LSI® Nytro™ MegaRAID®
Application Acceleration Card for DAS

Key Features

- **Provides an economical solution for accelerating applications – frequently accessed data is stored on low latency flash storage while existing SAS or SATA connected hard drives may be used for cost savings**

- **Uses LSI flash storage reducing compatibility issues**

- **Single mini-SAS x4 connector**

- **6Gb/s throughput per SAS lane**

- **Specialized server off load processors include the LSISAS2208 dual core RAID-on-Chip process and two LSI SandForce® SF-2582 flash controllers**

- **MD2 Low profile (6.6" X 2.536")**

- **x8 PCI Express 3.0 host interface**

- **Onboard flash also helps protect cache in the event of power fail – no battery required**

- **RAID levels 0, 1, 5 and 6**

- **RAID spans 10, 50 and 60**

- **Fast rebuilds will occur due to servicing most storage requests from flash**

Designed to accelerate applications economically with a solution providing leading RAID performance from direct-attached storage combined with intelligent caching using onboard flash storage.

Many customers are looking for ways to increase their storage performance, but retain their current investment in direct-attached storage. Flash technology has become almost synonymous with speed, but it comes at a price premium over hard disk drives (HDD). The Nytro MegaRAID card combines flash technology with LSI's industry leading RAID-on-Chip (ROC) implementation. Using intelligent caching algorithms to help identify application "hot spots", frequently accessed data is stored and accessed from flash enabling the lowest possible latency. By combining flash and HDDs, this solution is designed to enable the lowest cost/GB at the lowest cost/transaction over products supporting only flash memory.

Easy To Use with Transparent Access to Applications

Not all solid state disk (SSD) implementations work at enterprise levels. Performance may suddenly drop after only several hours of use. The Nytro MegaRAID card provides more sustainable high performance by using its own on-board PCIe accessible flash storage. This flash storage has been certified by LSI in internal testing for enterprise applications and offers more consistent latency performance over SAS-accessed SSDs. And the industry proven LSI software drivers allow many applications to enjoy performance improvements seamlessly from the Nytro MegaRAID card without any application or file system modifications.

Combining Flash with HDD Storage for Economy

In addition to providing caching intelligence and high performance flash storage, the Nytro MegaRAID card uses LSI's latest ROC technology which is PCIe 3.0 X8 compliant. The intelligent caching implementation can provide high performance when using SATA or SAS hard drives. Another benefit is that caching lightens the HDD load so HDD RAID rebuilds complete faster and removes traditional HDD head wear from accessing small block requests typical in database environments. The card provides a 4-lane mini-SAS connector for internal disk connection.

THE **Smarter** WAY
TO FASTER™

Identify Hot Spots in your Applications

Because hot spot activity varies by application, a free assessment software package, Nytro Predictor™ Software Tool (figure 1), helps administrators to identify the potential benefits of the Nytro MegaRAID card. Using non-intrusive Windows® or Linux® utilities (xperf and blktrace), traces of the storage activity generated by the application are captured and analyzed for hot spot activity using the same algorithms that the Nytro MegaRAID card uses. Administrators can see the potential benefits the card can provide. There is no need to install LSI hardware to run the Nytro Predictor Tool.

For more information, visit:
www.lsi.com/acceleration

Nytro MegaRAID Card Specifications	
Operating Systems	RHEL : RHEL 6.0/RHEL 6.1 SUSE Linux: SLES 11 SP1 Windows: Windows 7/Windows 2008/Windows Server 2008 R2
Physical Dimensions	MD2 Low profile (2.536"x6.60")
Internal Connector	Mini-SAS SFF8087 internal connector
Device Support	Up to 128 SAS and/or SATA hard drives and SSDs
Host Bus Type	x8 lane PCI Express 3.0 compliant
Data Transfer Rates	6Gb/s per SAS lane
DDR memory for RAID cache assist	1 GB 1333MHz DDRIII SDRAM

RAID Data Protection Features	RAID levels 0, 1, 5 and 6
	RAID spans 10, 50 and 60
	Online RAID Level Migration (RLM)
	  • Configurable stripe size up to 1MB
	Fast initialization for quick array setup
	  • 64 logical drive support
	  • Up to 64TB LUN support
	  • S.M.A.R.T Mode 5 support

Operating Temperature	Maximum ambient: Controller Card: 60°C, Cap Pack: 55°C
Operating Voltage and Power	+3.3V, +12V, less than 25 watts
Regulatory Certifications	EN55022, EN55024, EN60950, EN 61000-3-2, EN 61000-3-3; FCC Class A, Class B; UL1950; UL; CSA C22.2; VCCI; RRL for MIC; BSMI; C-tick

Figure 1. Nytro Predictor Software Tool

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For more information and sales office locations, please visit the LSI web sites at: lsi.com lsi.com/contacts