At First American, HP BladeSystem makes one out of many

Over 300 HP c-Class server blades are projected to deliver $714,000 in power savings, streamline consolidation, and reduce TCO by 30 percent.[1]

"By virtualizing with VMware and HP BladeSystem, we've reduced the total cost of server ownership by 30 percent and management time by 30 percent."

Aaron Andrews, Director of Distributed Systems, Windows® and Virtualization, The First American Corporation

First American

HP customer case study: server consolidation, virtualization

Industry: financial services

Objective

Scale processing power to support growth and integrate acquired infrastructure while reducing complexity and total cost of ownership

Approach

Consolidate and virtualize with VMware and HP BladeSystem

IT improvements

- Significant space reduction
- Lights-out data center operation
- 30 percent gain in administrator-to-server efficiency ratio
- Two- to three-day BladeSystem deployment reduced to an hour

Business benefits

- Sixfold faster integration of acquired IT assets (12 months reduced to two)
- Projected $714,000 in annual power savings[1]
- Additional projected $12,000 annual reduction in endpoint power consumption[2]
- In most cases, achieving close to 30 percent reduction in total cost of ownership

Helping you

Any time you get a new job, rent an apartment, buy a car or house, secure a mortgage, or open or buy a business, it's likely that The First American Corporation is playing an important role in your life—and you probably don't realize it.

This Fortune 500 company, based in Santa Ana, California, is America's largest provider of business information, with 2007 revenues of approximately $8.2 billion. Behind the scenes, it supplies data that helps inform and complete the major economic events in people's lives.

"We're fitting what would be 10 racks of traditional servers into one 10U HP BladeSystem enclosure."
Aaron Andrews, Director of Distributed Systems, Windows, and Virtualization, The First American Corporation

The First American family of companies operates within five primary business segments: Title Insurance and Services, Specialty Insurance, Information and Outsourcing Solutions, Data and Analytic Solutions, and Risk Mitigation and Business Solutions.

A common element links every one of these businesses: the value delivered depends on good IT. In few other companies is IT so essential.

To process information that makes its business possible, First American counts on a large mainframe environment and a large open systems environment. The open systems environment consists of 4,500 servers—but that doesn't mean 4,500 actual machines.

In 2007, the company standardized on virtualization. Using VMware on HP BladeSystem c-Class server blades, it has virtualized twenty percent of its servers. The 4,500 open systems run on 3,500 physical machines. That means First American has been able to avoid buying, maintaining, and feeding electricity to 1,000 physical systems. Yet, it gets essentially all the benefits of their capabilities.

Moving ahead, the company plans to virtualize more and more of its servers when they're scheduled to be refreshed. First American is a textbook example of the benefits possible from extensive virtualization.

Unify fast

The company turned to virtualization when it faced an almost universal IT challenge: in the wake of multiple acquisitions, how can the respective data centers be consolidated?

"Consolidation let us experience firsthand the value of virtualization, VMware and HP BladeSystem," says Jake Seitz, an enterprise architect at First American.

"We're now able to on-board new business much faster than before," adds Aaron Andrews, director of distributed systems. "If we were physically moving server hardware, it would be much more difficult. But by virtualizing servers, we can bring the acquired servers as images into our lab, test applications, and easily move them onto the production floor. On-boarding that would have taken a year before now takes two months."

Power up

First American has chosen to standardize on the HP ProLiant BL680c G5 Server Blades with quad core Intel® Xeon® 7300 Series processors. "Our objective is getting the maximum density of virtual machines (VMs) on each server," Andrews says. "We chose these servers because in our benchmark tests, they really were twice as fast as models that had dual core chips."

The company currently has 300 HP c-Class server blades and 270 HP p-Class blades. The latter will be upgraded to c-Class when it's time to refresh them. The c-Class server blades are in 25 HP BladeSystem c7000 Enclosures. Ten of those enclosures contain virtualized servers.

More are on the way. "We're about to virtualize another 600 servers onto 30–40 more server blades," Andrews says.

About The First American Corporation

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Projected $714,000 in power savings![1]

The IT team found that eight HP server blades inside an HP BladeSystem c7000 Enclosure can accommodate 180 VMs. That means the space required by 180 servers is reduced by 98 percent. "We're going from 10 racks to 10U," Andrews says. "We're fitting what would be 10 racks of traditional servers into one 10U HP BladeSystem enclosure."

Power requirements also drop by 90 percent. The 180 rackmounted servers would consume 450 watts each, totaling 81 kilowatts, Andrews notes. Running 180 VMs on 8 server blades consumes 6.7 kilowatts. The result is that 74.3 kilowatt-hours are saved for each enclosure. Multiply this savings by ten enclosures over a year, and the result is a projected annual power savings of $714,000.[1]

Additional energy savings will come from a desktop virtualization project the company will host in its HP BladeSystem environment. The team is rolling out VMware Virtual Desktop Infrastructure, which will convert existing desktops to thin clients. Watts per hour for each endpoint will drop 93 percent from 118 to 9. With 500 endpoints, the projected annual power savings for an eight-hour workday could eventually be $12,000 a year.[2]

Reducing needed power brings an added benefit. "VMware and HP BladeSystem have helped us significantly reduce our energy consumption," Seitz says. "This is the primary driver behind a substantial rebate from Southern California Edison this year."

A 30 percent gain in efficiency

Virtualization on HP server blades streamlines management, the team reports. "We can use HP iLO Advanced remote management to perform steps like powering servers on and off, installing media and monitoring and managing power consumption from our desks," Andrews says. "That's cut data center visits by 90 percent, from 10 a week to one a week."

Customer solution at a glance

Hardware
- HP ProLiant BL680c G5 Server Blades with quad core Intel Xeon 7300 Series processors
- HP BladeSystem c7000 Enclosures

Software
- HP Integrated Lights-Out 2 (iLO 2) Advanced Pack
- HP Systems Insight Manager
- Microsoft® Exchange Server 2003
- VMware Infrastructure 3 Enterprise

Operating systems
- Red Hat Enterprise Linux v4, v5
- SUSE Linux Enterprise v9, v10
- Microsoft Windows Server 2003, 2008, 2000

HP Services
- HP Factory Express

HP Partner
- CDW

In a rackmounted server environment, one administrator took care of 150 servers. With HP BladeSystem, one admin takes care of 200 servers—a 30 percent gain in efficiency.

Server management hours have dropped 10 to 12 percent annually. "That's enabled a 100 percent increase in servers with just a 10 percent increase in server administrators," Andrews says.

Doing what couldn't be done before

The team can deploy new servers faster. "Virtualization has enabled us to reduce our service level agreement for server deployment from 21 days to 15, for a faster time to value for new services," says Andrews.

The team can also plan and build capacity for new projects based on average rather than peak demand. "Before we had to dedicate hardware and software capacity to accommodate a potential 10 to 15 percent demand spike," Seitz says. "Now we only have to plan for average demand—and through VMware's Distributed Resource Scheduler (DRS) feature, we can allocate additional VMs as needed during peak demands. That means higher utilization for us and lower costs for the business units we serve."

Sums up Andrews, "If we had a rackmounted server infrastructure, we would not be where we are today. By virtualizing with VMware and HP BladeSystem, we've reduced the total cost of server ownership by 30 percent and management time by 30 percent. That's critical to our success."

And given what the company does, it's also critical to successfully completing economic events in the lives of millions of people around the world.

[1] $714,000 a year in projected power savings for servers = theoretical cost savings based on 74.3 kilowatts saved per hour x $.1097 cost per kilowatt-hour (U.S. government estimate of average cost of a kilowatt hour for commercial user in California) x 10 enclosures x 24 hours x 365 days.

U.S. government estimate at http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_a.html

[2] Projected $12,000 annual power savings for endpoints = theoretical cost savings based on 118 watts/hr. for desktops vs. 9 watts/hr. for thin clients = 109 watts/hr. saved x 500 endpoints x 8 hrs/day x 250 workdays/year = 109,000 kilowatt hours x $.1097 cost per kilowatt-hour (U.S. government estimate of average cost of a kilowatt hour for commercial user in California) = $11,957 a year or rounded to $12,000 a year. This projection assumes all endpoints will be used for an eight-hour business day and then turned off by end users.

If the 500 endpoints are left on 24/7, the projected annual power savings would be $52,000 a year, based on: 109 watts/hr. savings x 500 endpoints x 24 hrs/day x 365 days/year = 477,420 kilowatt hours x $.1097 cost per kilowatt-hour (U.S. government estimate of average cost of a kilowatt hour for commercial user in California) = $52,373 a year or rounded to $52,000 a year in projected power savings.

U.S. government estimate at http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_a.html

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