

# THE GREAT VIRTUALIZATION MIGRATION

The benefits of infrastructure virtualization are many and proven. Increased operating efficiencies top the list.

New server deployment time—one hour. Server hardware cost savings—\$331,000. Server process utilization rate—60 percent, up from 10 percent. For Concord, Mass.-based Welch Foods, producer of Welch's juices, virtualization has paid enormous bottom-line dividends. It's also allowed the company to free up space in the data center by consolidating applications onto just 10 Dell PowerEdge servers running VMware ESX Server. The alternative would have been to purchase 100 stand-alone servers at a cost of \$720,000.<sup>1</sup>

Today, with robust management software and native, on-chip support at the processor level, virtualization solutions are bringing operational efficiency to distributed computing environments like never before. As a result, IT executives are taking notice—and enterprise

adoption is taking off. In fact, according to a May 2006 survey conducted by The Strategy Group for Ziff Davis Media (sponsored by Dell), over 80 percent of the 205 IT decision-makers polled have either implemented or are planning to implement virtualization in their environment.

The survey further revealed the reasons why companies are embracing virtualization (see survey results graph, below). The top three—lower hardware costs, lower maintenance costs and higher utilization rates—were cited by a third or more of respondents. Clearly, IT executives are searching for greater operational efficiency. And virtualization delivers.

Virtualization is a key component of the Dell Scalable Enterprise strategy. Working with industry leaders Intel, VMware, Altiris and EMC, Dell offers

mature, proven, best-of-breed solutions that can deliver dramatically higher levels of operational efficiency by helping to:

- Improve server utilization rates
- Streamline development and test environments
- Support legacy applications more effectively

Let's look at each of these cases more closely.

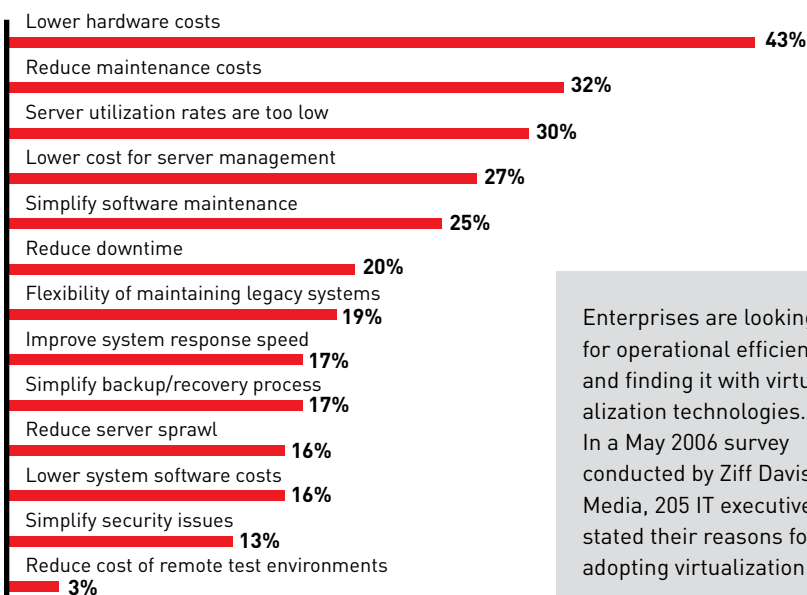
## IMPROVING SERVER UTILIZATION

Imagine if factories operated their machinery at five or ten or even twenty percent of production capacity. They wouldn't stay in business long. And yet that has been the standard operating procedure for enterprise servers.

However, with server virtualization, efficiency is the new model. Diverse operating systems and applications that previously would have required many physical servers can now be encapsulated into virtual servers and consolidated quickly and easily on a single server. Moreover, virtualization lets administrators relocate or replicate workloads quickly and easily, so maintenance can be performed without affecting service levels or uptime. The effect is better utilization of resources—hardware, software and human—and greater operational efficiency across the board.

In addition, virtualization can provide the basis for outstanding scalability. By moving away from the one-application/one-server model, enterprises don't have to buy excess server capacity that locks them into older technology. By deploying applications on virtual machines, companies can make the most of the re-

## TOP FACTORS DRIVING VIRTUALIZATION ADOPTION



Enterprises are looking for operational efficiency and finding it with virtualization technologies. In a May 2006 survey conducted by Ziff Davis Media, 205 IT executives stated their reasons for adopting virtualization.

<sup>1</sup> "Welch Foods: Out of a Jam with Virtualization," *Baseline*, April 2006

sources they have, then add more capacity as needs arise. Stability may also be enhanced because if one virtual machine fails while sharing physical resources, the other servers (virtual machines and physical hosts) aren't affected.

### STREAMLINING SOFTWARE DEVELOPMENT AND TEST ENVIRONMENTS

Virtualization enables companies to test software in a controlled environment prior to deployment without disrupting production environments. Multiple virtual machines may be used to create a virtual multi-server environment for distributed testing on a single physical server.

This lets IT departments demonstrate new software as well as test patches and upgrades to copies of their exact environment without fear of corruption or end-user downtime. It also helps speed up platform certification because it allows for certifying to a common virtual interface rather than multiple implementations or generations of physical hardware.

Lastly, virtual machines can be set up in minutes and used multiple times. Applications and services are therefore far more likely to be developed on time and within budget—contributing to skillful, economical application lifecycle management.

### SUPPORTING LEGACY APPLICATIONS

Virtualization can simplify operations by ensuring workload portability across multiple servers. This includes the ability to “re-host” software—even legacy operating systems that are no longer supported—on new servers. In essence, companies can migrate to new versions of Windows® and Linux®, while keeping old OSs and applications for as long as they serve a purpose. Platform-specific incompatibilities or “quirks” can be eliminated by encapsulation in virtual machines.

By supporting legacy OSs and applications, virtualization provides long-

term stability and support in a static environment. By decoupling hardware from the host OS, each can evolve without disrupting the other environment. This type of deployment may be carried out today within environments where the guest OS is supported by the virtualization software, as is the case with the VMware virtual infrastructure environment.

### CHOOSING THE PRACTICAL PATH

Every organization has its own reasons for migrating to virtualization, based on business needs, competitive challenges, existing infrastructure, and other factors. And as we've seen, virtual infrastructures that help companies run a leaner, more efficient data center can't be beaten.

Where do companies turn when seeking guidance on virtual infrastructure technologies and deployment solutions? The Strategy Group/Ziff Davis Media virtualization survey confirms that no clear leader has yet emerged. The top three server systems vendors were virtually tied for first place as hardware vendors likely to be considered for a virtualization project, and most preferred brands.

Dell and its partners—Intel, VMware, Altiris and EMC—aim to change the game with tightly integrated virtualization solutions that are proven and ready for deployment. By working together on the key components—servers, virtualization infrastructure software, management and storage—these partners deliver the best-of-breed answer to today's top IT challenges. And Dell Services for assessment, design and implementation help companies jump-start virtualization projects and keep them running successfully.

Forward-thinking companies around the globe are using these virtualization solutions to get the most out of what they already own, while positioning their infrastructure to respond to new business demands. For more information, visit [www.virtualization.ziffdavis.com](http://www.virtualization.ziffdavis.com). ■

## VIRTUALIZATION GIVES AD AGENCY COMPETITIVE EDGE

For GSD&M, a 750-person advertising agency in Austin, Texas, server virtualization was key to staying competitive. GSD&M boasts a demanding list of clients that includes Wal-Mart, Southwest Airlines, and the PGA Tour.

“We in the IT department see ourselves as enablers,” explained GSD&M Chief Technology Officer Jerry Rios. “We allow our creative people to respond quicker and deliver work faster than our clients have been accustomed to in the past.”

Besides enabling his creative people to work more efficiently, Rios and his staff are improving the reliability and ease of management of the IT environment through a solution that includes Dell PowerEdge servers, VMware virtual infrastructure software, Altiris management tools and a Dell/EMC storage area network. Most recently, GSD&M purchased a four-way Dell PowerEdge 6850 server—based on the 64-bit Intel® Xeon® processor—that features on-chip virtualization support at the processor level via Intel Virtualization Technology. Performance is outstanding even while handling many virtual machines containing multiple operating systems and applications.

“We're consolidating 18 virtual servers on one physical server,” Rios said. “The PowerEdge 6850 is very powerful hardware that allowed us to clear out a huge area of our data center.”

Advertising is a tough business: as agencies acquire new clients, they are expected to add staff virtually overnight to accommodate them. To help speed the deployment of data resources and improve the management of its computers, GSD&M uses Dell OpenManage™ along with the Altiris Management Suite. Virtualization enables GSD&M to encapsulate complex configurations onto virtual servers that can be easily replicated. And with Dell and Altiris software, new employees are provisioned automatically.

