

Introducing LiveVault 5.5

Importance of Backup of Servers

Businesses of all sizes have become increasingly dependent on data for the very existence of the company. Whether it is a large financial institution with transactional data or a 15-person law office with valuable client records, business assets are increasingly represented by the data we maintain.

The business risk of losing this data or losing access for an extended period of time is well documented and well understood. A report from Gartner Group indicates that server backup in the Small and Medium-sized Business (SMB) world is approaching 100%. Continuously expanding regulatory requirements are causing businesses to re-examine current recovery plans.

In addition, there is an increasing awareness that responsible business protection also includes moving data to a safe off-site location. While there are the well-known examples of large-scale disasters such as hurricanes and tornados, greater total risk exists in the less publicized, but equally damaging events such as fire, flood, theft, a malfunction in the sprinkler system or simple human error.

Understanding the need is only the first step in the process. Equally important is determining the right data protection strategy for your business.

Data disaster protection comes in many shapes and sizes. What's best for a large global company may not be right for your business. Developing your data protection strategy does not have to be complicated, but it does need to be carefully thought out. It needs to ensure not just that the data is backed up, but that it is stored safely, and that it is readily and quickly available when restoration becomes necessary.

DOCUMENT INFORMATION

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PRINTED

July 2006

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ABOUT IRON MOUNTAIN DIGITAL

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

Iron Mountain's LiveVault, our automated server backup and recovery solution, received a 2006 CoDiE Award in the Best Storage Software Solution category. LiveVault is offered as licensed software and managed service and features all of the key characteristics on the checklist provided in this paper. In addition, our PC backup and recovery services and products protect and defend data stored locally on desktops and mobile devices.

Reliability of Traditional Backup and Restoration Capabilities

Traditional backup — today's incumbent, de facto method for corporate data protection — has many shortcomings that have become too obvious to ignore. It is increasingly apparent that businesses require new solutions that bring new levels of ease and simplicity. Industry analysts have long noted that traditional backups fail to fully restore data as much as 50 percent of the time, an indefensible level of avoidable risk. After all, which half of data can companies afford to lose — the customer orders, the client records, the invoices? The fact is that virtually all company data is critical to ongoing operations and can not be placed in jeopardy.

Today, many companies are embracing a sophisticated new approach to data protection — leveraging disk-based, online technologies that address the challenges and shortcomings posed by traditional backup solutions.

Online Backup and Restore Benefits

• Disk-based Backup

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

• Continuous Backup

In the event of a disaster, through continuous backup technology you can restore data from moments before the interruption, rather than from the previous evening. LiveVault captures changes as often as every 15 minutes, which means the enterprise can manage its business knowing that maximum disaster loss would be 15 minutes of data, and the restoration can be completed much quicker, further reducing system downtime.

• Automatic Off-site Electronic Vaulting

Even if you're extremely careful about backing up your data, that's only half of the process. To truly protect that data, you must also get it off-site. Too many businesses store backup tapes onsite, needlessly exposing them to risk from fire or flood. Some businesses assign an employee to take the tapes home. While that might work (when they do not forget), what if the employee leaves the tapes in a car, vulnerable to theft or temperature damage? Even if you hire a professional tape-handling service to courier and store tapes on a daily or weekly basis, there's always a period of time when you're unprotected and vulnerable to severe data loss. 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.

• Recovery Where and When You Want It

With online backup and recovery, if you experience a site disaster — or even want to restore data to a different location for any reason — all you have to do is log on to a Web interface, click on the files you want to restore, and specify the location (even one that is thousands of miles away). The restore process begins automatically.

White Paper Purpose

This white paper will describe Iron Mountain's LiveVault 5.5, an automated solution for online backup and restore for small and medium-sized businesses, as well as remote offices with local servers.

INTRODUCING LIVEVAULT 5.5

As defined above, online backup clearly has numerous benefits that make it a superior solution to traditional backup. Iron Mountain Digital understands the benefits of online backup and is now improving the LiveVault solution family with the introduction of LiveVault 5.5.

LiveVault 5.5 – A Better Server Backup Solution

LiveVault 5.5 provides the world's only completely automated end-to-end data protection solution for businesses with distributed servers. Uniquely coupling the speed and ease-of-use of disk backup with the security and convenience of online backup, LiveVault offers the simplest, yet most advanced data protection available. With LiveVault 5.5, 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.

LIVEVAULT KEY CAPABILITIES

LiveVault 5.5 continues to provide all of the primary functionality of an online backup and recovery solution, tuned to enable the most efficient management of your data protection needs.

Backup and Restore

- **Backup** – Unlike traditional backup, that requires taking a static snapshot of the server at a point in time, LiveVault provides continuous backup (snapshots are taken as often as every 15 minutes), so that the time between the last backup set and a server failure is minimized. This means that IT can restore the server to the state it was in just 15 minutes before the loss, rather than days before. In addition, LiveVault monitors changes at the files system I/O level, which means that only the changed regions of each file are backed up, reducing backup time.
- **Iron Mountain Storage** – All backup data is electronically transmitted to Iron Mountain's secure underground storage facility, providing real-time remote storage to protect against losses from disasters at the server location.
- **Restore Speed** – With LiveVault's continuous backup and file-level backup, file restoration is significantly faster than traditional backup restoration. The incremental file-level backup creates more restore points and requires that only changed data is restored, not the entire file.
- **Local and Remote Copy** – LiveVault can be implemented with TurboRestore, a local appliance that retains up to one week of backup data for faster restoration.

Configuration and Management

The enterprise manages its LiveVault implementation through the integrated Web UI, which can be accessed from anywhere the administrator has an Internet connection. The administrator can add or remove servers for backup, request a restore, or manage users.

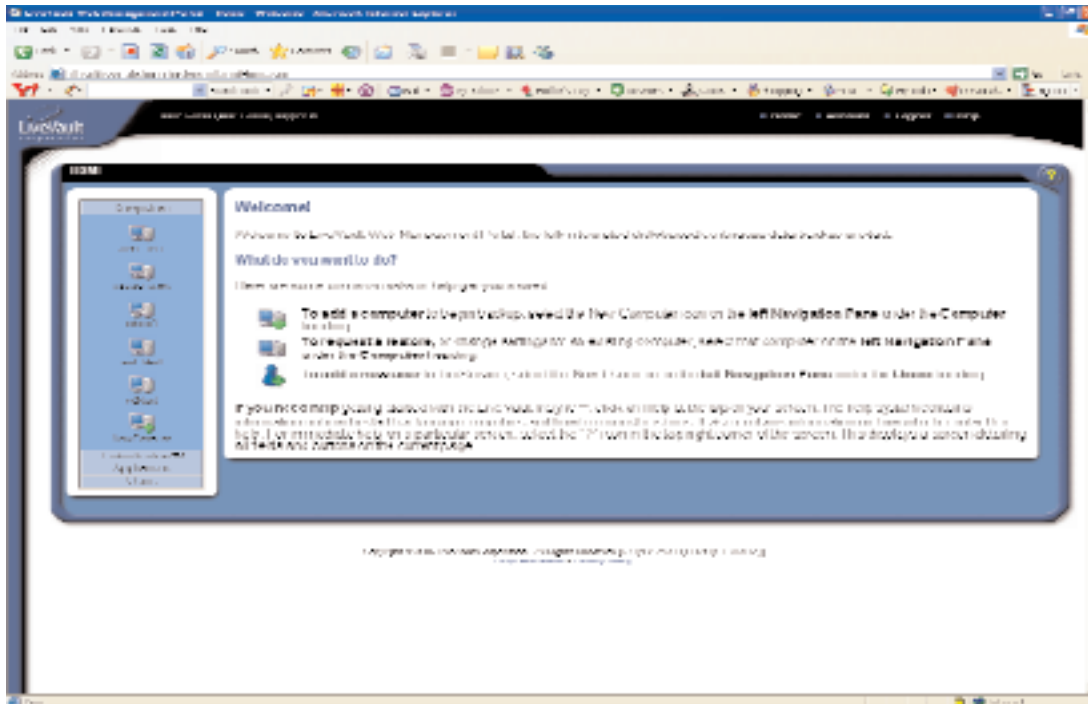


Figure 1: Web UI Home Page

- **Scheduling and Automated Transfer** – For each server that is being backed up, the administrator can configure the schedule for how often data is backed up. LiveVault automatically takes care of transferring the data to the remote storage at the Iron Mountain storage vault. Once the settings are configured, no interaction is necessary for IT staff — the continuous backup is active and available at any point for restoration needs.
- **Retrieve Restores** – The interface can also be used to request a restore. No direct access to the affected server is necessary — from any Internet connection, the administrator can access the UI and request restoration of a file or a complete snapshot of the server from a particular time.
- **Bandwidth Throttling** – The administrator can define bandwidth used for backup by day of week and time of day. This allows the enterprise to manage the bandwidth used in the backup process and make more efficient use of excess bandwidth during off-use hours.

NEW IN 5.5

With LiveVault 5.5, the solution continues to improve. Some key features include:

- **Internationalization** – LiveVault can now support data on foreign language Operating Systems including double byte characters.
- **Disconnected Restore UI** – With TurboRestore, the administrator can initiate a restore from the local appliance without needing an active Internet connection.
- **MS Cluster Support** – LiveVault can now support servers with Microsoft® Cluster implementations, both in active/active and active/passive configurations.
- **Improved Email Notifications** – Backup and restore status tracking and alerts have been enhanced to give the administrator even more insight into the status of the data protection on the configured servers.
- **Additional Operating System Support** – As server Operating Systems continue to upgrade, so does LiveVault. LiveVault 5.5 adds RedHat® Enterprise 4.0, Solaris™ 10, Suse Linux® Enterprise 10, and Windows® 2003 Server R2 to the list of supported operating systems.
- **Web UI Enhancements** – The user interface has also improved, providing faster response time and full access to configuration management from any Internet access point.

ARCHITECTURE

The standard LiveVault architecture configuration is described below:

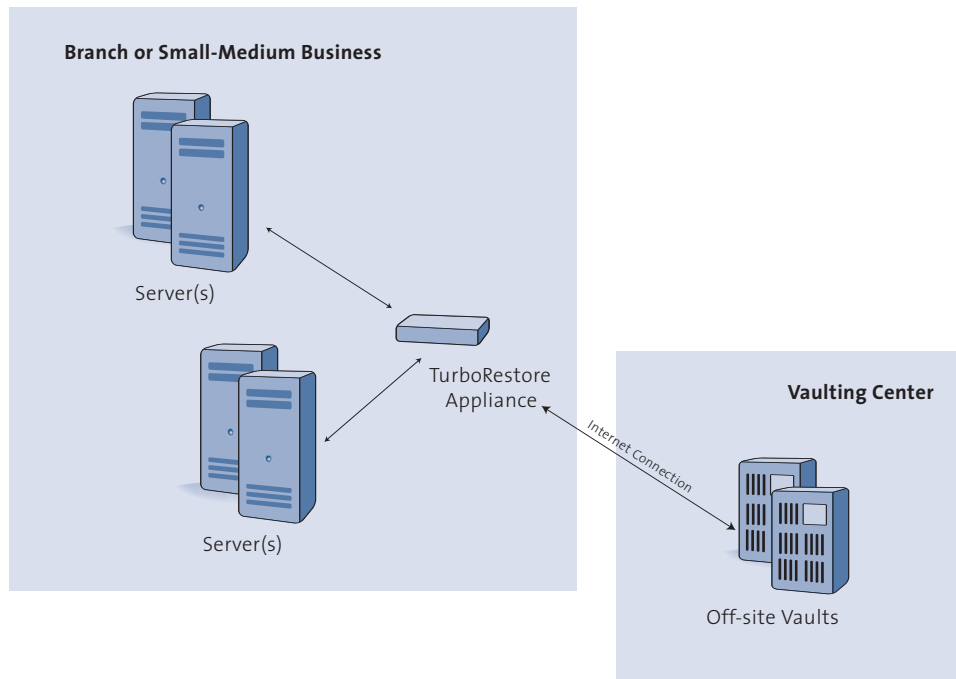


Figure 2: LiveVault Architecture

Server Agent

On each server to be included in the backup process — any server running a compatible operating system and containing less than 400GB of data under a change rate of less than 10% — an Agent is installed. This Agent runs in the system process at the file system I/O and identifies changed disk regions that should be included in each incremental backup. Using the settings configured through the Web management UI, the Agent monitors the identified files for changes and sends those changes for backup. The Agent also plays a critical role in managing the restore process, and must be installed on a new machine before a restore of backup data can be initiated to that machine.

TurboRestore Appliance

Although not required for a LiveVault implementation, the TurboRestore appliance adds significant functionality and speed to the data protection solution. The appliance acts as an interim “mini-vault” to keep a local copy of the backup, thereby enabling faster restoration when necessary. In addition, the appliance acts as a holding spot for the backup data to enable delayed transfer to the remote storage, which enables smarter management of Internet bandwidth utilization.

The amount of data that is stored on the appliance can be managed by the enterprise, and expanded with the addition of additional storage hardware to meet the needs of the number of servers and respective data needs of the enterprise.

Iron Mountain Storage

Via the enterprise Internet connection, all backup data is transmitted to Iron Mountain’s secure underground facility. Using state-of-the-art security, including AES encryption, VPN tunneling and digital certificates, Iron Mountain ensures that the data is continuously stored off-site at a secure, remote facility.

All data is encrypted at the source using 256-bit AES encryption, to ensure that data is secure from the moment it leaves the server, to storage at Iron Mountain’s secure underground facility, through restores back to the systems. LiveVault utilizes SSL security to establish a secure, resilient communication tunnel to the Iron Mountain Data Storage Vault. This ensures that the data is always protected with data encrypted in transit, and while in the secure Vault. The data can only be decrypted using a key the enterprise controls.

Each secure Iron Mountain Data Storage Vault facility features comprehensive physical security, UPS, emergency backup generators and fire protection systems. You can be assured that your backup is consistently executed and your business data is fully protected.

Web Management UI

The entire backup and restore process is managed through LiveVault's user-friendly, available anywhere Web Management user interface. Through the UI, the administrator can identify all policies and configurations, including:

- Identify the servers to be backed up.
- Set the backup policies (what files to back up and how often).
- Manage the backup retention length.
- Initiate restores of single files through to entire servers — even restoring files to a different machine.

CONCLUSION

With LiveVault 5.5, Iron Mountain continues to provide the premier data protection solutions for the needs of small and medium-sized business, as well as remote offices with local servers. LiveVault's continuous data protection, local near-term storage and online remote storage provide a premier mechanism for protecting critical server data — a solution far superior to traditional backup. With LiveVault 5.5, organizations can get lower total cost of ownership, higher reliability, better protection with more data rollback points, and significant ease-of-use with less maintenance. LiveVault 5.5 brings large enterprise disk-based backup features to the small and medium-sized business market, with the security of Iron Mountain storage.



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Iron Mountain Digital, the world's leading provider of data backup/recovery and archiving software as a service (SaaS), offers a comprehensive suite of data protection and e-records management software and services to thousands of companies around the world. For more information, visit our Web site at www.ironmountain.com/digital.