(intel®)

Intel® RAID
Amplify Performance. Optimize Data Protection. Thrive.

Intel® RAID solutions offer exceptional performance, extremely fast read-and-write capability, and simplified data protection for Intel® Server Boards and Intel® Server Systems. With thousands of hours dedicated to validation, Intel RAID simplifies the storage experience for even the most demanding customer applications such as high performance computing, data center, healthcare, video surveillance and others.

- **Lower total cost of ownership for storage and server building blocks.** Intel offers a broad range of cost-effective RAID and server products that include exceptional service and support, seamless documentation, and unified training.
- **World-class performance and features.** The leading technology, such as SAS 2.0, PCI Express* 2.0, and advanced data protection algorithms, delivers exceptional performance and additional benefits.
- **Seamless integration and ease of deployment.** Intel RAID solutions are thoroughly tested across Intel® server product line and popular third-party components.
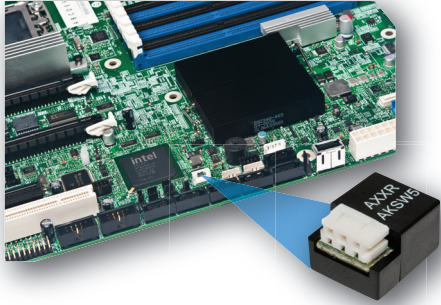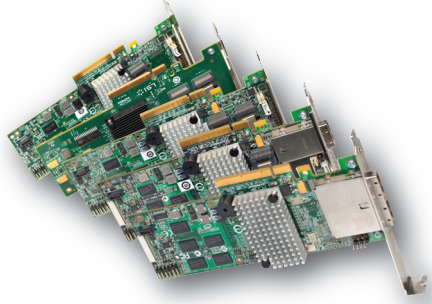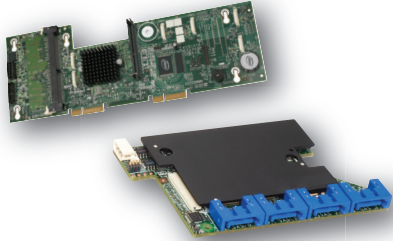
Optimize Storage within Your Budget

Tailor a storage solution using Intel RAID, powered by LSI MegaRAID technology, for your customers' specific server deployment.

System builders can choose from three distinct products when architecting storage solutions: Intel® Embedded Server RAID Technology II, Intel RAID Controllers, and Intel® Integrated Server RAID. All RAID technologies are easy to deploy, supported by a single Web-based user interface, and designed for seamless upgrades.
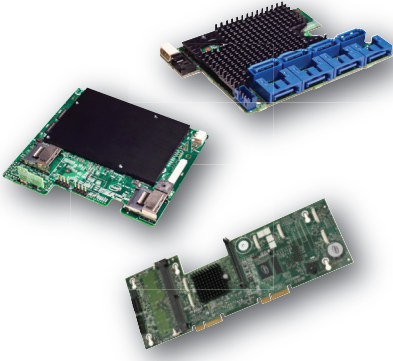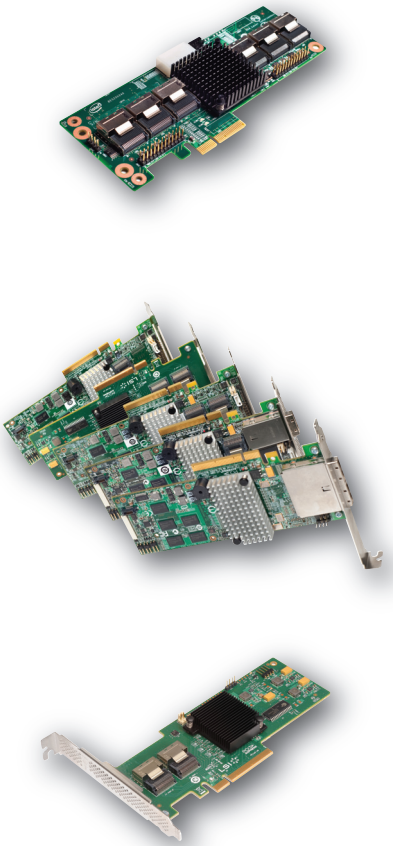

The Intel® Smart Battery BBU8 offers up to 5 years of cache protection and includes the components remote mounting

Good: Intel® Embedded Server RAID Technology II

Host-based RAID that uses the chipset, processors, and memory of the server board to provide basic data protection.

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—shown in image above)
- Suitable for solutions that require six or fewer SATA drives

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

Better: Intel® RAID Controllers

Adapter (add-in) cards designed for standard expansion slots on a server board.

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 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 because they are designed for general-purpose use)

Best: Intel® Integrated Server RAID

Unique system boards that add value over standard add-in cards.

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

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 (page 4) to further enhance your storage solution

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

Select the Intel RAID product that best fits your requirements. Intel's Mainstream and Scalable performance RAID products support all key RAID levels, including RAID 6 and 60[1], to maintain data integrity even if two drives fail simultaneously. Intel's Entry RAID products offer RAID 0, 1, 5, 10, 50 unless otherwise noted.

Featured Intel® RAID Products

Intel® Integrated Server RAID	**MAINSTREAM**	**Intel® Integrated RAID Module RMS2MH080** Eight-port internal mainstream 6G SAS RAID module for select Intel 1U and 2U rack optimized server boards and systems
		Intel Integrated RAID 1U/2U Midplane 3G SAS midplane capable of full hardware RAID activation for Intel® Server Systems SR1625UR, SR2600UR, and SR2625UR
	ENTRY LEVEL	**Intel Integrated RAID Module RMS2AF080/040** Eight/four-port internal entry-level 6G SAS RAID module for 1U, 2U, and pedestal use with a wide variety of Intel Server Boards with an I/O module connector
		Intel Integrated RAID Module RMS2LL080/040 Eight/four-port internal entry-level 6G SAS RAID (Levels 0, 1, 1E, and 10 only) module for 1U, 2U, and pedestal use with a wide variety of Intel Server Boards with an I/O module connector
Intel® RAID Controllers	**SCALABLE PERFORMANCE**	**Intel® RAID Expander RES2SV240** 24-port, 6Gb/s-capable expander card designed to be teamed with another Intel® RAID product to expand 4 ports to 20, or 8 ports to 16
		Intel® RAID Controller RS2SG244 6G SAS RAID controller with 24 internal and four external ports for SAS/SATA drives
		Intel RAID Controller RS2WG160 6G SAS RAID controller with 16 internal ports for SAS/SATA drives
	MAINSTREAM	**Intel RAID Controller RS25DB080** 2nd generation SAS-2 with dual core processing and eight internal ports for SAS/SATA drives
		Intel RAID Controller RS2MB044 6G SAS RAID controller with four internal and four external ports for SAS/SATA drives
		Intel RAID Controller RS2VB080/040** 6G SAS RAID controller with eight/four internal ports and maintenance-free backup (flash-based) for SAS/SATA drives
		Intel RAID Controller RS2BL080/040 6G SAS RAID controller with eight/four internal ports for SAS/SATA drives
		Intel RAID Controller RT3WB080** 6G SATA-3 RAID Controller with eight internal ports for SATA drives only
		Intel RAID Controller RS2PI008 6G SAS RAID controller with eight external ports for JBODs with SAS/SATA drives
	ENTRY LEVEL	**Intel RAID Controller RS2WC080/040** 6G SAS RAID controller with eight/four internal ports for SAS/SATA drives

** All products are currently shipping with the exception RS2VB080 and RS2VB040 which are anticipated to be available by July 2011.
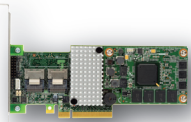
For additional details on the products featured here and others within Intel's portfolio, please visit
www.intel.com/go/RAID.

RAID Accessories to Enhance Performance and Data Protection

Thrive during the most demanding server operations with easy to deploy accessories. Deliver exceptional performance and protection options when architecting your customers' storage solution.

Cache (RAID Card Memory) Backup

Cache boosts storage performance by enabling more parallel operations, reducing latency of parity calculations, and completing transactions quicker. It allows for data to be stored locally rather than waiting for drives or system memory. However, it introduces risk in the event of power or server failure.   Therefore, a cache backup solution is highly recommended.
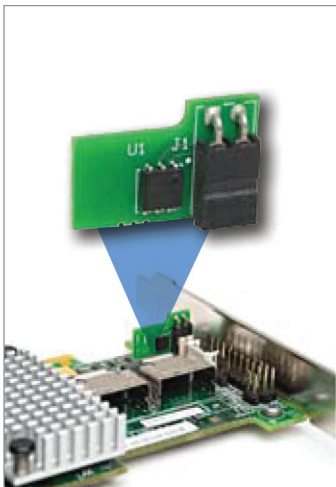
The new **Intel® RAID Controllers RS2VB080/040** provide flash memory and a super-capacitor that allow for cache offload in failure scenarios. This solution is maintenance free with a lower projected TCO.

The new **Intel® Smart Battery BBU8** is a LiON-based backup offering multiple modes of operation and retention times with up to 5 year service life.

Premium Upgrades with New Upgrade Keys

Uncover the power of performance and data protection by simply installing an Intel Premium Features for RAID solutions. When combined with Intel® RAID controllers based on LSI SAS2108 or LSI2208^ processors, you can further enhance storage applications and deliver higher ROI for your server boards and systems.

SSD Cache with Fast Path* I/O (Order Code AXXRPFKSSD)^
- 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 465,000 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)^
- 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)^
- Captures source volume data changes allowing users to quickly restore files, recover data, or roll back applications to a previous point in time
- Allows isolation of a server's boot volume to a separate virtual drive; by enabling the AutoSnapshot feature, users are guaranteed that bootable snapshots exist, in case corruption of the operating system occurs

^For LSI2208 based products such as Intel RAID Controller RS25DB080, the premium feature key order codes are AXXRPFKSSD2, AXXRPFKDE2, and AXXRPFKSNSH2. Performance of up to 465,000 I/O reads per second requires the Intel® RAID Controller RS25DB080 and may vary with system configuration.

TAKE THE NEXT STEP
For more information on Intel® RAID Products, visit **www.intel.com/go/RAID.**

To make Intel® RAID Controllers part of your server environment, contact an Intel® Channel Partner Program participant.

LSI **ENABLED**