# *Disaster Recovery Strategies:* Business Continuity through Remote Backup Replication

## ENSURING IMMEDIATE ACCESS TO YOUR BUSINESS CRITICAL DATA

Every organization has critical data that it can't live without. When a disaster strikes, how long can your business survive without access to its critical data? Weeks? Days? Hours? Minutes? When creating a disaster recovery plan, one of the most important questions you need to ask is "How accessible is my backup data?" Your response to that will typically supply the answers to your other critical questions, such as can you even recover if a catastrophe brings your site down? If you can, how long will it take you to recover?

The ability to answer these questions in a favorable manner requires that organizations do more than just simply back up their data. They need to have high confidence in the integrity and reliability of their backups, so they can actually restore from them. They need to have copies of their backups stored in a secure offsite location to ensure that they don't become compromised by the same disaster that brings down their main site. Lastly, and one of the most overlooked conditions, is that they need to be able to access and restore from those offsite backups in a timely manner.

While a number of backup and disaster recovery solutions address some of these issues, only disk-to-disk backup with remote replication to disk at another location addresses all of these issues in a manner that enables organizations to be assured that they'll have immediate access to their data when a disaster strikes.

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## CRITICAL DATA ACCESSIBILITY KEYS

### TAPE BACKUP

Tape backup has long been the traditional method for preserving an organization's critical data. Unfortunately, tape backup strikes out in terms of addressing the key factors of accessibility; integrity, off-site storage, and time to recover.

- Low Reliability - Tape backup does not provide high confidence in terms of reliability or integrity. Organizations report failures of anywhere between 20 to 70 percent when attempting to restore from tape backups. Tape backup management is also a labor intensive undertaking. Additionally, tape manufacturers recommend that tape media be replaced every two to three years.
- Labor Intensive and Costly Offsite Storage - Assuming you can rely on the integrity of a tape backup, it can be used as an offsite disaster proof solution. However, the tapes have to be physically transported to an offsite location and manually cataloged to enable future retrieval and recovery. To eliminate the hassle of this physical effort, some organizations contract a third-party company to handle the physical transport and storage of the tapes.
- Slow Time to Recover- Before being able to recover from a tape stored in an offsite location, the correct set of tapes first need to be located, which in itself can take significant time depending on the cataloging system and physical organization of the tape sets. Once located, the tapes have to be physically transferred back to the restoration location before the actual restore process can even begin. From start to finish, the whole process to restore from tape might take days or weeks.

### DISK-TO-DISK-TO-TAPE

To address many of the reliability and labor intensive aspects of tape, many organizations have turned to disk-to-disk solutions. However, these solutions typically rely on tape backups for long term or off-site archival. As a result, in terms of offsite disaster protection, these solutions ultimately don't fare any better than tape in terms of addressing the key factors for reliable, immediate accessibility.

### CLOUD SERVICES

Recently, backup cloud services have become a popular trend for consumers and even some smaller businesses. While cloud services do address some reliability and accessibility issues quite well, their inherent design limits their ability to provide the needed level of immediate accessibility.

- Potential High Reliability - Depending on the cloud service and actual infrastructure, backup cloud services hold the promise of being able to provide reliable backup and restore. In terms of integrity, a cloud service should be able to pro-

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vide the same level of integrity as a disk-to-disk solution, but without the need to go to tape for off-site archival.

- Automated Offsite Storage – One of the major benefits of a backup cloud service is its transparent, automated nature. Data is automatically backed up and archived at an offsite, hosted data center without any user intervention.
- Slow Time to Recovery – The main disadvantage of a cloud service for backup is the slow time to recovery. While it might be fine for recovering a few files, transferring the backup files for entire servers over the Internet can take days to weeks, depending on an organization's Internet bandwidth and connection speeds.

> ***"We have a requirement to archive all of our backups. To meet that requirement, we backup our servers on one Revinetix Disk Backup Appliance and then replicate our backups to another Revinetix appliance at our disaster recovery site."***
>
> Grant Baker
> Senior Systems & Security Administrator
> University of Virginia at Wise

## DISK-TO-DISK-TO-DISK REMOTE REPLICATION

Only a disk-to-disk backup solution with automated replication to an offsite location addresses the key accessibility factors of high reliability, automated offsite storage, and fast time to recovery.

High Reliability – Disk based storage has long proven to be more reliable than tape, especially when implemented with a RAID system, which has the ability to further increase storage integrity and availability through disk redundancy.

Automated Offsite Storage – Replication provides the ability to automatically and transparently transfer copies of an organization's backups over the Internet or a WAN to its own offsite disk storage appliance, providing redundant, easily accessible backups of critical data.

- Fast Time to Recovery – Disk-to-Disk-to-Disk, with automated replication to an offsite location, provides organizations an ideal way to quickly access and recover critical backups when disasters occur. Not only does it provide immediate access to offsite stored data, as a disk-based solution it provides transfer rates of up to seven times faster than tape. Data can also be recovered and transferred simultaneously to multiple servers without sacrificing speed.

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## Enterprise Class Replication

A variety of replication strategies and technologies exist in terms of implementation, replication process, and transfer of data between the data source and the target. As a result, when choosing a disk-to-disk-to-disk replication offering, organizations need to evaluate the solution in a number of areas, including ease of setup and management, storage capacity optimization, bandwidth optimization, OS and application support, fast and flexible accessibility and total cost of ownership.

Built on its scalable, high-performing enterprise class data protection appliances, Revinetix addresses all of these key areas to deliver optimal disaster recovery that leverages easy-to-deploy, automated disk-to-disk-to-disk replication.

### EASE OF SETUP AND MANAGEMENT

Disaster recovery offerings from Revinetix are based on its 'all-in-one' rack mount Sentio line of disk backup appliances. Each appliance is built with best of breed technology, which includes dual Intel® Core™2 Duo Processors, Gigabit Ethernet controllers, hardware RAID (Redundant Array of Inexpensive Disks), high speed Serial ATA (SATA) disks and dual-redundant power supplies on the 2U and larger units.

As turnkey solutions, the Revinetix Sentio appliances are easy to deploy. You connect the appliance to your LAN, assign it an IP address, run the intuitive setup wizard and then it's ready to begin backing up your servers, desktops, laptops and other devices. It is Microsoft Active Directory aware, which makes it easy to identify and schedule which devices you want it to automatically back up. The whole setup and configuring process can be typically completed in less than two hours. Once it's up and running, it essentially manages itself so you to don't have to expend any manpower managing your backups.

Adding off-site replication is as simple as deploying a second Revinetix Sentio appliance to an off-site disaster recovery location and then configuring that appliance as a secondary or replication appliance. Revinetix employs what is referred to as active-passive replication, where the on-site or primary appliance actively backs up your system's data and then passively replicates that data to the offsite secondary backup appliance.

### Storage Capacity Optimization

Even though a single Revinetix Sentio backup appliance can support up to 70TB of data, the solution provides a variety of capabilities for optimizing storage capacity. One of the most compelling of these is its data deduplication capability. Data deduplication simply involves identifying duplicate copies of data, recording where each of those duplicates is stored, and then only storing a single copy of that data. Depending on how much duplicate data resides on an organization's servers, deduplication

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can provide anywhere between a 20x to 300x space savings.

### Bandwidth Optimization

Just as data deduplication saves on storage consumption, it also optimizes bandwidth usage, but Revinetix goes a step further to optimize bandwidth usage by transferring changes in backup data at the byte-level rather than the file-level. Solutions that employ file-level transfers have to transfer the complete file over the WAN even if only a small change is made to a file. By working at byte-level, Revinetix appliances only replicate the actual bytes of data that changed. This considerably minimizes the amount of data that needs to be transferred during a replication process, making it the quickest and most efficient data transfer method for replication.

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>
> Sam Robinson
> IT Backup Technician
> iFreedom Direct

### OS and Application Support

For complete disaster recovery, organizations need a solution that can backup and replicate their entire server and client environment. Designed to support heterogeneous environments, Revinetix Disk Backup Appliances support Windows, Netware, Linux, MAC OS-X, BSD, AIX, SCO Unix, and Solaris devices.

To facilitate the restoration of individual emails, Revinetix also provides a native Microsoft Exchange Server Agent. This provides the ability to view, select and restore individual emails or mailboxes from live Exchange server databases based on search criteria. This can be a significant help in addressing government email retention guidelines, such as Sarbanes-Oxley, HIPAA, and other regulations.

Revinetix also provides an add-on SQL database agent that enables the backup of live, open SQL databases. SQL Server backups can be scheduled as full, incremental, or differential backups, providing organizations granular protection of their databases and file groups.

### Fast and Flexible Accessibility

Restoring files from a Revinetix Sentio backup appliance designated as primary is as simple as logging in, searching or browsing for the files to be restored, and then point, click and restore. When restoring from a remote replication appliance, Revinetix provides a variety of options to ensure that organizations have fast, flexible access to their critical data. The first is to simply promote the remote, secondary replication appliance to a primary

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appliance and then restore over the WAN connection. However, depending on network connection speeds, this might not be the best option for full server or site restorations.

In such cases, it can be faster to use Revinetix' bare metal restoration capabilities to simply restore to new, like hardware at the offsite disaster recovery location. As another option for speeding the restoration process, organizations can remove the hot swappable SATA drives in their offsite Revinetix replication appliance and insert them into an on-site appliance for local restoration from that appliance.

### Total Cost of Ownership

Unlike most other offerings, Revinetix provides a complete enterprise-class disaster recovery solution at a price affordable for small to medium size enterprise businesses. Revinetix doesn't charge per client or per site license fees, or per client renewal fees. Rather, it employs a capacity license fee. This means that with a single Revinetix appliance, an organization can choose to back up one device or hundreds of devices, limited only by the storage capacity of their purchased appliance. This allows organizations to perform backup, replication, and recovery services for virtually an unlimited number of servers, desktops, laptop and even virtual machines (VMs). By basing licensing solely on capacity and providing its entire advanced backup and recovery capabilities as standard features in each of its appliances, Revinetix helps organizations achieve the lowest total cost of ownership (TCO) possible.

## Customer Experiences with Replication on Revinetix Disk Backup Appliances

### iFreedom Direct

iFreedom Direct, a Utah based mortgage broker, creates a tremendous number of documents. Because of the legal requirements of being a mortgage broker, they need to have ready access to documents on current and recent transactions, as well as occasional access to much older transactions. They have developed a comprehensive disaster recovery plan which utilizes Revinetix Data Protection Appliances as the keystone of the plan.

iFreedom Direct backs up a variety of virtual and physical servers from two Utah offices to a single Revinetix Data Protection Appliance located in their main office which then replicates the backup data to a disaster recovery site in San Diego across a 6 Mbps data link.

"The Revinetix appliance was extremely easy to setup to do backups. Setting up a second one for replication was incredibly simple and requires very little maintenance," Sam Robinson, IT Backup Technician stated.

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## University of Virginia – Wise

The University of Virginia – Wise (UVA-Wise), a public, four-year residential college located in southwestern Virginia, uses Revinetix Data Protection Appliances to replicate their backup information from their site in Wise, VA to their disaster recovery site located at the UVA data center in Charlottesville, VA. UVA utilizes a 1Gbps data link between sites to replicate the backup of about 25 university servers. These servers include a variety of Microsoft Windows and Linux servers, including Microsoft Exchange and SQL databases.

"The Revinetix backup servers work very well. We have a requirement to archive all of our backups. To meet that requirement, we backup our servers on one Revinetix Disk Backup Appliance and then replicate our backups to another Revinetix appliance at our disaster recovery site," says Grant Baker, Senior Systems & Security Administrator at UVA-Wise.

Grant adds, "Using tape, we stayed up past 11:00 PM every Friday night to do our backups. With Revinetix, everything is backed-up and replicated automatically. Now we can leave on Fridays at 4:00 PM. What's not to love about that?"

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## Critical Data Accessibility When You Need It

Employing enterprise class disk-to-disk-to-disk replication, Revinetix helps ensure that you have immediate access to your critical data even when disasters strike. It provides the reliability and immediate accessibility you need to minimize downtime and restore your critical data fast. As a turnkey disaster recovery appliance, it's fast and easy to deploy, and its automated backup and replication frees up your IT team to focus their efforts elsewhere. It optimizes storage capacity and bandwidth usage, and can backup heterogeneous environments. It provides all the advanced features and capabilities of an enterprise class appliance, but with a lower total cost of ownership with one low price, and no client or site license fees. As the leader in data life management, Revinetix delivers the business continuity you need to ensure that you always have immediate access to your critical


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888.264.5116
www.revinetix.com
sales@revinetix.com

## ABOUT REVINETIX, INC.

Revinetix, the Leader in Data Life Management, provides innovative data protection solutions that ensure continuity of business, control of critical information and confidence in recovery systems. Revinetix offers the first total disk backup and recovery solution that allows automated backup schedules for every user on the network and allows critical data to be stored safely off-site from a single appliance. For more information, customers are encouraged to contact Revinetix at 888-264-5116 or sales@revinetix.com to locate a reseller in their local area.

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