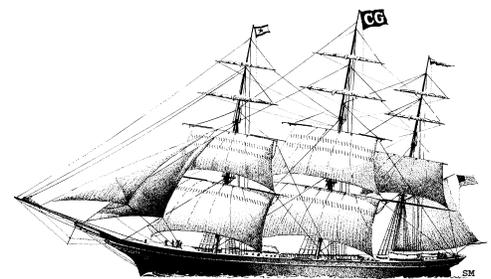


THE CLIPPER GROUP Navigator™



Navigating Information Technology Horizons™

Published Since 1993

Report #TCG2006075

August 22, 2006

IBM's DS4200 Express Is Expressly for SMEs

Analyst: Dianne McAdam

DS4200 Express

IBM recently added a new model to their successful *IBM System Storage DS4000* disk storage family. This new model, called the *IBM System Storage DS4200 Express*, is designed for smaller enterprise customers with an affordable price tag. But don't let the low cost lull you into thinking this is just a low-cost bunch of disks. IBM has packed several data services into this new product.

Features of the IBM System Storage DS4200 Express

The DS4200 chassis can be populated with up to sixteen 500 GB SATA disk drives, for a raw capacity of 8 TBs. Inside the DS4200 Express is a dual storage controller that manages the connections to servers and the disk drives. The DS4200 cannot be ordered with a single storage controller. Dual controllers provide redundancy and provide for non-disruptive maintenance. Each dual controller has a list price of about \$11,000. Included with each DS4200 is an installation and configuration eLearning CD at no additional cost.

The 500 GB SATA drives are priced separately at less than \$900 each and up to sixteen disk drives can be packed within one enclosure. If eight TBs is not enough storage, then you can increase disk capacity by adding up to six EXP420 disk expansion units, for a total capacity of 56 TBs. The DS4200 Express lets enterprises start small but still have all of the features found on the larger DS4000 disk storage products. Data services that are available on the larger *DS4700* and *DS4800* disk storage systems are also available on the DS4200 Express. *FlashCopy*, which creates logical point-in-time copies of volumes, and *VolumeCopy*, which creates full physical copies, are available (at an additional cost). Also available is the *Enhanced Volume Mirroring* feature, which allows any DS4000 disk system to replicate volumes to another DS4000 within a campus environment or thousands of miles away.

Other Announcements

In tandem with this announcement, IBM announced that the 500 GB SATA drives are also available for the DS4700, DS4800 and the sixteen-drive *EXP810* expansion unit. The DS4800 can attach up to sixteen *EXP810* expansion units, providing up to 112 TBs of capacity. The DS4700 can support up to six *EXP810* expansion units, increasing storage capacity to a maximum 56TBs. All of these models have 4 Gbps end-to-end Fibre Channel connectivity.

Intermixing different disk drives on the same internal loops can provide flexibility, at the cost of performance. For example, if a vendor intermixes a Fibre Channel drive capable of transmitting at 4 Gbps on the same loop as a SATA drive, which can only communicate at 1 Gbps, then the loop "arbitrates" or decides to communicate at the speed that is the "lowest common denominator". In our example, the loop will communicate to both Fibre Channel and SATA drives at 1 Gbps. However, IBM has addressed this problem by writing emulation software for these new SATA drives that allows the drives to act like Fibre Channel drives. Now, the loop does not arbitrate between different drive types and allows the drives to communicate at their maximum speed. This enhancement will not benefit enterprises that have all Fibre Channel drives, but can provide added performance for those who want to intermix drives to reduce costs by assigning volumes according to requirements (called "tiering").

Putting It All Together

The low cost of the DS4200 Express makes it an ideal candidate for enterprises that wish to consolidate storage across several Microsoft servers, for example. But it can also be appealing to larger enterprises that need to replicate their data to second location for disaster recovery. Not all data may need to be replicated to a remote site. The smaller capacity (and cost) of the DS4200 makes it a good target for replication. Enterprises that need to support numerous branch offices can place a DS4200 in each office, and replicate the data back to the main data center to ensure that the data is protected in different locations.

The continuing cost reductions of large disk drives and the availability of data services on small arrays gives enterprises new, lower cost options to consolidate storage, provide disaster recovery services and support remote offices, just what smaller enterprises need.



The Clipper Group, Inc. - Technology Acquisition Consultants ♦ Strategic Advisors

888 Worcester Street ♦ Suite 140 ♦ Wellesley, Massachusetts 02482 ♦ U.S.A. ♦ 781-235-0085 ♦ 781-235-5454 FAX
Visit Clipper at www.clipper.com ♦ Send comments to editor@clipper.com

About The Clipper Group, Inc.

The Clipper Group, Inc., is an independent consulting firm specializing in acquisition decisions and strategic advice regarding complex, enterprise-class information technologies. Our team of industry professionals averages more than 25 years of real-world experience. A team of staff consultants augments our capabilities, with significant experience across a broad spectrum of applications and environments.

- ***The Clipper Group can be reached at 781-235-0085 and found on the web at www.clipper.com.***

About the Author

Dianne McAdam is Director of Enterprise Information Assurance for the Clipper Group. She brings over three decades of experience as a data center director, educator, technical programmer, systems engineer, and manager for industry-leading vendors. Dianne has held the position of senior analyst at Data Mobility Group and at Illuminata. Before that, she was a technical presentation specialist at EMC's Executive Briefing Center. At Hitachi Data Systems, she served as performance and capacity planning systems engineer and as a systems engineering manager. She also worked at StorageTek as a virtual tape and disk specialist; at Sun Microsystems, as an enterprise storage specialist; and at several large corporations as technical services directors. Dianne earned a Bachelor's and Master's degree in mathematics from Hofstra University in New York.

- ***Reach Dianne McAdam via e-mail at dianne.mcadam@clipper.com or at 781-235-0085 Ext. 212. (Please dial "212" when you hear the automated attendant.)***

Regarding Trademarks and Service Marks

The Clipper Group Navigator, The Clipper Group Explorer, The Clipper Group Observer, The Clipper Group Captain's Log, The Clipper Group Voyager, and "*clipper.com*" are trademarks of The Clipper Group, Inc., and the clipper ship drawings, "*Navigating Information Technology Horizons*", and "*teraproductivity*" are service marks of The Clipper Group, Inc. The Clipper Group, Inc., reserves all rights regarding its trademarks and service marks. All other trademarks, etc., belong to their respective owners.

Disclosure

Officers and/or employees of The Clipper Group may own as individuals, directly or indirectly, shares in one or more companies discussed in this bulletin. Company policy prohibits any officer or employee from holding more than one percent of the outstanding shares of any company covered by The Clipper Group. The Clipper Group, Inc., has no such equity holdings.

Regarding the Information in this Issue

The Clipper Group believes the information included in this report to be accurate. Data has been received from a variety of sources, which we believe to be reliable, including manufacturers, distributors, or users of the products discussed herein. The Clipper Group, Inc., cannot be held responsible for any consequential damages resulting from the application of information or opinions contained in this report.