AXA Technology Services Uses VMware ESX Server to Meet Consolidation Goals Without Compromising Performance

Virtual Infrastructure Streamlines AXA Technology Services IT Infrastructure

KEY HIGHLIGHTS

INDUSTRY: **FINANCIAL SERVICES**

CHALLENGE

Consolidate servers - including trading platform - without sacrificing performance

SOLUTION

Used VMware P2V Assistant to migrate servers to ESX Server platform

RESULTS

- 15:1 server consolidation on 2-CPU servers, 30:1 on 4-CPU servers
- Shortened deployment time from 6-8 weeks to one day
- Improved server utilization by 60 percent
- Optimized server management with VirtualCenter
- Reduced downtime with VMotion
- Compressed development and testing cycles
- Drastically reduced energy and cooling costs
- Provided mainframe levels of reliability and data security at lower cost

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Ken Torricella, Director of Infrastructure Solutions Services

The Need to Consolidate

AXA Technology Services, an AXA Group internal service provider organization, provides infrastructure services for AXA Financial. In February of 2003, AXA Group and IBM announced a partnership to create a service agreement for enhancing the performance and efficiency of AXA's global computing infrastructure.

In early 2004, AXA Technology looked to leverage VMware® ESX Server™ and P2V Assistant to consolidate 11 Wintel servers that provide key functionality for AXA Financial's Broker Dealer Infrastructure. Developed and distributed in-house, the Broker Dealer Infrastructure is a trading platform that runs across a heterogeneous server environment including Windows, UNIX and mainframe systems.

Due to its high visibility and the brokers' low tolerance for poor system performance, it was critical that the platform perform at least as well in the VMware virtual environment as in the physical one. The role of the Wintel servers in the application includes a front-end user interface via Microsoft IIS running on NT 4.0 Server, WebLogic Application Server on NT 4.0 Server and MS SQL Server on NT Server 4.0. These physical servers spanned five different server models, each with unique drivers and maintenance procedures. In addition to maintaining system performance, the company sought to minimize the number of platforms to support, thereby streamlining maintenance and using fewer IT resources.

A Successful Migration Using VMware TAM

Ken Torricella is the Director of Infrastructure Solutions Architecture at AXA Technology Services. Working closely with Torricella's Windows Systems group, VMware advised on topics such as backup and recovery, high availability options, and Runbook documentation. In addition, AXA engaged a VMware Technical Account Manager (TAM) to assist with the program. The TAM worked with support to formulate special case escalation procedures for the cutover weekend.

Timothy Midgley, the Technical Lead in Ken's group, successfully migrated the production Wintel servers that drive the broker dealer application. P2V was used to migrate and then test the application running in virtual machines on ESX Server hosts. "Using P2V Assistant, we were able to quickly and easily migrate servers to our consolidated virtual machine environment, enabling optimal resource management and performance," Midgley says.

The virtual machines were distributed so that nine of them run on one ESX Server-enabled host, two run on a second (along with several non broker dealer virtual machines), and one ESX Server instance is reserved for standby operation in the event of a disaster. After migration and assessment of resource utilization on the virtual machines, the virtual machines were cut to production—replacing 11 physical servers spanning five different models.

VMWARE ESX SERVER AT WORK

- ESX Server on 4-CPU IBM x445 with 16GB RAM
- Guest operating systems: Microsoft® Windows® 2000, Windows NT 4.0
- Applications running in virtual machines include: SQL, Oracle, IIS, Ciscoworks, SUS, Puridiom and domain controllers
- Network configurations: teamed gigabit Ethernet connections for all guests

The Result: Performance

Due to careful planning and solid execution, the broker dealer application worked flawlessly in the virtual machine environment on ESX Server. The brokers who use the system to drive revenue noticed absolutely no change in availability, performance or service levels associated with this mission-critical application. "We wanted to gain the benefits of server consolidation, but we needed to guarantee that the performance of broker applications running on virtual machines would be as reliable as running them on physical servers," says Torricella. "With VMware ESX Server, we were able to successfully migrate our applications to virtual machines, and the applications ran flawlessly."

As resource requirements grow, the AXA team can fine-tune ESX Server to maximize application performance. Torricella notes, "VMware software was a key factor in the success of this project".

The benefits for AXA Tech of deploying virtual infrastructure include:

- **Cost savings**. AXA Tech reports savings of $550,000 in hardware expenditures, plus additional savings from better utilization of space and resources.
- **Server consolidation**. The AXA team is able to put an average of 12 virtual machines on each physical server for a 12:1 consolidation ratio. CPU utilization has also increased by 30 percent.
- **Time savings**. With VMware software, the AXA team can respond quickly to requests for new servers. Instead of taking at least three days to order and set up a new physical server, they can deliver it in just a few hours.

- **Increased flexibility and scalability**. Due to the ease of deploying new virtual machines, the AXA team can respond more rapidly and flexibly to business requirements for new IT resources.

"The VMware software has increased our capabilities while allowing us to conserve our hardware," Midgley says. "We are able to respond faster and we have complete control of our computing resources."

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