

# Why Disk Has Forever Replaced Tape as a Primary Backup Target

By DCIG Lead Analyst Jerome M Wendt



*The reasons as to why disk has forever replaced tape as a primary backup target go much deeper than disk now being cheaper, faster and easier to manage than tape. Disk, as a backup target, gives businesses assurance and new found peace of mind that their data is protected and recoverable. Further, it opens up new opportunities for them to affordably introduce business continuity and disaster recovery options into their environments.*



## Company

Revinetix, Inc.  
308 East 4500 South, Suite 100  
Salt Lake City, UT 84107-4057  
(888)264-5116  
Founded 2003  
[www.revinetix.com](http://www.revinetix.com)

## Industry

Data Protection

## Why Disk is the New Primary Backup Target:

- Backup software deduplicates data to utilize disk storage capacity more efficiently
- Backup software manages off-site replication of data
- Backups complete successfully and in less time
- Deduplicated data can be feasibly and affordably replicated offsite over WAN links
- Eliminates daily handling and off-site transportation of tape cartridges
- High capacity disk storage solutions can store over 100 TBs of deduplicated data
- Near line storage allows for faster recovery times
- Price per GB of disk drives are on par or lower than price per GB of tape cartridges
- Business has greater assurance that its data is quickly recoverable
- Opens up new opportunities for disaster recovery and business continuity

## Solution

Revinetix Disk-based Backup

Right here, right now, it's time to state what may sound preposterous to some and obvious to others. Disk has officially forever replaced tape as the primary target for backup software. But the reasons for this go much deeper than disk now being cheaper, faster and easier to manage than tape. Disk is just one part of a whole new equation that has emerged where near real time business continuity and disaster recovery are the new desired end results.

Many small and midsize enterprises (SMEs) that still use tape as their primary backup target are probably aware that disk has made inroads in replacing tape. But to state that *tape's role as a primary backup target is forever over* may sound premature.

## The Four Advancements Driving Disk's Adoption

Consider these four major technology advancements that have contributed to disk firmly establishing its preeminence over tape from this time going forward.

- **Hard disk drive (HDD) capacities and cost.** HDD manufacturers have delivered on forecasted but still hard to believe increases in storage capacities over the last 10 years. In that time, the size of SATA HDDs have increased from about 40 GBs to their present size of 2 TBs, essentially doubling in storage capacity about every 18 months with 3 TB disks now entering the market. Further, the price for the physical platter has essentially stayed the same or even dropped over that same period of time such that a 2 TB internal HDD can be obtained for less than \$100. Conversely, a 1.5TB LTO-5 tape cartridge now costs *as much or more* than disk while offering less raw capacity.
- **Data deduplication.** A few years ago, data deduplication was the breakthrough technology that first enabled disk to begin to replace tape as a primary backup target. Now, data deduplication just makes disk that much more affordable than tape, plus it gives disk-based backup a tape-like property: that of "infinite capacity."

One of the few remaining arguments for tape is that a tape library will technically never "run out of capacity" because as soon as a tape cartridge fills up it can be replaced with another tape cartridge. However, since up to 97% of the backup data in most businesses is a deduplicate of the data from the previous day's, week's and month's backup, by deduplicating this data businesses essentially get this "infinite capacity" property of tape when they use a solution that deduplicates data.

Affordable data deduplication is readily available from providers such as Revinetix whose disk-based backup solutions achieve deduplication ratios of 4x or greater. For example, using a deduplication solution in conjunction with fifteen (15) internal 2 TB HDDs, SMEs can achieve effective backup storage capacities of over 100 TBs which, from their perspective and at this stage of the game, meets their definition of "infinite capacity."

- **Replication.** Disk's immobility was another long term road block to the disk's broader adoption. After all, what good is a backup on disk if your building with all of your data in it is destroyed? But this hurdle too has been overcome in the last few years in large part because of data deduplication.

By deduplicating backup data *before* it is replicated, the only data that needs to be replicated offsite is *the net new data*. So once the initial full copy of all of a company's backup data is replicated offsite, only changes to that data need to be replicated going forward.

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— Jerome Wendt, DCIG Lead Analyst

Further, since data deduplication is done before any data is replicated, only one copy of all new data needs to be transmitted to the secondary site. This minimizes the size/bandwidth of the WAN connection that SMEs need to replicate the data and they may even be able to use an existing WAN connection to perform this task.

- **Improvements in backup software technology.** Even with these prior three factors in place, if backup software could not: 1) backup or recover from disk; 2) manage backup data once it is on disk; or, 3) only did so at a price that was cost-prohibitive to most SMEs; it would still be premature to declare that disk had replaced tape as a primary backup target. This is not the case as backup software from providers such as Revinetix illustrate. It backs up and recovers from disk. It can manage the replication of backup data between two sites. All of its backup, data deduplication, recovery and replication features (along with many others) are included which SMEs find easy to understand.

## The Intangibles Driving Disk's Adoption

Yet these four technical reasons as to why disk has replaced tape as a primary backup target fail to account for many of the intangible reasons that are also driving disk's adoption. What do not appear on any ROI spreadsheet are the dramatic improvements in personal quality of life and peace of mind that every individual who has adopted disk as a backup target shares with me.

Disk eliminates the daily grind and uncertainty that typically surrounds backup to tape. In its stead is a new found sense of relief that backups and restores are completing successfully, completing more quickly and that the worries that administrators have away from the job about backup jobs failing have come to an end.

On a broader organizational front, SMEs that use disk as their primary backup target have similar stories to report. Their IT staff is no longer bogged down for hours each day troubleshooting problems associated with failed backup jobs.

Tape administration also comes to an end or is greatly minimized. IT staff no longer needs to swap tapes, move tapes on and off site, store tapes and track what tapes are where. This typically results in SMEs reducing the tens of hours they spend on backup management to just a few hours per week. In so doing, this frees corporate IT staff to refocus on more strategic initiatives that take advantage of this backup data now being on disk.

## Disk Has Changed the Data Protection Equation

A formula that summarizes this new environment can be stated as follows:

$$\text{Disk} + \text{Deduplication} + \text{Replication} + \text{Backup Software} = \text{Near-real Time DR \& BC}$$

This is the new equation that is replacing data protection in 2011 and beyond. The software, hardware, technology, money and staff that were once used to deliver "just" data protection can now be repurposed and refocused to deliver on these more strategic business initiatives of disaster recovery and business continuity.

The reasons as to why disk is replacing tape as a backup target go much deeper than disk just now being cheaper, faster and easier to manage than tape. Over the last decade, an entire cast of supporting technologies have emerged that make it feasible for disk to replace tape as disk-based solutions as they now offer the benefits that only tape once provided, such as infinite capacity, portability and manageability.

But the real reasons as to why disk will replace tape as a primary backup target may have nothing to do with either the financial or the technical reasons. Rather, they may have everything to do with intangible human reasons as the SMEs and the administrators who work for them want:

- Less risk and pain in their environment
- Guarantees that what they have works
- Time to focus on initiatives that add more value to the business

### About DCIG

DCIG analyzes software, hardware and services companies within the storage and ESI industries. DCIG distributes industry, company and product analysis by way of viral marketing and community building using the burgeoning blog infrastructures created worldwide.

### About Revinetix

Revinetix® is revolutionizing the disk-based computer network disaster recovery space with a compelling product offering that delivers distinct advantages to SMB/SME network administrators and IT managers. Central to Revinetix' technology and market approach is its Disk2Disk2Disk® or D2D2D® backup philosophy. While traditional backup solutions transfer data from disks to tapes—a slow and often unreliable method—Revinetix offers affordable total disk-based backup solutions, complete with preinstalled RevOS® management software, Bare Metal Restore (BMR) utility and support for off-site archiving and replication. Revinetix' easy-to-use software allows customers to accept pre-defined parameters or to customize the backup of their data. Using its Disk2Disk2Disk technology, Revinetix eliminates tape from the backup process. High-density, low-cost, and reliable SATA disks replace slow and unreliable tape to provide the data protection SMB/SME needs. Revinetix delivers solutions ranging from \$5,399 to \$109,999.



DCIG, LLC | 7511 Madison Street | Omaha NE 68127 | 402.884.9594  
[dcig.com](http://dcig.com)