

## EMC Seeks Edge With Large Flash-Memory Drives

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EMC Corp., the market-share leader in big computer storage systems, said it will start selling flash-memory drives -- similar to those in ultra-portable music players -- to replace some of the slower disk drives in its most powerful systems.

The flash drives, to be available later this quarter, let computer programs retrieve information about 30 times faster than the input-output process in a traditional hard-disk drive and use less electricity, EMC said. But they cost about 30 times the price of a disk per megabyte of information stored.

Many high-tech manufacturers are now moving to replace disk drives with flash-memory drives as prices have declined and storage capacity has increased. However, the transition has been slowed by storage advances in traditional disk drives as well as reliability problems with flash memory that is heavily used.

Analysts briefed on the product by EMC said it might give the Hopkinton, Mass., company a big lift. "Most likely this will create a giant gap against IBM and Hitachi," said Steve Duplessie, an analyst at Enterprise Strategy Group, a market-research firm based in Milford, Mass. [International Business Machines](#) Corp. and [Hitachi](#) Ltd. are EMC's main rivals in making high-performance storage systems.

EMC's Symmetrix storage systems, which cost \$250,000 to more than \$1 million, are used by financial institutions, government agencies and many big companies. EMC expects the flash drives will be bought by large financial institutions, which may handle hundreds of transactions a second while trading currencies or authorizing credit cards, said David Donatelli, president of EMC's storage division.

Many of those organizations buy more disks than they need and store just a little information on each to achieve high input and output of data. Mr. Donatelli said a typical system containing four flash drives, in addition to a large number of disk drives, would cost about 10% more overall.

He said EMC will use a type of flash called single-level cell rather than the multilevel cell flash used in consumer devices. Single-level is much faster but costs more.

One likely EMC customer, a computer manager for a large U.S. financial institution who declined to be named, said: "Recently we had to buy a lot more storage than we need in order to get better performance. This technology looks interesting." He said that because the flash drive would go into the same Symmetrix system as slower drives, it should be possible to transfer slow-running applications to the flash drives without having to buy a separate system.

Mr. Duplessie said: "There's only a finite number of customers -- maybe 1,000 entities -- that really need this kind of hyper performance. No matter what the cost, they'll have to have it."

EMC is buying the drives from [STEC](#) Inc., a Santa Ana, Calif., maker of solid-state drives. Manouch Moshayedi, STEC's chairman and chief executive, said other computer-storage manufacturers also are working to implement the technology. He said STEC hopes to sell \$50 million of the drives this year to EMC and others, and he predicts volume might rise to \$200 million the following year. STEC buys single-level flash from Samsung Electronics Co. of South Korea.

Each new EMC drive, designed to fit into the same slots in a storage server as disk drives, will hold either 73 gigabytes or 146 gigabytes of information.