



Fusion ioMemory Mezzanine PCIe Application Accelerators for HP
Fusion ioMemory Mezzanine PCIe Application Accelerators for Cisco

Fusion ioMemory™ Mezzanine PCIe Application Accelerators

PCIe solutions that deliver cost-effective and proven high application performance

PCIe Application Workloads:

- Server Virtualization
- Virtual Desktop Infrastructure
- Databases: MS SQL Server, SAP, Oracle, MySQL, Informix, Sybase, DB2
- Business Intelligence and Data Mining
- Real-time Financial Data Processing
- Seismic Data Processing
- Content Caching
- 3D Animation/Rendering
- CAD/CAM
- Web Infrastructure
- RISC Migration
- In-memory Analytics

The new Fusion ioMemory™ Mezzanine PCIe application accelerators for Blade Servers provide up to 2x higher performance, 33% greater capacity and lower latency data access over the previous ioDrive®2 Mezzanine PCIe cards for mission-critical virtualized, cloud and hyperscale data center environments. These flash based mezzanine PCIe devices are designed for applications requiring high transaction rates and real-time data access where high performance and ultra-low latency is required. These mezzanine PCIe cards sit close to the CPU and deliver high performance that equates to more VMs per server, accelerated database/data mining and faster business intelligence, resulting in cost and time savings.

The latest Fusion ioMemory™ Mezzanine PCIe application accelerators are available in capacities from 1.2TB up to 1.6TB* with ultra-low 92µs/15µs read/write data access latency, superior reliability with an UBER 10⁻²⁰, outstanding random read/write performance of up to 235K/375K IOPS and sequential read/write speed of up to 2.7/1.7 GB/s**. These Mezzanine PCIe cards are designed for I/O intensive transactional applications requiring real-time data access such as server virtualization and virtual desktop infrastructure, databases, business intelligence and data mining, real-time financial data processing, seismic data processing, content caching, 3D animation / rendering, CAD/CAM, web infrastructure, RISC migration and In-memory analytics. Available through HP on the latest Gen9 and Gen8 BladeSystem Servers and through Cisco on the latest UCS B-Series Blade Servers, these Mezzanine PCIe cards reduce infrastructure and power and cooling costs by providing high performance, scale, zero footprint, and savings for a low total cost of ownership (TCO).

The Fusion ioMemory Mezzanine PCIe application accelerators offer significant application performance acceleration benefits, can augment existing NAS/SAN HDD based solutions and can also offer an alternative solution for customers that buy large arrays in order to get the performance for their application. Implementing these high performance enterprise-grade NAND flash technology storage devices lowers power consumption, cooling requirements and reduces infrastructure rack space needs over traditional hard drive infrastructures. These new Fusion ioMemory Mezzanine PCIe application accelerators are designed to provide performance driven application environments with deterministic performance, superior reliability, and maximum value.

Fusion ioMemory™ Mezzanine PCIe Application Accelerators

	HP	HP	Cisco	Cisco
Usable MLC Capacity*	1.2TB	1.6TB	1.3TB (PX600)	1.6TB (SX300)
Read Bandwidth (GB/s)	2.7	2.7	2.7	2.7
Write Bandwidth (GB/s)**	1.5	1.7	1.7	1.7
Ran. Read IOPS (4K, 512QD)	196,000	235,000	235,000	235,000
Ran. Write IOPS (4K, 512QD)	330,000	375,000	375,000	375,000
Read Access Latency	92µs	92µs	92µs	92µs
Write Access Latency	15µs	15µs	15µs	15µs
Bus Interface	Mezzanine Card			
Endurance (PBW)	4	5.5	16	5.5
UBER	10 ⁻²⁰			
Weight	5.2 ounces			
Form Factor	Low Profile			
Warranty	Refer to the warranty for these products on the respective HP and Cisco product websites			

Operating Systems	HP Operating Systems:	Cisco Operating Systems:
	Microsoft Windows: Windows Server 2012 R2, Windows Server 2012, Windows 2008 R2 SP1 Linux: RHEL 5/6/7; OEL 5/6/7; CentOS 5/6/7 UNIX: Solaris 11.1/11 x64; Solaris 10 U11 x64 Hypervisors: VMware ESXi 5.0/5.1/5.5, Windows Server 2012 with Hyper-V, Windows Server 2012 R2 with Hyper-V; Oracle VM	Red Hat Enterprise Linux 64-bit 5.x and 6.x SUSE Linux Enterprise Server 11 Microsoft Windows Server 2008 R2, 2012, 2012 R2 VMware ESXi 5.x

Environmental Specifications			
		Min	Max
Temperature ¹	Operational	0°C	55°C
	Non-operational	-40°C	70°C
Power Requirements			25 W
Air Flow (LFM) ²		300	
Humidity (%)	Non-condensing	5	95
Altitude (ft)	Operational	-1,000	10,000
	Non-operational	-1,000	30,000

HP RI Mezzanine PCIe Workload Accelerator Ordering Information		
HP RI Mezzanine PCIe Workload Accelerators for BladeSystem Servers	HP Part Number	Models with SanDisk SSDs
HP 1.2TB RI Mezz PCIe Workload Accelerator	794603-B21	Gen8 BL420c, BL465c, BL660c, BL 480c
HP 1.6TB RI Mezz PCIe Workload Accelerator	794605-B21	Gen 9 BL460c

Cisco UCS Fusion ioMemory™ Flash Adapters for B-Series Blade Servers Ordering Information		
Cisco UCS Fusion ioMemory PX600 and SX300 Flash Adapters	Cisco Part Number	Models with Fusion ioMemory PCIe
Cisco UCS Fusion ioMemory 1.3TB (PX600) Mezzanine PCIe Card	UCSB-F-FIO-1300MP	B22 M3, B200 M3, B420 M3, B200 M4, B260 M4, B460 M4
Cisco UCS Fusion ioMemory 1.6TB (SX300) Mezzanine PCIe Card	UCSB-F-FIO-1600MS	

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Specifications subject to change without notice. Performance results are based on internal testing and use. Results and performance may vary according to configurations and systems, including drive capacity, system architecture and applications.
 * 1TB = 1,000,000,000,000 bytes. Actual user capacity less.
 ** Write BW achieved with optional high power mode. Maximum write bandwidth performance of 1.6 GB/s achievable within 25 W power limit. Performance may vary based on host device. 1GB = 1,000,000,000 bytes. X = 150 KB/sec.
 1 Temperature derated 1°C per 1000 ft elevation above sea level
 2 Product is designed for server platforms only and relies on 300 LFM (min) airflow, which is required for normal operation in server environments.
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 HP Cisco Mezzanine Cards Datasheet 06.14.16.