

An espresso shot for disc drives

- By Karen D. Schwartz
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New hybrid hard drives that blend disk and flash memory will appear this fall

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Several information technology vendors have come together as the Hybrid Storage Alliance to promote a new kind of hard drive they say is more rugged, boots faster, launches applications faster, extends battery life for laptop PCs and lasts longer than traditional hard drives. The alliance's members include Seagate Technology, Hitachi, Samsung, Fujitsu and Toshiba America Information Systems.

Hybrid hard drives have a flash memory cache that stores copies of frequently used Microsoft Windows files and applications. Companies created the drives to take advantage of Windows Vista because it recognizes the drives' flash memory cache and makes optimal use of it. Hybrid hard drives can work with other operating systems, but they won't perform as well as they do with Vista.

Disk-drive systems typically have cache memory on the disk controller, said Dianne McAdam, director of enterprise information assurance at the Clipper Group. Manufacturers "decided to take some of that memory that was on the controller and put it on the disk drive itself, which gives faster performance," she said.

An operating system needs to read certain files, and when it can retrieve those files from flash memory instead of the hard drive, retrieval can be as much as 30 percent faster, industry analysts say. That's much quicker than today's hard drives, for which the largest dynamic RAM cache is 9M.

"We're adding 256M of flash memory, which gives you up to 30 percent improvement over 8M of DRAM," said Andy Higginbotham, director of hard-disk drive marketing at Samsung.

Boot time is also about 30 percent faster, allowing laptop PCs to boot up or recover from standby or hibernation mode much more quickly, experts say.

Another benefit is improved reliability. Because flash memory takes over in many cases, the hard drive isn't used as heavily and is powered down more than half the time, resulting in increased longevity.

"When the drive is spun down, the mechanics are off, last longer and are in a more robust state," said Josh Tinker, manager of PC market development at Seagate. "If you drop or bump a system, it's like the drive was off in terms of drive fragility because the head is parked."

Hybrid drives also use batteries more efficiently, according to a study done by Samsung. The company compared

battery-power consumption on a Samsung laptop PC using a hybrid hard drive versus one with a standard drive. Battery power on the computer with the hybrid drive lasted 25 minutes longer — about a 10 percent improvement in battery life.

All of those benefits add up to one thing: Hybrid hard drives can increase productivity, the Holy Grail for all organizations. Any application that requires more battery life, greater reliability or faster access is a good candidate for a hybrid drive.

For increased productivity, users will pay premium prices, at least initially. The drives, which alliance members expect to deliver this fall, will cost about \$300. At that price, users would pay 20 percent to 30 percent more than they would for traditional hard drives. However, the difference will narrow over time, Tinker said.

Proponents say justifying the additional expense shouldn't be difficult. "What do you pay your employees per hour? If they can do work more quickly, that's valuable," Higginbotham said. "The cost you'll pay incrementally for each notebook [PC] will be paid for in one day's use of an employee's productivity." It's too early to tell how enthusiastic the government will be about hybrid drives.

"It sounds like interesting technology," said Alfred Rivera, director of the Defense Information Systems Agency's Center for Computing Services. "My folks are looking at various technologies, but I'm not sure they have looked at hybrid hard drives as a technological need."

That could change as agencies buy new laptop PCs and move to Windows Vista. Demand will grow, according to market researcher IDC, which predicts that hybrid drives will account for 35 percent of hard drives shipped with portable PCs by 2010.

And laptop PCs are only the beginning. If the technology takes off as expected, organizations can expect to see hybrid drives in desktop PCs and computing devices smaller than laptops. "We think that eventually in the mainstream hard-drive market, hybrid hard drives will be the standard," Tinker said.

Hybrid drives can benefit all types of organizations, including government agencies, Higginbotham said. "It's about getting more work done in a shorter amount of time, and that benefits every sector."

Schwartz is a Washington writer specializing in business and technology issues. She can be reached at karendschwartz@gmail.com.

FCW Quick study Here's the take-away on hybrid hard drives.

WHAT IT IS

- A 2.5-inch hard drive with a flash memory cache built into the hard drive. Available initially for laptop PCs.
- The flash memory cache keeps a copy of frequently used Windows files so it can retrieve them quickly.

BENEFITS

- Operating system boots and software applications launch about 30 percent faster than they do from traditional laptop PC hard drives.
- An average 10 percent improvement in battery life.

- Greater reliability and drive longevity.

COST

- About \$300 on the street, which is 20 percent to 30 percent higher than traditional hard drives. Prices, and the premium, are expected to drop quickly after companies begin selling the drives.

— Karen D. Schwartz



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