

# Iron Mountain’s Cloud-Based Data Protection for Servers

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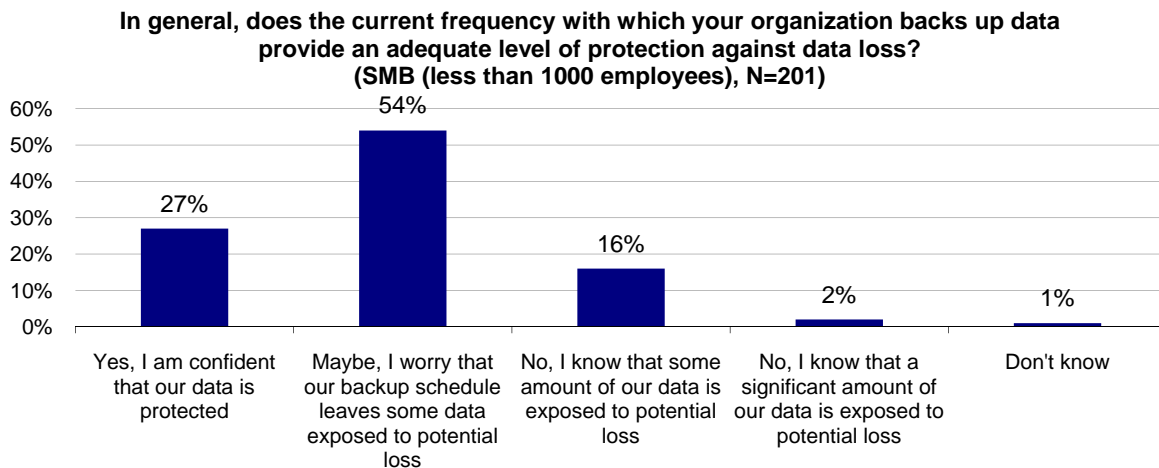
**Abstract:** Lower disk costs and bandwidth-optimized data transfer are fueling disk-to-cloud (D2C) and disk-to-disk-to-cloud (D2D2C) strategies. Iron Mountain’s LiveVault enables on- and off-premises data protection, providing small and medium-sized businesses (SMBs) and the remote and branch offices (ROBOs) of any size organization with an alternative to tape-centric backup and recovery.

## Overview

SMBs and ROBOs have many of the same requirements as larger organizations—just on a different scale. Companies of all sizes have come to rely on digital content to conduct business. E-mail, Web sites, databases, financial applications, and collaboration platforms such as SharePoint are standard fare—even at smaller sites. With this dependence on electronic communications, commerce, and collaboration, downtime tolerance is low. In fact, ESG research found that nearly 60% of smaller companies could tolerate four hours or less of application downtime before experiencing significant revenue loss or other adverse business impact.<sup>1</sup>

To minimize risk of downtime, best practices suggest making copies of data—including an offsite copy—to facilitate recovery in the event of an interruption. As seen in Figure 1, ESG research found that even though backup is performed, only 27% of SMBs are confident that data is protected.

FIGURE 1. CONFIDENCE IN SMB DATA PROTECTION STRATEGIES



Source: ESG Research Report, *Data Protection Market Trends*, January 2008.

Organizations that rely on once-per-day, tape-centric backup strategies may be least confident. Tape-based backup/recovery may also introduce new issues including less-efficient, more operator-intensive processes (more time to complete backup or recovery, more cost, and introduction of human error).

<sup>1</sup> Source: ESG Research Report, *Data Protection Market Trends*, January 2008.

Two external factors exerting pressure on data protection are data growth and the economy. Storage capacity growth rates may exceed companies' ability to keep pace—affecting IT's capacity to complete backup jobs within the prescribed backup window or recover data rapidly. Economic factors may constrain capital expense budgets or restrict SMBs' or ROBOs' ability to maintain an adequate level of IT resources to oversee operations and protect data.

Due to these factors, requirements for data protection have evolved:

- Backups must be performed without impacting normal business operations
- Data protection processes should be automated wherever possible
- Recovery of a single file or a whole site should be simple
- Both physical and virtual servers should be protected
- Backup for multiple sites should be centralized
- Steps should be taken to comply with privacy, retention, and eDiscovery requirements
- Backup/recovery solutions and processes should be efficient

Iron Mountain's LiveVault can address many of the challenges and requirements SMBs and ROBOs face today. LiveVault is an online backup service that enables a disk-to-cloud (D2C) or disk-to-disk-to-cloud (D2D2C) backup and recovery strategies. LiveVault automatically and continuously backs up data over the Internet or private network connection to a remote and secure mirrored Iron Mountain facility.

## Analysis

Cloud-based backup and recovery can be designed in a few ways. Third-party backup software delivered as a service is one approach. IT accesses an application hosted and operated at a central location via a Web interface and takes advantage of a shared, scalable infrastructure. D2C transfer of data occurs at user-defined intervals. Another approach is to use a backup service, while also maintaining a duplicate on-premises copy on disk. A D2D2C transfer of data is performed, offering a local copy of data for operational recovery and a cloud copy for disaster recovery. Often, the cloud provider's data center facility, infrastructure, staff, and processes are a step above what may be available at the primary site.

Iron Mountain offers two solutions that fit the D2D2C model. Through a partnership with Microsoft, Iron Mountain has CloudRecovery. Microsoft DPM has been newly enabled to back up to cloud-based storage, in addition to local disk and tape. Rather than build out a cloud infrastructure itself, Microsoft elected to partner with Iron Mountain, a vendor that has been engaged in SaaS and cloud services for years, which recently introduced its aptly-named CloudRecovery service.

Iron Mountain's LiveVault protects Microsoft Exchange, SQL applications and Windows, Linux, and Solaris servers. A lightweight agent installed on protected servers compresses and encrypts data and facilitates continuous backup over a secure communication link to the cloud—in this case, an Iron Mountain data center. Data can be transferred directly to the cloud or through a LiveVault TurboRestore Appliance to a remote Iron Mountain facility. Data is also sent to a duplicate LiveVault Data Center as a failsafe mechanism. After the initial backup, only changed blocks are transmitted, which minimizes bandwidth consumption. Policies and schedules are managed via the LiveVault Web interface. Recovery is accomplished in a few ways: directly from the cloud (small file sets), from the local TurboRestore Appliance (larger file sets, such as a whole server or site), or via a Media Restore device (bulk data transfer for whole server or site recovery).

LiveVault features addressing the data protection challenges include:

**Flexibility in implementation.** LiveVault can be configured in D2C or D2D2C scenarios to meet the cost and performance needs of the organization. Off-site, cloud-based storage provides inherent DR and may improve response time for single or small set of files recovery over tape-based approaches. Local disk accelerates backup performance and improves recovery time, especially for larger recoveries.

**Continuous data capture.** LiveVault operates in an automated fashion, “collecting” and transferring data continuously. Unlike once-per-day, scheduled backups, a continuous approach ensures that the most up-to-date versions of files are backed up, improving recovery point objectives and minimizing data loss in the event of an interruption. It also eliminates the need for a backup window since ongoing backup occurs unobtrusively in the background.

**Centralized management.** Management through a single Web interface allows for local or remote and central management of distributed sites such as ROBOs. This capability can facilitate backup consolidation and introduce operational efficiency.

**Compliance and litigation support.** In addition to the physical security at Iron Mountain’s secure facilities, LiveVault employs powerful 256-bit AES encryption and user access control to prevent unauthorized access to data and retention settings to aid in meeting regulatory or corporate mandates. Iron Mountain also offers LiveVault DiscoveryAssist—a method of indexing and searching of backup data—to rapidly gain access to and retrieve data stored in LiveVault repositories to support Iron Mountain’s Stratify eDiscovery search/review applications.

**Capacity and bandwidth optimization.** LiveVault introduces network efficiency in a few ways. First, LiveVault only captures and transfers changed blocks during backup. Also, data is compressed at the source system before data is transmitted over the LAN or WAN. Finally, user-specified settings control bandwidth usage during specific windows of time.

**Scalability.** In addition to capacity optimization, LiveVault online backup offers elasticity in storage capacity, allowing organizations to scale the amount of required capacity up or down. Features such as retention settings and lifecycle management of data deliver additional flexibility in managing online backup capacity—and costs.

Iron Mountain’s LiveVault is a solid solution for SMBs and ROBOs of larger organizations. Areas the company should consider addressing include server virtualization and additional application support. Companies of all sizes are realizing the benefits of server consolidation via virtual server technology. LiveVault can back up a virtual machine today, but not the virtual environment. A solution that can more efficiently back up and recover data for both physical and virtual machines would be preferred over multiple management approaches. While LiveVault covers the most popular Microsoft applications, Iron Mountain might consider extending application-aware support for SharePoint and Oracle databases.

## The Bottom Line

Iron Mountain’s online backup solution is not unique; however, the company’s tenure in the online backup segment, as well as its long-term reputation as a trusted partner for retention services around the world, make it stand out. Iron Mountain’s experience and industrial-strength technology separate it from newly-minted consumer- and commercial-grade solutions. For example, Iron Mountain is one of the few commercial- or consumer-grade online backup solutions to offer service level agreements (SLAs).

While the transition from tape- to disk-based backup is part of many SMBs’ and ROBOs’ backup modernization strategies, leveraging a cloud-based service, such as Iron Mountain’s, can provide savings in administrative time and capital budgets. Capital investments in and management of data protection infrastructure is removed, often making a service approach more palatable for budget-constrained organizations. Even if organizations are skeptical about an all off-premises strategy, LiveVault’s D2D2C offering can help ease SMBs and ROBOs into the cloud.