

LiveVault Online Backup Service is a managed service providing continuous online backup, recovery, and electronic vaulting. The most important benefit of this managed service is to deliver complete peace of mind to the customer, through the knowledge that their data is always secure, and available when needed. With LiveVault, that benefit is achieved with the Service Operations Center (SOC). The SOC monitors all critical systems, and takes a unique proactive approach to provide a wide range of monitoring and troubleshooting capabilities.

The success of LiveVault Online Backup Service is dependent upon the reliability of the underlying technology used in its infrastructure and the strength of the organization that stands behind it. In considering this managed service, it's important to know:

- *How reliable are the networks and the systems that back up and vault my data?*
- *Who manages, monitors, and maintains this infrastructure?*
- *Does the service monitor the whole infrastructure, all the time?*
- *If the network goes down or hardware fails, what happens?*
- *If I have a question or problem, can I get immediate help?*

LiveVault Online Backup Service addresses all of these concerns with its LiveVault Service Operations Center. The SOC proactively monitors all critical systems 24 hours a day, 7 days a week, including: protected customer servers, Internet connections and gateways, LiveVault backup servers, and LiveVault web servers. In addition to monitoring, maintaining, and troubleshooting the entire LiveVault infrastructure, the SOC also monitors the status of backup and restore operations in progress.

The SOC provides world-class technical operations and customer support with:

- *Complete infrastructure coverage*
- *Full range of monitoring, troubleshooting, installation, and restore support services*
- *Best-in-class network diagnostic and troubleshooting tools and technology*
- *State-of-the-art operations center with complete redundancy and fail-over capability*
- *Trained, experienced, and dedicated staff*
- *Detailed escalation and crisis management policies and procedures*

Operations Overview The basic mission of the LiveVault Service Operations Center is to be the eyes and ears of the customer, so that every customer is secure in the knowledge that someone is continuously monitoring backup and restore operations and that critical data is always protected. The SOC is there to ensure that all functions run as smoothly and transparently as possible. Top-of-the-line hardware, state-of-the-art software, and regular preventive maintenance assure peak performance and availability. If problems do arise, the SOC identifies and manages them to a prompt and satisfactory resolution, often before the customer is even aware that the problem existed.

Service Operations Center

SOC Responsibilities The SOC has a wide array of responsibilities and competencies. One of the most important is its ability to monitor Internet traffic and connectivity, Wide Area Networks (WANs), and IT infrastructure. Components the SOC monitors include:

- **The Internet:**
 - *Data transmission during backup and restore operations*
 - *Customer access to MyLiveVault™, the web management interface*
 - *LiveVault SOC access for monitoring and troubleshooting*
- *LiveVault gateway servers, located in the Iron Mountain data center, which run LiveVault Internet gateway software*
- *LiveVault backup servers, located in the Iron Mountain data center, which capture byte-level changes and manage the actual backup process*
- *LiveVault web servers, through which customers can check the status of their data protection via MyLiveVault™*
- *LiveVault intranet web servers, through which the SOC monitors customers' data protection*

Additionally, the SOC is customer service oriented. Along with troubleshooting and technical skills, SOC personnel have years of experience with the interpersonal and communications skills necessary to manage the technical details of a crisis.

Monitor the Infrastructure The SOC proactively monitors the entire LiveVault Online Backup Service infrastructure. This includes the secure connection through the Internet, the LiveVault Internet gateway, the LiveVault backup servers in the data center, and the LiveVault web servers. Most monitoring activity is concerned with detecting and diagnosing Internet connectivity problems, firewall and gateway issues, and hardware or software problems.

The SOC's primary monitoring tool is Micromuse's Netcool® suite. This industry-leading software provides real-time updates on network faults and service availability. Netcool is used by many of the world's leading telecommunications and Internet service providers to ensure the uptime of large-scale, network-based customer services and applications. Netcool software quickly alerts operations staff of problems so that immediate action can be taken to resolve them.

The SOC supplements Netcool with its own monitoring tools. The Enterprise Monitoring Tool (EMT) monitors the status of LiveVault servers in the data centers, and the LiveVault Admin Tool is used to diagnose LiveVault server problems detected by EMT.

Troubleshoot Problems The SOC troubleshoots any problems that may be detected and serves as a point of escalation for issues that require involvement of other parties. When an alert occurs, a LiveVault service operator first attempts to determine the precise nature of the problem—whether it is network, hardware, or software related. Depending on this determination, the SOC then manages the problem to resolution, escalating if necessary to other appropriate parties.

Since all LiveVault servers consist of Dell hardware, the SOC uses Dell OpenManage™ to access those LiveVault servers remotely and find out if the servers are operational. With this and other best-of-breed troubleshooting tools, such as HP OpenView, SOC service operators can troubleshoot all critical infrastructure components.

Restore Operations Another important function of the SOC is to monitor and manage customer restore operations. At any time, a customer can initiate a restore operation through MyLiveVault or by contacting Customer Service. Whenever a restore request is initiated, the SOC is alerted and begins to monitor and manage it for optimum results. For every restore initiated, the SOC automatically determines the best and fastest possible delivery mechanism depending on file size, and lets the customer know if they should use an Internet restore for smaller files, or overnight delivery of a CD or NAS for very large data sizes.

For all restore operations, customer data is encrypted and protected using the latest digital technology, regardless of whether the restore is delivered over the Internet or by physical media. Moreover, data center personnel who handle tapes and other media are bonded, and only perform tasks that the SOC has pre-authorized. The SOC is responsible for coordinating with the data centers to get the correct tapes and ensure that the NAS or CD units are correctly written, protected, labeled, and shipped.

SOC Facilities The LiveVault SOC is designed and equipped for maximum security, reliability, availability, and performance. The primary SOC facility is housed in a safe and secure environment, located in LiveVault's Marlborough, Massachusetts corporate headquarters, in the heart of New England's "technology corridor." This site is protected by a security system with round-the-clock monitoring. Dedicated video monitors display signals from cameras facing all entrances that have access to the SOC. In addition to SOC site security during normal operations, there are provisions for operation of a virtual SOC—including a redundant secondary operations center—in case power outages, bad weather, or other emergency temporarily impedes travel or interrupts operations at the primary site.

In addition to a safe and secure physical environment, all LiveVault hardware and software is carefully selected for optimal performance and reliability. All LiveVault servers use certified Dell hardware. This means that every Dell workstation and server in the network has been tested and certified by Dell to ensure optimum performance and reliable operation of LiveVault products and services on this hardware. LiveVault software is designed to recover automatically from network failures, through a connection integrity feature that automatically restores the secured connection from the customer server to the LiveVault data center if a network interruption occurs. After a network interruption, a job that was in progress picks up where it left off. For restore operations, multiple levels of redundancy, active testing and fault-tolerance ensure that the file version a customer is looking for is available and correct.

The SOC contains workstations, projection screens, security monitors, and a control console to provide a complete operations support environment. Three large projection screens display video inputs from a variety of sources, including any of the management

workstations, satellite TV signals, and other inputs. The main center screen is typically reserved for displaying and tracking Netcool alarms. This allows operators to drill down and use other utilities to diagnose and/or troubleshoot a problem while continuing to monitor the alarm status on the main projection screen.

SOC Organization and Staffing By monitoring critical systems 24 hours a day, 7 days a week, the SOC ensures that customer data is always safe, always backed up, and always available for immediate restore. The SOC is staffed by teams of experts who combine specialties in network technology with strong customer support skills. As a proactive team, these experts know how to diagnose and troubleshoot problems, when and where to escalate them, and how to communicate with customers. The SOC personnel are also armed with an extensive array of custom-developed policies and procedures, providing an appropriate detailed plan for them to follow in every conceivable scenario.

LiveVault's Total Service Strategy The Service Operations Center is a key component of LiveVault's total service strategy, in which the SOC coordinates with LiveVault Customer Service, engineering, and product organizations, with Iron Mountain data center personnel, and with external network carriers and equipment vendors to provide comprehensive customer service and protection through every stage of LiveVault Online Backup Service. In providing total customer service and support, Customer Service may escalate a customer request to the SOC that, in turn, may involve other LiveVault or outside organizations to resolve the issue. Whenever an issue is escalated, the SOC takes full responsibility, and manages the crisis by working its resources until the issue is fully resolved, while sending regular status updates to the customer.

Continuous Coverage, Comprehensive Support, Complete Protection In selecting an Internet-based online backup service, two major considerations are its technology infrastructure and its support organization. Realizing that an online backup service requires the complete reliability of these two components, LiveVault's Service Operations Center is dedicated to maintaining the health and well-being of the LiveVault Online Backup Service infrastructure, and providing continuous, real-time data protection and total peace of mind for customers.

LiveVault's Service Operations Center is part of a total service strategy designed to provide comprehensive data protection and customer service. With round-the-clock operation, trained and dedicated staff, well-defined escalation procedures, coordination among LiveVault and third-party support organizations, state-of-the-art facilities, best-of-breed equipment and tools, and complete operational redundancy, the LiveVault SOC ensures high availability, continuous protection, and timely support under all conditions to ensure that your data is always protected and always available.



www.livevault.com
LiveVault Corporation
201 Boston Post Road West
Marlborough, MA 01752 USA

