IRON MOUNTAIN DIGITAL™

WHITE PAPER

Is Online Server Backup Appropriate for Your Business?

Backing Up Your Servers: Why It's Essential

Businesses of all sizes depend on their computer data for their very existence. Whether it's a large enterprise with transactional data or a 15-person law office with valuable client records, business data represents a valuable and irreplaceable business asset. The business risk of losing this data — or even losing access to this data — is well documented and well recognized. A survey of over 200 small and medium-sized businesses (SMBs) by Imation indicates that 90 percent have some formal backup and restore strategy. The question is: which strategy is best for your company?

In addition, continuously expanding regulatory requirements are forcing businesses to re-examine their current storage and recovery strategies. Businesses must justify their backup strategies as compliant with mandates for privacy, security, and accessibility.

Therefore, understanding your need for server backup is only the first step in the process. The next step is determining the right data protection strategy for your business.

Problems with Traditional Backup

Even though companies may recognize the value and necessity of backup, their choice of backup solution may not be appropriate for their needs. Part of the challenge relates to size: small and medium-sized businesses may lack the resources to dedicate to implementing and maintaining backup solutions. Even large enterprises with IT departments face challenges in adequately managing remote locations.

Traditional Backup or Online Backup?

The decision between traditional backup and online backup depends on your business requirements, including your company's goals for restore time objectives (RTOs) and restore point objectives (RTOs), desired backup window, the amount and change rate of the data, and the specific compliance and security requirements for your industry.

Traditional backup — today's usual approach to protecting vital business data — does have limitations that many recognize. For example, industry analysts Baroudi Bloor warn that restoring from tape fails to restore data completely as much as half of the time. Some companies cope with unreliable data restore by keeping several copies of the tape backup, which may be acceptable unless there are compliance issues. Even so, this is an indefensible level of avoidable risk. After all, which half of your data can your company afford to lose? Your customer orders? Your client records? Your invoices? The truth is that virtually all your company data is critical to ongoing operations and must not be placed in jeopardy.

The usual backup approaches include practices that too many businesses regard as acceptable. In reality, these traditional backup practices often don't meet business objectives for RTOs and RPOs.

These traditional backup practices include the following:

- **Tape-based backup** – Many businesses back up their files only to data tapes. Tape archives provide inexpensive, high-density storage for long periods of time. However, data stored on an unmounted tape is not accessible until the tape is physically mounted. In addition, recovering data from tapes can be a slow process that requires finding the necessary tapes, locating the necessary data on each tape, and reading the data. Relying exclusively on tape for restoring files or disaster recovery can result in lengthy outages during which necessary data is unavailable.
- **On-site backup** – Businesses often retain their backed-up data in the same location as the original data. This is dangerous, because the same disaster that affects the primary source of data can also affect the backed-up data. While examples of large-scale disasters — such as hurricanes and tornados — are well known, a far greater total risk exists in less publicized, but equally damaging, events such as fire, theft, a malfunctioning sprinkler system, or simple human error. The reason for keeping data on-site is often a false sense of security, believing that having backed-up data on hand is more secure. However, the reverse is the case. The time and money you spend recreating lost data can be costly, not only in terms of lost productivity, but in terms of lost revenue and customer goodwill. Also, it can be expensive to physically move media off-site.
- **Once-per-day backup** – Administrators usually choose to back up their data once each day, usually at night when there is less demand on the servers and the network. These backup tasks can take hours to complete, and may actually interfere with production time. In such situations, the administrator may well decide to forego complete backup in favor of business operations. Unfortunately, even if these large backup tasks complete, the backed-up data is only current as of the previous night. Any data loss during the day can only be restored to last night's situation. All changes since then are irretrievably lost.
- **No encryption** – Encryption might not be an option with some traditional backup systems. Even if encryption is available, company administrators may disable this feature to save time. However, unencrypted data can reveal company and personal information that must be protected to satisfy regulatory and best practices requirements.
- **No compression or deduplication** – Businesses can save a considerable amount of space by using data compression and deduplication technologies to reduce the volume of backed-up data. Unfortunately, some traditional backup systems do not offer these features. This means that backups take longer, backed-up data requires more space, and restoration after data loss takes longer.
- **Not automatic** – Surprisingly, many backups are ad hoc events and are not scheduled regularly. Also, businesses may require individuals to initiate backups manually. Unfortunately, people forget, so that backup does not occur regularly. This makes restoring data after a disaster difficult or impossible. In addition, compliance with government regulations often requires that businesses demonstrate routine and good-faith efforts to back up data. Manual and ad hoc processes might not qualify as routine.
- **Off-line backups** – Using tape or other off-line media for backups means that access to the backup data may not be as rapid as your business requires. If the media is stored off-site, this only increases the difficulty in restoring data when necessary.

Today, businesses are beginning to realize that traditional backup is not acceptable, either in terms of the safety of their data, the security of their information, the ease of access and restore, or the true cost of backup. They are exploring new possibilities for creating their ideal solution for backup.

Features of the Ideal Backup Solution

Businesses require new backup solutions that provide new levels of security, ease, and simplicity. Many companies are embracing a sophisticated new approach to data protection — leveraging disk-based, online technologies that address the challenges — and correct the shortcomings — of traditional backup solutions. In addition, businesses are becoming more and more aware that responsible business protection includes moving their data to a safe, off-site location.

Data protection comes in all shapes and sizes. What's best for a large global company may not be right for your business. Developing your particular data protection strategy need not be complicated, but it does require careful thought. You must ensure, not only that your data is backed up, but also that it is stored securely, and is readily and quickly available whenever you need to restore it.

Online Backup and Restore Benefits

Online backup and restore of your server data offer a variety of benefits.

Disk-based Backup

Backup to tape and other media has long been flawed by the reliability issues inherent in the technology. However, disk-based backup technology solves this reliability problem by eliminating the technology that has the most flaws —the traditional media and the human intervention that it requires. In addition, disk-based backup adds new capabilities to the data protection process, such as quicker and more precise data restoration.

Off-Site Electronic Vaulting

Even if you're extremely careful about backing up your data, that's only part of the solution. To truly protect your data, you must also move it off-site. Too many businesses store their backup tapes on-site, needlessly exposing them to the same risks as the servers they're supposed to protect. By sending your data off-site to secure electronic data vaults, you protect your data — and your business — from any disaster that affects your servers. Your data is safe and available whenever you need to restore it.

Continuous Backup

Once-a-day backup only lets you restore to the previous day's content — not much help if you've been running for hours after the last backup. By using continuous backup technology instead, you can restore data from moments before the interruption, rather than from the previous day. Continuous backup captures changes in your data as often as every few minutes. This means that your enterprise can manage its business knowing that the maximum data loss from a disaster would be only a few minutes of data, not hours or even days.

Encrypted Backup

Encrypting your backed-up data ensures that no one outside your business can access your data. This provides protection from industrial espionage and identity theft. Encryption satisfies government regulations for privacy of personal data, and prevents embarrassing losses reported in the news.

Minimizing Backup Size

Modern technologies enable saving less data in a backup. For example, if only part of a file has changed since the last backup, it's not necessary to save the entire file, but only the changed part, called the "delta". Storing a smaller volume of data means that backup can proceed faster. In addition, when it's time to restore data,

retrieving only the changes takes far less time than retrieving entire files.

Automatic Backup
Automatic backup ensures that backup happens as needed, without human intervention. This removes a major source of uncertainty and error from the backup process. You can be sure that your backups are occurring regularly and properly. This routine backup also enables your business to satisfy government regulations.

Online Backup
By having your backup files stored in online data vaults, your data is always available to your business anytime and anywhere. You can gain access to your information rapidly whenever you need it. Furthermore, restoring your data after a disaster is much quicker, further reducing system downtime.

Web-based Recovery
Round-the-clock, on-premises IT staff are not a possibility for small and medium-sized companies. Even large enterprises find it difficult to manage the backup procedures at remote locations. Administrators prefer Web-based tools that allow them to manage everyday backup processes, and initiate data restore procedures when necessary, from any location and at any time. Web-based tools also require no special software on the administrator's computer, and can run with any Internet browser.

LiveVault®: The Ideal Online Backup Solution

Iron Mountain's LiveVault® backup and restore solution provides ideal server backup for small and medium-sized businesses, as well as enterprises with remote locations. The LiveVault® solution combines the speed and ease-of-use of disk-based backup with the security and convenience of online backup.

LiveVault's features include:

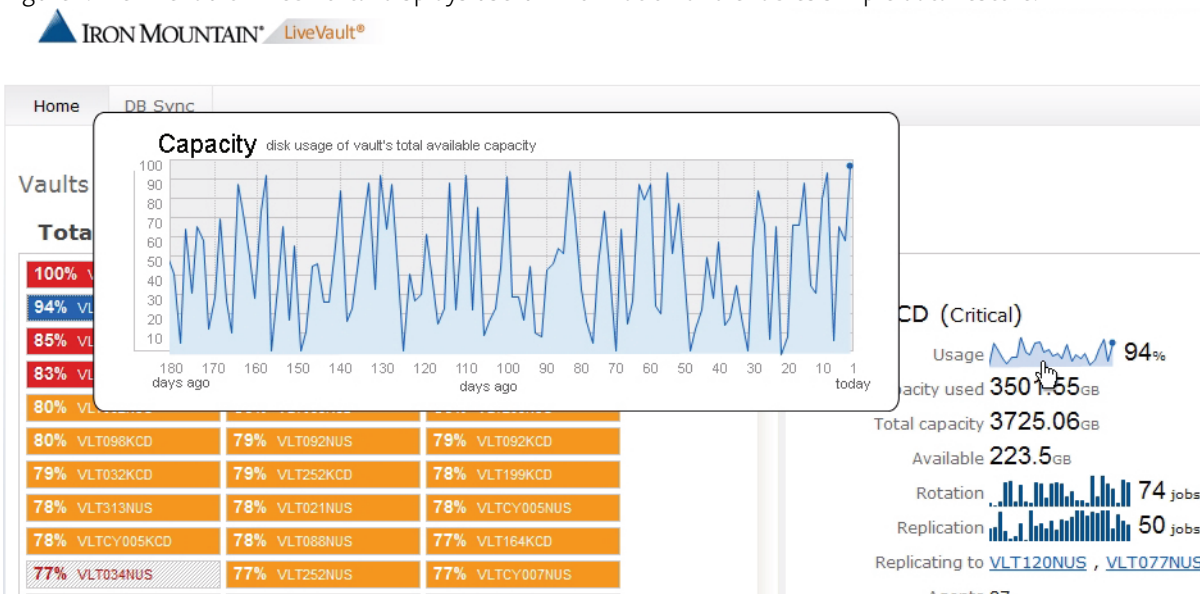
- **Disk-Based Backup**: LiveVault is faster and more reliable than tape backup. Your data is easily accessible and available for quick restore.
- **Off-Site Electronic Vaulting**: LiveVault electronically transmits your backed-up data to Iron Mountain's mirrored and secure underground storage facilities, providing real-time remote storage to protect against disasters at the server location. Redundant sites keep duplicates of your data so recovery is guaranteed.
- **Continuous Backup**: LiveVault takes a snapshot of your server data as often as every 15 minutes, minimizing, the time between the last backup set and a server failure. This means that IT can restore the server to its state just 15 minutes before the loss, rather than hours or days before. File recovery is significantly faster than with traditional backup restoration.
- **Encrypted Backup**: LiveVault uses government-level, 256-bit AES encryption, as well as SSL-based VPN tunneling and digital certificates, to ensure that your data is always protected both while in transit and while in the secure vault. Decryption is only possible with a key that your enterprise controls.
- **Minimizing Backup Size**: LiveVault monitors changes at the file system I/O level, and backs up only the changed regions of each file, reducing backup time. LiveVault's unique DeltaRestore™ technology restores only the data that has changed, drastically speeding restoration.
- **Automatic Backup**: Automatic backup removes the burden from IT, so that remote servers get backed up with limited or no IT involvement. Your administrators can schedule how often to back up the data and limit how much bandwidth to use for backup.
- **Online Backup**: LiveVault stores your data online where it's available to your business whenever necessary.
- **Web-Based Recovery**: LiveVault's integrated Web Management Portal is always available for maintaining your backup implementation and initiating data recovery. Simply log on to the Web portal from anywhere with an Internet connection, select the files to restore, and specify the destination.
- **Optional On-Site Backup**: LiveVault offers the option of the TurboRestore™ Appliance, a local device that retains up to one week of backup data for even faster restoration. The administrator can initiate a restore from the local appliance without needing an active Internet connection.
- **Access and Retrieval for eDiscovery**: Iron Mountain's optional LiveVault® DiscoveryAssist™ solution enables enterprises to access and retrieve data across all LiveVault repositories to speed data collection for legal discovery. File metadata supports Iron Mountain's Stratify® (as well as third-party) eDiscovery search and review applications. LiveVault DiscoveryAssist dramatically reduces expenses for eDiscovery.

Details

The LiveVault® solution handles data on foreign language operating systems, including double-byte characters. LiveVault supports RedHat® Enterprise 4.0, Solaris™ 10, Suse Linux® Enterprise 10, Windows® 2008 Server, Microsoft Cluster implementations, and VMWare ESX. Email alerts notify the administrator of the status and areas requiring attention.

Iron Mountain's LiveVault solution for automated server backup and recovery won the 2006 award for *Best Storage Software Solution* from the Software and Information Industry Association. LiveVault is available as both a managed service and as licensed software.

Figure 1:The LiveVault® Web Portal displays useful information and enables simple data restore.



CONCLUSION

Iron Mountain's LiveVault® solution provides the market-leading, automated, end-to-end, data protection solution for businesses with distributed servers. LiveVault offers the simplest, yet most advanced, data protection available. With LiveVault, small and medium-sized businesses, as well as remote offices with local servers, have a complete solution that addresses the numerous deficiencies of traditional backup for distributed servers. Using LiveVault, organizations can achieve lower total cost of ownership, higher reliability, better protection with more data restore points, and significant ease-of-use with less maintenance.

Iron Mountain Digital is the world's leading provider of data backup and recovery as well as archiving software as a service (SaaS). The technology arm of Iron Mountain offers a comprehensive suite of data protection and e-records management software and services to thousands of companies around the world, both directly and through a worldwide network of channel partners. Iron Mountain Digital is based in Southborough, Massachusetts, with European headquarters in Frankfurt, Germany. For more information, visit **www.ironmountain.com/digital**.

IRON MOUNTAIN®
120 Turnpike Road
Southborough, Massachusetts 01772
(800) 899-IRON option 4

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For more information, visit our Web site at www.ironmountain.com.