

## Intel® RAID: Leading the Next Generation



Intel® RAID Controllers provide simple, high-performance data protection for Intel® Server Boards and Intel® Server Systems based on the Intel® Xeon® processor 3400 and 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.** The leading technology, such as SAS 2.0, PCI Express\* 2.0, and advanced data protection algorithms, delivers 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 customers' requirements. All RAID technologies are easy to deploy, supported by a single Web-based user interface, and designed for seamless upgrades.





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

<p><b>Good: Intel® Embedded Server RAID Technology II</b></p>	<p><b>Better: Intel® RAID Controllers</b></p>	<p><b>Best: Intel® Integrated Server RAID</b></p>
<p>Host-based RAID that uses the chipset, processors, and memory of the server board to provide basic data protection.</p> <p><b>Why Embedded RAID?</b></p> <ul style="list-style-type: none"> <li>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)</li> <li>Suitable for solutions that require six or fewer SATA drives</li> </ul> <p><b>Why Consider Upgrading to Better or Best?</b></p> <ul style="list-style-type: none"> <li>Gain increased overall performance, particularly I/O response</li> <li>Gain superior data protection including battery backup</li> <li>Benefit from superior features such as revertible hot spare, RAID 6, and advanced management capabilities</li> <li>Avoid having to use system (server board processor and memory) resources for RAID calculations</li> </ul>	<p>Adapter (add-in) cards designed for standard expansion slots on a server board.</p> <p><b>Why Intel RAID Controllers?</b></p> <ul style="list-style-type: none"> <li>Wide range of products addresses diverse customer needs</li> <li>Products are tested across multiple Intel and third-party server building blocks</li> <li>High port count and external port count models available</li> </ul> <p><b>Why Consider Upgrading to the Best?</b></p> <ul style="list-style-type: none"> <li>Suitable for systems that do not have standard add-in card slots available</li> <li>Gain greater flexibility</li> <li>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)</li> </ul>	<p>Unique system boards that add value over standard add-in cards.</p> <p><b>Why Integrated RAID?</b></p> <ul style="list-style-type: none"> <li>Eliminates the need for an add-in card, a particularly useful factor in 1U and 2U systems</li> <li>Optimized for Intel Server Boards and Intel Server Systems</li> <li>Flexible options from basic to advanced RAID</li> </ul> <p><b>Want Even More?</b></p> <ul style="list-style-type: none"> <li>Add an Intel® Smart Battery Backup Unit (BBU) to protect data in transit during a power interruption or system failure</li> <li>Use an Intel® Server Chassis for hot-swap drive bays and easy remote BBU mounting</li> <li>Add a premium feature key to further enhance your storage solution</li> </ul>

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

Choose the RAID product from Intel—powered by LSI MegaRAID\* Technology—that delivers the right features for your data protection needs, as described below. Intel’s Mainstream and Scalable performance RAID products support all key RAID levels, including RAID 6 and 60,<sup>1</sup> 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.

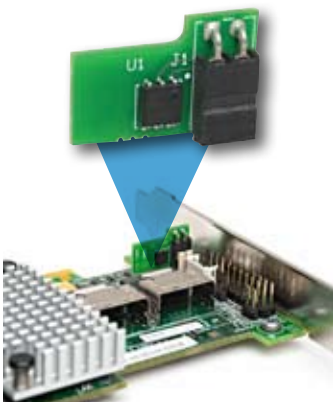
Intel® RAID Product Highlights	
 <p>Intel® Integrated Server RAID</p>	<p><b>MAINSTREAM</b></p> <p><b>Intel® Integrated RAID Module RMS2MH080</b> Eight-port internal mainstream 6G SAS RAID module for select Intel 1U and 2U rack optimized server boards and systems</p> <p><b>Intel Integrated RAID Module SROMBSASMR</b> Four-port internal 3G SAS RAID module for 1U, 2U, and pedestal use with Intel® Server Boards S5520HC, S5500WC, and S3420GP</p> <p><b>Intel Integrated RAID 1U/2U Midplane</b> 3G SAS midplane capable of full hardware RAID activation for Intel® Server Systems SR1625UR, SR2600UR, and SR2625UR</p>
	<p><b>ENTRY LEVEL</b></p> <p><b>Intel Integrated RAID Module RMS2AF080/040</b> 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</p> <p><b>Intel Integrated RAID Module RMS2LL080/040</b> 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</p>
	<p><b>SCALABLE PERFORMANCE</b></p> <p><b>Intel® RAID Expander RES2SV240</b> 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</p> <p><b>Intel® RAID Controller RS2SG244</b> 6G SAS RAID controller with 24 internal and four external ports for SAS/SATA drives</p> <p><b>Intel RAID Controller RS2WG160</b> 6G SAS RAID controller with 16 internal ports for SAS/SATA drives</p>
	<p><b>MAINSTREAM</b></p> <p><b>Intel RAID Controller RS2MB044</b> 6G SAS RAID controller with four internal and four external ports for SAS/SATA drives</p> <p><b>Intel RAID Controller RS2VB080**</b> 6G SAS RAID controller with eight internal ports and maintenance-free backup (flash-based) for SAS/SATA drives</p> <p><b>Intel RAID Controller RS2BL080/040</b> 6G SAS RAID controller with eight/four internal ports for SAS/SATA drives</p> <p><b>Intel RAID Controller RS2WB080**</b> 6G SATA RAID Controller with eight internal ports for SATA drives only</p> <p><b>Intel RAID Controller RS2PI008</b> 6G SAS RAID controller with eight external ports for JBODs with SAS/SATA drives</p>
	<p><b>ENTRY LEVEL</b></p> <p><b>Intel RAID Controller RS2WC080/040</b> 6G SAS RAID controller with eight/four internal ports for SAS/SATA drives</p>
	<p>Intel® RAID Controllers</p> 

\*\* All products are currently shipping with the exception of RS2WB080 and RS2VB080, which are anticipated to be available by October and December 2010, respectively.

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](http://www.intel.com/go/RAID).

## 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](http://www.intel.com/go/RAID) for a complete list of LSI SAS2108-based products.)

	<b>SSD Cache with Fast Path* I/O (Order Code AXXRPFKSSD)</b> <ul style="list-style-type: none"><li>▪ 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</li><li>▪ 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</li></ul>
	<b>Drive Encryption Management (Order Code AXXRPFKDE)</b> <ul style="list-style-type: none"><li>▪ Enables authentication key management, auto-lock, and instant erase of self-encrypting drives</li><li>▪ Helps reduce risk of data being compromised when drives eventually leave the data center</li><li>▪ Significantly reduces the cost and time of repurposing or retiring drives</li></ul>
	<b>Rapid Recovery Snapshot (Order Code AXXRPFKSNSH)</b> <ul style="list-style-type: none"><li>▪ Allows users to capture source volume data changes and either restore files or roll back applications to a previous point in time</li><li>▪ Recovers lost data from disk in minutes, minimizing the downtime that users experience and eliminating the lengthy process of restoring data from tape</li><li>▪ 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 the operating system occurs</li></ul>

## TAKE THE NEXT STEP

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



<sup>1</sup> RAID level support may vary by product. Please see [www.intel.com](http://www.intel.com) for details on each model.

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