



Is Your PC Optimized for Storage Performance and Reliability?



The Intel® Matrix Storage Technology brings new levels of hard disk drive performance and reliability to the digital home.

Intel® chipsets with Intel® Matrix Storage Technology deliver higher performance and reliability.



Storage in the Digital Home

We live in a digital world. We digitally create, record, edit, share and save practically everything from the movies we watch, to the pictures we take, to the files we store. Today's digital home demands the ability to do all of this with high-quality digital content. PC storage plays an important role in meeting this demand. Intel® Matrix Storage Technology provides improved performance and reliability for systems equipped with Serial ATA hard disk drives, today's optimal PC storage solution.

The RAID Solution

Optimum disk performance can be found in a core technology from the enterprise server arena known as Redundant Array of Inexpensive Disks (RAID). Originally developed by a research team at the University of California, Berkeley, RAID harnesses the power of multiple hard drives working in unison to deliver greater performance and redundancy.

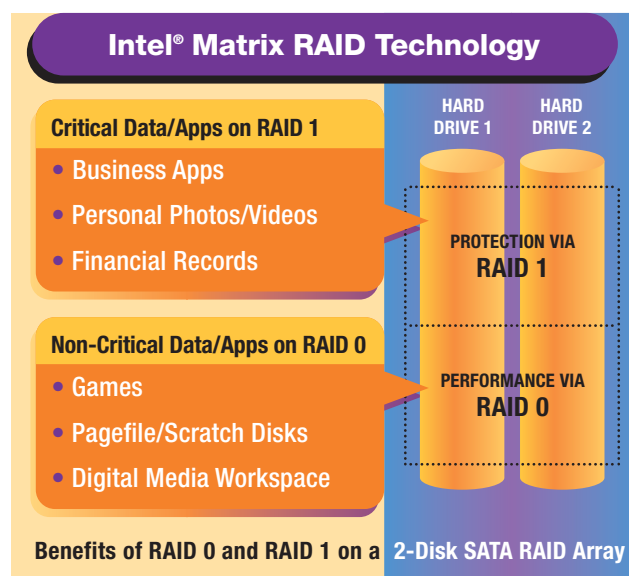
While the storage performance of a single-drive system is only as fast as the physical limits of the single drive, a RAID array can read and write data in parallel from multiple drives. This configuration, known as RAID 0, delivers exceptional storage performance and optimizes data transfer to provide a richer digital media experience.

Multiple drives in a PC can also provide added protection from disastrous hard drive failures by mirroring all data among two or more drives. This configuration is known as RAID 1. While RAID 1 capability does not provide the same level of performance as RAID 0, it is faster than a single disk, and adds value by helping to keep the system functional in the event of a hard drive failure.

RAID 1 capability is an ideal solution for home PCs containing valuable content that would be at risk in the event of a hard drive failure. With digital photography and video editing becoming commonplace, more personal memories such as photos and recordings are being stored on the PC. RAID 1 technology can protect these digital memories from hard drive failure.

Performance with Protection: Intel® Matrix RAID Technology

Intel innovation continues with the introduction of Intel® Matrix RAID Technology, which combines the benefits of RAID 0 performance and RAID 1 protection on two hard drives. For example, games and video editing benefit from improved performance, while valuable personal photos and financial records can be better protected from a drive failure.



The Desktop Storage Solution: Intel® Chipsets with Intel® Matrix Storage Technology

Intel is making RAID and advanced Serial ATA capabilities an affordable reality for desktop platforms by offering Intel Matrix Storage Technology as a value-add feature on Intel's new line of desktop chipsets. Intel Matrix Storage Technology, based on tools from Intel's enterprise RAID products, is the industry's first RAID capability in the chipset, and uses the latest Serial ATA disk interfaces for increased performance headroom.

Intel Matrix Storage Technology includes support for Serial ATA Advanced Host Controller Interface (AHCI), providing advanced features such as native command queuing, hot plug, and power management. Native command queuing, when paired with capable hard disk drives, increases storage performance on random workloads by allowing the drive to internally optimize the order of commands. This provides increased performance for today's multitasking environments and demanding applications.

Intel Matrix Storage Technology can be found on select platforms based on the Intel® 915G and 915P Express chipsets and the Intel® 925X Express chipset. Contact the platform manufacturers directly to verify which of their products offer Intel Matrix Storage Technology.

FEATURES	BENEFITS
Intel® ICH6R/RW	Four port SATA RAID controller, providing storage benefits of Intel® Matrix Storage Technology. ICH6RW also adds Intel® Wireless Connect capability.
Intel® Matrix RAID Technology	Exceptional storage performance with increased data protection on a RAID-enabled double hard drive array.
RAID BIOS ROM	Integrated into system BIOS, enables pre-OS RAID creation, naming and deletion.
Intel® RAID Migration Technology	Seamless migration from a single hard drive to a RAID 0 or RAID 1 dual hard drive array without requiring OS reinstallation.
Serial ATA AHCI	Software interface providing advanced storage interface for Serial ATA, including native command queuing and native hot plug.
Intel® Application Accelerator	Software solution with full management and status reporting of RAID array, including detailed reporting of storage devices.

Intel® Matrix Storage Technology Benefits

In today's digital age, safekeeping of digital content such as photographs, video, audio and personal records is extremely important. Should a PC's hard drive fail, these digital memories can be lost forever. Additionally, high-speed storage capabilities improve the performance of demanding applications and games.

Whether users want to load huge files into Adobe Photoshop® faster, create large CD/DVD images with Nero® in record time, or want to be the first on the map in a Quake® 'frag' tournament, Intel Matrix Storage Technology is a key part of the solution for these and many other disk-intensive applications.

Video content, digital photos, music libraries, realistic 3-D gaming environments and even TV programs recorded live from satellite can all be stored on today's desktop PC. With megabytes, or even gigabytes, of data being transferred to and from the hard drive, storage performance counts. Intel Matrix Storage Technology helps deliver results in this media-rich computing environment.

Simplified Upgrade

Building or buying a PC with a single Serial ATA hard drive, then upgrading to RAID at a later date is typically not a simple task, as it requires the reinstallation of the OS and applications. However, an Intel® chipset with Intel Matrix Storage Technology¹ can be more easily upgraded to RAID when adding a second Serial ATA hard drive. The Intel® Application Accelerator utility (included with platforms supporting Intel Matrix Storage Technology) handles the configuration and migration running in the background, allowing users to surf the Web or read e-mail during the process. Once the migration is complete, dramatic increases in storage performance are immediate.

Choose Intel® Matrix Storage Technology

When looking for a desktop PC system designed to make the multimedia experience as rich as it can be, be sure to look for an Intel chipset with Intel Matrix Storage Technology.

¹ System must be configured as "RAID Ready" to take advantage of Intel RAID Migration Technology which includes enabling the RAID controller in the chipset and installing the Intel Application Accelerator RAID Edition software drivers.

INTEL ACCESS

Developer's Site	http://developer.intel.com/
Motherboard Selector Guide	http://www.intel.com/go/boards
Other Intel Support:	http://support.intel.com
Intel Literature Center	(800) 548-4725 7 a.m. to 7 p.m. CST (<i>U.S. and Canada</i>) <i>International locations please contact your local sales office.</i>
General Information Hotline	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST
For more information, visit the Intel Web site	http://www.intel.com/design/chipsets

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¹Look for systems with the Intel® Pentium® 4 Processor with HT Technology logo which your system vendor has verified utilize Hyper-Threading Technology. Hyper-Threading Technology requires a computer system with an Intel Pentium 4 processor supporting HT Technology and an HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. See <www.intel.com/info/hyperthreading> for more information including details on which processors support HT Technology.

The Intel® 915 G/P and 925X Express chipset may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata for are available on request. Intel Corporation assumes no responsibility for the use of any circuitry other than circuitry embodied in an Intel® product. Information contained herein supersedes previously published specifications on these devices from Intel.

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