

“ We never hesitate at introducing Coolspirit to any customer looking for a Quantum product or solution regardless of whether it is a few dozen media or a complete backup system. Their focus on customer needs is second to none. ”

Ewan Johnson
Quantum Storage UK

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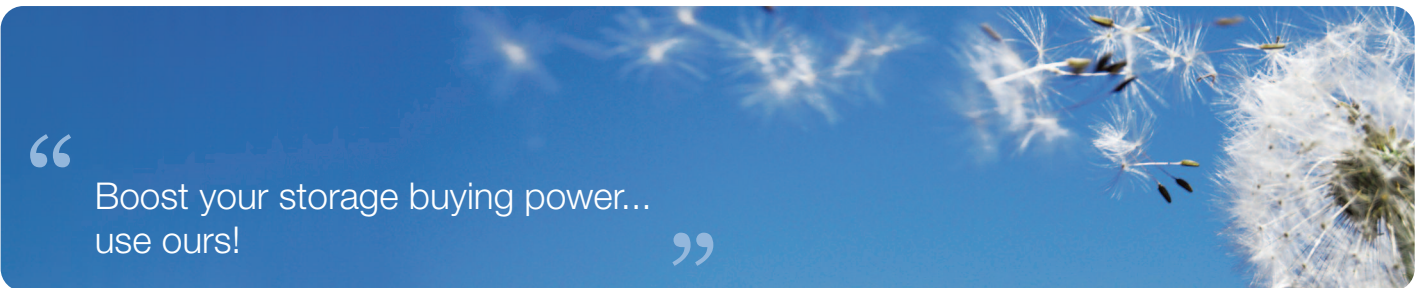
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Quantum GoVault – Solving SMB Needs

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On March 6, Quantum announced the availability of the GoVault removable drive storage solution, designed for small-to-medium sized business (SMB) users and remote offices. Quantum is the first major storage vendor to offer a backup and archive solution that includes removable SATA disk cartridges and backup software, with solutions starting at under \$300. The disk cartridges are available in 40GB, 80GB, or 120GB capacities and are extremely portable. And they are specially designed to withstand a 3-foot drop onto a hard surface, have a 10-year archive life, and include password protection. Clearly, this type of functionality and value will make many SMB users reconsider their future tape purchases and disk-based solutions could completely replace tape in some environments. GoVault is targeted at offices with little or no IT staff, which represents about 60% of the SMB market, and enables them to implement data protection best practices. We view this affordable, innovative solution as part of a larger trend that will allow SMB users to finally benefit from disk-based data protection.

The DIY Challenge

Most small-to-mid sized companies do not adequately protect their data on a regular basis. In order to better understand SMB data protection challenges, we can define the market in terms of two broad groups – “IT-Savvy” and “do-it-yourself” (DIY). The IT-Savvy group typically has a dedicated IT staff that is comfortable using tape (DAT, DDS, Travan) as their main backup technology. They backup the entire server daily, utilize sophisticated tape cartridge rotation schemes, and store data offsite for disaster recovery. Whether this group is fully satisfied with their tape-based solution or not, they are at least familiar with the equipment and the methodology and therefore, are likely to continue using existing solutions, unless they hit a wall with backup windows. Overall, this group represents about 40% of all SMB users.

However, the DIY group typically has no dedicated IT resources and data protection is just one of many responsibilities assigned to the office manager or owner. As a result, backup does not occur on a regular basis and data protection best practices are not implemented. When backups do occur, they typically utilize an external USB disk, CD/DVD, or tape device and only critical data is protected. Also, offsite storage is not typically performed. DIY users are generally frustrated with tape because of the time it takes to backup and recover data, cartridge and robotic failures, and complex cartridge rotation schemes. As a result, they are seeking alternatives to tape and represent about 60% of all SMB users.

Clearly, there is a need for reliable, fast, and easy-to-use data protection solutions in the majority of small-to-mid-sized businesses. Let's take a look at current disk-based

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solutions and determine their ability to solve the DIY challenge.

Disk on the Rise

For the past 20 years, companies of all sizes have utilized tape-based solutions for data backup, recovery, and archive. Some of the reasons for tape's initial popularity include portability, low-cost, long shelf life, capacity, and backup performance. However, as noted above, DIY users are not satisfied with tape for backup and archive. Over the past 24 months, we have seen a tremendous surge in the use of disk-based data protection, especially by mid-to-large sized companies. This has been fueled by a number of factors including affordable SATA disk technology, virtual tape library interfaces, and RAID protection. Also, disk-based solutions offer faster data recovery since they utilize random access capabilities, while tape-based solutions require the media to stream until the appropriate section of tape is located, which is much slower.

Since DIY small businesses are not comfortable with tape, disk-based solutions became an alternative worth evaluating. Current options include external USB and FireWire disk-based devices, which offer performance, low-cost, and interoperability with many computers and backup software programs. These approaches merit a quick look to examine their strengths and weaknesses.

SMB External Storage Options

SMB users have relied extensively on USB and FireWire-attached disks for external

storage needs over the past several years. USB interfaces are standard in most Windows PC's and servers, while FireWire is standard with most Macintosh computers but a popular option for Windows platforms, as well. Examples of external USB and FireWire disk devices include offerings from Maxtor, Seagate, and Western Digital. These solutions all offer similar capabilities, and include backup software and capacities ranging from about 200GB – 500GB in a single device.

However, these external disk solutions do not completely meet the needs of small business DIY users. For example, they are perceived as being too bulky and heavy to move between locations and too fragile to withstand accidental drops or vibration. As a result, current external disk-based solutions are seldom moved offsite for disaster recovery or archiving. And because all backup data resides on a single disk that is kept at the office, there is a risk of data loss if the drive fails or is stolen.

As a result, DIY users are faced with tape or external disk storage devices and neither solution completely solves their data protection needs. However, Quantum's recent introduction of the GoVault removable disk cartridge solution provides an affordable and compelling alternative.

Meet GoVault

On March 6, Quantum introduced the GoVault removable drive storage solution, designed to meet the needs of SMB users and remote offices. Before we dive into the product architecture, it is important to

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understand the fundamental value provided by GoVault solutions.

In essence, GoVault combines the best attributes of disk (speed, reliability, capacity, ease of use) with the best attributes of tape (portability, long shelf life, and low cost). We believe that GoVault will change SMB user's perception of disk-based solutions. To better understand this solution, we begin by reviewing the basic product architecture.

GoVault Architecture

GoVault consists of an internally mounted dock, removable disk cartridges, and bundled backup software. The GoVault dock has a 3.5" form factor, which can be installed in any server with an available 3.5" or 5.25" internal bay. The dock utilizes an industry standard SATA interface that is compatible with leading motherboards and SATA host bus adapters. GoVault accepts a single, 2.5" removable disk cartridge, which is built on industry standard disk drive technology to help ensure future version compatibility. Also, GoVault is compatible with all Windows operating systems and certified with most backup software applications.

Unlike standard disk products, the GoVault disk cartridges are ruggedized, meaning that they can survive a lot of punishment. For example, the disk cartridges are designed to withstand up to 2,000 Gs and a drop from three feet onto a hard surface, such as a tile floor or concrete sidewalk. The disk cartridges are available in three capacity points of 40GB, 80GB, or 120GB and they provide up to 26MB/s backup performance (94GB/hr), according to Quantum.

GoVault system software is also included to monitor the device and maintain optimum performance. It automatically sets the transfer rate between GoVault and the host system to Direct Memory Access (DMA) operation. DMA allows certain hardware subsystems within a computer to access system memory for reading and/or writing data independently of the CPU, which provides fast performance. GoVault system software also monitors environmental conditions and usage statistics of the dock and disk cartridge to ensure reliability and data recoverability, according to the company.

The GoVault solutions also include a SafeEject feature to reduce operator error. SafeEject allows the disk cartridge to be removed only after the read and write activities have completed, which prevents user-interrupted errors. Also, the GoVault disk cartridges have a 10-year archive life, which makes them suitable for long-term archiving. The net result is that when compared to alternative solutions, GoVault offers significant benefits, which we will now explore.

GoVault Differences

With a basic understanding of GoVault's core functionality, we can now define specific advantages that GoVault brings to DIY users. Taneja Group believes that these differentiators are significant when compared to traditional tape, external disk, and CD/DVD alternatives that are predominantly available to SMB users today.

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Differentiator: Alternative to Tape

GoVault provides a viable alternative to tape based solutions while preserving the benefits associated with disk. Some of the main benefits of tape-based solutions include the amount of capacity that can be stored in a single, portable cartridge. GoVault cartridges provide up to 120GB of capacity and can span cartridges in a backup, which should meet the needs of most DIY users. And they are extremely portable given that they weight just 5.6 oz, (about the same as a cellular phone) and each cartridge measures .96”H x 3.37”W x 4.4”D, which makes it small enough to fit into a backpack, suitcase, or pocket.

Unlike tape cartridges and other disk solutions, GoVault disk cartridges can survive a three-foot drop onto solid concrete. This is an important benefit since DIY users expressed concern about disk durability, which is no longer an issue. And GoVault disk cartridges can be used for data backup via Windows or with most popular backup software. But it can also work like a traditional hard drive, since each disk cartridge appears as a drive letter (e.g. H:) when viewed via Windows and users can drag and drop their data onto the cartridges. In addition, applications and files can be run directly from a GoVault cartridge, which eliminates the need to move files back and forth between the storage media and system.

We have found that ease of use is a critical component in the adoption of products by SMB users. This is especially true for the DIY business, which has no dedicated IT staff and typically has little data protection experience. We expect that SMB users will be pleased

with GoVault’s ease of use, which should result in improved data protection.

Differentiator: Disk-Based Disaster Recovery and Archive

Disaster recovery planning is not just for large data centers. Even small companies should keep at least one copy of their critical data offsite to protect against a disaster at the main office. Tape has been the preferred media for offsite storage due to its portability and long shelf life. However, we have already established that GoVault cartridges are just as portable as tape and even more durable, which makes them ideal for disaster recovery. In addition, GoVault cartridges have an archive life of 10 years, which makes them suited for long-term archiving. We see companies of all sizes retaining data for extended periods of time in order to comply with government regulations, legal discovery, and internal business practices.

Differentiator: Supports Best Practices

Data protection at DIY businesses and remote offices is typically very limited or non-existent. This can be attributed to factors including the lack of dedicated IT staff, untrained personnel, product failures, and complex tape rotation schemes. Best practices in data protection include the daily backup of data, offsite data storage in case of disaster, the ability to quickly recover data when needed, and security to prevent unauthorized data access.

Quantum recommends a simple three-disk cartridge rotation scheme that enables SMB GoVault users to implement data protection best practices. Below is an example of how

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this rotation scheme can be applied, using nightly backups and daily offsite storage.

- **Day 1 / Cartridge #1** – at the end of the day, this cartridge is placed in the server to perform the nightly backup. When the user returns to the office the following morning, the cartridge is available to restore any data if needed.
- **Day 2 / Cartridge #2** – at the end of the day, this cartridge is placed in the server to perform the nightly backup. Cartridge #1, which contains the previous night's backup, is taken off-site for storage. When the user returns to the office the following morning, cartridge #2 is available to restore data from the most recent backup.
- **Day 3 / Cartridge #3** - at the end of the day, this cartridge is placed in the server to perform the nightly backup. Cartridge #2, which contains the previous night's backup, is taken off-site for storage. Cartridge #1 is then brought back to the office the following morning. When the user returns to the office the following morning, cartridge #3 is available to restore data from the most recent backup. And at the end of the day, cartridge #1 is placed in the server for the nightly backup. And the cycle repeats.

While variations can be implemented, it is clear that a three-cartridge rotation scheme allows data to be readily available for immediate recovery and safely stored offsite in case of disaster. And password protection prevents the disk cartridges from being accessed by unauthorized users. The bundled backup software enables users to automate the scheduling of daily backup

operations. Simply put, GoVault enables DIY users and remote offices to attain a higher level of data protection than that provided by alternative, comparably priced solutions on the market.

Differentiator: Affordability

A key factor to the adoption of any technology is price. Small businesses are extremely price sensitive and often cannot justify purchasing a backup solution that costs more than their server. The Quantum GoVault is extremely affordable at \$299, which includes a 40GB disk cartridge and Yosemite backup software. Additional larger capacity cartridges are also available.

SMB users should also calculate the return on investment (ROI) derived from the GoVault solution. Comparable tape-based solutions are more expensive and do not offer the durability of GoVault or the disk-speed recovery. And alternative external disk devices are perceived as too cumbersome and fragile to move offsite and cannot scale via the use of additional cartridges. So when considering price, performance, portability, durability, capacity, and scalability it is clear that GoVault provides a superior ROI when compared to available alternatives.

Taneja Group Opinion

We believe the introduction of GoVault is a smart move by Quantum. It solves key data protection challenges currently faced by SMB users and instills best practices that were mainly implemented by larger organizations that have dedicated IT staff. Quantum has extensive experience in the SMB market and is now the first major storage vendor to offer

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this type of solution. We expect GoVault will be extremely popular given its affordable price and robust feature set.

It should be noted that Iomega currently offers a similar product called Rev Drive, which is built from Iomega's proprietary technology. It includes 35GB removable disk cartridges that are ruggedized and bundled with backup software. The REV dock utilizes an "external" head that must penetrate the cartridge, thus allowing for potential contamination. The use of proprietary technology could also limit user adoption if only available from Iomega. And future versions may not be compatible with the current model if the adoption rate is low. Based upon the product specifications, Quantum's GoVault is more affordable, offers greater capacity, and is more durable (standard 2.5 inch drive within the cartridge that is sealed and shock-mounted).

With regard to GoVault features, we recommend that Quantum consider the following future enhancements: Data stored on disk cartridges could be encrypted to provide security beyond the current password protection. This would help protect sensitive information in case the password is cracked. Also, offering write once read many (WORM) technology would help financial, medical, and other users comply with

regulations requiring proof that data has not been altered. While 120GB of capacity on a single disk cartridge will suffice for most DIY users, larger capacities may be needed to perform unattended nightly backups.

We believe that disk-based backup solutions for SMB users will become mainstream over the next 18 months, with products like GoVault helping to drive this change. And given the product's features and benefits, we expect disk-based solutions will significantly reduce the role of tape or completely eliminate tape from some user environments. As a result, tape devices will be mainly used for reading archive data stored on tape.

Quantum's efforts to build a brand that is recognized by DIY users should result in loyal customers that will continue to purchase Quantum products as their companies grow. We expect Quantum to enjoy incremental revenue as SMB customers deploy GoVault for enhanced data protection. We do believe, however, that Quantum is underestimating the appeal for such a solution for the somewhat larger customers who are using a tape-based solution today. If the 120GB cartridge capacity meets their data requirements, we expect many of them will flee to this solution for convenience, reliability and speed of recovery.

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