Analysis of RDX® Storage Alliance

Analysts: Camberley Bates, Russ Fellows, John Webster

On Tuesday January 26, 2010 RDX® Storage Alliance announced their formation of a non-profit alliance for the purpose of promoting and openly sharing the RDX removable disk solutions and best practices. Much as other disk technologies have formed working groups, RDX Storage Alliance is promoting the growing market for removable disk. Removable disk is being adopted for semi and permanent archive and an easy mode for transferring large quantities of data.

HIGHLIGHTS

- Non-profit vendor neutral organization for storage vendors, channel partners, and end users (www.rdxstorage.com)
- Purpose is to share best practices and solutions
- Karl Chen, Executive Director, former VP of Business Development and Marketing Lefthand Networks and VP of Marketing at BMC
- Announced Alliance partners the time of this publication include Imation, Maxell, ProStor and Tandberg Data
- Companies that are currently shipping products with RDX storage technology include industry Dell, Fujitsu, Hitachi-Maxell, HP, IBM, Imation, NEC, ProStor Systems, and Tandberg Data

OVERVIEW

The RDX removable storage disk was developed by ProStor. Since 2006 over 600,000 units have shipped worldwide, primarily integrated into server or storage solutions. The premise of the RDX is a ruggedized disk unit that is removable and able to withstand variable temperatures, impact, vibration and even liquid contamination. Testing by an independent lab, Percept Technology Labs, which specializes in establishing resiliency statistics for technology and hand held devices, has verified its ability to withstand the elements and provide secure storage for data at rest up to 30 years in a traditional office environment (78^{o}F and 5 to 95% humidity) and over 100 years in optimal conditions (68^{o}F and 5 to 95% humidity).

RDX Storage Alliance and others have also taken demonstrating its ruggedness with a bit showmanship, but proving a point. See the RDX subjected to a velodrome or used as a hockey puck on ice.

Applications specifically aligned for the RDX include:

- Fast drag and drop backup and recovery
- Long term tape replacement
- Long term archives and compliance
- Movement for large footprint files, i.e. medical, video surveillance, scanned documents
- Bulk data movement in and out of the cloud, when WAN is too slow

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Figure 1: RDX Disk and Unit Enclosure

The RDX is now shipping with 750GB drives and will be releasing 1TB later this year. The product is used as a standalone device or integrated with server and storage offerings.

Current RDX solutions shipping:

Company	Product
Dell	PowerVault RD1000 Removable disk backup
Fujitsu	Primergy RDX Backup and Archiving System
Hitachi - Maxell	Maxell RDX
HP	Storageworks RDX-750 Removable Disk Backup
Imation	RDX Removable HDD System
NEC	Express 5800 Server family, optional built in RDX
Prostor	InfiniVault
Tandberg Data	QuikStor Cartridge-based Removable Storage Solution

VALUE PROPOSITIONS AND TARGET MARKETS

The following discusses three primary markets for the RDX.

Backup and Recovery - Tape Replacement: Users of tape, which has been the chosen media for longer term storage, have been inundated with forward and backward technology refresh cycles, forcing them to copy data from one tape technology to the next to assure preservation. The RDX alliance cites a 30 year life span using a 2.5" ruggedized disk, about eight to ten times longer than tape.

While we have seen disk arrays that emulate tape storage (Virtual Tape Libraries) taking the place of tape in certain environments, Constantly rotating disk incurs the cost of energy consumption and requires network replication to provide offsite DR. Because RDX is removable, energy costs related to disk storage can be dramatically reduced and even with a VTL's advanced de-duplication and replication technologies, movement of removable media by truck may still be less costly and faster. Note, for most companies it is a best practice to keep unduplicated copies of full backups offsite both for recovery and compliance.

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Several vendors have integrated the RDX into basic server environments and stand alone backup archiving solutions for the SMB and remote office market. This replaces low end tape units and also provides a more secure, trust-worthy solution than the disk, CD's or DVD's.

Long Term Archive – Users can leverage the removability of the disk for basic archive management. In addition, ProStor has developed application software specifically for enabling active and long term archive. In summary, the application enhances the manageability of RDX with permission based access, tracking and management of multiple copies for long term and active archive, guaranteed immutability, file level deduplication, integration with industry applications such as email, PACS, HSM and ECM as well as other functionality required by this market.

Physical Movement of Large Files – Removability adds data portability to certain applications because RDX disk just plugs into a computer and is seen as another drive. Using RDX technology, IT administrators and film producers alike have been moving 750GB of data securely and without risk of damage to the media. For example, VMware administrators are using the removable drive to carry VM images from one server to the next. And in perhaps the most unusual example so far reported the US State Department is using RDX to transport large quantities of data in an ambassador's pouch.

Bulk Data Movement In and Out of Cloud Computing – One of the difficulties of implementing cloud is just getting the data to the site. There are two options. One is WAN, which can be costly and also depending on the amount of data, prohibitive in terms of time. The other option is transporting a storage device. It is not uncommon for a managed service provider to ship a storage unit to a client for copying the data. This is then shipped back overnight. As we have all experienced, storage devices are not particularly fond of movement and are prone to error. The RDX, with its growing capacity is a good option to transport this type of data.

EVALUATOR GROUP COMMENTS

Positives:

Evaluator Group is encouraged by the market acceptance and shipments of the RDX. While 600,000 units is substantial, the RDX still needs to show significant growth to replace tape or other media in the market. We do believe it will take a consortium to adopt the RDX on a broad scale basis. As the developer of RDX, ProStor has taken the right move to support an alliance that can promote adoption. Also, with ProStor InfiniVault, the RDX is seeing success as an active and removable archive solution for selected industries.

For small business, the RDX addresses some of the reliability and cost concerns for backup applications and provides a good alternative to tape or VTL array-based disk which still requires a disaster recovery solution. RDX cartridges provide many of the advantages of disk storage, combined with the best aspects of tape storage. By utilizing disks, RDX provides rapid access to data for fast restoration, something not possible with tape. However, RDX cartridges are also easily transported, and require no power or cooling when storing data. These factors allow RDX to fill a role within smaller organizations looking to protect their data, while providing high speed data restore capabilities. For larger organizations, RDX can serve as the primary storage media within products such as ProStor InfiniVault and others.

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Potential Concerns:

While the Alliance is a significant step for adoption, the RDX is patented and owned by ProStor. New technologies, however successful, typically need broad acceptance and at times competing efforts to gain market accepted. We would like to see the alliance not only move forward in promoting best practices, but also enabling either open source development models or establishing RDX as an open standard.

However, it is clear to us that formation of the alliance will help RDX technology gain wider market adoption, which will help both users and RDX members ensure RDX is a viable technology in the future.