Virtuozzo Alleviates Windows Server Epidemic

Plagued by many small applications and requirements for multiple servers, AAMC consolidated its server infrastructure with Virtuozzo

Business Challenge

The Association of American Medical Colleges (AAMC) provides a wide variety of services to its members and prospective and current medical students. AAMC is a unique association as it provides considerable amounts of online and other computer-based services, supported by an impressive team of 100 IT and programming professionals.

When Lonnie Snyder, Senior Windows Systems Analyst, evaluated the 100+ Windows servers required to support the AAMC, he realized many of the servers were severely underutilized. The IT department was required to support many small applications on separate servers to avoid conflicts. It was not unusual for a single small application that was used once a month by one or two programmers to be loaded on four servers. Because of the development environment and the quality assurance process, it was necessary to have separate servers for staging, internal production, development and functional testing.

There were also quite a few older applications that had been ported to Web-based applications. When these Web-based applications performed poorly under heavy load situations, as is common in many IT organizations, the answer was to throw more hardware at the problem, further increasing the server epidemic.

Evaluation

AAMC decided to explore virtualization technologies as a way to consolidate servers. They evaluated VMware's GSX and Microsoft's Virtual Server in addition to Virtuozzo. VMware's GSX had some nice virtualization capabilities, but the price made it difficult to justify internally. GSX doesn't minimize OS licenses, so the only real savings was on the hardware. AAMC also evaluated Virtual Server and found that the product was immature. The performance was much slower than Virtuozzo and GSX and its emulation capabilities were crude and awkward.

After reading an article about the Virtuozzo architecture and OS virtualization, Lonnie Snyder decided to try Virtuozzo. The testing and deployment of Virtuozzo for Windows went extremely well, after

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Virtuozzo Solutions:

- **Server Consolidation**
- Disaster Recovery
- Service Provider
- **Infrastructure Management**
- **Development & Testing**

watching an online demonstration; he had Virtuozzo up and running in a few hours.

"We tested and evaluated all of our virtualization options," said Mr. Snyder. "Our Assistant VP really loves the fact that Virtuozzo virtualizes the OS kernel, not the hardware. Not only does it save money in licensing, he compares it to using mainframes earlier in his career. The systems just run without worry about the underlying hardware and using the management tools, you can move applications and functions seamlessly for hardware upgrades and maintenance."

Virtuozzo Solution & Implementation

AAMC typically runs *ten* virtualized environments (VEs) on a single physical server. The configuration can be a single application with servers provided for the different development uses, or it can be a combination of many applications on a single server. The first virtualized Windows server they launched was for a seldom used, but critical print server. After gaining some experience with Virtuozzo, more important applications such as Cold Fusion applications, Lotus Notes and a Sunguard Accounting program were migrated to virtualized servers. "When our Lotus Notes server died I brought the system back online in a VE. It now runs much faster and we simply don't think about the application or the server, it just runs," said Mr. Snyder.

An added benefit to AAMC is the fast provisioning time. Because a server can be provisioned in seconds, the testing servers can be provisioned for development on demand, so that valuable computing resources are not wasted.

VE 1: Sunguard IFAS	VE 2: Microsoft SharePoint	VE 3: Doc Finity	VE4: ACT	VE 5-10: Proprietary User-Facing Applications
Virtuozzo				
Windows OS				
Dell Server				

AAMC's Future Plans

The Windows server consolidation still continues and AAMC has begun an evaluation of Virtuozzo for Linux. Mr. Snyder also plans to expand the Virtuozzo deployment to cover Disaster Recovery capabilities as well. Several critical servers such as the domain controller will be replicated at a different site, using a Virtuozzo server as the server infrastructure for disaster recovery. "I'm looking forward to expanding our use of Virtuozzo, and using it in our Disaster Recovery site to consolidate systems and provide online backups of some of our critical network systems," said Mr. Snyder.

Hardware
• Dell
• CPU: Dual Xeon 3.6 GHz
• RAM: 8 GB
• 300 GB Hard Drive
• Raid 5

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Software Applications
• Cold Fusion Applications
• Lotus Notes
• Microsoft SharePoint
• Mercury Interactive Winrunner
• Sunguard Bi-Tech's IFAS (Integrated Fund Accounting System)
• ACT
• Proprietary User-Facing Applications (for members)
• Medical Specialized Applications: Doc Finity
• Print Servers

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