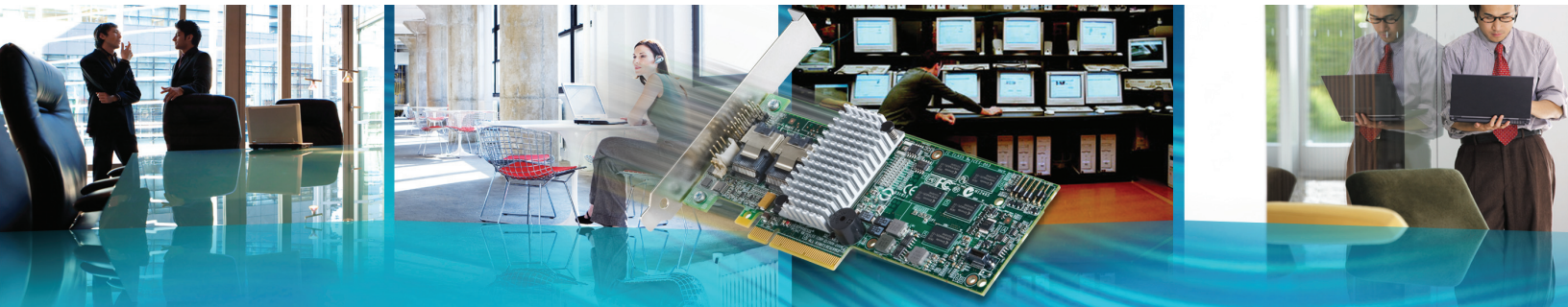


Intel® RAID Solutions for Your Video Surveillance Applications

Amplify. Optimize. Thrive. Do SAS-2/6G Storage Right.



There is a digital movement to capture footage on hard drives versus tapes. And, whether the most critical 24x7 surveillance operations are required or the opposite end of the spectrum, locating a security and storage solution for your requirements can be difficult.

A Different Digital Paradigm

High-end, mid-tier, and low-tier video surveillance applications face some unique challenges. For one, there is a common dilemma is that approximately 95% of video surveillance I/O operations are write based; yet most enterprise-class storage systems are designed to support faster read access with write times compromised to enhance data protection. For video surveillance, this shifts the focus from standard I/O applications that thrive off of reads/writes to needing to be write based over reads.

High-End

High-end applications require 24/7 operation. If footage is lost or frame dropout occurs, the risk is high, and can be life threatening or seriously damaging to their business. For this application tier, capacities are typically measured in petabytes instead of gigabytes. For instance, an application with 100 cameras can generate 30.20 terabytes of data weekly. This tier also requires the highest resolution possible and resulting bit-rates. And, no matter what the cost, protecting data and hard drives is critical.

Mid-Tier

Although the risk associated with the inability to capture a video stream is lower than in high-end applications, these organizations still face high capacity requirements, as footage may need to be archived and referenced on-demand. Some customers might require high resolution footage while others lower quality.

Low-Tier

This tier is primarily concerned with cost, has little risk involved if frame dropout occurs, deals with low capacity and resolution requirements as they don't need to retain footage for a long period of time as daily rewrites are acceptable.

Selecting the Right RAID Level

Selecting a RAID level greatly depends on the level of risk associated with footage loss along with capacity, quality of resolution required, data protection, footage retention, and budget.

To support 24/7 operation, RAID 6 is the best choice as it provides double parity protection and allows administrators ample time to replace failed hard disk drives before data is compromised. If the archival requirements demand high data availability, the customer would be best suited for RAID 6.

If the customer has onsite IT for drive replacements or is not in a critical 24/7 environment, RAID 5 might be a more viable option as it allows the customer to gain more in net storage than with RAID 6. RAID 0 is the most cost-effective and highest performing, however if one drive fails data will be lost.

Intel RAID Delivers Write Performance

To address the video surveillance paradigm, Intel put extra emphasis on improving write performance for the new RAID SAS-2 generation of products. The result is up to 250% higher write performance when compared to the previous generation. At a high level, Intel RAID offers you the following value:

- Industry leading performance, and simplified data protection across all RAID levels.
- Reduces total cost of ownership by shopping Intel.
- Validated using more than 10 times the testing of most other RAID cards.
- Single Web-based RAID software stack to support all products.
- Easy to deploy, and seamless upgrades available.

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

Diverse Intel RAID Options for Video Surveillance

System builders can access a broad range of Intel RAID solutions, powered by LSI MegaRAID, to solve video surveillance storage applications. Customers can benefit from significant performance improvements for both 3Gb/s and 6Gb/s SATA or SAS-based systems. By upgrading from a SAS-1 to SAS-2 generation product, customers can achieve up to 250% more performance with standard hard drives and even higher with the use of Solid State Drives (SSDs). When architecting storage solutions, system builders can choose from the following:

- **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.
- **Intel® Integrated Server RAID:** Unique system boards that offer intelligent RAID protection for SAS and SATA hard disk drives.
- **Intel® RAID Controllers:** Standard add-in cards designed to provide a wide variety of RAID solutions for Intel® Server boards and systems.
- **Intel® Premium Feature Keys:** Unlock advanced software features to further enhance performance and data protection of mainstream and scalable performance products.

Consider a Powerful Trio of Performance

Intel® Solid State Drives when combined with Intel® RAID controllers and Premium Features offer significant performance advantages including I/O acceleration. Simply add at least one SSD to your array to improve performance, and reduce power consumption per IOP.



1. Intel Solid State Drives provide rugged and reliable storage performance. SSDs can reach up to 45,000 read IOPs compared to the fastest enterprise hard disk drives that can only reach up to 400 IOPs.
2. Intel® RAID Controllers lower total cost of ownership and provide simple, high-performance data protection for Intel® Server Boards and Systems based on the Intel® Xeon® processor.
3. SSD Cache and FastPath I/O, when combined with an SSD and RAID controller, can accelerate I/O and transactional performance of your array. FastPath I/O nearly doubles I/O performance with up to 150,000 I/O reads per second for SSDs.

TAKE THE NEXT STEP

For more information on architecting a storage solution using Intel® RAID Products, explore www.intel.com/go/RAID

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



INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. UNLESS OTHERWISE AGREED IN WRITING BY INTEL, THE INTEL PRODUCTS ARE NOT DESIGNED NOR INTENDED FOR ANY APPLICATION IN WHICH THE FAILURE OF THE INTEL PRODUCT COULD CREATE A SITUATION WHERE PERSONAL INJURY OR DEATH MAY OCCUR. Intel may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information. Intel and the Intel logo are trademarks of Intel Corporation in the U.S. and other countries. *Other names and brands may be claimed as the property of others.

