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Business Benefits of Server Virtualization

What is server virtualization?

Server virtualization is one a number of virtualization trends in the IT industry (others include storage virtualization and, believe it or not, virtual private networks [VPNs]). Server virtualization uses technologies to create one or more software-based virtual machines on a single physical server. Each of these virtual servers looks, acts, and operates just like a physical server, but transparently shares the resources of the underlying physical server with other virtual servers hosted on the same physical server.

Why would I want to use server virtualization?

Server virtualization offers a number of benefits to organizations. Some of these benefits are:

- *Decreased number of physical servers:* By combining multiple virtual servers onto a single physical server, the number of physical servers—and the corresponding power and HVAC load—is reduced.

- *Increased server utilization:* Many organizations find themselves with "single-purpose" servers that run a specific application which, due to compatibility issues, cannot be combined with other applications on the same server. The result: many servers, each of them only lightly utilized. With server virtualization, these single-purpose servers can be turned into virtual machines running on the same physical server, completely isolated from each other. This allows organizations to get more utilization from their hardware.

- *Greater flexibility in upgrades:* By abstracting the operating system (OS) from the true underlying hardware, virtual machines can be easily moved from one physical server to another. This greatly simplifies the process of migrating to new hardware. For example, to migrate virtual machines to a newer, faster physical server, only the data files that comprise the virtual servers need to be copied. The virtual servers will automatically be able to take advantage of the physical server's faster CPUs.

- *Simplified backups:* To backup a virtual machine, simply take a snapshot (using the snapshot/open file technology of your OS or backup application) of the virtual machine's data files. Then backup this snapshot. No downtime is required. To restore a virtual server, simply restore the data files from the last backup.

- *Improved redundancy:* In addition to greater flexibility in upgrades and simplified backups, moving a virtual server from a failed physical machine to a new server is as simple as moving the files. If the virtual server's data files are stored on a SAN, then the SAN only need to be reconfigured to present the volumes containing the data files to a new server on the SAN—usually on the fly.

What products provide server virtualization?

VMware (www.vmware.com) is one of the most well-known vendors in this area. VMware's GSX Server runs on all major Windows server platforms, including Windows Server 2003. In addition, Linux versions are also available. Microsoft (www.microsoft.com) also has an as-yet-unreleased product called Microsoft Virtual Server will provide similar functionality for Windows-based servers.

For More Information

If you want more information about server virtualization or how server virtualization can help your organization, please call us at 919.266.5957. You can also e-mail us at *info@mercurionsystems.com*.