



# HP Cloud Solution for Microsoft® with HP IO Accelerators

Scaling VM Performance Density

## Optimized Converged Infrastructure

In recent years, virtualization has been widely adopted to consolidate servers, increase IT flexibility, and improve business continuity. As the foundation for a highly available cloud environment, virtualization of IT resources delivers a wide range of benefits. It helps increase agility, operate more efficiently, reduce costs, simplify application deployment and management, and improve availability.

HP Cloud Solution for Microsoft®, based on best-in-class HP Converged Infrastructure, Microsoft Windows® Server with Hyper-V and System Center, and expertise from HP Technology Services is an ideal private cloud-ready infrastructure for virtualized workloads.

Showcased in the “Serverquarium” at Microsoft Management Summit, the HP Cloud Solution for Microsoft configured with 32 SanDisk® Fusion ioMemory™-based HP IO Accelerators provides the scale, performance and responsiveness to support all Hyper-V virtual machines in the real-time hands-on labs. These labs put the solution to the test: every 90 minutes on average, the HP Cloud Solution for Microsoft® launches more than 1,200 VMs in under 8 minutes—with many VMs running complex, full System Center workloads. Over the 4.5 day conference, it launched tens of thousands VMs to support thousands of lab seats thus proving it could meet even the most demanding needs of the virtualized enterprise.

**HP CLOUD SOLUTION FOR MICROSOFT**

**Scale Up VM Performance Density**

- More and larger VMs per server
- Larger workloads per VM



**1.2TB HP IO Accelerator Mezzanine Card**

- Available capacities: 365GB, 785GB and 1.2TB
- IOPS (4K): up to 250,000 per device
- Bandwidth (1MB): up to 1.5GB/s per device
- 15µs access latency

Adding HP IO Accelerators to each server as a high-performance persistent memory tier dramatically scales up virtual machine densities and workload performance—with more and larger VMs per server—and eliminates the I/O bottlenecks resulting from excessive data access latency. IO Accelerators provide best-in-class endurance, reliability and low queue-depth performance across a wide variety of real world high-performance enterprise environments.

## SanDisk Fusion ioMemory™ Powered HP IO Accelerators – Ignite Virtual Server Performance And Efficiency

Virtualization introduces an abstraction layer that makes even sequential I/O random—making I/O one of the biggest barriers to effectively consolidating virtual environments. HP IO Accelerators, based on SanDisk's industry-leading low-latency Fusion ioMemory technology, eliminate this I/O bottleneck by making terabytes of high-performance persistent memory available within each server—unlocking trapped CPU cycles, improving virtual machine workload capabilities and unleashing virtualization's true potential.

HP IO Accelerator benefits for HP BladeSystem virtual environments:

- Increases virtual machine density and workload performance
- Improves compute economics making infrastructure investments more efficient
- Simplifies virtual environments and infrastructure while improving service levels
- Extends virtualization to more I/O-intensive applications
- Reduces infrastructure power requirements and footprint, simplifies management

As a cost-effective, high-performance, drop-in solution for blade and rack environments, HP IO Accelerators are used to accelerate data-intensive, high-transaction, and virtualized workloads.

With capacities up to 3TB each, HP IO Accelerators have enterprise-class reliability and endurance to meet demanding data integrity and availability requirements, and feature microsecond access latency for extreme performance density. With up to 540,000 read IOPS, 1,100,000 write IOPS and 3GB/s of bandwidth, they are qualified and supported with HP ProLiant blade and rack servers.

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# SanDisk®

a Western Digital brand

At SanDisk, we're expanding the possibilities of data storage. For more than 25 years, SanDisk's ideas have helped transform the industry, delivering next generation storage solutions for consumers and businesses around the globe.

HP ioDrive®2 IO Accelerator



- Half Height/Half Length
- PCIe 2.0 x4
- 365GB, 785GB, 1.2TB, 3TB
- 24 watts peak

HP ioDrive®2 Duo IO Accelerator



- Full Height/Half Length
- PCIe 2.0 x8
- 2.4TB
- 55 watts peak

HP ioDrive®2 Blade Mezzanine IO Accelerator



- Type B card
- PCIe 3.0 x4
- 365GB, 785GB, 1.2TB
- 24 watts peak

### Want To Learn More?

Contact your local HP Sales representative to learn more about how HP Cloud Solution for Microsoft® with HP IO Accelerators can enhance your data center environment.

HP Cloud Solution for Microsoft® [www.hp.com/go/cloud](http://www.hp.com/go/cloud)

HP IO Accelerator [http://h18006.www1.hp.com/products/storageworks/io\\_accelerator/](http://h18006.www1.hp.com/products/storageworks/io_accelerator/)

Microsoft Windows Server 2012 [www.microsoft.com/ws2012](http://www.microsoft.com/ws2012)

The performance results discussed herein are based on testing and use of described products. Results and performance may vary according to configurations and systems, including drive capacity, system architecture and applications.

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