

Virtualization—aligning IT supply with business demand

Thought leadership from HP: turning silos into resource pools



"Virtualization technologies will enable higher utilization rates. . . . By 2008, server utilization rates could improve from 25% on average today to more than 40% on average. . . . Businesses will not be able to ignore this trend—the cost benefits will be too great."

— Tom Bittman, "Real-time Enterprise Demands a Real-time Infrastructure" Gartner Symposium, October 2004



A new world of computing

At HP, we see virtualization as one of the keys to a new world of computing, where application services execute on shared IT resources, allowing business and IT to be synchronized. Virtualization allows you to dynamically allocate and manage resources in a utility-like way. It helps you break down the rigid IT structures that inhibit business agility. Virtualization also helps you increase utilization of valuable computing resources.

The agility challenge

Historically, IT departments have organized and governed technology and human resources in silo-like structures that dedicate resources to particular applications or business functions, such as ERP, CRM, or Web-based services. The capacity of each silo is fixed. Resources are over-provisioned to meet peak demand.

The result? Inflexible systems that are chronically underutilized. One recent study found that some corporate data centers use just 10 to 35 percent of their available processing power. Virtualization makes these past approaches just that—a thing of the past.

Virtualization is an imperative

To break down silos, enterprises need to create IT infrastructure pools that can be shared by multiple systems and applications. They also need to reorganize processes to enable diverse functions to share the same technology and human resources. Virtualization makes this new approach possible. Virtualization allows you to pool and share IT resources to improve utilization and enable supply to automatically meet demand. Virtualization makes good business sense. It simultaneously helps you reduce costs and increase agility.

HP leadership

HP's experience with virtualization runs deep. Early breakthroughs, including VAX Clusters and the NonStop architecture, led to new ways to manage large-scale systems and maintain continuous availability. Recent innovations, such as the HP Virtual Server Environment and the HP BladeSystem infrastructure, help IT organizations simultaneously reduce costs and increase agility.

Solutions for the adaptive enterprise.



The big picture

In its drive toward the new world of computing, HP focuses its development resources on five technology areas: virtualization, automation, grid computing, service-oriented architecture (SOA), and utility services. Working together, these technologies enable shared, utility services that allocate IT resources dynamically on an as-needed basis, to deliver lower unit costs with greater speed of response. This utility-like approach to computing is core to the HP Adaptive Enterprise vision, in which business and IT are synchronized to capitalize on change.

Today, HP invests millions of dollars in the industry's broadest set of virtualization solutions. These solutions enable your enterprise to pool and share IT infrastructure resources—servers, storage and networking, and even clients and printers—as well as to better organize your IT processes. Only HP is unifying the management of the physical and virtual with integrated solutions that simplify control of virtualized resources. And we're not stopping there. We are working with our enterprise customers to develop new approaches to governing the delivery of IT as a service based on a virtualized, shared infrastructure.

Looking to the future, we are working to bring unprecedented levels of automation to the allocation of IT resources. In this new world of computing, modular application services will be executed on a virtualized, shared IT infrastructure that can be dynamically allocated and managed in an automated, efficient, utility-like manner.

The HP virtualization approach and offering

HP solutions go beyond innovative technologies to help your enterprise design and develop IT processes that draw upon a virtualized infrastructure for the delivery of computing as a service. HP focuses on delivering virtualization at three levels: element virtualization, integrated virtualization, and the complete IT utility.

Element virtualization optimizes individual servers, storage, networking, and other resources—such as software, printers, and PCs—to meet demand within a single application environment or business process. HP builds virtualization capabilities into many of its standard offerings. HP element virtualization capabilities include offerings for:

- Server virtualization
- Storage virtualization
- Network virtualization
- Software virtualization
- Printer and client (PC) virtualization

Integrated virtualization enhances multiple infrastructure elements within a single application environment or business process to automatically meet service-level agreements. HP integrated virtualization offerings include:

- HP BladeSystem infrastructures
- HP Virtual Server Environment (VSE) for HP Integrity Servers
- HP StorageWorks Grid Architecture
- HP Integrity NonStop application virtualization
- HP Adaptive Network Architecture

The complete IT utility improves the utilization of resources across applications and business processes, pooling and sharing them so supply automatically meets demand. HP's modular approach to the complete IT utility makes it easier for your enterprise to acquire and integrate these capabilities and to deliver IT as a service. HP's complete IT utility solutions include:

- HP Datacenter Architecture Services
- HP Managed Services
- Grid computing

Comprehensive HP solutions

HP offers innovative solutions at every point across the three levels of virtualization. Consulting and integration services help you bring it all together. Our professionals can help you plan, design, and implement virtualization solutions tailored to your needs. We have the expertise you need to align your IT architecture with your evolving business needs. You can also look to HP for outsourcing services and innovative approaches to financing, including utility payment options and pay-per-use programs. Through these offerings and services, HP helps you establish an agile IT foundation that is poised to respond quickly to change.

To learn more

For more information on HP virtualization initiatives, please visit: www.hp.com/go/virtualization

© 2005 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

To learn more, visit www.hp.com

4AA0-1992ENW, September 2005

