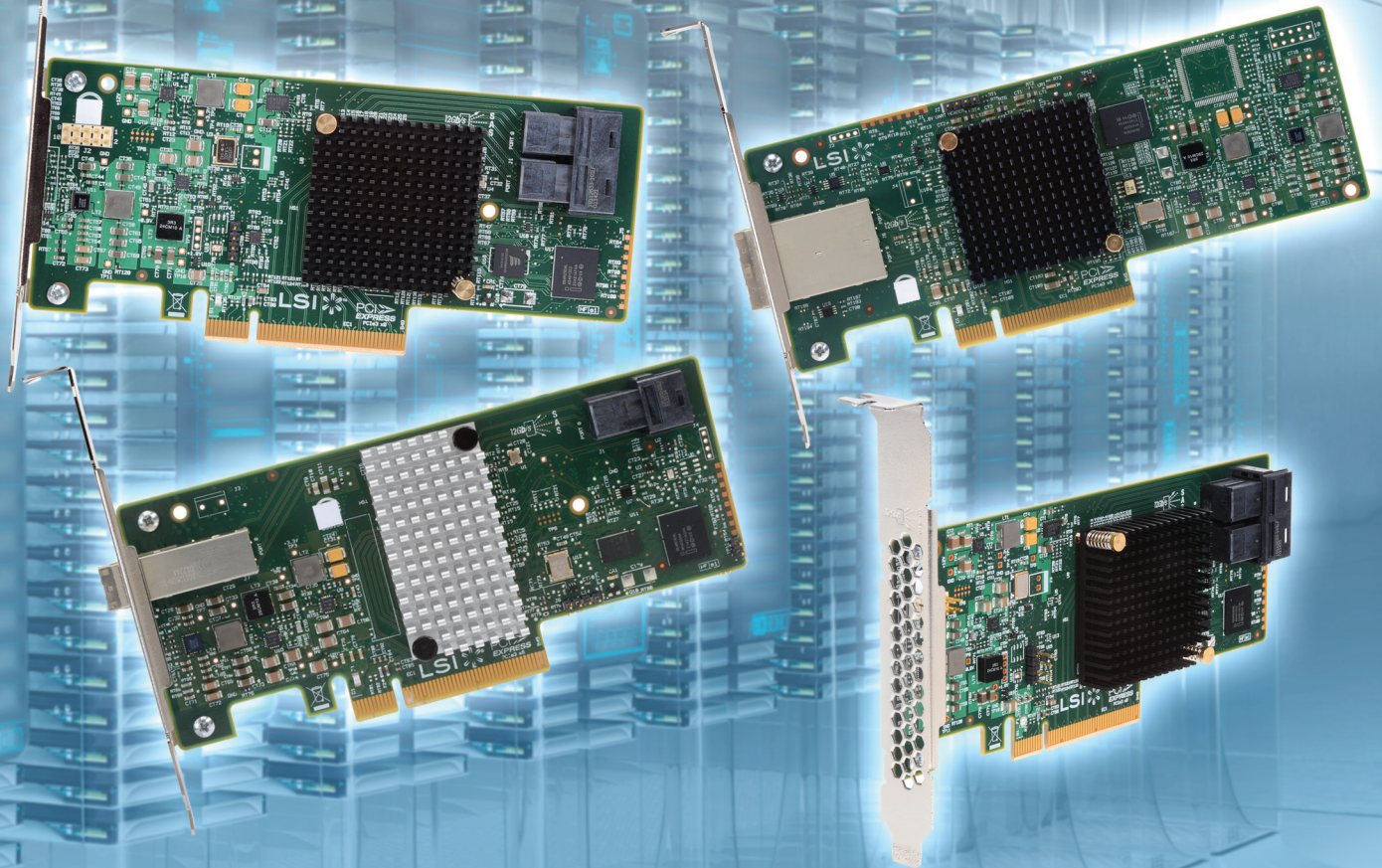


Entry-level Intel® RAID RS3 Controller Family

12Gb/s connectivity and basic data protection

RAID matters. Rely on Intel® RAID.



Cost-effective 12Gb/s SAS-3 with Mirroring, Striping, JBOD and RAID 5 Options

Entry-level Intel® RAID RS3 Controller

12Gb/s SAS-3 technology for connectivity and basic data protection

As big data continues to increase exponentially and becomes the foundation that supports productivity, growth and innovation, organizations require a higher performance storage solution. Now with Intel® RAID RS3 controllers, powered by LSI technology, organizations can achieve a higher level of storage performance designed to meet the demands of I/O-intensive applications, cloud datacenters and virtualized server environments. By utilizing Intel® RAID RS3 controllers as a basis for their storage infrastructure, businesses can achieve more than 1 million IOPs in JBOD mode, accelerating business-critical applications in enterprise, Web and cloud datacenters.¹

12Gb/s SAS-3 technology doubles the available bandwidth of current 6Gb/s SAS solutions unlocking the full potential of PCI Express® 3.0-based systems and solid-state storage solutions. The greatly improved throughput and I/O processing capabilities maximize link utilization thereby supporting the highest performance SSD and increased scaling of traditional hard disk drives.

The entry-level Intel RAID RS3 controllers provides powerful performance and scalability without relying on system resources for RAID 0,1,1E. While many other SAS controllers utilize large RAID software stacks between the host CPU and controller, the Intel RAID RS3 family uses the embedded CPU in the LSI 3008 ASIC to perform RAID 0,1 and 1E/10 operations. The ultra-thin driver affords low RAID overhead for high host CPU offload with excellent read/write performance. Plus, Intel RAID RS3 controllers offer backwards compatibility, which can enhance the performance of 3Gb/s and 6Gb/s infrastructures. Furthermore, the Intel RAID RS3 controllers deliver scalability, with support for up to 244 physical devices, multiple RAID arrays and industry-leading interoperability.

Did you know that by replacing older products with Intel RAID RS3 controllers organizations can achieve more than 1 million IOPs in JBOD mode, which can significantly accelerate critical applications?¹



Why Intel RAID controller RS3 family?

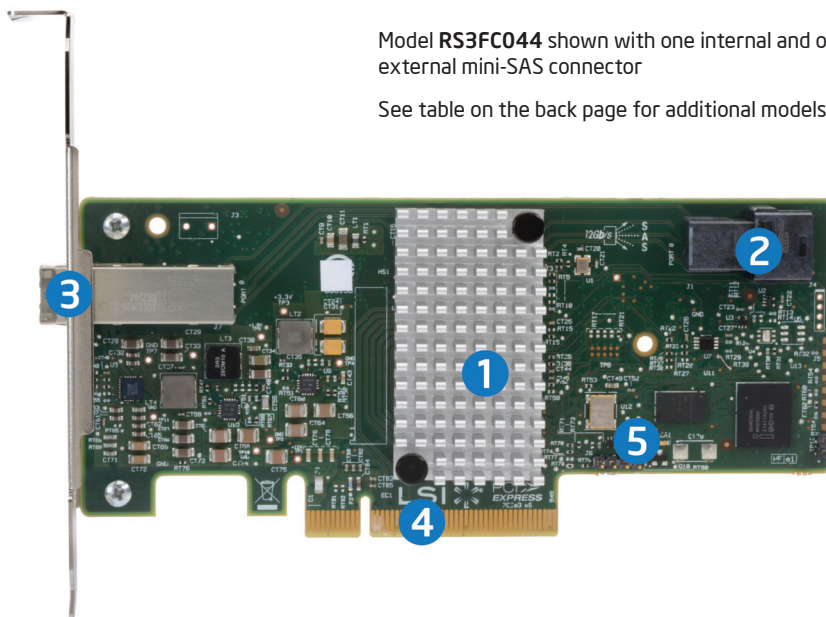
- High throughput with 12Gb/s SAS data transfer rates
- Supports solutions with over 1M IOPs¹
- Optimized drivers support multiple operating systems with low overhead
- Intel documentation and support provide ease of mind and enable low TCO

The new Intel® RAID 12Gb/s controller RS3 family provides the next generation of storage performance to meet the current and future demands of today's datacenters. These entry-level controllers are also perfect for 3Gb/s and 6Gb/s as they provide a faster processor and also allow for 12Gb/s data transfer when teamed with a SAS-3 compliant expander. This provides room to grow by paving the way for 12Gb/s infrastructures as server demands increase and technology progresses.

Features

Entry-Level Intel® RAID Controller RS3

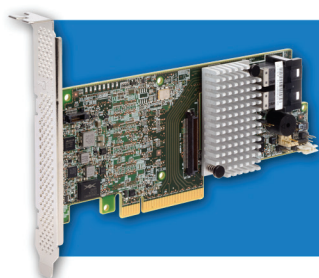
1. LSI SAS 3108 I/O processor supporting over 1 million IOPs¹
2. Up to 2 internal High Density Mini-SAS connectors with up to eight ports of 12Gb/s bandwidth per port
3. Up to 2 external High Density Mini-SAS connectors with up to eight ports of 12Gb/s bandwidth per port
4. x8 PCI Express* connector with support for Generation 3 protocol
5. "Heartbeat" LED for visual verification that the card is functioning properly



Model **RS3FC044** shown with one internal and one external mini-SAS connector

See table on the back page for additional models

- **Internal and External Connectivity** – Internal ports allow for a RAID array within a system while external ports allow for connecting to a JBOD or SAS switch.
- **Cost Effective Data Protection** – Provides a low-cost RAID 0,1, and 1E solution for entry-level server and workstation environments that need high-performance and reliable data protection.
- **Hybrid RAID 5 with RS3WC080** – The Intel® RAID Controller RS3WC080 design is based on LSI MegaRAID* technology that offers RAID 5 capability with many of the same features as Intel's mainstream RAID products. (Note: RAID 5 is firmware based but utilizes system resources, which makes it "Hybrid".)
- **SAS or SATA Storage** – Connect SAS or SATA devices within the array for speed, reliability and scalability and use high-capacity SATA drives for budget-friendly storage.
- **Featuring Compatibility with Intel® Server Products** – All Intel RAID solutions are validated across multiple platforms with Intel® boards, chassis and systems. When used together, they deliver the best combination of performance, built-in capabilities, and cost-efficiencies that meet the demands of big data now and into the future.



Entry-Level or Mainstream?

The Intel® RAID Controller RS3DC080 is a Mainstream Intelligent RAID product that offers more performance and features compared to entry-level products. Features such as RAID 6/60, SSD Cache, advanced management and Maintenance Free Cache Backup are available with the RS3DC080.²

² Expected availability Q4 2013. See www.intel.com/go/RAID for additional details on Mainstream Intel® RAID products.

Entry-Level Intel® RAID Controller RS3 Product Family

Technical Specifications

Compatible Server Boards, Systems and JBODs	Compatible with most Intel® Server Boards and Systems supporting the Intel® Xeon® E5 and E3 processors, Intel® Storage Systems (JBODs) and a wide number of third party-based servers and JBODs.	
Data Protection Feature Highlights	Distributed Sparing Hot Spare Support Expander Support	Background Consistency Checking Enclosure Management / S.M.A.R.T. Support RAID Support Before Operating System Loaded
Intel® RAID Software	Intel® RAID Web Console 2, Intel® RAID Command Line Tool, Intel® RAID Flash Utilities	
Maximum Devices/Drives	Models: RS3UC080, RS3FC044, RS3GC008 Non-RAID: 256 Integrated RAID (IR): 14 spread across 2 volumes RAID 0, 1E, 10: 10 per volume RAID 1: 2 per volume plus hotspare	Model: RS3WC080 Non-RAID: 64 RAID 0: 16 per volume RAID 1: 2 per volume plus hotspare RAID 10: 16 per volume RAID 5/50: 16 per volume
Connectors	Internal connectors are mini-SAS HD SFF8643 and external connectors are mini-SAS HD SFF8644 080 models offer 8 internal ports, 008 model offers 8 external ports, 044 model offers 4 internal and 4 external ports	
PCI Interface	x8 PCI Express* 3.0	
Form Factor	Low profile, MD2 compliant	
Data Transfer Rates	Up to 12Gb/s per port and a cumulative bandwidth of up to 8000 MB/s	
Drive Types	SAS 12Gb, SAS and SATA 6Gb, and SAS and SATA 3Gb	
Operating Temperature	Maximum ambient: 55°C with 200 LFM airflow	
Operating Voltage	+12V ±10%	
Standard Warranty	3 years, extended warranty available	
Operating System Support	Microsoft Windows*, Linux (SuSE, Red Hat), Solaris*, VMware*, FreeBSD See http://www.intel.com for details on versions and support	

Quick Order Reference Table for Intel® RAID Controller RS3 Family

Intel Order Codes	RS3UC080	RS3FC044	RS3GC008	RS3WC080	RS3DC080 ³
Internal Ports	8	4	0	8	8
External Ports	0	4	8	0	0
RAID Levels	0, 1, 1E, 10, JBOD	0, 1, 1E, 10, JBOD	0, 1, 1E, 10, JBOD	0, 1, 10, 5, 50	0, 1, 10, 5, 50, 6, 60
I/O Processor	LSI SAS3008 IOC	LSI SAS3008 IOC	LSI SAS3008 IOC	LSI SAS3008 IOC	LSI SAS3108 ROC

3 - Intel® RAID Controller RS3DC080 is a Mainstream Intelligent RAID product which is covered in detail in a separate product brief. This brief addresses Entry-level products only.

Cable Kits

AXXCBL650HDM5	One kit with two 650mm cables. The initiator end connector is HD SFF8643 Mini-SAS. The target end connector is 8087 Mini-SAS.
AXXCBL730HDM5	One kit with two 730mm cables. The initiator end connector is HD SFF8643 Mini-SAS. The target end connector is 8087 Mini-SAS.

For more information on how to make the entry-level Intel® RAID 12Gb/s Controller RS3 Family part of a successful storage solution, visit: www.intel.com/go/RAID

1 - Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing.

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