



# Intel® Smart Response Technology



Figure 1. Solid State Drive.

## What is Intel® Smart Response Technology?

Consumers today need to store a lot of diverse types of content, such as documents and e-mail, as well as personal media such as movies, photos, and music. While traditional hard disk drives (HDDs) deliver larger storage capacities, Solid-State Drives, or SSDs, typically provide the best storage option for system performance and responsiveness. However, large-capacity SSDs can be costly for the average consumer. Intel® Smart Response Technology enables system responsiveness similar to a high-performance SSD with the capacity and lower cost of a traditional hard drive. This new technology—enabled by systems utilizing select Intel® 6 Series chipsets with Intel® Rapid Storage Technology<sup>1</sup> version 10.5 and 2nd generation Intel® Core™ processors—accelerates storage performance by caching frequently used applications and data into the SSD.

For cost-conscious consumers, Intel Smart Response Technology allows for a lower cost, small-capacity SSD to be used in conjunction with a low-cost, high-capacity hard drive. This combination delivers benefits similar to an SSD-only system.

In addition, for high-end enthusiasts who consider performance to be their top value, Intel Smart Response Technology allows the flexibility of using the latest, high-performance, high-capacity SSDs, carving out a small portion for caching a hard disk drive or backup RAID array as needed.

## Flexibility and Ease of Use

Add any SSD to a system enabled with Intel Smart Response Technology, turn it on and start caching. It's just that simple. Want to upgrade to the latest, greatest SSD later? Turn off the cache, replace the SSD and turn it back on. No rebuild, no data loss. It's simple with our easy point-and-click user interface.

## How It Works

Part of the Intel Rapid Storage Technology storage-class driver feature set, Intel Smart Response Technology implements storage I/O caching to provide users with faster response times for things like system boot and application startup.



Figure 2. Hard Disk Drive.

On a system with a traditional hard drive, performance of these operations is limited by the hard drive, particularly when there may be other I/O-intensive background activities running simultaneously, like system updates or virus scans.

Intel Smart Response Technology accelerates the system response experience by putting frequently used blocks of disk data on an SSD, providing dramatically faster access to user data than the hard disk alone can provide.

The user sees the full capacity of the hard drive with the traditional single drive letter (i.e., C:\) with overall system responsiveness similar to what an SSD-only system provides.

### Intel® Rapid Storage Technology Features Together

With Intel Rapid Storage Technology, PC users can configure a RAID array for data protection and then accelerate it using Intel Smart Response Technology for both increased performance and protection against data loss.

#### Key improvements over a hard disk alone:

- Significantly higher performance
- Lower power consumption
- Increased system responsiveness



Figure 3. M-SATA version of the SSD.

Intel Smart Response Technology implements an optimized cache policy to maximize performance of client workloads and provide power savings. This cache policy is adaptive to facilitate faster cache warm-up and also to retain good steady state performance, best optimized for long-term system usage.

The cache policy also differentiates between high-value data (application, user, and boot data) and low-value data like that which may be related to a virus scanner or other similar one-touch data. This type of data typically does not benefit from caching, and therefore is not inserted into the cache. Purely sequential data streams (example, streaming a movie file from disk, or large file copies) may bypass the cache, since these often consist of a large amount of one-touch data unlikely to benefit from caching.

Available on select Intel 6 Series chipset-based platforms with 2nd generation Intel Core processors and Intel Rapid Storage Technology version 10.5.

### Speed Meets Capacity

Increase your PC's performance without giving up storage capacity by combining Intel Smart Response Technology, your favorite hard disk drive, and a high-performance SSD.

For more information, visit the Intel Web site: [www.intel.com/products/desktop/chipsets/ec-z68/z68-overview.htm](http://www.intel.com/products/desktop/chipsets/ec-z68/z68-overview.htm)

<sup>1</sup> Intel® Rapid Storage Technology requires the computer have an Intel RST-enabled Intel chipset, RAID controller in the BIOS enabled and the Intel Rapid Storage Technology software driver installed. Please consult your system vendor for more information.

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