In an increasingly digital world, it’s clear that business continuity is no longer an option. Keeping systems running 24x7 and ensuring that data reaches its intended destination — precisely when it’s needed — is the heart and soul of a business.

However, it’s also true that in an era of tight budgets and limited resources, organizations cannot toss unlimited money and time at a Business-Continuity (BC) initiative. “Costs are a significant issue,” states Bob Laliberte, analyst for Enterprise Strategy Group, Milford, Mass. “It’s important to develop a viable strategy.”

These days, effective business continuity spins a tight orbit around a number of tools and technologies. These include virtualization, data replication, data deduplication, mirroring and instant failover, along with a variety of storage systems and devices.

But successful business continuity also requires a good deal of thinking about Recovery Point Objectives (RPO), Recovery Time Objectives (RTO), data tiers, collocation facilities, network infrastructure and bandwidth, and, possibly, offsite backup.

In the final analysis, superior preparation and execution allow an enterprise to leverage — and maximize — existing investments. And at the same time the firm can gain greater functionality and optimize Return On Investment (ROI).

Business as Usual
Over the last decade, business continuity has evolved from a good idea into an absolute necessity. Any downtime or interruption in systems and services can result in lost dollars and lost opportunities.

The events of Sept. 11 and Hurricane Katrina have forced numerous organizations to examine — and in some cases reexamine — Disaster-Recovery (DR) strategies. However, the reality is that not all interruptions are the result of earthquakes, floods, fires, hurricanes and human-caused events.

Disruptions on the Internet or key servers can take a toll on business revenue. The same holds true for power failures. They can force an organization offline for anywhere from seconds to hours.

It’s no small problem. A 2006 CDW survey of 420 IT managers found that 56 percent of respondents cited improved business continuity/disaster recovery as a key consideration. Moreover, 62 percent of those surveyed reported that optimization is essential because it drives business-process improvements.

What’s more, simply deploying new hardware and software won’t necessarily get the job done. It’s essential to take a more holistic and comprehensive approach to operating a business and ensuring system and data availability.

Make no mistake, the cost of downtime can be crippling, if not fatal. One study conducted by Contingency Planning & Management magazine found that 40 percent of organizations experiencing a shutdown for three days failed within 36 months.

Even an hour or two of downtime, depending on the business and the industry, can result in hundreds of thousands of dollars — sometimes millions — in losses. Financial services, e-commerce, transactional hubs, information services portals and government sites are among those most heavily impacted by service interruptions and data loss.

RTO RPO Strategy
Developing a successful strategy is no simple task. Business continuity is more than the sum of technology components.
Notes

John Bennett, worldwide director for Datacenter Transformation Solutions at Hewlett-Packard: “It touches on many dimensions. What are the risks to the business? What's the impact on the business if these risk events take place? And then, how does that roll up into costs, both qualitative and quantitative?”

Business continuity can take many different forms, he says, depending on an organization’s RTO and RPO objectives. “Not all services require the same level of protection,” Bennett adds. “It is vital to understand how long of an outage you can tolerate.”

In fact, RPO and RTO are the starting point for mapping out costs and benefits. The former is key for identifying the point at which data is recoverable. For one organization, this might translate into two hours and for another it might mean zero seconds.

At the most basic level, RPO represents an acceptable loss in the event of a disaster or service interruption. Everything from the point of failure back to the recovery point objective is lost or must be recovered manually.

RTO, on the other hand, represents the time period required to get systems or applications back in service without a major disruption to the business. The RTO essentially serves as a goal or desired benchmark and is linked to business processes (and not the actual resources required) to recover missing data.

Typically, an organization conducts a detailed Business Impact Analysis (BIA) up front and has a plan in place for dealing with a disaster, interruption or service problem. As Laliberte puts it: “Everything ties into RPOs and RTOs. It’s the starting point for understanding costs and return on investment.”

Of course, data comes in a variety of shapes and forms. Within any organization, RPOs vary for different types of applications and information, including e-mail, desktop applications and enterprise software.

As a result, developing data tiers and mapping out various approaches and options — particularly when multiple data centers enter the picture — is key to driving down costs. Likewise, it’s essential to optimize the entire environment so that data can flow across the network infrastructure without lags, interruptions and disruptions.

**Virtually There**

For many organizations, the road to lower costs and better performance is paved with virtualization technology and tools. “Traditionally, disaster recovery and business continuity have revolved around building out identical hardware and systems at the recovery site or failover location,” explains Jon Bock, senior product marketing manager for VMware.

“It has been necessary to have the same operating systems, drivers and registries in order to ensure complete data integrity,” he adds. Moreover, in the past, recovery often meant rebuilding the Operating System (OS) and reinstalling and rebuilding applications manually — something that can devour money and resources.

In a virtualized environment, on the other hand, software runs independently of hardware. This allows organizations greater flexibility and to create more options about how to set up an entire business-continuity infrastructure.

Businesses are usually able to consolidate systems and utilize existing servers and storage devices more efficiently. Typically, utilization rates for servers rise from 30-to-50 percent to as high as 90 percent.

Bock says that virtualization users also report costs savings as great as 50 percent. “It is eliminating the need to constantly buy and provision new servers,” he says.

Although much of the action resides on the server virtualization side of the equation, there’s also a growing focus on storage virtualization. It can help an enterprise manage disk space more efficiently and boost utilization levels for tape, Network Attached Storage (NAS), Storage Area Networks (SANs) and other components.

Instead of relying on physical disks, it’s possible to create logical spaces using virtual mapping techniques. The address mapping occurs between a physical disk and a virtual disk (vdisk). Simply put: The virtualization software or device manages the view of the entire mapping with metadata.
According to Bock, many users of storage virtualization that lack full-fledged replication capabilities are still looking to reduce RTO and RPO windows. “Traditionally, that has meant completely reconfiguring storage,” he says.

Indeed, IT would have to move data across physical machines and to a new device. This is something that requires scheduling, enduring systems offline and the actual process of managing the data migration.

“But with storage virtualization, you can undergo the process without disruption and without downtime,” Bock says. “Storage virtualization can make it a lot easier to handle the migration process.”

Bock says that more than half of all VMware customers are using virtualization to assist with business continuity. And that figure is likely to rise in the months and years ahead.

While cost savings are a key consideration, organizations also realize many direct and intangible business gains, including improved availability and business continuity. “Significant business gains often result,” he adds. “As a result, we are seeing virtualization become a key part of the business-continuity platform.”

**Rapid Recovery**

Once an organization has a solid business-continuity strategy in place, it is integral to select the right technology components and build a robust and flexible platform. This will likely consist of a combination of legacy as well as new tech components.

“There’s no question that organizations are trying to get the most out of their IT investments,” says Rick Walsworth, director of product marketing for EMC’s Replication Solutions. “Total cost of ownership [TCO] is a huge factor in business continuity as we move forward.”

Although virtualization applications can provide significant cost and performance benefits to enterprises, they are by no means the only consideration. EMC, for example, offers RecoverPoint, a network-based data protection solution that can replicate data across multiple and disparate platforms.

It also replicates storage arrays from a variety of vendors and integrates bandwidth reduction — a feature that reduces the amount of bandwidth required across a network. RecoverPoint “can reduce the check a company writes to its telecommunications provider,” Walsworth says.

In addition, RecoverPoint integrates bandwidth reduction from a local site to a disaster-recovery facility — further lowering TCO. And it helps mitigate the effects of a rolling disaster.

For example, if a power outage occurs and hits a data center, data corruption can take place. That’s a significant enough problem, though data replication can cause the corruption to be replicated at remote sites.

“The ability to recover against logical corruption is an important aspect of any business-continuity strategy — particularly when you’re dealing with applications that are transactionally oriented,” Walsworth notes. RecoverPoint allows IT to roll back a system to the point just before the data corruption took place — and then recover systems from that point in time.

Dan Lamorena, senior manager for Symantec’s High Availability and Disaster Recovery Solutions group, says that organizations are recognizing the growing need for better business continuity as they handle more and more transactions. And he has the research to prove it.

In 2007, more than 1,000 IT managers at large enterprises in 15 countries reported that 36 percent of the applications were mission critical. A year later, the figure had zoomed to more than 50 percent. “People understand that today applications and services are intertwined and that managing a complex web of applications is a baseline for doing business,” Lamorena says.

**BC Basics**

Today’s business-continuity environment increasingly incorporates systems that span a diverse array of hardware and software systems. And it’s vital to have tools that bridge the gaps.
Symantec’s Veritas NetBackup application, for example, delivers high-performance data protection that scales to protect large heterogeneous environments, including UNIX, Windows, Linux and NetWare platforms. It manages data across tiers and provides advanced support for data deduplication, new Virtual Tape Library (VTL) controls, third-party disk appliances and snapshot capabilities.

Others, such as HP, provide other pieces of the business-continuity puzzle. Its StorageWorks XP series disk arrays offer built-in support for storage virtualization. As a result, an enterprise can combine arrays from different companies and use them in a single integrated storage environment.

StorageWorks combines a fully redundant hardware platform with unique data-replication capabilities that are fully integrated with clustering solutions. The devices also support thin provisioning and dynamic partitioning.

The common denominator for companies that build a successful business-continuity plan, Bennett says, is the ability to devote time and resources to developing a viable — and cost-efficient—model. “Too often,” he says, “a company gets the message only after a serious problem or when a new CIO or CEO arrives and puts business continuity at the top of the priority list.”

Moreover, organizations that typically realize the greatest cost efficiencies are those that “understand the business case,” he adds. “They have a clear strategy, test the plans and keep them up to date.”

In the final analysis, Enterprise Strategy Group’s Laliberte says, real cost savings derive as a result of a highly optimized and efficient IT environment. Nevertheless, “The thing that you have to think about is that business continuity and disaster recovery are nothing less than insurance policies.

“An enterprise may look for ways to trim costs and build a more efficient infrastructure,” he adds. “But, at the end of the day, you want to know that you can keep systems running and have essential data available.”

All kinds of unfortunate events can interrupt a business. Still, discontinuity planning often takes a backseat in competing for finite IT resources. The best advice: Don’t delay in taking action.

Business-Continuity and Disaster-Recovery Facts
Symantec’s 2008 Disaster-Recovery Research Report found that:

- Although one-third of organizations have had to execute a Disaster-Recovery (DR) plan, just under half say they are able to get fully operational within a week.

- The amount of applications that IT Managers believe are business critical has increased 20 percent over data from the previous year, and only about half of these applications are covered in DR plans.

- Virtualization is driving organizations to reevaluate their DR plans.

- Organizations find that the biggest challenge for high availability and disaster recovery in virtual server environments is the different tools they need for their physical and virtual environments.

- Organizations report that DR testing impacts customers, sales and revenue.

- Despite increasing importance of DR, there is an alarming decrease in executive involvement.

- Thirty percent of disaster-recovery plans that are tested at least once per year fail.

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