What's next now that we've virtualized our servers?

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Virtualization in the form of the use of virtual machine software isn't the panacea that many in the media seem to believe. While the use of this technology is very helpful if an organization's goal is consolidation to achieve some level of cost reduction, cost avoidance or, on occasion a more agile environment, its indiscriminant use creates new data center issues. The issues these organizations soon face are how to manage a growing list of virtual servers and how to *rapidly and automatically* deal with the growing network and storage access and management issues a proliferation of virtual servers creates.

FLEXIBILITY IS THE GOAL; SERVER VIRTUALIZATION IS JUST A TOOL

It's always important for business and IT decision-makers to keep their real goal in mind. Their goal, contrary to public opinion, is increasing the efficiency, flexibility and effectiveness of the organization so as to increase both revenues and profitability, not to effectively deploy virtual machine software. Increasingly both time to market and time to profit are major drivers in technology adoption.

With this in mind, the adoption of virtual machine software or, in fact, any other type of technology, is a means to an end not a goal in itself. What is the real goal in this area? The end being sought is increased business flexibility and offering better service to the customer. Virtual machine software is being deployed because it can help the organization quickly set up and tear down the systems that can support the organization's rapidly changing needs in the fastest and most efficient way.

It is clear that virtual machine software that supports server virtualization was a great start at achieving the goals of organizational flexibility, efficiency and agility. That being said, no one starts down the path toward a more virtualized environment by saying "I want virtualization." They usually are looking for ways to rapidly deploy workloads, the storage needed for the applications and data making up those workloads and, of course, making sure that individuals can access those applications quickly and cleanly on whatever appropriate system hardware the organization owns.

THE TOOL HELPS, BUT ALSO HAS LIMITATIONS

Server Virtualization certainly helps organizations achieve the dual goals of adaptability and mobility. Virtual machine software, upon which server virtualization is based, is sharply limited by pre-conditions. Before virtual machines can be initially deployed and later moved, a number of steps must have already have been accomplished including:

- the underlying physical machines must be installed with a hypervisor
- each of the virtual machines must be provisioned with the appropriate operating system, data management, application framework and application software

- all of the virtual machines must be granted access to the appropriate storage facilities
- All of the virtual machines must be granted access to the appropriate network facilities.

Accomplishing all of these things in a dynamic and automatic way can be a logistical headache and security nightmare. It is also clear that without the help of automated tools, these simple steps would become time-consuming, error-prone and would inhibit the organization's progress towards a flexible, adaptive datacenter. So, most organizations pre-allocate virtual machines and leave them in place and running. They face significant problems when there is a system, storage or network outage (planned or unplanned).

WHAT'S NEXT? SERVER REPURPOSING

The Kusnetzky Group recommends that organizations really understand all of the ramifications of the use of virtual machine software to create a server virtualization environment. If the organization really hopes to deploy a large number of virtual servers to replace a number of physical servers to achieve the goals of consolidation and agility, it's important to also implement server repurposing technology to address the basic physical bare-metal and network and storage access issues.

Repurposing, however, is really a form of redeployment. This, after all, can be a very difficult task to accomplish quickly and efficiently. Datacenters for medium and large organizations are usually architected as a number of separate sub-networks to reduce management issues. Moving systems and storage around in this environment can be a daunting task.

Furthermore, once a virtual machine software product, such as VMware's ESX Server is deployed, organizations often find that some applications or workloads must be hosted on physical, not virtual, systems. Some workloads or applications simply do not fit within the constraints and performance profile of virtual systems. Moving these workloads or applications adds to the complexity of system repurposing.

What does this mean? To use server virtualization in the most effective way, it must be possible to rapidly change which servers are running, what software stacks these servers are running, and how those servers are connected to network and storage. It must be possible to make these changes without also being forced to take up time-consuming and error-prone manual tasks such as reconfiguring physical machines, cable infrastructure, LAN connections or SAN access.

The Kusnetzky Group suggests that decision-makers would be well advised to include server repurposing and its requirements in their planning regardless of whether the organization is planning to deploy Microsoft's, VMware's or XenSource's virtualization technology. Scalent Systems, an industry leader in server repurposing technology, offers the tools to make server repurposing straightforward and dynamic. More information on Scalent System's approach can be found here: http://www.scalent.com/kusnetzky

Financial Services Customer Profile

A large worldwide financial services organization was undertaking a development and testing lab consolidation effort and was seeking software what would work well with their chosen virtual machine software product, VMware's ESX Server. The organization examined Egenera's technology but, came to the conclusion that its cost to benefit ratio was not as good as that offered by Scalent Systems.

The initial benefits from the implementation of Scalent System's technology are expected in the area of a better development and testing environment. Longer term, however, the organization plans to implement a disaster recovery program based upon this technology.

A company representative made this recommendation "this technology is worth a very hard look at the least because with a bit of vision the potential is seemingly limitless for the truly physical solutions. It is a very broad solution in that it allows for so many different types of components that are not proprietary. Lastly, when you talk to Scalent; they "get it" and are really trying to take it to the next level."