

# MegaRAID® SAS 9271-4i

## Four-Port 6Gb/s PCI Express® 3.0 SATA+SAS RAID Controller



### Key Features

- Four internal 6Gb/s SATA+SAS ports
- One Mini-SAS internal connector (SFF8087)
- LSI SAS 2208 Dual-core 6Gb/s ROC –x2 800MHz PowerPC Processors
- PCI Express 3.0 Host Interface
- 1GB DDRIII cache memory
- RAID Levels 0, 1, 5, 6, 10, 50 and 60
- Support for NAND flash or BBU cache protection solution

### Key Advantages

- Unmatched RAID performance
- Connect up to 128 3Gb/s and 6Gb/s SATA and SAS hard drives or SSDs
- Helps users realize potential of solid-state storage deployments
- CacheVault technology option for greener, lower total cost cache protection (LSICVM01)
- Heat-tolerant battery backup option (LSIiBBU09)

### Unmatched RAID Performance for Next-Generation Servers and Storage

Today's data center, cloud and high-performance computing environments not only require increased storage capacity to handle massive volumes of data, but are also challenged to protect and deliver data as quickly as possible to meet the needs of applications and end users. To address these performance demands as capacity scales, the newest 6Gb/s SAS RAID controllers from Avago offer a powerful combination of intelligent performance, enterprise RAID data protection and proven interoperability with the latest server platforms based on the PCI Express 3.0 specification. The MegaRAID SAS 9271-4i, with four internal ports, delivers two 800MHz PowerPC® processor cores and a 72-bit DDRIII interface that drives 1GB cache memory. Powered by the LSI SAS 2208 dual-core ROC, the 9271-4i controller includes the latest PCI Express 3.0 and 6Gb/s SAS technology and helps users to maximize the performance benefits of solid state storage.

### Protect Cached Data with MegaRAID CacheVault™ Technology or BBU

RAID caching is a cost-effective way to improve I/O performance by writing data to a controllers' cache before it is written to disk. In write-back mode, data written to cache is vulnerable until it is made permanent on disk. To avoid the possibility of data loss or corruption during a power or server failure, Avago offers the CacheVault flash cache protection module or the LSIiBBU09 battery backup unit for the MegaRAID SAS 9271-4i controller. CacheVault flash cache protection uses NAND flash memory powered by a super-capacitor to help protect data stored in the MegaRAID controller cache. The RAID controller automatically writes the data in cache memory to flash storage when a power failure occurs, while the super-capacitor keeps the current going during the process. When the power comes back, the DRAM is recovered from flash storage and the system goes on without loss of data. Customers have the flexibility to choose a traditional LiON battery solution or a greener, lower total cost of ownership (TCO) cache protection solution with MegaRAID CacheVault technology.

### Support for Advanced Software Options

The family of 6Gb/s MegaRAID controllers are designed to support advanced software options that provide white box channel partners with enhanced performance and data protection capabilities. These new software options help enable end users to address key business challenges while helping to deliver a higher return on their IT investments. MegaRAID CacheCade™ Pro 2.0 software and MegaRAID Fast Path software boost transactional I/O performance of solid state disk configurations, while MegaRAID Recovery software and MegaRAID SafeStore™ software enable enhanced data protection and security.

### Intuitive RAID Management Utility

The MegaRAID Management Suite™ software provides essential tools to manage MegaRAID products, whether deployed in an enterprise or small business. Avago offers a collection of applications and tools including a pre-boot setup utility and a full spectrum of online RAID management utilities. This suite of applications allows administrators to adjust SAS or SATA topology views from the system host, controller and disk enclosure down to the logical and physical drive level. Extending to enterprise deployments, these tools scale to more easily configure, monitor and manage RAID and JBOD volumes locally or over the LAN network.

MegaRAID® SAS 9271-4i	
Solution Provided	Four-port internal SAS solution for performance-hungry applications using up to 128 SAS, SATA and solid state drives (SSDs)
Physical Dimensions	MD2 Low profile (6.6" X 2.536")
Internal Connectors	One Mini-SAS SFF8087 internal connector (side mount)
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	Up to 6Gb/s per port
I/O Processor/SAS Controller	LSI SAS 2208 Dual-Core RAID on Chip (ROC)
Cache Memory	1 GB 1333MHz DDRIII SDRAM
Cache Protection	MegaRAID CacheVault flash cache protection (optional – LSICVM01 / LSI00297) MegaRAID LSIiBBU09 (optional – LSIiBBU09 / LSI00279)
Key RAID Data Protection Features	<ul style="list-style-type: none"> <li>• RAID levels 0, 1, 5, and 6</li> <li>• RAID spans 10, 50 and 60</li> <li>• Online Capacity Expansion (OCE)</li> <li>• Online RAID Level Migration (RLM)</li> <li>• Auto resume after loss of system power during array rebuild or reconstruction (RLM)</li> <li>• Single controller Multipathing (failover)</li> <li>• Load Balancing</li> <li>• Configurable stripe size up to 1MB</li> <li>• Fast initialization for quick array setup</li> <li>• Check Consistency for background data integrity</li> <li>• SSD Support with SSD Guard™ technology</li> <li>• Patrol read for media scanning and repairing</li> <li>• 64 logical drive support</li> <li>• DDF compliant Configuration on Disk (COD)</li> <li>• S.M.A.R.T support</li> <li>• Global and dedicated Hot Spare with Revertible Hot Spare support               <ul style="list-style-type: none"> <li>– Automatic rebuild</li> <li>– Enclosure affinity</li> <li>– Emergency SATA hot spare for SAS arrays</li> </ul> </li> <li>• Enclosure management               <ul style="list-style-type: none"> <li>– SES (inband)</li> <li>– SGPIO (sideband)</li> </ul> </li> </ul>
Operating Temperature	Maximum ambient: Controller Card: 60°C, with optional CVM01: 55°C, with optional LSIiBBU09: 55°C
Operating Voltage	+3.3V, +12V
MTBF (Calculated)	1,031,514hours
Hardware Warranty	3 years, free advanced technical support, advanced replacement option
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
RAID Management	MegaRAID Management Suite <ul style="list-style-type: none"> <li>• MegaRAID Storage Manager</li> <li>• MegaCLI (command-line interface)</li> <li>• WebBIOS</li> </ul>
Optional SSD Optimization	<ul style="list-style-type: none"> <li>• MegaRAID CacheCade Pro 2.0 Software leverages SSDs in front of HDD volumes to create high-capacity, high-performance controller cache pools</li> <li>• MegaRAID Fast Path Software provides high-performance I/O acceleration for SSD arrays connected to 6Gb/s MegaRAID SATA+SAS controllers</li> </ul>
OS Support	Extensive support includes Microsoft® Windows® Vista/2008/Server 2003, Linux®, Solaris™ (x86), FreeBSD®, VMware® and more. * Visit the download center for the most complete list of supported operating systems: <a href="http://www.lsi.com/support">www.lsi.com/support</a>

## Ordering Information

MegaRAID SAS 9271-4i	LSICVM01	LSIiBBU09	BBU-BRACKET-05
Single Pack: LSI00328 Kit: LSI00329	Kit: LSI00297	Kit: LSI00279	Kit: LSI00291



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