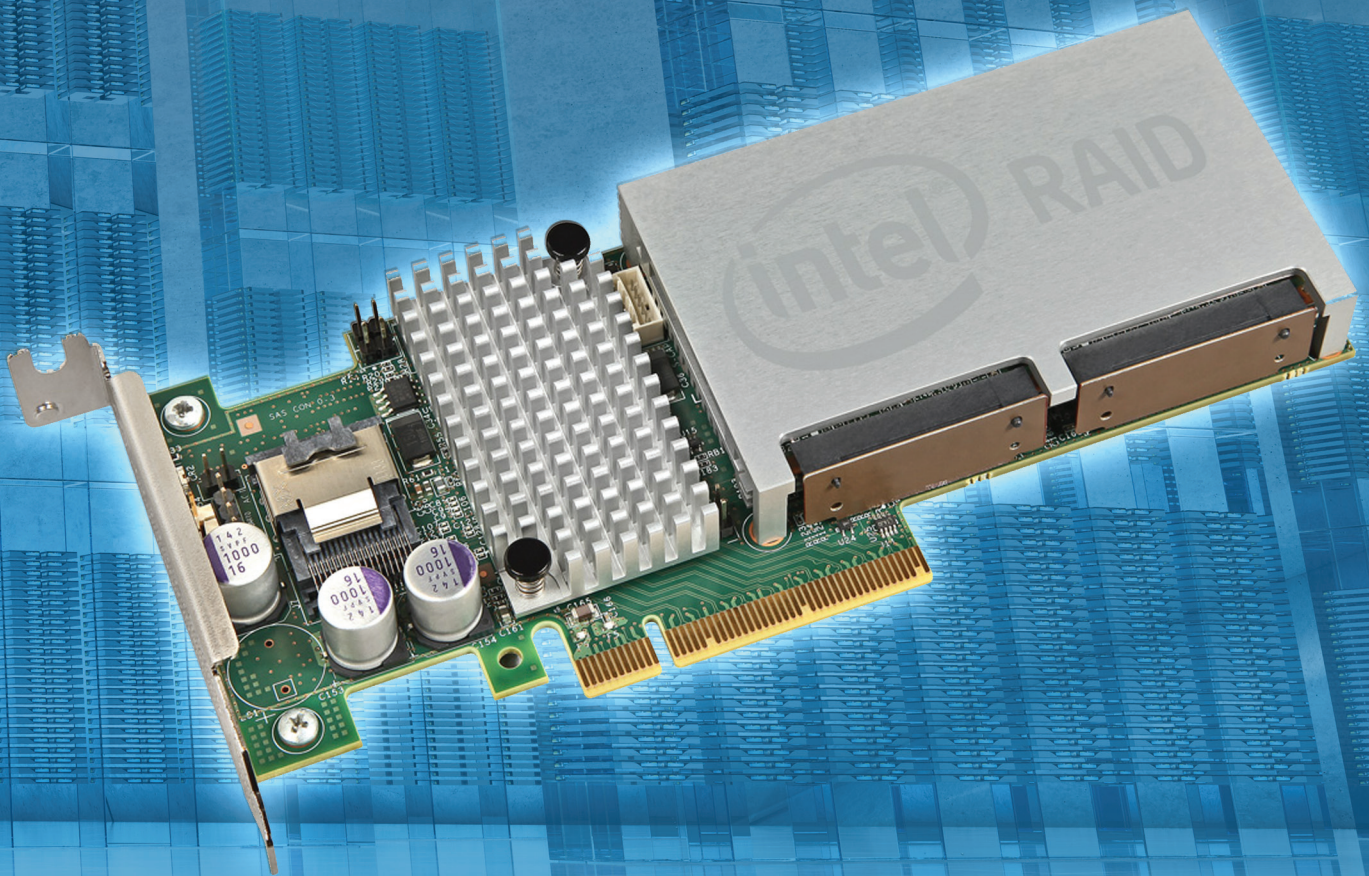


Intel® RAID SSD Cache Controller RCS25ZB040

Enables SSD Performance from a Hard Drive Array

Powered by LSI® Nytro™ MegaRAID® technology*



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Enables SSD Performance from a Hard Drive Array

The Intel® RAID SSD Cache Controller RCS25ZB040 delivers up to 1TB of onboard Flash-based cache and two 800MHz RAID-On-Chip processor cores to help accelerate business applications. The Intel RCS25ZB040, powered by LSI* Nytro MegaRAID technology, unleashes the IOPs and throughput potential afforded by solid-state memory without requiring a full array of SSD. As an example of the performance acceleration possible, replacing a standard RAID card with the Intel RCS25ZB040 resulted in a transaction rate of more than an order of magnitude (10x) for a database server in a test environment.¹

The Intel RCS25ZB040 utilizes intelligent caching algorithms to help identify frequently accessed data or “hot spots” and to promote them to the fast on-board Flash. SSD Caching RAID acceleration can be more cost-effective than direct attach solid-state drive (SSD)-only arrays or short stroked hard disk drive (HDD) environments.

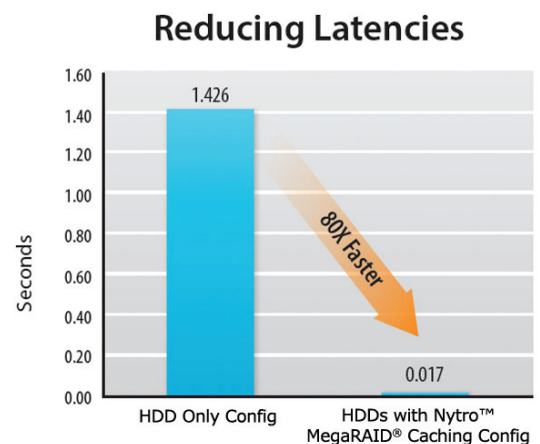
All Intel RAID solutions are validated across multiple platforms with Intel® boards, chassis, and systems. Customized training, as well as service and support, make Intel the one source for customers seeking data protection, increased productivity, and simplified IT.

- **High speed Flash performance with RAID data protection.** Up to 1TB of Flash significantly enhances the performance of many mainstream applications and a powerful LSI* SAS2208 ROC manages the high speed transactions and data protection.
- **Advanced capabilities that don't require you to be an expert.** Built-in caching algorithms manage data transfer to and from the Flash pool without the need for special code, intimate application data structure knowledge or time spent understanding configuration complexities.
- **Optimized Flash use for both Reads & Writes.** Many competing Flash caching technologies are limited to Read use and do not allow for Write capability. Writes can be mirrored to help protect against data loss prior to the data being written to the designated RAID array.
- **Flash memory can be partitions for OS and RAID cache.** The embedded Flash can be partitions such that a portion of it is usable by the Operating System; while the remainder is utilized as cache to accelerate performance.
- **Faster rebuild during degraded states.** In a degraded array scenario, the time to optimal performance can be reduced by as much as 75%.

Performance Benefits and More

Data requests served from flash can significantly reduce application latency, which leads to improved user response times and quality-of-service. The graph below compares the performance of a SQL Server® database used in an online transaction processing (OLTP) workload with a hardware configuration with only HDDs, against an Intel RCS25ZB040-based configuration.

A test found that the LSI* Nytro MegaRAID technology with intelligent caching and integrated flash storage yielded an 80 times faster response. Applications that benefit from caching can also benefit from reduced rebuild time for degraded RAID arrays, even when using high-capacity HDDs. With the Intel RCS25ZB040 servicing I/O from the onboard flash, the backend HDDs are less burdened and can dedicate more resources to the rebuild operation.

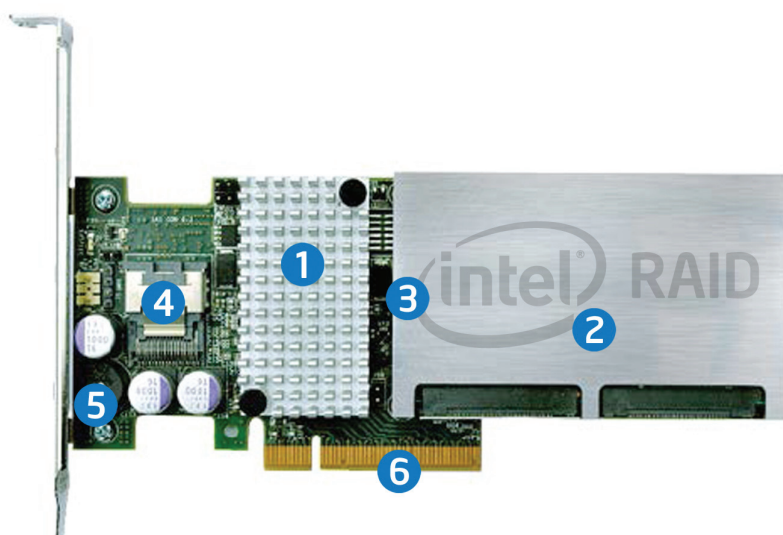


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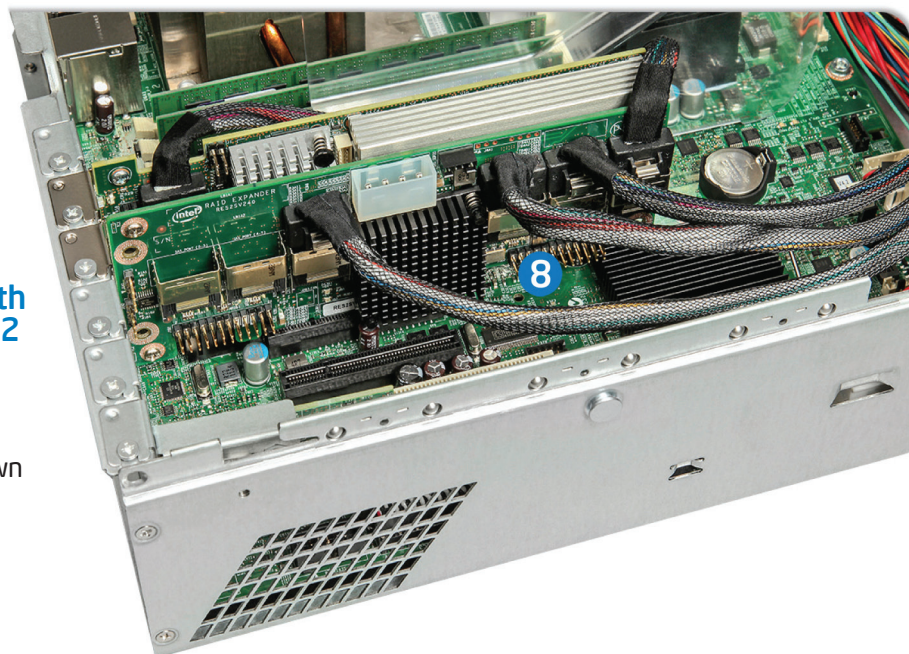
Features

1. LSI* SAS2208 ROC controller providing SAS 2.0 compliance including 6Gb/s data transfer
2. Up to 1TB of eMLC NAND Flash to significantly enhance the read and write performance of many server applications
3. Embedded 1GB 1333MHz cache (ECC DDR3 memory) for further performance enhancement
4. One SFF8087 SAS/SATA connector for up to four internal ports and up to 128 hard disk drives via expanders
5. Speaker to deliver audible alerts
6. x8 PCI Express* Generation 3 interface for fast communication with the server board
7. Optional Intel Cable Kit AXXCBL650MSMS includes 2 x 650mm cables with mini-SAS (8087) to mini-SAS (8087) connectors (AXXCBL740MS7P with mini-SAS to 7-pin connectors also available.)
8. Optional Intel® RAID expander RES2SV240 is ideal for expanding RAID arrays up to 20 hard drives



Team the Intel® RCS25ZB040 with
Intel® RAID Expander for up to 32
hard drives with SSD Caching

Intel RCS25ZB040 and RES2SV240 shown
teamed in a 2U System



Intel® RAID SSD Cache Controller RCS25ZB040

Technical Specifications

Order Codes	RAID Card with 256GB SSD Cache2: RCS25ZB040 RAID Card with 1TB SSD Cache2: RCS25ZB040LX Maintenance Free Backup Unit: AXXRMFBU3 Cable Kit: AXXCBL650SMS or AXXCBL740MS7P RAID Expander (for >4 hard drives): RES2SV240
RAID Levels and Spans	RAID Levels 0, 1, 5, 10, 50, 60
Data Protection Feature Highlights	Online Capacity Expansion Hot-Spare Support – Global & Dedicated Single Controller Multipathing (Failover) Enclosure Management Background Consistency Checking Patrol Read for Media Functionality S.M.A.R.T. Support
Intel® RAID Software	Intel® RAID Web Console 2 Intel® RAID Command Line Tool Intel® RAID Flash Utilities
I/O Processor	LSI* SAS2208 ROC running at 800 MHz
Drive Types	SAS 6Gb/s or SATA 6Gb/s, SAS 3Gb/s or SATA 3Gb/s
Maximum Drives	Up to 128 physical devices supported
Connectors	One SAS SFF8087 x4 SAS internal connectors
Cache Memory	Embedded 1GB at 800MHz
PCI Interface	x8 PCI Express* 2.0
Cache Backup Support	Optional Intel® RAID Maintenance Free Backup Unit AXXRMFBU3
Form Factor	Low profile, MD2 (6.6" X 2.536")
Data Transfer Rates	Up to 6Gb/s per port
Operating Temperature	Maximum ambient: 55°C (300 LFM airflow or greater recommended at maximum temperature)
Operating Voltage	+3.3 V
Operating System	Extensive support includes Microsoft* Windows* Vista/2008/Server 2003/2000/XP, Linux*, Solaris*(x86), Netware*, FreeBSD*, VMware* and more. * Visit intel.com for the most complete list of supported operating systems

For more information on the Intel® RAID Cache Controller RCS25ZB040, visit: www.intel.com/go/RAID

For more information on how to make the Intel® RAID Cache Controller RCS25ZB040 part of your server environment, please contact an Intel® Channel Partner Program participant.

¹ Performance enhancement is unique for each server and usage model. Performance will also vary with time. High transaction databases will typically achieve the largest performance gains.

² The eMLC flash is provisioned such that 200GB is accessible for storage capacity on model RCS25ZB040 and 800GB is accessible on model RCS25ZB040LX.

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