

SOLID STATE DRIVES

For about 10 years now SATA hard drives have been the standard for individual desktop and laptop computers and most file servers as well. This is about to change as solid state drives are beginning to make their mark in the hard drive industry. All that is holding them back right now is pricing as they can be a little expensive for the larger capacity models.

Unlike conventional drives that have been around for a long time, Solid State drives have no moving parts and as a result are much more resistant to damage and require less energy to operate. As such, they make a lot of sense in portable devices like laptops.

This technology has been available to an extent in tablets like the i-pad but in capacities far below what we have come to expect in typical home computers. The i-pad comes in 16, 32 & 64 gigabyte models as compared to a typical PC which comes with anywhere from 250 to 1000 gigabytes for the same price.

While PC drives of about 1000 gigabytes cost about \$100-\$120, a solid state drive of the same capacity might cost as much as \$2500. Smaller drives are much more reasonable in price however and I recently picked up a 120 gb drive for \$70 on sale. While this is still a little low in capacity I made it my primary Operating System Drive and used my old 500 gb SATA model as a secondary drive to house most of my larger files, music, pictures, videos and archived client files and databases.

This provides an operational boost in speed and Windows definitely starts faster and most programs seem a little quicker if not exceptionally so. The Windows performance test brings the new drive in at a 6.9 rating as compared with the typical 5.9 rating of almost any SATA drive you might use. This drive still uses the standard SATA cable and controller and that may now be the limiting factor.

BEYOND THE SATA INTERFACE

The large majority of Solid State drives utilize the commonplace SATA controller and cable and while the performance characteristics of the drive are still better this still limits their potential somewhat. To go beyond this limitation newer technology drives are implementing newer interface methodologies.

One manufacturer has come out with a new HSDL controller card and cable for use with their high end drives. Still others have placed their drives on PCI-e cards that utilize the much faster interface used by high end video cards for rapid graphics data movement. It's a little early to say which methodology will become prevalent but these options can effectively boost data transfer rates from the better SATA models at about 500 mb/sec to as much as 1200 mb/sec at the high end.

Whether or not you need this high end performance will depend on the type of programs the computer uses. For most people the SATA models would be more than sufficient and as prices come down I expect to see solid state drives used more and more. This will likely start in the Laptop market, where lower power consumption and increased durability will be advantageous.

Still, the greatest need for improved drive performance probably lies in the File Server market where many, many users can put demands on a server simultaneously. This is where the high performance enterprise models will likely first be used. Expensive drives can more easily be justified if they improve performance for the entire network.

The only thing holding this back is the fact that Solid State drives do eventually wear out. Not a problem for the average user but this could be a problem for a server. The best drives however are rated for over 1000 gigabytes of data writes a day for over 5 years.