



Relief Arrives for the Smaller Business — Exabyte Introduces Entry-Level Automated Backup

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Management Summary

I was watching a concert the other day when I realized how pervasive technology is and how it has evolved everyday items from luxury to an essential part of our everyday lives. The band was playing one of their standards, you remember, a song where we would take out our cigarette lighters – “flick a *Bic*” – and hold it over our heads. Well, no one is allowed to light a match indoors anymore, let alone a lighter. To my amazement, everyone in the audience took out a cell phone, opened it, held it over their heads, and flooded the arena in a bath of swaying light. Everyone! How did a luxury item like a cell phone become a staple to where every adult owns one and every child feels entitled to one? Technology has driven the cost of a cell phone down to the point where anyone can make a call, or be called, wherever they are, for about \$1.00/day? Cell phones are now like your car keys or your credit card – don’t leave home without them.

Cost improvements are also being employed in the IT centers of every enterprise, to solve a growing array of business problems being caused by the establishment of new standards regarding the preservation of enterprise data. In the past, any large enterprise could solve just about any IT problem by throwing enough money at it! Nowhere was this truer than within the storage area network (SAN). The SEC and Congress are the leading instigators of new regulations and legislation that require the preservation of all kinds of financial data and email history, all in the name of consumer protection. Executives of the largest corporations got the message loud and clear: **if you want to stay out of court – and out of jail – save everything!** They instructed their data center staffs to implement very sophisticated, automated backup and recovery procedures that enabled the preservation of required information – not for months, but for years. In some cases, regulations require hospitals to save data for the patient’s lifetime, and longer. Saving this data required the installation of some very large, and very expensive, tape libraries, the path of least resistance, when compared to the cost of disk arrays. However, no one was addressing the automated storage requirements of the SMEs, companies that could least afford an automated storage solution. Now, one company is paying attention to the plight of the little guy with the smaller budget, but very similar data storage needs, Exabyte.

Exabyte has now introduced an automated tape loader that has the capability to store almost 2TBs of mission-critical enterprise data in a 1U rack-mounted drawer for less than \$1700. Further, this autoloader can be expanded – on demand – to over 3TBs of storage. If this sounds like a solution for your business problems, please read on.

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The SME IT Environment

First, we need to establish one fact: the small and medium enterprise, the SME¹, is not so little any more. With upwards of 20 to 30 x86 servers distributed over sales, accounting, manufacturing, and human relations, among others, the SME has deployed a complex IT network. Some of these servers have directly attached storage (DAS) with others sharing a common storage resource over a SAN. The total amount of storage being maintained is often measured in the 100s of gigabytes, with growth being measured at from 60% to 100% annually. In general, SMEs lack the discipline typically found in larger enterprise IT organizations. Backups are being done sporadically and often by a server administrator, and many times are incomplete. There is little or no inventory management for the cartridges, which, as often as not, are simply thrown into the bottom desk drawer, with little or no labeling. Recovery to a specific time or a specific day is unlikely. Disaster recovery is, well, probably going to be a disaster. Each of the servers is usually configured with a low-capacity – and often dead – tape technology, which the server has long since outgrown. In many SMEs, each server may utilize a different tape format, with DAT at one site, DVD at another. These formats have limited capacity, often only 6 or 40GB per cartridge. As the existing network and storage architecture continues to grow, the SME, and enterprise department, will require additional administrative staff to manage it, staff they can ill afford to hire.

As the amount of storage requiring backup continues to grow, current configurations may not be capable of completing the task within a specified window of time available for this important task. This may necessitate the delay in activating mission-critical applications. Virtual Tape Libraries (VTL) and Disk-to-Disk (D2D) technologies are an efficient solution to this problem, but, alas, an expensive one. In addition, VTL and D2D appliances lack the portability required by many enterprises for off-site storage of data to enable disaster recovery in the event of fire or flood, etc.

Because of capacity restrictions, one cartridge may not support a full backup, requiring personnel to change cartridges, putting the correct label on each. This also results in a financial burden as the

number of cartridges grows. However, upgrading the backup environment to currently available tape technology will enable the data center to store over 100GB of data on a single cartridge!

The data center staff must look for new ways to reduce the complexity to reduce the total cost of ownership (TCO) of the IT infrastructure. Consolidating multiple, heterogeneous, standalone tape drives into a single autoloader is one way.² This autoloader must be scalable to take into consideration the growth rates discussed previously. The enterprise can reduce maintenance costs by eliminating multiple, distributed, mechanical devices and replacing them with a single drive with multiple cartridge positions. This will also reduce the handling of media and personnel costs, not to mention the recovery time saved by not having to open every drawer in the data center looking for the correct backup tape.

The problem then becomes finding a low-cost solution that is scalable and affordable over time. Microsoft sells the *Xbox* at cost just to sell the highly profitable games. Autoloadable tape cartridges must be as affordable as the autoloader. Exabyte has recognized these SME issues and has developed a reliable, easy to use platform designed specifically for the SME and remote offices of larger enterprises. The *VXA-172 Packetloader* brings tape automation to the smaller office, where budget limitations made earlier solutions too expensive.

Who is Exabyte

First, Exabyte is not IBM or Sun, or any other systems provider. They do not make servers; they do not make disk drives. They do not attempt to be all things to all people. They are a tape storage provider. Exabyte has provided innovative tape storage solutions since 1985, to customers whose top buying criteria is value measured by price/performance, density, quality, and ease-of-use. Exabyte is recognized as a value-leader in tape storage and automation solutions for workstations, midrange servers, and enterprise storage networks. They are the owner of hundreds of patents in tape technology and automation, and they are focused on SME/departmental requirements.

Exabyte has shipped over two million drives and over 70,000 libraries through a network of resellers. They do not sell directly to SMEs, but rely on resellers and distributors. Their *VXA* tape

¹ See **The Clipper Group Captain's Log** dated December 14, 2004, entitled *Why "SMB" is a Meaningless Acronym – Trying to Define the "Middle"*, at <http://www.clipper.com/research/TCG2004096.pdf>.

² An *autoloader* is a data storage device consisting of at least one tape drive, a method of loading tapes into the drive, and a storage area for tapes.

technology, introduced in 1999, is recognized as state-of-the-art. Exabyte has OEM and Alliance partnerships with the biggest names in the IT industry, companies such as Apple, IBM, and Sony.

VXA is based upon digital packet architecture rather than the track-based technology that is standard in *AIT*, *DLT*, and *LTO* drives. VXA eliminates the alignment and reliability issues that occur with track-based tapes, especially when trying to read a tape on a drive other than the one that wrote the cartridge.

With three generations of VXA products behind them, Exabyte has established a proven track record for reliability and automation. They now are moving forward with not only increasing the capacity of VXA, but also lowering the price for entry-level automation.

The VXA-172 PacketLoader Solution

Based upon the *VXA-172* drive, the *VXA-172 PacketLoader* delivers the highest rack density, and the lowest price, in the industry with ten cartridges in a 1U rack space. The SME can finally avail itself of the same reliability and automation that has been available to their larger brethren for decades. Independent labs have subjected the VXA drive to the most severe and abusive conditions, including violent vibration, immersion in volcanic dust, hot coffee, and frozen cartridges. The VXA passed with flying colors. Easy to install, the *VXA-172 PacketLoader* does not require an expensive installation service. The average do-it-yourselfer can complete the task in a matter of minutes.

The *PacketLoader* consists of a single *VXA-172* drive, ten cartridge positions, a barcode reader, and a loader mechanism to support up to 3.2TB of data, in a rackmountable chassis. The *VXA-172* drive, with a price of \$699³, has an entry capacity of 172 GB (compressed) and a throughput of 24 MB/sec. This is twice the capacity and four times the throughput of the typical *DDS/ DAT* drive⁴ for about the same price. Further, as the volume of data in your storage network grows, the capacity of the *PacketLoader* can grow with it, with no disruption to your IT operation. Exabyte has included a “capacity on demand” feature with the *VXA-172*. With the download of a simple electronic upgrade, the capacity of the *VXA-172* drive can be increased from 172 GB to 320GB, expanding the capacity of the *Loader* from 1.7TB to 3.2TB,

protecting the investment that you make today. No need to overprovision to insure against tomorrow’s growth. Pay for it tomorrow when you need it! Not that a price of \$349 for this feature would affect your decision, anyway⁵.

More importantly, the blank cartridges are also priced for the SME, with an 80GB cartridge priced at \$15.00 and a 172GB tape priced at only \$29.00. This equates to less than \$.20 per GB. This is less than you would pay for an ink cartridge for your home printer and it is reusable. The new 320GB cartridge is priced at \$65.00, but that equates to only \$.20/GB.

This means that the average SME will fill a standard 172GB cartridge in two hours. In an environment with a standalone drive, an administrator (or someone else that you trust) would have to be available to remove the full cartridge and replace it with a blank four times for a 1TB backup. With the *PacketLoader*, you can free up that personnel requirement every night that a backup is executed. At a cost of \$1699 for the *VXA-172 PacketLoader*, your ROI can be rapidly met simply from the unattended backups that can be accomplished overnight.

In addition, the *VXA-172 PacketLoader* has been qualified with backup software from all of the leading vendors, including HP, IBM, Legato, and Veritas, as well as Dantz and Yosemite, among others.

Conclusion

It is now safe to say that tape automation is finally affordable for the SME. Exabyte has packaged the *VXA-172* architecture with just the right combination of capacity and throughput to be able to leverage a low entry price, with affordable long-term cost. Available as both a standalone and a rack mounted automated system, Exabyte has provided an upgradeable tape system to match every SME and departmental need.

With endorsements through partnerships with most of the leading IT providers, Exabyte is delivering a solution that satisfies all requirements for capacity, throughput, and reliability. It is a value product. Exabyte is definitely one of the companies that should be on your short-list of next procurement decisions.



³ All Exabyte pricing is estimated street price.

⁴ Commonly installed tape format at SMEs.

⁵ Cost of the capacity on demand upgrade for the *VXA-172 PacketLoader* is \$599.

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