutions
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Industry	Health Information Systems
Geography	Birmingham, Alabama



OVERVIEW

Selected for their use of Red Hat Enterprise Linux and JEMS to build a consumer-directed healthcare solution that was first-to-market, yielding immediate customer traction, increased market visibility, thus reflective of corporate leadership and success.

1. PLEASE DESCRIBE YOUR COMPANY. (NUMBER OF EMPLOYEES, PRIVATE/PUBLIC, INDUSTRY, ETC.)

DST Health Solutions is a wholly owned subsidiary of DST Systems, Inc., a publicly traded mutual fund processing company with approximately 10,000 employees worldwide. The DST Health Solutions subsidiary has 1,000 employees dedicated to delivering applications and outsourcing services that improve efficiency, reduce operational costs, increase speed to market, and improve customer service for health plans, consumer-directed health plans, Medicare plans, and physician practices. DST Health Solutions' enterprise applications and ASP and BPO services support 390 healthcare clients, representing 38 million covered lives, 360 million health plan claims, 30 million physician business transactions, and 450,000 consumer-directed members annually.

2. PLEASE DESCRIBE THE BUSINESS AND/OR TECHNICAL CHALLENGES YOU FACED IN THIS PROJECT.

Three years ago, DST Health Solutions began developing a consumer-directed platform for self-administration of flexible spending accounts (FSAs), health spending accounts (HSAs), and health reimbursement arrangements (HRAs). Previously, consumers could only access or make changes to their accounts by calling a claims support representative. Due to the growing demand for consumer driven health products, DST Health Solutions wanted to be first to market with a software solution that allowed members to log in and administer their own accounts. However, the company mainly focused on developing larger, more lenient business-to-business solutions that didn't require the constant uptime of a consumer web application.

Since developing a member accessed application was new territory, DST Health Solutions wanted to start with a conservative approach, while still providing the reliability demanded by consumers. DST Health Solutions needed a technology it could implement at a low cost and scale over time as membership numbers grew. Also important was technology agility, since DST Health Solutions wanted to put the systems together quickly without first building an extensive infrastructure.

3. WHAT WAS THE DESIRED SOLUTION?

DST Health Solutions needed a low cost, small volume stack that would scale with demand. Flexibility was a key factor, since the company wanted to get the system up and running quickly and then develop an appropriate infrastructure to support ongoing growth.

The goal was to build the system on inexpensive Intel-class hardware, with one application server and one database server, monitor the load, and quickly scale as needed. DST Health Solutions also knew it needed to guarantee uptime to ensure customer satisfaction.

4. PLEASE DESCRIBE YOUR VENDOR SELECTION PROCESS AND WHY YOU CHOSE RED HAT IN THE END.

The decision to use JBoss Application Server was initially one of necessity for DST Health Solutions. After considering several solutions, the company determined that the Sun application server didn't have the functionality needed, and Weblogic and Websphere were too cost prohibitive. A developer within DST Health Solutions started coding using JBoss and brought it into the organisation. The organisation immediately liked JBoss Application Server's flexibility, resulting in its quick acceptance. On the operating system side, DST Health Solutions used Novell's SUSE with JBoss for a short time before moving to Red Hat Enterprise Linux. SUSE was too unstable, and SUSE running on Oracle servers didn't provide the expected reliability. RHEL offered DST Health Solutions a cost-effective, rigorously tested technology that met the company's reliability and scalability needs. Additionally, the Red Hat Network (RHN) systems management platform would allow for easy maintenance and monitoring of the system.

5. WHAT ROLE DID RED HAT AND/OR JBOSS PRODUCTS PLAY IN THE FINAL SOLUTION?

A Red Hat and JBoss significantly contributed to the affordability and scalability of the project. Red Hat made administration of the whole infrastructure easier through use of the RHN management tools that enable the company to easily provision new systems as demand warrants, download important patches and configuration changes, and monitor the status of its 50-60 servers.

Because Red Hat Enterprise Linux is so agile, it can easily scale to handle large numbers of subscribers as well as heavy loads during peak times, such as open enrollment, when demand is high. RHEL also makes it simple to deploy new servers to grow the network without creating administration headaches.

The modularity of JEMS made it possible for DST Health Solutions to pick only the software development solutions it needed. The company uses JBoss Application Server to develop and grow its web application, Hibernate to eliminate the need for extra coding, and JBoss jBPM to facilitate business processes and workflow. As part of its subscription, DST Health Solutions utilises JBoss Operations Network (JBoss ON) and has implemented the Monitoring Module that provides the company with advanced monitoring capabilities, pre-selected statistics, and the ability to create custom statistics.

6. WHAT WAS THE OVERALL IMPACT OF THE PROJECT ON YOUR BUSINESS? (E.G. IMPROVED ROI, INCREASED COMPETITIVE ADVANTAGE, BETTER TIME TO MARKET, ETC.)

The health insurance industry is historically slow to adapt new technology. Using Red Hat Enterprise Linux and JBoss to develop, deploy, and scale its FSA, HSA, and HRA consumer-directed healthcare product allowed DST Health Solutions to be first to market and quickly attract large enterprise customers.

7. WHAT VALUE DID YOU GAIN FROM IMPLEMENTING RED HAT SOLUTIONS? IF A GAIN IN EFFICIENCY, HOW WERE THOSE ADDITIONAL RESOURCES ALLOCATED WITHIN YOUR COMPANY?

When DST Health Solutions first developed its consumer-directed healthcare product, a separate holding company owned the technology and CDH solution. DST Health Solutions credits the market visibility gained because of its new offering and resulting customer success with making the company an attractive acquisition target for DST Systems. DST Health Solutions' success using Red Hat and JBoss solutions in a production environment is leading its parent company,



also a Red Hat and JBoss user, to explore using the technology beyond its current development and testing environments. DST Health Solutions currently supports more than 450,000 lives on our CDH solution. DST Health Solutions was awarded a prestigious opportunity to serve one of the nations leading financial/ banking institutions.

Scalability was the key business need for this financial institution, as their consumerism offering expands and CDH members increase dramatically. The Red Hat framework afforded DST Health Solutions the flexibility and scalability to quickly adapt and deploy new lines of business, which further supported strategic decisions and penetration into evolving markets.

8. PLEASE PROVIDE A TECHNICAL DESCRIPTION OF IMPLEMENTATION, INCLUDING THE SIZE OF DEPLOYMENT. (I.E. HARDWARE SPECS, APPLICATIONS, O/S, DATABASES, ETC.)

DST Health Solutions uses 10 production application servers and three database servers, all of which are HP DL or BL class running Red Hat Enterprise Linux 4. All systems use AMD Operton processors and some feature SAN booting for easy system provisioning. The company also uses version 3.0.28 of the JBoss Application Server, with plans to move to version 4 soon. Other JEMS products used include Hibernate for object/relational mapping and JBoss jBPM for workflow applications.

9. DID YOU LEVERAGE RED HAT SUPPORT SERVICES, TRAINING, OR CONSULTING? IF SO, PLEASE DESCRIBE YOUR EXPERIENCE?

DST is a JBoss Platinum and a Red Hat Basic support customer. Skilled Red Hat engineers provide a high level of RHEL support when needed. Since DST Health Solutions began receiving support directly from JBoss, the company has enjoyed high-quality, prompt answers to its inquiries. While the company has not used consulting services because of the rapidity with which it put the system together, it foresees using these services in the future to help improve system performance.

10. DO YOU HAVE ADVICE FOR OTHER COMPANIES FACING A SIMILAR BUSINESS CHALLENGE?

Because it offers the maturity of older technologies and the innovation of newer solutions, Red Hat provides a nice medium for developers coming from an HP-Unix background. The more mature and conservative RHEL packages, testing, releases, and patches provide a stable solution for any project. While JBoss is more cutting-edge than Red Hat, it is easy to deploy and provides the stability needed in a production environment.

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