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SOLUTION BRIEF

Solution: I/O Diversity - Making Servers Agnostic to Storage

As organizations look to embrace "cloud computing" as a model for hosting their data center applications, any cloud architecture requires complete flexibility in the server infrastructure layer. Having flexibility not only means having new or better ways of deploying server infrastructure (speeding the time to deploy a server), but also means having choices in *whose* server infrastructure you select for deployment.

Whether that means choice between brands/makes/models of standard rack mount server or the ability to commission/decommission servers in a non-disruptive way, and in a simple, easy to use and transparent manner.

Choice also extends to what types of network interfaces you deploy and what services you choose to connect to, including critical resources like storage. The modern data center is dynamic and needs to be flexible. As storage needs change, connectivity needs may also change. Knowing that your servers are ready to accommodate this change in a non-disruptive manner is not only a requirement but invaluable to achieve operational scale.

USAGE SCENARIO

Let's look at a typical IT scenario:

Oliver, the storage administrator from XYZ Corporation, has been asked to assist the server team with a migration from a legacy Fibre Channel environment to a new IP based storage device. The new storage device supports both iSCSI and NFS. They are excited about completing the migration, as many end users are complaining that the performance of the existing Fibre Channel (FC) SAN is lacking (as it is a few generations old) and the new device only supports 10 GbE network interface connectivity. XYZ Corporation is hoping for a boost in performance and improvements in response time. The business has decided to migrate their business critical data to this new storage platform ASAP.

As a part of the migration project plan, Oliver assesses the readiness of the existing servers. He determines that he needs to install additional 10 GbE network cards in order to get the "end to end" performance that the business is expecting. His only dilemma is that the servers are a 1U form factor and currently have two 4 GB FC HBAs installed, leaving no additional slots for the new 10 GbE network interface cards. He is seeking for a better way to approach the migration process, with the least disruption and the way that will bring him the most successful outcome.

Is there a better way?

Yes, there is, in fact -- Oliver has chosen to leverage the Virtensys' VIO-4000 series, specifically the VIO-4001. He can now have simultaneous access to both Fibre Channel and 10 Gigabit Ethernet – before, during, and after the migration has been completed. Once cabled up and connected, his servers will have access to a pair of 10 GbE and 4/8 GB FC HBAs, presented through Virtensys' PCIe sharing technology.

Having access to these capabilities greatly eases the migration process and will not put the environment at risk, as Oliver can easily run in a high availability (HA) mode with two cards/cables; now having at his disposal four 10 GbE and four FC HBAs per server host. That's more than enough bandwidth for his applications and to provide the high availability required both during and after the migration process has been completed.

In addition, if XYZ Corporation decides to change their minds and deploy yet a different storage technology or even revert back to Fibre Channel, the server is now "agnostic" to the storage protocol or platform.

Virtensys' I/O Virtualization solution

With Virtensys' PCIe sharing appliance the "I/O profile" of the server is stored and managed centrally within the I/O Virtualization appliance. If the server administrator needs to remove or replace a server with a newer make and model, they simply connect the new server to the PCIe sharing appliance. The new server inherits the persona of the original I/O profile; the already assigned 10 Gigabit Ethernet (10 GbE) network interface's MAC address or Fibre Channel HBA's (FC HBAs) WWN. This greatly reduces the downtime associated with a server replacement or swap out.

With PCIe sharing, servers become "disaggregated" from their I/O connectivity, making them effectively "agnostic" to the storage/network services to which they connect, and flexible enough to change as the requirements of the data center change. Servers become "agnostic" to the storage network they connect to, allowing for easier migrations between storage platforms and the coexistence of multiple storage protocols. Ultimately, this gives administrators more choice as to what storage technologies they deploy and puts the control back into their hands as to when they choose to migrate and how they do it.

Find out more:

Learn more about how Virtensys' PCIe sharing appliance enables you to virtualize your server workloads, applications and/or virtual desktop infrastructure; allows you to scale beyond "traditional" consolidation ratios and meet / exceed performance ratios.

Please visit us at: www.virtensys.com/solutions or email us at info_request@virtensys.com