



Unparalleled Performance: Harvesting the Power of Application Virtualization

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Organizations are increasingly forced to find ways to do more with their current IT infrastructure even though they're not able to increase their investment in IT. This "doing more with less" imperative has become a mainstay of organizations of all sizes around the world. This paper looks into one tool organizations could use to successfully implement a "doing more with less" strategy.

WHAT'S THE PAIN

Organizations are facing a new world, one in which the need for information technology-based solutions is growing while their budget is not. Often this means that they're facing an unpredictable workload that being driven by a changing business environment, regulatory compliance as well as an almost daily announcement of new technology in the areas of hardware, software, networking and storage. One day an application could need all of the power available in the organization's IT infrastructure and the next day, that same application may need only a small amount of computing resources. They're also facing the well-known challenges of keeping their systems "on the air" 24 hours a day, 7 days a week.

APPLICATION VIRTUALIZATION HARNESSSES UNUSED POWER IN YOUR NETWORK

In response to this painful set of circumstances, organizations are seeking ways to optimize the use of their industry standard systems in real time so that they'll be able to make the best use of systems they already own, have predictable levels of performance despite a rapidly changing environment as well as providing an "always on the air" computing environment. To this end, they'd like to find ways to view their systems as a pool of available resources rather than having to link specific tasks to specific systems in a "silo of computing". They'd like to be able to allow a high-priority application to allocate as much of the organization's IT resources as needed when the workload grows rapidly and then return them back to the resource pool when they are not so as to allow other applications to use those same resources.

Although the organization doesn't have "rocket scientists" on staff, they'd like to be able to spread workloads over their pool of available system resources to obtain "grid computing" levels of performance when needed and have their systems dynamically reconfigure in other ways to address their rapidly changing workload. This, of course, means that the organization is seeking easy-to-use, tools that will give their applications the power they need, when they need it without the staff having to re-architect and re-develop the organizations entire application portfolio.

As heat production and power consumption become an issue, they'd like to gain the benefits of a "green computing" environment. They'd like that tool to move

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workloads to a smaller number of systems when possible so that administrators could power unused systems down.

REAL BENEFITS

Application virtualization tools, such as FabricServer from DataSynapse, can address all of these requirements without also requiring the organization to invest in an entirely new set of systems or hire highly expert staff members. What is application virtualization you say?

APPLICATION VIRTUALIZATION

The Kusnetzky Group defines application virtualization as software technology allowing applications to run in a logical or virtual, not a physical environment. Application virtualization makes it possible for to restart an application in case of a failure, start another instance of an application if the application is not meeting service level objectives, or provide workload balancing among multiple instances of an application to archive high levels of performance or scalability. Some really sophisticated approaches to application virtualization can do this magical feat without requiring that the application be re-architected or rewritten using some special application framework. This technology can work hand-in-hand with other forms of virtualization including access, processing (includes virtual machine software, operating environment virtualization/partitioning, clustering and parallel processing software), as well as either storage or network virtualization.

BENEFITS OF DEPLOYING APPLICATION VIRTUALIZATION

MAKE BEST USE OF AVAILABILE RESOURCES

Application virtualization makes it possible for an organization to view their industry standard systems as a pool of resources, rather than a number of computing silos that are dedicated to specific tasks. This resource pool can be configured and then optimized in real time to meet service level objectives and deal with planned and unplanned outages.

DOING MORE WITH LESS

Since systems are no longer dedicated to a specific application, it is no longer necessary for organizations to configure each system for the peek load of some application and then watch it sit idly by while other applications on other systems are at peak load. Resources can be applied to workloads as needed and then reassigned to other workloads in real time. This approach offers organizations the ability to get more work done. Since all systems are fully utilized, it is likely that fewer physical systems will be needed to support all of the organization's workloads. This means it may not be necessary to upgrade systems or purchase new systems as the workload increases or new applications are added to the mix.

INCREASED RELIABILITY

Since individual physical systems are not dedicated to specific applications, a system outage no longer means that an application is down.

MEETING SERVICE LEVEL OBJECTIVES

If an application is not meeting service level objectives, it can be moved to a faster machine. It is also possible that several instances of an application can be started allowing the environment to scale out to support a bigger workload.

SUMMARY

Organizations needing unparallel performance simply must come to understand application virtualization. This technology offers the organization ways to harness all of their industry standard systems, to take back unused processing power and put it to work for high-priority applications. This approach offers levels of power and performance that were available only to users of supercomputers and grid



processing techniques. Tools, such as Fabric Server from DataSynapse clearly can help. More information about FabricServer can be found here:

<http://www.datasynapse.com/application-platform-virtualization-fabricserver.aspx>.

This is the second of three papers in the application virtualization series. The first paper, *Application Virtualization and Utopia: Proving the Value of Virtualizing Applications*, can be found here:

http://www.kusnetzky.net/publications/ImpactPapers/20070807c_Unparalleled_Performanc_Application_Virtualization.doc

A web seminar is scheduled to discuss this topic. Registration information is available here:

<http://www.bulldogsolutions.net/DataSynapse/DTS09272007/frmRegistration.aspx?bdl=11465>