

# VIRTUALIZATION: Progress and Opportunity



Standardizing on the latest server hardware, such as 11th-generation Dell PowerEdge servers featuring Intel processors, can help businesses overcome many of the challenges that keep them from capitalizing on virtualization's capabilities.

LONG USED ON MAINFRAME and RISC-based hardware platforms, server virtualization has established itself in just a few brief years as one of the most important technologies in x86 computing. Looking to lower power and cooling costs, simplify administration, and conserve data center floor space, businesses of every description are rapidly virtualizing their physical infrastructures. Yet at present, most of them are exploiting only a portion of virtualization's power to radically increase IT agility.

A recent IDG Research Services survey of Computerworld readers underscores these trends, revealing that while virtualization is rapidly becoming a mainstream presence in today's data centers, challenges related to security, complexity, and management are preventing companies from fully capitalizing on its potential.

This white paper examines the results of the survey. It also explores how standardizing on next-generation server hardware can help businesses overcome many of their top virtualization challenges.

## Virtualization Adoption Trends and Challenges

Server virtualization is one of the most pervasive technologies in enterprise IT today. Indeed, analyst firm IDC estimates that virtual server shipments will exceed physical server shipments in 2010.

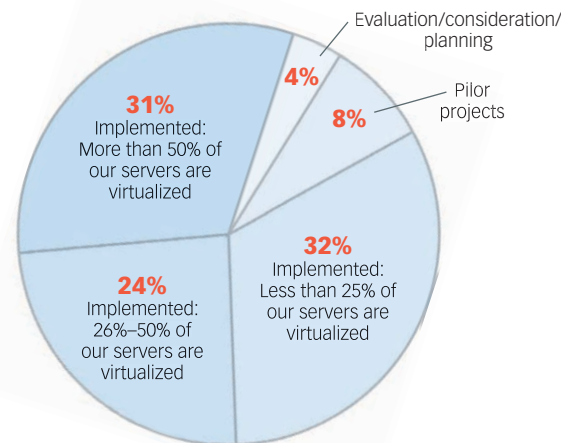
The Computerworld survey results confirm that adoption of server virtualization is widespread: 87 percent of respondents have virtualized at least some of their servers, and 31 percent

have virtualized more than half. Moreover, companies that use virtualization are gaining significant benefits. For example, 53 percent of respondents have experienced greater operational efficiency, and 55 percent have seen their power and cooling requirements drop.

Even so, businesses appear to be exploiting only a fraction of what virtualization can do. Eighty-five percent of respondents with virtual servers are using them to support server consolidation, and 72 percent are using them to support application development—yet those are some of virtualization's most basic deployment scenarios. When utilized fully, virtualization can help companies dramatically increase their IT agility; empower technology managers to roll out business solutions in minutes versus days; scale processing and storage capacity up or down dynamically in response to shifting needs; and even migrate workloads globally to wherever energy is currently cheapest.

Why, then, haven't more companies capitalized on these opportunities? Asked to list their top virtualization challenges, 31 percent of respondents cited security concerns; 30 percent pointed to increased complexity; and 26 percent named inadequate management tools. Such issues are undoubtedly discouraging IT managers from fully employing virtualization.

## At what stage is your company with regard to deploying server virtualization?



## The Power of Server Standardization

In reality, organizations can alleviate many of their biggest virtualization concerns by standardizing on state-of-the-art server hardware. For starters, the latest servers come with cutting-edge security safeguards. Servers equipped with the newest Intel Xeon processor 5600 series, for example, include Intel Trusted Execution Technology, a hardware-based solution that isolates applications in protected execution and memory spaces, shielding them from software-based attacks and system-level threats such as rootkits.

Similarly, 11th-generation Dell PowerEdge servers contain a Trusted Platform Module (TPM). Installed directly on a computer's motherboard, TPMs securely store encryption keys, digital certificates, and other sensitive data in tamperproof files. When used in conjunction with software-based security techniques, TPMs can significantly reinforce a server's defenses.

Standardizing on the newest server hardware can remove complexity from virtualization as well. Decreasing the number of hardware platforms in a data center simplifies administration, saving time and money. In addition, server manufacturers now offer pre-built hardware configurations that make deploying and integrating virtual environments simpler. Dell Business-Ready Configurations, for example, include servers, software, storage, implementation guidance, and more, enabling companies to build a dynamic, efficient virtual infrastructure faster and more easily.

The latest servers also come with powerful management tools. For example, Dell PowerEdge servers feature Lifecycle Controller, an embedded chip that supports complete server lifecycle management across a comprehensive list of functions such as provisioning, deployment, configuration, and updating. In the past, hardware manufacturers usually required IT managers to retrieve such functions from easily-lost CDs and DVDs. By embedding them on the Lifecycle Controller instead, server management is streamlined, reducing the number of steps taken to perform operational tasks and saving IT administrator time.

In addition, Dell PowerEdge servers come—at no additional charge—with a number of systems management applications, including:

**DELL MANAGEMENT CONSOLE:** A standard feature on all Dell servers, Dell Management Console (DMC) provides IT managers with a comprehensive, unified view of their IT infrastructures. DMC offers administrators multiple views of the IT environment, including device tree, graphical

report, and exportable table views, with drill-down capabilities that enable in-depth visibility into configuration and inventory data, software patch revisions, and compliance information. Systems management tasks (such as discovery, inventory, monitoring, and updating) can be performed from a single console, helping avoid the need to use multiple tools and interfaces. Tasks can also be automated, which streamlines systems management and increases efficiency.

**DELL OPENMANAGE SERVER ADMINISTRATOR:** Available free, Dell OpenManage Server Administrator (OMSA) equips IT managers to administer servers and their internal storage arrays. In addition to detailed information on system configuration, health, and performance, OMSA provides online diagnostics that administrators can use to identify and resolve problems, locally and remotely.

Furthermore, Dell-provided connections enable companies to integrate Dell OpenManage with other popular management tools, including CA NSM, HP OpenView Network Node Manager, and IBM Tivoli Enterprise Console.

## Conclusion

As the Computerworld reader survey results make clear, the majority of businesses today have virtualized at least some of their servers and are realizing significant benefits because of this. To date, however, most of those companies have confined themselves to relatively basic uses of virtualization, such as server consolidation, due at least partially to concerns about security, complexity, and management. Consequently, few organizations are taking advantage of virtualization's ability to radically increase IT flexibility and efficiency.

Standardizing on the latest server hardware, such as 11th-generation Dell PowerEdge servers featuring Intel processors, can help businesses overcome many of the challenges that keep them from capitalizing on virtualization's capabilities. Companies looking to maximize agility and minimize costs will benefit from hardware standardization as the next step on their path to a fully virtualized infrastructure.

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