

NyTRO[®] XP6500

FLASH ACCELERATOR CARD Data Sheet

Key Features and Benefits

- Ultra-low write latency across all workloads regardless of queue depth (14µs @ QD1)
- 8-lane PCIe 3.0 host interface and RAID-on-Chip (ROC)-based controller with onboard DRAM cache up to 4GB for consistently high and predictable performance
- Low-profile and high-profile configuration options for a broad range of server types
- Tuned for seamless deployment and ease of use requiring minimal IT intervention
- Plug and play—no user configuration required
- Supercapacitors for power fail data protection with instant recovery
- Enterprise quality and reliability

The continual and massive growth of data is increasing the demands of modern data centers for robust storage solutions. Data center managers look for modular solutions that easily scale and replicate high performance ensuring richness of service to customers, while dramatically reducing TCO and the cost of IT transactions. The Seagate[®] NyTRO XP6500 flash accelerator card is an industry-leading, versatile application acceleration solution with onboard NAND flash modules (XFF). It is optimized for write-latency sensitive applications, such as data warehousing, data mining, data analytics, online transaction processing, high-performance computing, software-defined storage and big data.

Maximum Performance for Write-Latency Sensitive Applications

The NyTRO XP6500 card pairs an innovative hardware design with intelligent I/O software to deliver one of the industry's lowest and most consistent latency performance solutions that improves response time in applications requiring high IOPS and bandwidth. Featuring an 8-lane PCIe 3.0 host interface and ROC-based controller with a DRAM buffer, it delivers consistently high performance with the least impact on the host CPU for a broad range of workloads.

One of the top IT concerns is meeting SLAs for performance. By boosting application responsiveness with the NyTRO XP6500 flash accelerator card, enterprises are able to offer their customers the improved level of service, tighter performance-driven SLAs and enhanced user experience.

Lower TCO With Simplified Management and Reduced Resources

The NyTRO XP6500 card requires minimal administrator intervention with feature sets and capabilities tuned for ease of use and efficiencies to reduce hardware, power and IT resources. It not only reduces the deployment cost by enabling more processing power out of existing servers, but it also delivers significant cost savings through improved efficiency by enhancing performance without a complete IT overhaul. The user configurable over-provisioning enables defining and optimizing capacity, endurance and performance. With the Seagate Enterprise Storage Manager—a web-based management tool—users can easily configure, monitor and maintain the NyTRO XP6500 cards from a single interface.



Nytro[®] XP6500



Flexible, Reliable and Scalable Solution

The Nytro XP6500 card is a turnkey solution that offers an integrated deployment model with onboard flash modules (XFF) for optimal storage density, field-hardened reliability, endurance and data protection for critical business applications. The Nytro XP6500 card features the highest level of protection against data loss from an unexpected power failure by using supercapacitors for the onboard DRAM cache with an instant recovery lasting less than 50 seconds. Thanks to integrated supercapacitors, the XP6500 card also eliminates the need for battery maintenance in case of power failures. The Nytro XP6500 card easily scales performance and capacity by adding more cards, and also comes in low- and high-profile configuration options, making it a flexible solution for integrations in a broad range of server types.

Specifications	1.5TB ¹	4TB ¹
Raw Capacity ¹	1.5TB	4TB
Usable Capacity ¹	1.3TB ²	3.4TB ²
Form Factor	Half-height, half-length (MD2) with tethered supercapacitor Full-height, half-length (MD2) with integrated supercapacitor	
Host Bus Type	8-lane PCIe 3.0	8-lane PCIe 3.0
Cache Capacity	2GB DRAM	4GB DRAM
Read Bandwidth ²	Up to 4.0GB	Up to 4.0GB
Write Bandwidth ²	Up to 1.5GB	Up to 2.2GB
Read IOPS ²	Up to 300,000	Up to 275,000
Write IOPS ²	Up to 100,000	Up to 75,000
Read Latency (Queue Depth=1) ²	200µs	210µs
Write Latency (Queue Depth=1) ²	14µs	14µs
NAND Petabyte Writes ²	8PB	20PB
Flash Memory Type	MLC	MLC
End-of-Life Data Retention	>3 months	>3 months
Operating Temperature/Airflow	5°C to 45°C @ 550 LFM	5°C to 45°C @ 550 LFM
Product Health Monitoring	Self-Monitoring, Analysis and Reporting Technology (S.M.A.R.T.) commands, plus additional SSD monitoring	
Warranty, Limited	The lesser of 5 years or the end of the NAND flash life	
Management Tools	NyroCLI, Seagate Enterprise Storage Manager	
Operating System Support ³	CentOS 6.4, 6.5; OEL 6.5/6.4; RHEL 6.4, 6.5, 6.6, 7.0; SLES 11 SP2; Solaris 11 U1; VMware ESXi 5.1; Win 2008 R2 SP1; Win Server 2012	
Environmental Compliance	RoHS, WEEE	RoHS, WEEE

Model Number	Raw Capacity ¹	Flash Type	DRAM capacity	Supercapacitor	Form Factor
XP6500-8A1536LP	1.5TB	MLC	2GB	Tethered	HHHL
XP6500-8A1536FH	1.5TB	MLC	2GB	Integrated	FHHL
XP6500-8A4096LP	4TB	MLC	4GB	Tethered	HHHL
XP6500-8A4096FH	4TB	MLC	4GB	Integrated	FHHL

¹ One gigabyte, or GB, equals one billion bytes, one terabyte, or TB, equals one trillion bytes and one petabyte, or PB, equals 1000TBs when referring to product capacity.

² Results will vary by board capacity, over-provisioning (OP) settings, flash type and server capability. All numbers measured as fully preconditioned with 17% OP (default setting) and 20% compressible data. The 1.5TB model is 4K optimized and measured with 4K blocks. The 4TB model is 8K optimized and measured with 8K blocks. Highly tuned configuration for maximum performance. Subject to change.

³ See the complete list in the latest release notes.

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