

## Technology Advantages of the RDX® QuikStor™

The RDX QuikStor media-based removable storage system offers rugged, reliable and convenient storage for backup, archive, data interchange and disaster recovery. It provides enterprise performance and fast data access.

Invented in 2006 RDX has become the defacto standard for small, medium business and distributed enterprises when data needs to be portable, removable and mobile for off-site, backup and archive storage. Hundred thousands of business customers use RDX to store mission critical data and they are proving the reliability, robustness and ease of use every day.

The predicted marriage of tape backup with high-performance random access disk technology has been floating around the industry since the advent of disk drives.

However, attempts to replace tape with various technologies have always failed because they could not match or surpass tape in its removal, capacity, archival or low-cost benefits that users demand. The industry has been searching for and exploring technologies that both complement and address low-end tape's biggest detractors - its relatively low performance during both backup and retrieval operations, and its relatively high failure rates when compared to disk.

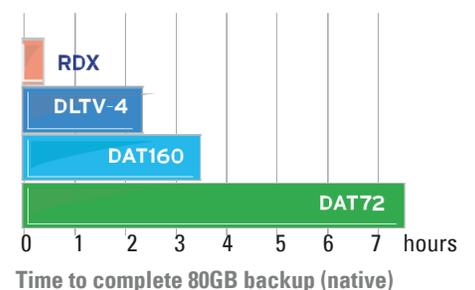
This paper explores the benefits of a portable disk-based technology, RDX® QuikStor™, which successfully and cost-effectively matches and surpasses tape in all of its key aspects AND provides the backup and retrieval performance of random access disk with 99.999% reliability. The RDX QuikStor solution is the only viable removable backup technology for high-capacity desktops and low-end servers in any kind of storage application where removability is required.



### What Is RDX QuikStor?

RDX QuikStor is a removable hard disk drive system that handles and operates like a traditional tape drive and media, yet has all of the advantages of a disk system. The RDX QuikStor device allows for backups to be accomplished in the traditional fashion of working just like a disk or tape—moving data directly to a device with removable media. To the computer, RDX shows up as a disk drive-letter, but can be handled like a tape cartridge. It takes the RDX QuikStor drive about 5 minutes to back up 80GB of native data at its 330 MB/s\* transfer rate. For this same operation in the tape world, a DAT160 drive takes almost four hours, and a DAT72 drive requires more than seven hours.

On a restore, the RDX QuikStor media has all of the read/write advantages of a hard disk drive. As serialized searches take hours in the low-end tape world, RDX just needs milliseconds. In brief, an RDX QuikStor backup lets you vastly improve customer business availability by allowing you to recover or access customer files in seconds and minutes instead of hours.



\* R/W performance is depending on System and RDX Media Generation and Media Technology and many other factors.

## Removability and Portability

The RDX QuikStor drive system utilizes a unique removable media that is ruggedly designed for portability. RDX QuikStor media consists of a mobile 2.5-inch hard disk drive (HDD) suspended in a highly durable cartridge. The same 2.5-inch drives are most often used in laptop computers due to their size and locking head feature. With its protective, shock-proof and static discharge resistance cartridge design, the RDX QuikStor cartridge passes drop tests in excess of one meter onto a tiled concrete floor without damage and the hard disk drive electronics is fully protected against electro static discharge events while handling the media or in long-term archive / off-site storage applications.

## Archivability and Reliability

Small-form-factor HDDs like the ones used in RDX QuikStor are specifically designed to significantly improve their mechanical reliability and life. Design features such as ramp-load heads and fluid dynamic bearings eliminate any concern about head-media contact or disk sticking. In fact these mobile HDDs now boast a mean time to failure (MTBF) of 550,000 hours.

## Compatibility

The RDX QuikStor system is compatible with all common backup applications and will plug-and-play in all backup architectures. IT professionals do not need to change designs, complicate backup processes, or even add cost to derive the benefits of using RDX QuikStor backup technology.

## Simplicity and Security

Anyone who has ever configured a multi-disk server can tell you that setup and security are never as simple as advertised and can often be quite complex. The RDX QuikStor device has all of the benefits of using a disk drive, with no special setup required. In fact, managing an RDX QuikStor device with a backup application is easier than using a tape device with simple drag and drop icons.

## Performance

Like all tape drives, hard disk drives vary in throughput and performance. The advantage of disk compared to tape is the ability to randomly access data once it's recorded. Even if data is written in a sequential format, RDX QuikStor can access and read data randomly, which essentially eliminates seek time and vastly improves single file restore times.

SuperSpeed USB 3.0 interface offers high performance. With a selection of hard disk and solid-state disk cartridges, users can choose the solution that meets their unique performance and capacity requirements. From professional workstations to the low-end enterprise, RDX QuikStor provides users with best-in-class backup and archive capability that is ideally suited to help users get their businesses up and running quickly in the event of data loss.



## Reliability

The RDX QuikStor Media is an enclosed system with a HDD or SSD. Inserting a media to a drive is just done via an electrical connection without any physical load of the media like it is done with tape. This ensures more than 5,000 load/unload actions, giving RDX media a usage life span that is more than 50 times higher than low-end tape media.

## Affordability

The progression of tape drives and media is well known. To take advantage of storage capacity enhancements, you must purchase new tape drives and new media. The RDX QuikStor system has no system obsolescence! RDX QuikStor features both backward and forward compatibility. Each year as higher-capacity cartridges are introduced they will work with your existing RDX QuikStor drive. So, all RDX QuikStor systems are compatible with all RDX QuikStor media, now and in the future. For your budget, this means that the simplicity of the RDX QuikStor design provides you a very low initial cost and a superior total cost of ownership compared to any tape products.

## Backing Up Disk Volumes with RDX QuikStor

With the typical incremental backups used by tape users, recovery of an entire backed up disk volume requires the time-consuming process of going through every piece of tape media that has been used in the backup process. And if the backup catalog is somehow contaminated, it can only be recreated by a time-consuming search of every piece of affected media. Even with an intact catalog, finding a targeted file requires a slow serial search of the correct tape cartridge.

RDX QuikStor cartridges are available in hard drive and solid-state disk drive capacities ranging from 128GB to 4TB. High native storage capacity combined with the RDX drive's 1.18TB/hr speed means full backups can be performed every day in much less time than it takes to do incremental backups to low-end tape.

## Head-to-Head with Today's Tape Technologies

In a nutshell, the following table clearly shows how the RDX QuikStor drive and cartridge surpass existing tape technologies in overall cost and performance.

	RDX QuikStor
Capacity (native)	128GB - 4TB
Max. Performance (native)	up to 330MB/s
Backward and Forward Compatibility	Yes
Reliability (MTBF)	550,000
Media uses	5,000

## Secure Data Moving and Archiving

The rugged design of the RDX media is predestinated for use as a data movement and data exchange device. So it is important to prevent the media from unauthorized access during transit. RDX media can be secured via the RDX Cartridge Encryptor Software (RCE) which provides an AES 256-bit encryption for the data and a password protection. RCE is compatible with Windows operating systems.

## Regulatory Compliance Archiving with RDX WORM

With RDX WORM, RDX QuikStor can also be used as storage for regulatory compliance archiving. The Windows®-based software rdxLOCK enables the WORM functionality and manages read-/write-access. So, RDX WORM is transparent for archiving applications and document management solutions. Even files that are copied to the media via drag and drop are secured immediately by the WORM functionality.

## Over other Removable Storage Technologies

RDX QuikStor the industry standard for removable disk application can be used for any kind of storage, backup and archive application where there is the need for data portability and mobility.

Its unique technology advantages are not limited to replace entry level tape technologies only. Optical and Magneto Optical devices but also external hard disk or NAS and even Cloud-Storage are facing limitations you can overcome with RDX QuikStor when it comes to rugged, reliable and removable storage, backup and archiving tasks.

## In Conclusion

Prior to the availability of RDX technology, users had to choose between tape, disk, or a combination of both to back up their high-end desktops and low-end servers—each with architecture, performance, and cost issues. Now there is a viable alternative—the RDX QuikStor. RDX QuikStor technology offers the best of both worlds: tape (removability, affordability, archivability) and disk (higher performance, simplicity, reliability)—all in one cost-effective package.

## Further information

If our White Paper on the RDX QuikStor has not answered all your questions about your backup challenges, Tandberg Data storage specialists are available globally to offer you help in finding the best solution for your business.

## Sales Offices

Sales and support for Sphere 3D products and solutions are available in over 90 countries. Contact us today at [sales@sphere3d.com](mailto:sales@sphere3d.com). For a full list of Sphere 3D addresses and phone numbers, please see our website at: <http://sphere3d.com/contact-us/>.

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