HILL AIR FORCE BASE - 2007 RED HAT INNOVATOR OF THE YEAR

FAST FACTS	
Category	Innovation in Government
Submitted by	Douglas Babb
Vertical	Government
Geography	Hill Air Force Base, UT .
Website	http://www.hill.af.mil.

OVERVIEW

Selected for use of Red Hat Enterprise Linux 5 to greatly reduce or eliminate system crashes, simplify a complicated operating environment and have minimal user disruption.

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

Hill Air Force Base in western Utah is part of the U.S. Air Force. Encompassing nearly 7,000 acres, Hill AFB is Utah's leading employer with almost 23,000 military and civilian employees. It is estimated that Hill AFB's national economic impact is more than $2 billion.

Begun in 1939 as Ogden Air Depot, the base was soon named Hill Field after Major Ployer Peter Hill. Hill Field opened in 1940 and was a crucial maintenance and supply base during World War II. Hill Field officially became Hill Air Force base in 1948. In the 1950s, Hill AFB personnel began maintenance support of various jet aircraft and missile systems. That support continue to this day. Despite downsizing by the government in recent years, Hill AFB has continued to grow. The Base Realignment and Closure Commission directed the workload from both San Antonio and Sacrament Air Force Logistics Commands. The Utah Test and Training Range, housed on Hill AFB, is one of only 5 live-fire air force training ranges in the county.

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

Hill AFB's existing system went down eight times in three months. With about 18,000 users on base, many of whom are doing highly sensitive and deadline-driven work, it can cost up to $1 million per hour when Hill's systems are down. Before Red Hat, Hill AFB has a very complex Windows and Oracle system that had been built over six years. There were surges in performance, long load time for applications and an unreliable system. According to Doug Babb, the IT systems architect at Hill and project manager for this undertaking, the existing system was providing "unacceptable application performance."

The technical challenges Hill AFB faced were immense but the problem becomes even greater when considering that Hill had not budgeted for a system refresh, leaving very little money for new software.

WHAT WAS THE DESIRED SOLUTION?

Hill AFB needed a cheaper, faster, more reliable system that would greatly reduce or eliminate system crashes, simplify a complicated operating environment and have minimal user disruption. The new system needed to add enhanced capacity for an increasing number of applications and users. Being a part of the U.S. Dept. of Defense meant that Hill needed a system that could guarantee security and reliability. Hill's IT specialists were also looking for a data center solution that would be transparent to the end user community and allow for business continuity.

Financially, Hill needed a system that would provide reduced total cost of ownership, lower capital expenditures both initially and in the long-term, and a reduced time-to-value. The lack of an allotment in the budget for the system overhaul put extra pressure on to find a solution that could solve the technical problems while not putting the IT department in the red.

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

When choosing a vendor for the new system, the IT managers at Hill AFB considered both Windows 64-bit and Linux. Frustrated with their current Windows environment, it became clear to the IT architects that Linux was the preferred solution. Because of security concerns, Hill needed to run security-enhanced Linux that was common-criteria certified. Red Hat Enterprise Linux stood out as the only Linux that was able to meet security concerns.

In addition to having enhanced security, Red Hat's solutions were much more economical than others. To sustain the existing environment and increase capability, it would have cost Hill a minimum of $5 million per year to use Solaris. Red Hat Enterprise Linux cost $100,000, just two percent of the cost of the old operating system.

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

Hill AFB is currently a little more than one year into their data center restructuring, using Red Hat Enterprise Linux as their new operating system. To integrate the new environment, Hill's CIO built a new system from scratch without affecting existing users. Hill's IT department performed aggression testing, deployed a test environment and had users review the new environment before switching the OS. The 11-step process used the Hill's IT system architects, along with the technical capabilities of Red Hat Enterprise Linux, allowed Hill to see immediate results and value.

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

The project saved time and money, the two most important resources in any business, particularly the military. Red Hat Enterprise Linux began saving the IT professional at Hill time almost immediately. The system was received on a Friday and was already running on Monday. There have been few, if any, glitches. The costly and frustrating systems failures have been eliminated and Hill's programs and applications are more reliable. Hill's data center now runs smoothly and efficiently, leaving personnel to focus on their jobs instead of worrying about their IT structure.

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

The value gained from implementing Red Hat was tremendous. Using Red Hat Enterprise Linux as the new OS, Hill AFB reduced its footprint by 25 percent. The nightly load time for the base's largest application has been reduced from an average of 12 hours to just 3 hours per night. There is an increase in capacity, reliability and security, allowing end users to work more efficiently.

Red Hat Enterprise Linux has eliminated performance surges and identified bottlenecks in the system, providing a more streamlined environment. End users were minimally disrupted by the change in systems but have since noticed a more improved IT environment. The total cost of ownership has been greatly reduced.

Because of Hill AFB's military status and lack of budget allocation for this project, there was no efficiency gained but an IT crisis was averted. At just two percent of the cost of the old system, Red Hat Enterprise Linux has performed substantially better and has increased system reliability, allowing IT professionals to focus on other areas.

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

The Hill AFB IT environment was a mixed Microsoft-Oracle one prior to the Red Hat deployment. Nearly 18,000 users were affected by the change to Red Hat.

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

All people involved in the Hill AFB Red Hat deployment were Red Hat certified, providing them with the necessary skills and capabilities to implement Red Hat Enterprise Linux with minimal problems. Hill's IT architects drew from the experiences of others who have used open source by becoming actively involved in the open source community and collaborating with others using open source for similar projects.

Though, because of their extensive training and learning process, they did not use Red Hat support services during deployment, the IT architects at Hill AFB are considering using Red Hat's training services during the next year to expand their knowledge of Red Hat solutions and open source.

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

Hill AFB IT architect Doug Babb and project manager Mike Jolley have several recommendations for others facing similar challenges. Do not rely on the opinions of others because they may be based on incorrect assumptions. When making a large-scale changes such as this, be inclusive and courteous to all those involved. This includes explaining the reason for the change and anticipating "human factors" when implementing a new system. Make sure the IT department has discussed how to change in increments, manage the overhaul and ensure that end users feel they are getting enhanced value from the new implementation.

Doug and Mike also recommend extensive testing of any new system. "One test is worth a thousand expert opinions," said Babb. Running tests, analyzing results and incorporating any necessary changes help tremendously with making the deployment efficient and effective. Finally, Doug and Mike note that it is important to keep in mind the effects on IT heating and cooling systems, as many people forget to look at this crucial element.

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