High Availability Low Down

Rising data loss, downtime and security breaches can sink customer trust, company reputations and the bottom line.

It's impossible to dispute the power of information technology. It has made it possible for organizations to manage business operations in a way that wasn't imaginable only a few years ago.

In fact, in today's fast-changing global environment, the ability to easily tap into data — and leverage it to maximum advantage — frequently determines whether an organization succeeds or stumbles. And nowhere is the challenge greater than in the business continuity arena.

Every business situation is unique. Therefore, business continuity and high availability solutions must be based on specific needs and the business costs of an outage. This includes careful evaluation of IT operational risk, potential impact of disruptions, regulatory compliance and IT service levels.

The upshot? Ensuring high availability through fault tolerance, disaster recovery and disaster tolerance is vital. Managing for planned and unplanned outages is imperative. A well-conceived disaster recovery plan and the ability to provide high availability go a long way toward achieving a predictable and stable IT framework.

High Availability Essential to Training Firm

TRACOM GROUP, a Denver-based training and leadership program company, calls many of the world's largest Global 2000 organizations clients. Reading like a list of business "Who's Who," these firms include ConocoPhillips, Accenture, General Electric and Starwood Hotels and Resorts.

The firm is the creator of the SOCIAL STYLE interpersonal effectiveness model, a behavioral-based program designed to help businesses enhance individual and team success. The ultimate goal is to garner a more productive and higher performing workplace, notes David Collins, TRACOM GROUP's vice president and general manager.

"We take our SOCIAL STYLE model and build training curriculums around it," Collins says. As part of its offerings, TRACOM GROUP delivers global online surveys and training in more than a dozen languages to companies and organizations in 40 different countries.

Like many firms operating on the worldwide stage, data availability along with business continuity play an important role in
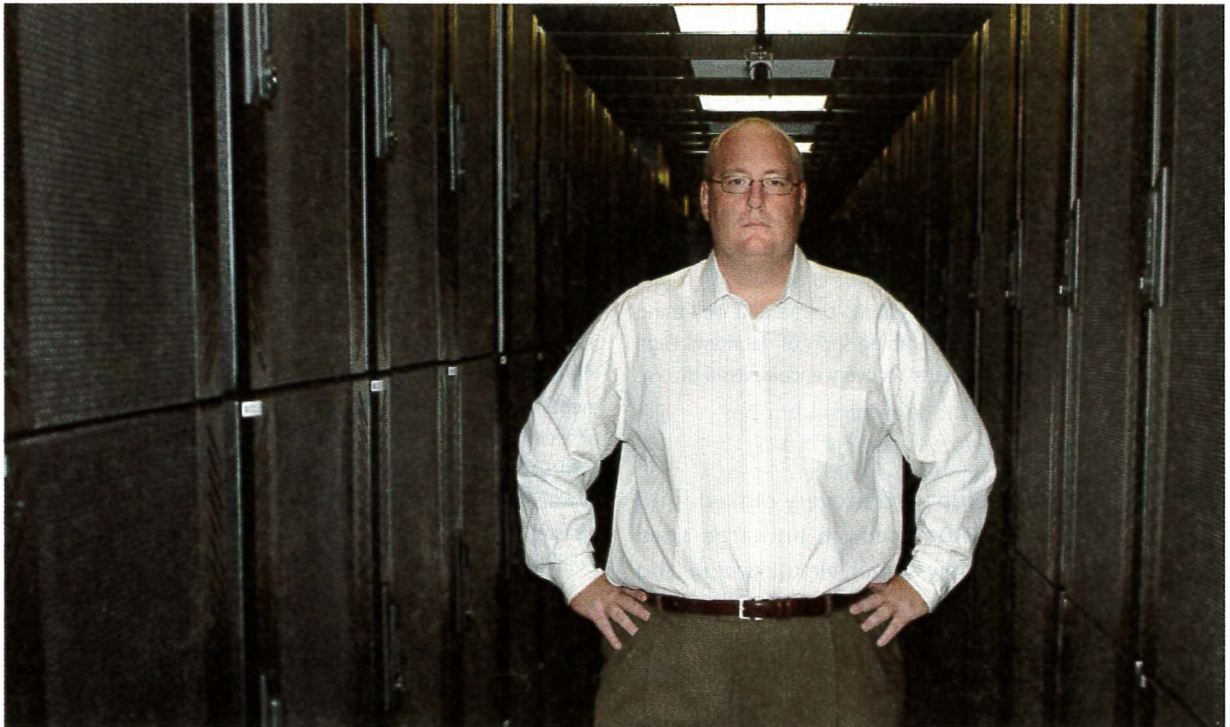
TRACOM's strategic approach. In fact to enhance efforts in these areas, the company recently undertook a significant investment in high-profile, best-of-breed business continuity processes.

Continuity on a Global Scale

Organizations supporting worldwide operations are dealing with expanding compliance requirements while managing growing data stores. This makes high data availability and speedy recovery from downtime essential to avoid being at risk with regulatory guidelines, customer relationships and revenues.

Bolstered business continuity efforts at TRACOM GROUP — in some ways — were driven by just that — several large global clients' interest in meeting compliance requirements. "We get frequent requests from information security groups at our largest customers and prospects about business continuity planning, business impact analysis and recovery test findings," Collins notes.

"A large part of our customer solution involves an online technology platform used

to deliver a SOCIAL STYLE profile as well as a library of training and development materials," he adds. The mission-critical survey platform, which is referred to as TRACOM MAX, supports the firm's global and high-volume initiatives.

To fortify continuity — as well as revenue streams — the firm recently moved this platform to a third-party data provider, Latisys. According to Collins, the data center and collocation provider offers TRACOM GROUP a managed, hosted service including high availability, full redundancy and SAS 70 auditing. "What we are looking for is 99 percent-plus uptime for our customers."

Data Center Resilience

In the Latisys' Denver-area data center, TRACOM GROUP is running a virtualized server environment offering the benefits of consolidation, enhanced reliability, better performance and cost savings. The virtual machines also provide a more efficient test and development environment.

"What we've done is provide a staging environment that is fully redundant and an exact replica of our production environment," Collins says. "We use the two environments as part of a development and testing process offering system developers analysis in a secure virtualized atmosphere."

For added resilience in the data center production environment, TRACOM GROUP uses load balancing. The technology assists in accommodating higher workloads of traffic and offering faster results. "In addition, an alternative server can take over if a server should crash or we simply need to take one out of service for maintenance," Collins adds.

Replication, mirroring and backup services are also supplied by the firm's data center provider. "We have a support contract to accommodate the high availability demands of mission-critical applications and data," Collins adds. "In a very real way this allows us to focus on running our business and meeting customer needs, not managing technology."

Best-of-Breed Technology

TRACOM GROUP is relying on the cloud environment for some mission-critical third-party applications. For example, customer relationship management (CRM) functions are supplemented by Salesforce.com. "We feel that software as a service can offer a higher level of availability and reliability than sometimes a business can provide on its own." Collins notes.

There's no question that TRACOM GROUP's international client base strongly influences its need for highly effective continuity practices. "Consider that a manager going through one of our training programs may be located in San Diego, while her boss is in London and other colleagues in the village of Kuala Lumpur, Japan or Chicago," says Sean Essex, TRACOM's director of marketing. "Our availability and uptime must be at the same high level anywhere in the world."

According to Essex, TRACOM GROUP is now better positioned to quickly identify potential business-limiting situations and outages and take steps to minimize their impact. In addition, company and client data is now managed in a way that exceeds all global legal requirements and operational best practices.

Minimize Risk; Maximize Edge

High availability is a core issue for organizations. A cohesive HA strategy ensures that the right hardware and software systems are used. Ultimately, organizations that build a framework for high availability and disaster recovery are better positioned to minimize risk and maximize their competitive edge.

However, keeping systems online and operating continuously can be nothing short of daunting. High availability and disaster recovery encompass a diverse

Improving data backup and recovery ranked third in top priorities for 2010 at medium- and large-sized companies, behind only server virtualization and information security initiatives.

Source: ESG Research Report, 2010
Data Center Spending Intentions, January 2010

range of technologies, including data mirroring, clustering, data replication, virtualization, backup systems and data center design.

Organizations embracing high availability must assemble the right mix of components and build in redundancies. Simply put, an effective business continuity initiative touches almost every corner of an organization.

Make no mistake, downtime can happen anytime. And in today's 24x7x365 world, it can prove entirely devastating. If a company grinds to a halt, customers and business partners may look for others to transact with. What's more, an enterprise may find itself hemorrhaging dollars and coping with lost productivity.

Studies show that between 25 and 40 percent of companies that experience a failure never reopen after a failure or disaster. At larger firms, a system failure can result in millions of dollars in losses each and every hour.

"A well-conceived disaster recovery plan and the ability to provide high availability go a long way toward achieving a predictable and stable IT framework," points out Bob Laliberte, an analyst for Enterprise Strategy Group. "Disaster recovery is increasingly complex. But the right systems and strategies can greatly reduce risk."

Beyond Backup

At the most basic level, high availability is defined by a system design that ensures a preselected level of operational continuity during a given measurement period. For a financial services firm or a medical center, high availability might translate into a so-called "six-nines" operational level or 99.9999 percent.

For a manufacturing firm or sales-based organization, 95 percent availability might be acceptable. Even within an organization, different applications and services may require different levels of availability. An enterprise might find that six nines availability is required for one system but 90 percent availability is perfectly adequate for another.

Recovery time is crucial within a high availability environment. Therefore, it involves far more than a single system or technology. Moreover, adding components to an IT infrastructure often complicates the ability to achieve high availability — in addition to ratcheting up costs. Ultimately, disaster recovery and high availability force an enterprise to examine the value and lifecycle of its data.

"In the past, IT leaders could easily divide data into mission-critical and non-mission critical categories," observes Dipesh Patel, senior product marketing manager for CommVault. "But today people demand that data is available whenever and wherever they happen to be."

Automating processes and installing the right systems is a key to success. For many firms, it's not adequate to simply replicate data and store it at a secondary disaster recovery site. Although mirroring or replicating data protects it, the process doesn't help an organization recover any faster after a disruption.

As a result, the need for automated recovery is growing and many companies now recognize that the cost of a more robust and expensive high availability infrastructure pays big dividends. Most important, it negates the potential catastrophic cost of downtime.

High Availability Components

Choosing the right technology components is vital. Dan Lamorena, senior manager for Storage and High Availability at Symantec believes that automation is paramount. "The cost of downtime usually justifies the purchase of high availability clustering," he says.

A big advantage to this approach is that clustered file systems allow multiple servers to access the same storage. This means that an organization can avoid the necessity to go "online" with its storage when switching a failed application over to another server. "Failover times are limited to the length of time it takes to restart the application," he notes.

Symantec's Veritas Cluster Server is a leader in cross-platform clustering functionality. It offers central management tools, automated failover, features to test disaster recovery plans without disruption, and advanced failover management based on server capacity.

The cluster software also provides availability of mission-critical applications and databases during planned and un-

planned downtime. It does this by monitoring the status of the application and failing it over in the event of an outage or disaster.

Others offer equally compelling solutions. CommVault offers leading-edge products for HA environments, including replication, deduplication, virtualization and cloud services. These applications run within a single code base that offers superior integration and interactivity, Patel notes.

The firm's replication solution, for instance, helps businesses meet service level agreements for protection and recovery by enabling the creation of secondary copies of production data quickly and efficiently — through a combination of host-based replication and snapshot technologies. These real-time data replication copies can be accessed immediately for fast recovery, used to create multiple recovery points or to perform traditional backups without impacting server performance.

Data storage is also essential. The strategy to design a unified storage solution rich in features and high in flexibility that is crucial to meeting service-level criteria, says Teresa Worth, senior marketing manager, Enterprise Storage at Seagate Technologies.

Seagate Technology offers the Pulsar, Savvio and Constellation lines of hard drives. The firm's Pulsar Solid State Drives offer ultra-high reliability, power loss protection that minimizes the risk of data loss during a power failure and a SATA 3Gbps interface that supports current blade server chipsets.

Other vendors also offer a variety of high availability and disaster recovery solutions, ranging from tape storage to virtualization software. Among them: Cisco Systems, Citrix Systems, EMC, Hewlett-Packard, IBM and VMware. EMC Data Domain offers deduplication storage systems that dramatically reduce the amount of disk storage required for high availability.

To be sure, the need for robust business continuity and high availability systems will continue to gain momentum. In a data-centric world, a growing number of IT executives recognize that there's no margin for error and a robust highly available environment offers numerous advantages. ■

Visit CDW.com/solutions to learn more about technology for business continuity.

Key
HIGH AVAILABILITY
Components

Companies looking to leverage business continuity and high availability to maximum advantage typically focus on several key factors:

Redundant components. An organization must have more than backup and failover servers in place to ensure high availability. There's also a need for redundant fans, power supplies, storage subsystems, memory, network interface cards and more.

Mirrored servers. The technology provides a way to automatically maintain multiple copies of data on different servers so that it's possible to recover quickly from a hardware failure. Mirroring is highly fault tolerant and provides a high level of performance at all times — typically through the use of Level 1 redundant array of independent disks (RAID).

Clustering. High availability clusters rely on linked computers to function like a single machine. They eliminate a single point of failure. If clustering software detects a problem it will start an application or service at another site. The result is faster performance and a more seamless recovery process.

Load balancing. This technology distributes the processing load over two or more computers. Through the use of multiple systems, it's possible to improve reliability through redundancy.

Duplicated data centers. The ability to use identical data centers can go a long way toward ensuring the highest level of availability.

Virtualization. The technology allows for dissimilar hardware and less of it at the disaster recovery site while facilitating easier failover and recovery. By creating an abstraction layer, an organization can utilize servers more efficiently.

WAN optimization. Increasing the speed of access to critical applications and information via WAN optimization helps speed backups thereby facilitating point objectives. WAN optimization can also speed the recovery process and reduce the time needed to return to normal operations.