Nytro® XP6302

FLASH ACCELERATOR CARD
Data Sheet

Key Features and Benefits

- Right-sized to enable PCIe flash adoption in low-profile server market

- High throughput with PCIe 3.0 support

- Lower utility costs with NAND flash module (XFF) integration design for bidirectional airflow and improved thermals

- Seamless deployment with transparency to applications, file systems, operating systems and device drivers

Maximizing Capacity and Performance for Highly Dense Environments

The top challenges for cloud, big data, web hosting and hyperscale data center managers is often a result of the demands of churning through massive amounts of data while reducing complexity, cost and data center space. The solution they select must not only provide the performance they require, but also accomplish it efficiently and within a very small footprint.

As an expansion of the most comprehensive flash-based solutions, Seagate has responded with a low-profile, high-bandwidth application acceleration solution to alleviate much of these stresses, especially for very dense environments. The Seagate® Nytro XP6302 flash accelerator card delivers up to 4TB of raw flash capacity and competitive performance while packing it all in a half-height form factor.

High Performance and Capacity for Even the Densest Environments

The multi-planar design of the Nytro XP6302 flash accelerator card delivers high-capacity flash and performance per slot with innovatively designed flash modules (XFF), making it well-suited for the most compact environments. The Nytro XP6302 card offers a PCIe 3.0 interface to deliver up to 4GB/s of bandwidth for performance-oriented applications like video surveillance and real time data backup, and enables space-constrained server environments and platforms that deploy low-profile boards to run server-based PCIe flash in their data centers.

It Just Works—Reliability and Seamless Deployment

For these large data centers, implementing a reliable and simple solution across a sea of servers is critical and a key driver in the development of the Nytro XP6302 flash accelerator card.

The Nytro XP6302 card not only addresses the challenges of performance and space, but does so seamlessly with minimal administrator intervention or fine-tuning. Additional sophisticated algorithms and dedicated hardware resources handle complex flash management tasks like garbage collection and wear-leveling. Leveraging these advanced features, the Nytro XP6302 cards deliver the performance and endurance needed for critical business applications.

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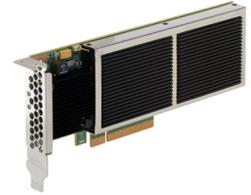
Higher Efficiency for Lower Total Cost of Ownership (TCO)

The Nytro XP6302 flash accelerator card enables greater efficiency resulting in less power and cooling resources, and reduced TCO. The Nytro XP6302 card is right-sized to support the needed flash capacity while fitting in a small space, making it more flexible and easier to integrate into today's low-profile, high-performance system chassis, such as 1U servers. The Nytro XP6302 card also introduces a new NAND flash module, XFF, integration design for better bi-directional airflow and thermals, which is well-suited for open-source architectures.

Flash Acceleration for Today's Demanding Applications and Space-Constrained Environments

The rise of cloud, big data, open source and hyperscale data centers in the market space is undisputed. These environments require vast computing and storage resources in order to sort through this massive amount of information, and often this must be accomplished in a very dense environment. The Nytro XP6302 application acceleration card delivers the performance acceleration for virtually any environment with seamless deployment, lower TCO and small footprint to enable their organization to achieve the full value and benefits they must deliver.

Specifications	
Usable Capacity[1]	1.3TB, 1.75TB and 3.5TB
Interface	X8 PCI Express 3.0
Read Bandwidth[2]	Up to 4GB/s
Write Bandwidth[2]	Up to 2.3GB/s
Read IOPS (4K)[2]	Up to 296,000
Write IOPS (4K)[2]	Up to 148,000
Write Latency[2]	33μs
Max Power	39W
Product Health Monitoring	Self-Monitoring, Analysis and Reporting Technology (S.M.A.R.T.) commands, plus additional SSD monitoring
Data Encryption	AES-128/256
Warranty	The lesser of 5 years or the end of the NAND flash life
Environmentals	5°C to 45°C @ 300 LFM
Mangement Tools	NytroCLI, Seagate Enterprise Storage Manager (GUI-based)
Operating System Support[3]	RHEL: 5.9, 5.10, 6.5-6.6, 7.0; CentOS: 6.4, 6.5; OEL: 5.9, 5.10, 6.5; SLES: 11 SP3; Debian: 6.0.5, 7; Fedora 19, 20; Ubuntu: 12.04, 14.04 LTS; Windows Server: 2008 R2, 2008 R2-SP1, 2012 R2; Solaris: 10U10, 11 (x86); 10U10, 11, 11.2 (SPARC); FreeBSD: 9, 9.2, 10; Vmware: 5.1 ESXi, 5.5 ESXi
Regulatory Compliance	Agency Certifications: CE mark, C-Tick mark, KCC, Taiwan BSMI, Japan VCCI, Russia GOST, FCC Class A and B, EN55022 and 55024 (US, Canada, and EU): Emission, Immunity and Safety, cUL (Canada), CCC (China) US/Canada UL, Europe CB Agency Certifications: CE mark, C-Tick mark, Canadian Compliance Statement, KCC, HF, Taiwan BSMI, Japan VCCI, FCC Class B, CISPR Class B
Environmental Compliance	RoHS, WEEE

Model Number	Usable Capacity[1]	NAND Type	Form Factor	NAND Petabyte Writes (typical)
ST1300KN0012	1.3TB	eMLC	HHHL	6.6
ST1750KN0012	1.75TB	eMLC	HHHL	8.8
ST3500KN0012	3.5TB	MLC	HHHL	11.7

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

2 Results will vary by board capacity, flash type, server capability. All numbers measured as fully preconditioned with 28% OP and 80% data entropy. Highly tuned configuration for maximum performance. Subject to change.

3 See the complete list in the latest release notes.

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