

Solution: I/O Consolidation – Improving how I/O is provisioned and managed

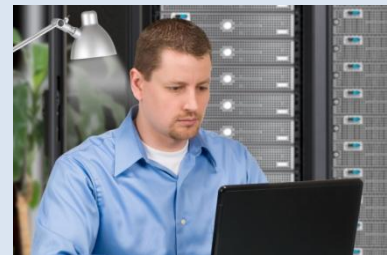
Server administrators make choices everyday on how I/O connectivity is assigned and dedicated to the servers they deploy. These choices are often based on “business as usual” behavior or process – rather than what’s best for the organization. Every time an I/O adapter is inserted within a server it’s made “captive”, essentially trapped within that particular server. This makes inefficient use of a critical/valuable resources that could be used by other servers within their data center.

In addition, the physical complexity of the traditional approach limits operational scale and IT agility. For instance, having to allocate a cable per connection, each to a dedicated network interface, not only consumes resources but also consumes a vast amount of time. It also causes headaches when trying to isolate issues; troubleshooting a connectivity problem becomes a virtual nightmare.

USAGE SCENARIO

Let’s look at a typical IT scenario:

Kyle the server administrator for XYZ Corporation has been tasked to deploy 10 new rack mount based servers for a mission critical business application. The project is already weeks behind, due to a purchasing issue – the IT vendor of choice informed Kyle that the Fibre Channel HBAs are on backorder, due to a silicon shortage with the manufacturer.



After the parts finally arrive, Kyle now needs to coordinate his fellow IT colleagues from the storage and networking teams, to align their activities in order to get his servers connected to the 10 Gigabit Ethernet network and the Fibre Channel SAN.

After a two hour planning meeting discussing the implementation plan, the team determines that it will require too much physical disruption to the server/storage environment, on account that they will have to run cables, provision switch ports and bring servers online and address them on the network. They have decided that they will have to wait until the next available maintenance window in order to continue the project -- which happens to be the following Sunday. Kyle scratches his head and wonders if there is a better way to get this done...

Is there a better way?

Yes there is -- Kyle has chosen to leverage I/O virtualization as a method of deploying I/O to his server environment, rather than doing “business as usual”. He has opted to leverage a smart technology to minimize the physical and logical complexity, instead of installing traditional I/O adapters in each server.

Because Kyle has chosen to deploy Virtensys' VIO-4001, he can now consolidate both 10 GbE and Fibre Channel on the same physical connection. Through the use of Virtensys' PCIe sharing technology, each server connection is presented with a pair of virtualized 10 GbE NIC and 4/8 GB FC HBA interfaces. This approach reduces the physical complexity to a single cable or at most two cables for higher levels of availability.

As each server connection will only consume a single PCIe slot, Kyle can easily support his high availability goals by using two Virtensys server adapter cards, which allows him to have twice the interface capabilities and twice the potential bandwidth – while reducing the physical cabling 4:1.

In addition, by choosing to leverage Virtensys' VIO-4001, he can pre-cable his servers to the VIO appliance and then allocate I/O connectivity to his servers “on-demand”, speeding the time to deploy his servers and thus accelerating the time to deploy the mission critical business application.

Virtensys' VIO-4000 Series: PCIe Sharing

Using a Virtensys' PCIe Sharing appliance, server administrators can “free” the “captive” and valuable I/O resources from single servers and make them available through the PCIe sharing appliance to multiple servers within the data center. Not only does this make sense from a resource utilization perspective, but it also solves serious problems associated with network cabling and I/O configuration complexity for both network and storage connectivity. Ultimately, PCIe sharing reduces the physical complexity, enabling server administrators to reduce “physical layer” guesswork when troubleshooting connectivity issues.

The Virtensys' PCIe sharing appliance allows administrators to deploy a solution to a real problem, greatly improving their server I/O utilization and maximizing the value from their existing network investments. The I/O Virtualization appliance improves utilization of the critical I/O resource, can be configured to guarantee the Quality of Service (QoS) per server/per port, and can be applied to fine tune how those resources will be used.

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