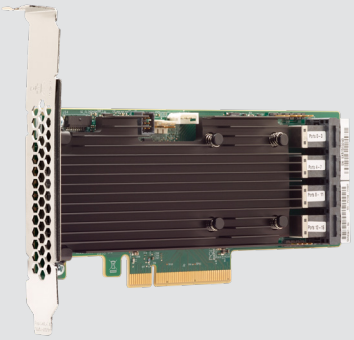
BROADCOM®

Product Brief

9361-16i

High Port Count 12 Gb/s PCI Express SATA + SAS RAID Controller



Key Features

- High-performance 12 Gb/s data transfer rates
- 16 internal 12 Gb/s SATA+SAS ports
- Four mini-SAS SFF8643 internal connectors (horizontal mount)
- SAS3316 RAID-on-Chip
  - Dual-core 1.2 GHz PowerPC 476
  - 16 Native 12 Gb/s SAS/SATA ports
- PCI Express 3.0 host interface
- 2 GB DDR3 cache memory
- RAID levels 0, 1, 5, 6, 10, 50, and 60
- Support for CacheVault flash cache protection

Key Advantages

- 12 Gb/s solutions accelerate performance for next-generation data centers, web and cloud
- Delivers enterprise-class data protection and security
- Preserves investment in 6 Gb/s and 3 Gb/s drives
- Support for Advanced Software options
- Connect up to 240 3 Gb/s, 6 Gb/s, or 12 Gb/s SATA and SAS devices

Unlock Storage Performance with Broadcom 12 Gb/s SAS Solutions

The explosive growth of data in cloud and enterprise data centers is driving the need for a higher performance storage interface to speed the ability of critical applications to access data. Broadcom 12 Gb/s SAS solutions are designed to deliver the performance and data protection capabilities required for the most demanding next-generation server and storage platforms. Offering up to double the data transfer rate of 6 Gb/s SAS solutions, 12 Gb/s SAS allows the SAS infrastructure to deliver bandwidth that can fully utilize that of PCI Express 3.0 with a single controller card.

Next-Generation High Port Count SAS RAID

The Broadcom MegaRAID® SAS 9361-16i, with sixteen internal ports in a low-profile form factor, delivers two 1.2 GHz PowerPC processor cores and a 72-bit DDR3 interface that drives 2 GB cache memory. Powered by the SAS3316 dual-core ROC, with 16 native SAS/SATA ports, the 9361-16i controller can take full advantage of the latest PCI Express 3.0 interface to provide higher performance and increased throughput. The 12 Gb/s MegaRAID SAS 9361-16i is designed for configuring high-density storage servers with up to 16 drives via direct connection inside the box or up to 240 drives by leveraging SAS expander technology.

Enterprise Data Protection

The Broadcom MegaRAID SAS 9361-16i RAID controller supports data retention by using NAND flash memory down on the controller, backed up by a CacheVault™ Power Module 02 (CVPM02). The CVPM02 module is a super-capacitor pack that provides power for data backup in the event of host power loss or server failure. The CVPM02 module is remotely connected to the controller by cable. The data is backed up to the NAND flash memory on the MegaRAID controller board.

Standard support for the most popular RAID levels, including RAID 5 and RAID 6, further strengthens the data protection capabilities of the MegaRAID SAS 9361-16i. A new enterprise feature employed by the 12 Gb/s MegaRAID SAS controllers is advanced drive diagnostic technology. In the event of a physical drive failure, the drive is placed in shield state and the MegaRAID controller starts drive diagnostics to determine if the drive is indeed failed or can be restored. This saves customers time, money, and lost compute time associated with transient drive failures and unnecessary drive returns.

MegaRAID SAS 9361-16i Controller Card	
Solution Provided	Sixteen-port internal SAS/SATA RAID solution for high-density and mainstream servers and storage systems requiring high drive count support inside the box.
Physical Dimensions	MD2 low profile (6.127 in. × 2.712 in.)/(155.65 mm × 68.90 mm)
Connectors	Four SFF8643 ×4 (Horizontal Mount)
Device Support	Up to 240 SAS and/or SATA devices
Host Bus Type	x8 lane PCI Express 3.0 compliant
Data Transfer Rates	Up to 12 Gb/s per port
I/O Processor/SAS Controller	SAS3316 dual core RAID on Chip (ROC)
Key RAID Data Protection Features	• RAID levels 0, 1, 5, and 6 • RAID spans 10, 50, and 60 • Online Capacity Expansion (OCE) • Online RAID Level Migration (RLM) • Auto resume after loss of system power during array rebuild or reconstruction (RLM) • Single controller Multipathing • Load Balancing • Configurable stripe size up to 1 MB • Fast initialization for quick array setup • Check Consistency for background data integrity • SSD Support with SSD Guard technology • Patrol read for media scanning and repairing • 64 logical drive support • DDF compliant Configuration on Disk (COD) • S.M.A.R.T support • Global and dedicated Hot Spare with Revertible Hot Spare support - Automatic rebuild - Enclosure affinity - Emergency SATA hot spare for SAS arrays • Enclosure management – SES (inband) – SGPIO (sideband) • Databolt bandwidth optimizer technology support for compatible expander-based enclosures • Shielded state drive diagnostic technology
Operating Temperature	Maximum ambient: Controller Card: 55°C, with optional CacheVault accessory (CVPM02): 55°C
Operating Voltage	+3.3V, +12V
MTBF (Calculated)	>2,500,000 hours at 40°C
Hardware Warranty	3 years; with advanced replacement option
MegaRAID Management Suite	• LSA (LSI Storage Authority) • MegaRAID Storage Manager • StorCLI (command-line interface) • CTRL-R (BIOS configuration utility) • HII (UEFI Human Interface Infrastructure)
SSD Optimization	MegaRAID CacheCade® Pro 2.0 Software leverages SSDs in front of HDD volumes to create high-capacity, high-performance controller cache pools (Optional Upgrade)
Regulatory Certifications	USA (FCC 47 CFR part 15 Subpart B, class B); Canada (ICES -003, Class B); Taiwan (CNS 13438); Japan (VCCI V-3); Australia/New Zealand (AS/NZS CISPR 22);Korea (RRA no 2013-24 & 25); Europe (EN55022/EN55024); Safety: EN/IEC/UL 60950; RoHS; WEEE
OS Support	Microsoft Windows, Linux (Oracle, SuSE , Red Hat), Solaris, VMware, FreeBSD, CentOS, Canonical, Citrix, FreeBSD, Fedora, Debian See www.broadcom.com/support/download-search for details on versions. Contact Oracle support for Oracle driver or software support.
Ordering Information	
MegaRAID SAS 9361-16i	05-25708-00 (Single Pack)
CVPM02	05-50038-00 (Kit)

BROADCOM®
connecting everything®

For more product information: broadcom.com/products/storage/

BC00-0418EN August 23, 2018