Improve data center efficiency with server virtualization technology

Today's businesses need and expect more agility from the IT department. New workloads must be brought online sooner, stay online longer and have fewer user disruptions, even as budgets shrink or underlying hardware fails. This expert e-guide from SearchDataCenter.com explains how to improve IT efficiency with server virtualization. Learn how to use this technology to enhance consolidation for added flexibility. Discover common data center efficiency issues and find out how to overcome them to meet more business needs promptly and effectively.

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With so much emphasis on technology selections, deployments, maintenance and support, it's easy for front-line administrators to forget that IT is there to serve the business -- not the other way around. Today's businesses need and expect more agility from the IT department. New workloads must be brought online sooner, stay online longer and have fewer user disruptions, even as budgets shrink or underlying hardware fails. But server virtualization technology and consolidation can provide much needed flexibility, allowing administrators to meet business needs more promptly and efficiently.

IT efficiency issues call for a solution

For The Motley Fool, an online financial services company based in Alexandria, Va., traditional data center growth had choked off IT efficiency. Equipment filled the available space, stretching power and cooling demands to their limits. It's a challenge faced by countless data centers.

"It severely hampered our ability to offer more [computing] capacity to do work," said Jeff Lovett, director of technical operations at The Motley Fool.

Lovett explained that new workloads, such as third-party applications or Web servers, and adding server resources, required 45 minutes of travel to the actual data center, followed by much equipment movement and reconfiguration to ensure proper power distribution. For the business, this meant slow response times and low IT productivity, frustrating the IT department.

"More cores in processors, more hard drives and the heat was expanding exponentially. We [the business] couldn't keep up with what was standard five years ago," Lovett said.

He finally turned to server virtualization technology to improve equipment utilization and allow more workloads to run on less equipment. The Motley Fool tech team spent
approximately six months experimenting with and testing free versions of Microsoft Hyper-V, Citrix XenServer and VMware vCenter, finally settling on VMware because of its maturity and feature set.

"We set aside the budget and the time and implemented VMware on a semi-small scale to start off with," Lovett said. He also noted that the implementation included several larger servers for hosting more virtual machines (VMs) simultaneously. VMware also provided assistance, which facilitated the initial deployment and setup.

The Motley Fool did not immediately move every workload to VMs, instead, they deployed low-priority servers and closely evaluated their behavior.

"Somebody would request a server and we'd try virtualizing it if it didn't have any huge business impact," Lovett said. "We put increasingly important servers on it."

Eventually, Lovett moved to the fully licensed version of VMware vCenter, which included vMotion and allowed the organization to virtualize its Web servers. This move took additional testing and a slow, systematic migration to vCenter.

"We basically kept adding [servers] piece by piece until we've completely virtualized our entire Web farm," Lovett said.

**The success of server virtualization technology**

Today, The Motley Fool is about 75% virtualized, and it runs approximately 200 VMs on 10 physical host servers. Lovett expects to approach 100% server virtualization within another year.

The move to server virtualization technology has caused few problems for the company. Lovett attributed this to VMware’s maturity, vendor support and experience gained throughout the process. Still, only a limited number of personnel were able to get up to speed on VMware prior to deployment. And several connectivity issues with a recently purchased storage area network (SAN) were quickly resolved with assistance from both the virtualization and SAN vendors.
Ultimately, server virtualization technology and server consolidation dramatically improved the business. Lovett suggested a 33% savings in overall server power consumption, a tremendous gain in rack space and an even more meaningful improvement in flexibility.

"What would normally take us the better part of two days to get a Web server up and running...takes about one or two hours now," he said. Lovett also noted that a hands-on presence in the data center is no longer needed, eliminating travel time to the physical data center and further improving IT efficiency.

Remaining projects for The Motley Fool include virtualizing the organization’s database servers, achieving database VM availability and moving to virtual desktops. Lovett acknowledged that desktop virtualization is complex, and he has no timetable for deployment. But he is currently experimenting with VMware View and Citrix XenDesktop.
Resources from HP and Intel

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