



Virtualization Revolution

Penton Media leverages server virtualization to manage growth, reduce costs and optimize business continuity across the enterprise.

Managing data, information and knowledge is among the biggest challenges of the Digital Age. For Penton Media, one of the nation's leading producers of business newsletters, trade magazines, conferences and web content, success is measured in more than accounts, clicks and eyeballs.

IT efficiency drives results and bottom-line profits. "Managing systems and data effectively is the key to executing our business strategy," explains Ken Savoy, director of infrastructure services.

New York City-based Penton, with more than 1,300 employees spread across 20 U.S. offices, takes the concept seriously. It has turned to server virtualization and made it the centerpiece of its IT strategy.

With 113 magazines (covering 30 industries), nearly 150 websites, some 200 e-newsletters and nearly 100 industry trade shows, maximizing server resources and boosting overall IT efficiency is paramount.

The company operates an enterprise data center in Overland Park, Kan. The firm also has a second externally managed facility in Dallas. The latter hosts various client websites.

In 2005, Penton turned to server virtualization in order to boost utilization rates, trim energy costs, increase system and data availability, and consolidate data-center operations. Today, the company is steadily phasing out older, less efficient rack-mount servers and replacing them with more powerful, yet energy-efficient systems, including blades.

The firm has so far migrated about 170 servers to virtual machines and has reduced the number of physical servers by approximately 50 percent. This has eliminated eight racks within the enterprise data center.

The result? "We have more flexibility and room to grow," Savoy says. "We've also been able to avoid upgrades to cooling systems."

Reading into Success

Over the last few years, huge volumes of data are forcing organizations to seek greater IT efficiencies. This is one of the reasons why server virtualization has taken the corporate world by storm.

In fact, industry estimates indicate that annual data growth rates now average approximately 50 percent. And within some organizations, the figure tops 100 percent annually. In addition, rapidly escalating energy costs are forcing many organizations to reexamine the way they manage data centers and their overall operations.

Simply put, server virtualization allows businesses to combine and consolidate workloads on a smaller number of physical servers. The main goal is to reduce costs and increase hardware utilization.

Basically, it allows a firm to maximize the value of their IT infrastructure investments. That can help increase ROI as well as cut the Total Cost of Ownership (TCO).

Over the years, hardware and software have matured and servers have become better optimized for virtualization. Companies have responded by transforming the technology into a mainstream proposition.

According to market research consulting group, IDC, worldwide virtualization license shipments in the second quarter of 2008 increased 53 percent year over year, with a heavy focus on x86-based systems.

In fact, today, 88 percent of organizations currently invest in virtualization initiatives. And 63 percent say they have already achieved success with server virtualization, IDG Research Services reports.

Virtualization at Penton

At Penton, the march to virtualization is now in full force. The company has a mix of virtualized systems in place — running Windows 2000, Windows Server 2003, XP, Vista, Windows Server 2008 and assorted Linux systems.

It has turned to VMware ESX, VMware vCenter Server and other tools to build a robust virtualization platform. As older systems and hardware become obsolete and enter the refresh cycle, Penton is installing the new machines as virtualized nodes on its network.

“There is only an upside to making the transition to virtualization,” points out Lucas Smith, senior systems architect for Penton. “We’re achieving better performance and cutting IT costs.”

Although Penton has never adopted an official virtualization strategy, the technology is now an entrenched part of its IT department and overall approach to business. “It is a real advantage to add virtual machines without paying \$10,000 for a replacement server,” Savoy says.

“As long as we have the capacity in the VM [virtual machine] cluster, we’re not incurring any capital cost to make additions and modifications,” he adds. And while energy savings isn’t a justification on its own, the company has watched its energy bills drop as it has migrated to virtualized servers.

No less important: system uptime has improved and it is now possible to transition to a new virtual server without shutting down applications and live sites. This makes software upgrades, changes, patches, memory upgrades and other administrative tasks far less cumbersome. And it allows Penton’s IT department to use staff more strategically.

“We can move boxes in real time without any kind of disruption or glitch,” Savoy says. “We simply transfer the virtual machine to a different node, make the changes and we’re set. We no longer need to work through the night and deal with stressful and challenging situations.”

In fact, with virtualization, the IT department can update applications without the risk of losing servers and inconveniencing employees for extended periods.

If something goes wrong with an installation or an application winds up broken, IT simply leaves the system offline, or it can even roll it back to a previous system snapshot or application state that is known to work correctly.

“We have been able to reduce outages from hours to minutes,” Lucas notes. “Troubleshooting has become much less complex and stressful.”

Business Continuity/Disaster Recovery

Another area where server virtualization is quickly gaining appeal is its contribution to Business-Continuity (BC) and Disaster-Recovery (DR) initiatives. These typically carry a hefty price tag and level of complexity, not to mention extensive idle hardware.

Server virtualization allows less hardware at the recovery site and easier failover and recovery. For example, a firm may be able to replicate a disaster-recovery environment of 20 servers with just three machines.

The move to virtualization has helped Penton ratchet up BC and DR by improving overall system availability. If a server fails, the IT department can switch over to a different virtual machine quickly and seamlessly.

“We can make a switch without anyone knowing that any kind of problem exists,” Savoy points out. Penton will further develop its disaster-recovery capabilities over the next few years. “Virtualization offers a realistic and price-effective option for disaster recovery,” he adds.

Even more, the expense associated with traditional disaster-recovery efforts often forces businesses to only protect the most critical applications. This may leave a number of other areas vulnerable.

With virtualization, many organizations are able to expand the scope of their disaster recovery and, at the same time, simplify the process.

Virtualization can also help to ease the data-recovery process. Because traditional solutions tend to entail numerous steps that can be difficult to automate, the practice tends to be slow, complex and prone to human error.

Virtualization, on the other hand, opens the door to automated disaster recovery. This can subsequently increase reliability and availability.

Virtualization Value

As publishing has become digital and interactive, Penton Media has been at the vanguard of change — migrating to online sites with audio and video, data links and interactive capabilities.

As a result, demand for servers and storage space has exploded. Penton, the largest independent business-to-business media company in the U.S. — serves more than six million professionals each month. Not surprisingly, account managers, sales reps, editors, art directors and support staff require sophisticated and dependable IT systems.

Server virtualization helps Penton manage a mélange of applications, processes and initiatives. The company runs enterprise applications such as Oracle Financials on VMs.

It also operates IT test environments and manages various file servers, web servers, Exchange servers and a mix of desktop applications within virtualized spaces. Although the initiative has provided positive results and a solid return on investment, the biggest obstacle, Savoy notes, is helping executives throughout the company understand the value proposition.

“It’s not uncommon for managers to initially question virtualization,” Savoy says. “They don’t always understand why they’re allocating money for a piece of hardware but suddenly there’s no hardware involved.”

He and other IT executives have found themselves explaining the concept to business executives throughout the firm. They also work with them to understand how virtualization provides benefits and ROI.

“It’s difficult for people to change their ways, so there has been an educational component to this initiative,” Lucas says. Similarly, managers have had to understand that shared virtualized resources change the way departments allocate expenses for servers.

Nevertheless, the march to virtualization is on. Penton is now able to run as many as 20 virtual machines on a physical server, and it has boosted utilization rates as high as 80 percent.

This is helping usher in a new era of computing and IT. In fact, two years ago, the company embarked on an ambitious upgrade initiative — replacing old and underperforming servers at office sites with newer Hewlett-Packard and other systems better able to run virtualization software.

At Penton Media’s Dallas data center, virtualized servers are now hosting the vast majority of the firm’s client websites. “It’s helping us become even more efficient,” Lucas says.

In March 2009, Penton owned 68 physical servers at the Dallas collocation facility. (Penton owns the hardware, though a third-party provider manages the data center.) At that time, the firm established the first virtualized node, which incorporated eight instances of Windows and Linux.

Since then, the firm has added two other nodes, and it is continuing to switch physical servers to the virtualized environment over a six-month time span. The goal? “We would like to reduce the number of physical servers by one-half,” Savoy explains. “We’re hoping to have a couple of SQL clusters and a four-node or perhaps eight-node VM cluster.”

In fact, as server virtualization software has become more robust and stable — and security tools in the virtualized environment have become more mature and easily deployed — Penton has watched resistance melt, and it is now expanding its use throughout the enterprise.

Eye on the Future

With server virtualization delivering stellar results, Penton Media is tackling other IT infrastructure projects. Lucas says that the company is looking to use virtualization and other technologies to further consolidate servers and systems.

“We have massive amounts of data on our network and a lot of it resides in legacy applications that are still producing revenue for the company,” he says. However, managing these systems requires disproportionate IT resources, whether they are virtualized or not. “Streamlining these systems and finding creative ways to reduce these legacy applications is essential.”

The company also recently completed a transition to IP telephony and unified communications. In April, Penton upgraded to the most recent versions of Cisco Call Manager and Microsoft Exchange.

Make no mistake, today's highly competitive and fast-changing business environment demands a solid IT foundation. Virtualization drives remarkable improvements in utilization and performance.

It's an impressive step forward and one that promises to reshape the media giant in the months and years ahead. "Virtualization allows us to get the most out of our hardware while also cutting costs and achieving greater energy efficiency," Savoy concludes. "There are clear benefits to deploying server virtualization within our data centers."

Penton and CDW Produce Results

For more than a decade, Penton Media has turned to CDW to assist with purchases — including printers, multifunction devices, peripherals and software. CDW provides the technical acumen and customer support that Penton requires to manage its business and IT operations effectively.

"Having an account manager who is knowledgeable and responsive is a huge factor in how we make purchases," says Ken Savoy, Penton's director of infrastructure services.

Savoy typically turns to CDW to research products and find solutions that fit within its business and IT requirements — as well as its budget. "Our sales manager at CDW understands our business and takes a hands-on approach.

"When we need to devise a solution, she usually has a clear idea of the nature and scope of the initiative," he says. "There's a clear value proposition."

In addition, CDW provides Penton with ongoing technical expertise. When the media giant recently sought to rebuild and update its telecom system, CDW tapped the internal expertise residing in its engineers to devise a custom solution.

Says Savoy: "We have had situations in the past where we bought through a third party provider and it was disappointing. When CDW presented the information to us, there were lots of excellent and well-thought-out ideas."

At a Glance:

Company: Penton Media Inc.

Headquarters: New York, New York

Employees: 1,600

Offices: 30

Business: An independent business-to-business media company in the U.S., Penton produces 113 magazines, 145 websites, more than 200 e-newsletters, 96 industry trade shows and 500 rich data products reaching more than six million professionals monthly.

Data centers: Overland Park, Kansas; Dallas, Texas (managed by a third-party provider)

Hardware: Hewlett-Packard and other servers

Virtualization Software: VMware ESX, vCenter Server, VMotion and vStorage.

CDW CAN DEVELOP A SIMPLE, YET COMPREHENSIVE APPROACH TO SERVER VIRTUALIZATION SOLUTIONS PROVEN SUCCESSFUL FOR ALL TYPES OF BUSINESSES. CALL 800.800.4CDW TO TALK TO A SPECIALIST TODAY.