virtensys

VIO-4010

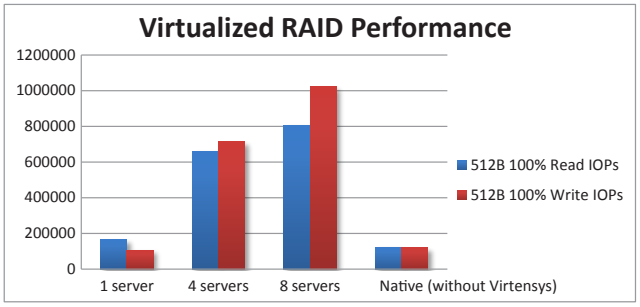
DATASHEET

OVERVIEW

Virtensys' VIO-4010 provides standard rack mount servers with access to virtualized SSDs (solid state drives), through the use of it's unique virtual RAID controller technology.

Each server host is connected via PCI Express (PCIe) and gains access to a high performance, enterprise class flash-based storage, presented as virtualized LUNs (vLUNs), accessible for datastore use, as a boot partition or can even be leveraged for virtualized swap space – as an extension of the host's physical memory.

The VIO-4010 is available in a half and fully configured variant and can be configured to support up to eight physical 100GB or 200GB 2.5" SSDs. A single VIO-4010 can support up to sixteen PCIe connected servers.



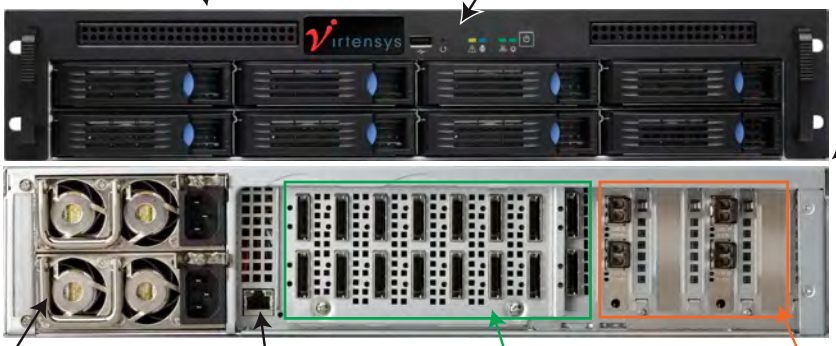
KEY BENEFITS

- Virtensys' VIO-4010 provides standard servers with virtualized direct attached storage (DAS), This eliminates the need to install physical disk drives inside servers, which has a direct impact on local storage management, as well as a power reduction - both fueled through the elimination of physical drives and the choice of solid state drive technology over spinning disk media.
- Once servers are connected to the VIO-4010, they gain access to their own virtualized instance of high performance, full-featured 6 Gbps SAS/SATA RAID controllers -- with performance capable of up to 2,000,000 IOPs per PCIe sharing appliance.
- Connected servers access a set of logical devices (vLUNs), which are created from a pool of enterprise class SSDs – these vLUNs can be used for local high performance datastores, as well as "Host Cache", a feature now available within VMware vSphere 5.
- To the server host, the virtualized disk operates as if it is a locally installed physical SSD, within vSphere 5, this vLUN can be optionally "tagged", then associated with a storage policy that allows it to be used as an extension of the host's memory, for virtualized swap space.
- vLUNs are managed and provisioned from a centralized management capability within Virtensys' management interfaces (web GUI, CLI, and a VMware vCenter Server Plugin for Virtensys), then presented to the vSphere host.
- The VIO-4010 leverages enterprise solid-state drives (SLC NAND) from a major memory manufacturer. The SSDs installed in the VIO-4010 have some of the highest performance ratings and best durability in the industry (through the use of their advanced wear leveling capabilities) and can write up to 3.5 Petabytes for the lifetime of each drive.

Hardware-based I/O Virtualization
- PCI Express Standards-Based Interconnect

Remote Visibility and Control
- Status/location LED Indicators
- Power and Reset Buttons
- Health Monitoring

PCIe Sharing
- PCI Express Standards Based Interconnect
- Dual 320 Gbps Non-Blocking PCIe Switch Fabrics
- Virtensys Management Interfaces (web GUI, CLI, and VMware vCenter Server Plugin for Virtensys)



Shared Storage
- Hot-swap SSDs
- Shareable RAID controllers
- Consolidated and Virtualized SSDs
- Optimized Storage Utilization

Robust Design
- Hot-swap redundant PSUs
- Hot-swap redundant Fans

Remote Management LAN Port
- Browser-based remote Management (VMS)
- 10/100/1000MB Ethernet Port

16 Server Connection Ports
- PCI Express Server Connection

Industry Standard I/O Adapters
- 10 GbE NICs
- 6 Gbps SAS/SATA RAID Controller

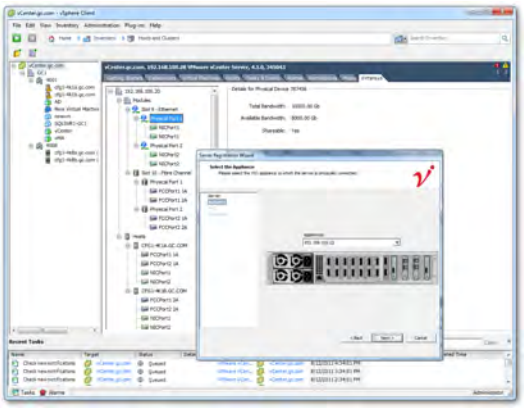
Product Features

- 19”, 2U rack-mountable PCIe sharing appliance
- Connects up to 16 servers
- Consolidates, virtualizes and shares up to four physical PCIe based I/O adapters:
  - Up to two dual-port Intel 10 Gigabit Ethernet adapters
  - Up to two dual-port 6 Gigabit LSI SAS/SATA RAID controllers
- Servers leverage the native device drivers (within the operating system/hypervisor), no additional software required
- Delivers Virtual adapters (vAdapters) to each connected server:
  - vAdapters function/operate the same as physical adapters
- Connects to servers using server-native PCI Express interconnects: x4 PCIe Gen1 or X4 PCIe Gen 2
- Supports Active/Active and Active/Passive Redundancy
- Redundant Hot-swapable PSUs and Hot-swapable fans
- Supports up to eight 3.5” hot-plug disk bays, fitted with 2.5” to 3.5” SSD & SATA hard drive converters each
- Support for up to eight physical 100 GB or 200 GB 2.5” SSDs
- SSDs are enterprise class SLC NAND

Specific to the SSDs used in the VIO-4010:

Drive Interface	SATA 6 Gb/s; backward-compatible to SATA 3 Gb/s
Sequential READ/ WRITE	Up to 360/275 MB/s (per disk)
Random READ/WRITE	Up to 60,000/45,000 IOPs (per disk)
Active Average Power Consumption2	2.2W for 100GB, 2.5W for 200GB (per disk)
MTBF	2 million device hours (per disk)
Form Factor	2.5”

Virtensys Management Interface



Remote Management

- Accessible via remote management network port on the VIO-4010, supporting connection speeds: 10/100/1000Mb
- Server registration to management interface to enable I/O resource provisioning
- Ability to create and assign vAdapters from physical I/O adapter resources
- vAdapters (depending on VIO-4000 model) can be: 10 GbE vNICS, 8 Gbps FC vHBAs, and/or virtualized LUNs (vLUNs)
- View “physical to virtual” mappings
- Set advanced quality of service (QoS) policies for bandwidth allocation
- Supports OEM branding and customization

Virtensys CLI, APIs and Protocols

- Scriptable Command Line Interface for automation
- (Native CLI and PowerShell)
- SNMP/CIM/IPMI support

Health Monitoring:

- IPMI 2.0 for active system health monitoring
- Alerts and events for monitored components

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