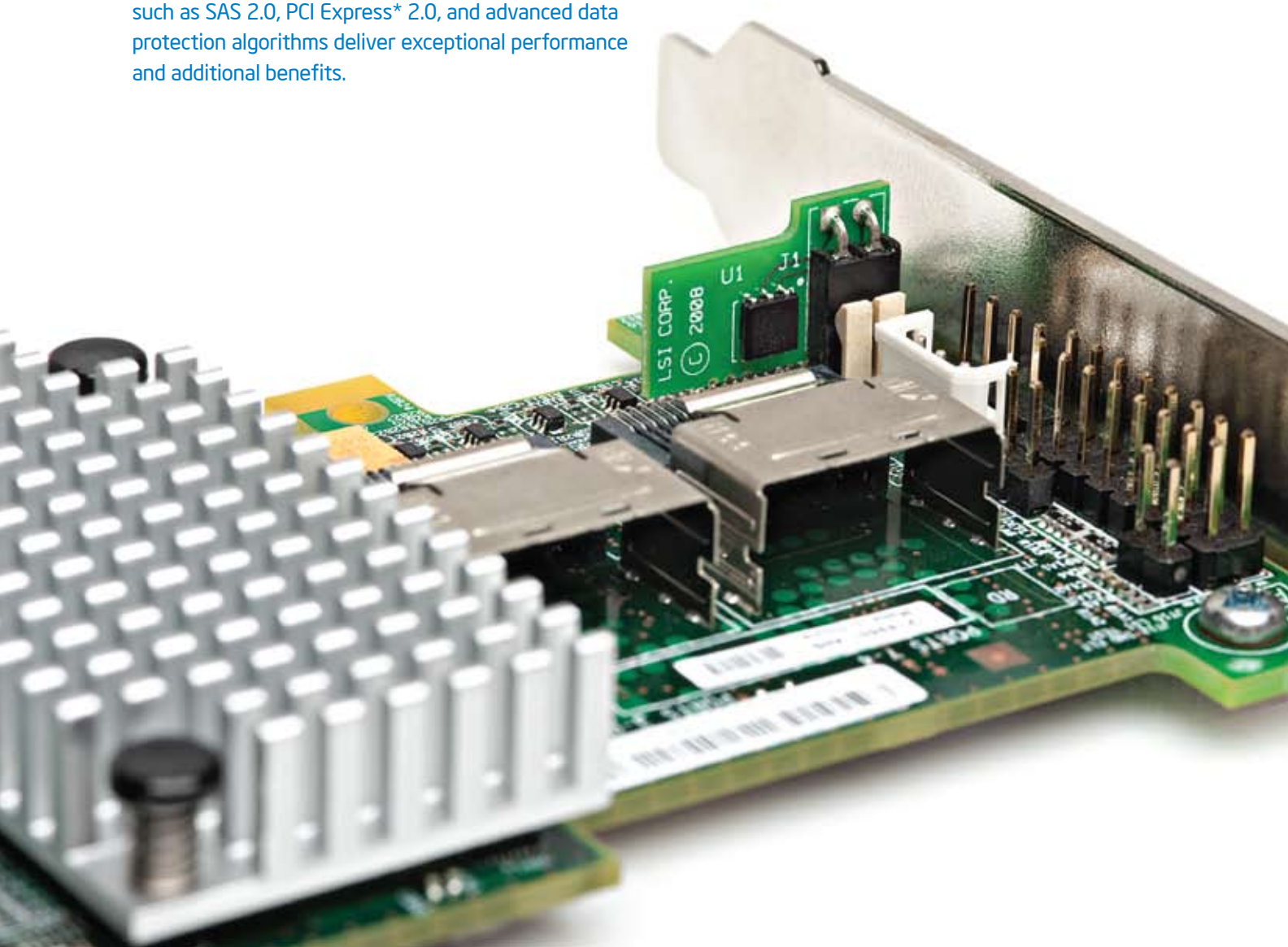
Spring/Summer 2010

Leading the Next Generation

Intel® RAID

Intel® RAID Controllers provide simple, high-performance data protection for Intel® Server Boards and Intel® Server Systems based on the Intel® Xeon® processor 3400 series and the Intel Xeon processor 5600 series. The extremely fast read-and-write capability and thousands of hours dedicated to validation ensure that Intel® RAID delivers high confidence, low cost of ownership, and additional benefits that include:

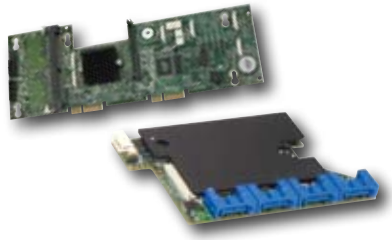
- **One source for storage and server building blocks.** Intel provides a broad selection of RAID and server products with seamless documentation, unified training, and exceptional service and support.
- **Ease of deployment.** Intel RAID solutions are thoroughly tested across the Intel® server product line and popular third-party components.
- **World-class performance and features.** Leading technology such as SAS 2.0, PCI Express* 2.0, and advanced data protection algorithms deliver exceptional performance and additional benefits.



Intel® RAID Controllers Safeguard Your Data with LSI MegaRAID* Technology

Intel RAID solutions are tailored to the technology and budget requirements of a specific server deployment with three distinct families of Intel RAID products.

System builders architecting storage solutions can choose from Intel® Embedded Server RAID Technology II, Intel RAID Controllers, and Intel® Integrated Server RAID to match their customer's requirements. All RAID technologies are easy to deploy, supported by a single Web-based user interface, and designed for seamless upgrades.

		
Good: Intel® Embedded Server RAID Technology II	**Better: Intel® RAID Controllers**	**Best: Intel® Integrated Server RAID**
Host-based RAID that uses the chipset, processors, and memory of the server board to provide basic data protection	Adapter (add-in) cards designed for standard expansion slots on a server board	Unique system boards that add value over standard add-in cards
Why Embedded RAID? ▪ Meets strict budget requirements (RAID 0, 1, 10 included with most Intel® Server Boards and Intel® Server Systems for no extra cost; RAID 5 available with upgrade key) ▪ Suitable for solutions that require six or fewer SATA drives	***Why Intel RAID Controllers?*** ▪ Wide range of products addresses diverse customer needs ▪ Products are tested across multiple Intel and third-party server building blocks ▪ High port count and external port count models available	***Why Integrated RAID?*** ▪ Eliminates the need for an add-in card, a particularly useful factor in 1U and 2U systems ▪ Optimized for Intel Server Boards and Intel Server Systems ▪ Flexible options from basic to advanced RAID
Why Consider Upgrading to Better or Best? ▪ Gain increased overall performance, particularly I/O response ▪ Gain superior data protection including battery backup ▪ Benefit from superior features such as revertible hot spare, RAID 6, and advanced management capabilities ▪ Avoid having to use system (server board processor and memory) resources for RAID calculations	***Why Consider Upgrading to the Best?*** ▪ Suitable for systems that do not have standard add-in card slots available ▪ Gain greater flexibility ▪ Suitable for RAID solutions specifically designed and optimized for Intel Server Boards and Intel Server Systems (add-in cards may be sub-optimal as they are designed for general-purpose use)	***Want Even More?*** ▪ Add an Intel® Smart Battery Backup Unit (BBU) to protect data in transit during a power interruption or system failure ▪ Use an Intel® Server Chassis for hot-swap drive bays and easy remote BBU mounting ▪ Add a premium feature key to further enhance your storage solution

Intel Offers a Broad Choice of RAID Options, Whatever Your Requirements

Choose the PCI Express add-in RAID card from Intel—powered by LSI MegaRAID* Technology—that delivers the right features for your data protection needs. Intel RAID Controllers support all key RAID levels, including RAID 6 and 60,[1] to maintain data integrity even if two drives fail simultaneously.

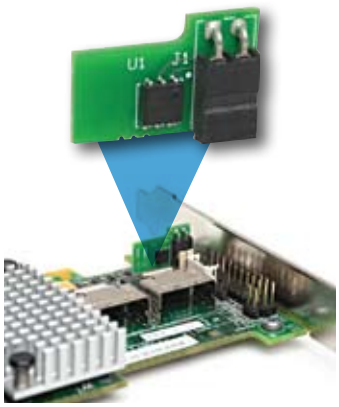
Intel® RAID Product Portfolio Highlights	
 Intel® RAID Controllers	**Intel® RAID Controller RS2MB044** Mainstream 6G SAS RAID controller with four internal and four external ports for SAS/SATA drives
	Intel RAID Controller RS2BL080/040 Mainstream 6G SAS RAID controller with eight/four internal ports for SAS/SATA drives
	Intel RAID Controller RS2PI008 Mainstream 6G SAS RAID controller with eight external ports for JBODs with SAS/SATA drives
	Intel RAID Controller RS2WC080/040 Entry-level 6G SAS RAID controller with eight/four internal ports for SAS/SATA drives
	Intel RAID Controller RS2SG244 (Availability expected August 2010) Scalable Performance 6G SAS RAID controller with 24 internal and four external ports for SAS/SATA drives
	Intel RAID Controller RS2WG160 (Availability expected August 2010) Scalable Performance 6G SAS RAID controller with 16 internal SAS/SATA drives
 Intel® Integrated Server RAID	**Intel® Integrated RAID Module RMS2MH080** (Availability expected July 2010) Eight-port internal mainstream 6G SAS RAID module for 1U, 2U, and pedestal use with select Intel® Server Boards
	Intel Integrated RAID Module RMS2AF080/040 (Availability expected July 2010) Eight/four-port internal entry-level 6G SAS RAID module for 1U, 2U, and pedestal use with select Intel Server Boards
	Intel Integrated RAID Module RMS2LL080/040 (Availability expected July 2010) Eight/four-port internal entry-level 6G SAS RAID module for 1U, 2U, and pedestal use with select Intel Server Boards
	Intel Integrated RAID Module SROMBSASMR Four-port internal RAID module for 1U, 2U, and pedestal use with Intel Server Boards S5520HC and S5500WB
	Intel Integrated RAID 1U/2U Midplane SAS and SAS RAID module for Intel® Server Systems SR1625UR, SR2600UR, and SR2625UR
	Intel Integrated RAID Module AXX4SASMOD Flexible module offering pass-through SAS and multiple entry-level RAID options

For additional details on the products featured here and others within Intel's portfolio of 3 Gbps and 6 Gbps SAS/SATA RAID products, please visit www.intel.com/go/RAID.

The Intel® Smart Battery BBU7 includes the components for direct or remote mounting

Premium Upgrades with New Upgrade Keys

Unlock premium features by installing a Premium Feature Key, available separately for all Intel RAID products based on LSI SAS2108 processors. (See www.intel.com/go/RAID for a complete list of LSI SAS2108-based products.)



SSD Cache with FastPath* I/O (Order Code AXXRPFKSSD, available May 2010)

- Uses solid-state drives (SSDs) as additional cache for the RAID controller by means of SSD flash tiering; frequently accessed information is stored in cache to allow for rapid access
- Accelerates SSDs using FastPath I/O, providing up to 150,000 I/O reads per second for small, random block-size I/O activity; this is a dramatic increase over solutions that do not use FastPath

Drive Encryption Management (Order Code AXXRPFKDE, available May 2010)

- Enables authentication key management, auto-lock, and instant erase of self-encrypting drives
- Helps reduce risk of data being compromised when drives eventually leave the data center
- Significantly reduces the cost and time of repurposing or retiring drives

Rapid Recovery Snapshot (Order Code AXXRPFKSNSH, available May 2010)

- Allows users to capture source volume data changes and either restore files or roll back applications to a previous point in time
- Recovers lost data from disk in minutes, minimizing the downtime experienced by users and eliminating the lengthy process of restoring data from tape
- Allows isolation of a server's boot volume to a separate virtual drive; by enabling the Auto Snapshot feature, users are guaranteed that bootable snapshots exist, in case corruption of operating system occurs

Select Intel® RAID Product Features							
	Order Code	Processor/ RAID On Chip	Memory	Channels	Form Factor	RAID Levels	Battery Backup
Intel® RAID Controller RS2MB044	RS2MB044	LSI SAS2108	512 MB embedded DDR2 ECC memory	4 internal, 4 external SAS/SATA ports	Low profile, MD2 compliant	0, 1, 5, 6, 10, 50, 60	RSBBU7
Intel RAID Controller RS2BL080/040	RS2BL080/ RS2BL040 (Standard) RS2BL080DE (Disk Encryption)	LSI SAS2108	512 MB embedded DDR2 ECC memory	8/4 internal SAS/SATA ports	Low profile, MD2	0, 1, 5, 6, 10, 50, 60	RSBBU7
Intel RAID Controller RS2PI008	RS2PI008 (Standard) RS2PI008DE (Disk Encryption)	LSI SAS2108	512 MB embedded DDR2 ECC memory	8 external SAS/SATA ports	Low profile, MD2	0, 1, 5, 6, 10, 50, 60	RSBBU7
Intel RAID Controller RS2WC080/040	RS2WC080/ RS2WC040	LSI SAS2008	2 MB for entry-level hardware RAID calculations	8 internal SAS/ SATA ports	Low profile, MD2	0, 1, 5, 10, 50	No
Intel RAID Controller RS2SG244 (Availability expected Aug 2010)	RS2SG244	LSI SAS2108	512 MB embedded ECC	24 internal, 4 external SAS/ SATA ports	Full height, 1/2 length	0, 1, 5, 6, 10, 50, 60	RSBBU7
Intel RAID Controller RS2SG160 (Availability expected Aug 2010)	RS2WG160	LSI SAS2108	512 MB embedded ECC	16 internal SAS/SATA ports	Full height, 1/2 length	0, 1, 5, 6, 10, 50, 60	RSBBU7
Intel® Integrated RAID Module RMS2MH080 (Availability expected July 2010)	RMS2MH080	LSI SAS2108	512 MB embedded DDR2 ECC memory	8/4 internal SAS/SATA ports	1U-capable system board	0, 1, 5, 6, 10, 50, 60	RSBBU7
Intel Integrated RAID Module RMS2AF080/040 (Availability expected July 2010)	RMS2AF080/ RMS2AF040	LSI SAS2008	2 MB for entry-level hardware RAID calculations	8 internal SAS/ SATA ports	1U-capable system board	0, 1, 5, 10, 50	No
Intel Integrated RAID Module RMS2LL080/040 (Availability expected July 2010)	RMS2LL080/ RMS2LL040	LSI SAS2008	2 MB for entry-level hardware RAID calculations	8 internal SAS/ SATA ports	1U-capable system board	0, 1, 5, 10, 50	No
Intel Integrated RAID Module SROMBSASMR	AXXROMBSASMR	LSI 1078	Embedded 128 MB ECC DDR2 SDRAM	4 internal SAS/ SATA ports	1U-capable system board	0, 1, 5, 6, 10, 50, 60	RSBBU3
Intel Integrated RAID 1U/2U Midplane	Midplane included with systems requires AXXRAKSAS2 for hardware RAID activation	LSI 1078	Supports up to 1 GB mini-DIMM ECC DDR2 667 MHz DDR2 SDRAM	8 SAS/SATA ports	System midplane	0, 1, 5, 6, 10, 50, 60	RSBBU3
Intel Integrated RAID Module AXX4SASMOD	AXX4SASMOD requires AXXRAKSW5 for RAID 5	LSI 1064	2 MB for entry-level hardware RAID calculations	4 SAS/SATA ports	1U-capable system board	0, 1, 1E, and optional RAID 5	N/A

Note: Unless specified otherwise above, all products shown are currently available.

TAKE THE NEXT STEP

For more information on Intel® RAID Products, visit:
www.intel.com/go/RAID

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

LSI ENABLED

[1] RAID level support may vary by product. Please see www.intel.com for details on each model.

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