

## WHITE PAPER

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# Business Risk and the Midsize Firm: What Can Be Done to Minimize Disruptions?

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## EXECUTIVE SUMMARY

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### How Midsize Businesses Face IT Disaster

Executives of midsize businesses may wonder how to prepare for the possibility that a calamity could wipe out their IT operations. The words "disaster recovery" (DR) evoke images of the earthquake in Northridge, California, or flooding in Chicago and Nashville — events that took businesses of all sizes offline.

However, it's important to know that many business-disrupting outages result from causes far less dramatic than natural disasters. Everyday events — such as construction crews cutting through a power line, an air conditioning failure, a network provider interruption, or a security issue — can take systems offline. These interruptions happen more than most midsize business managers expect and with increasingly critical impact, as customers become more accustomed to accessing online information and placing orders online.

It is clear that midsize businesses must prepare for these "disasters" just as larger enterprises do. What are the critical next steps? Relatively few midsize organizations have reached a high level of disaster readiness, even if they have taken the first steps to protect IT assets against unplanned interruptions; they're much more likely to have in place high-availability (HA) measures or data replication software. But given midsize organizations' reliance on Web-enabled applications and online systems, they must prepare to recover key IT systems from a disaster without severely interrupting their business. This paper looks at these concerns and presents an approach through which targeted solutions and management can reduce business risks by planning to address disruptions and by addressing technical challenges to business continuity.

### What Does Disaster Recovery Require?

Like most businesses, midsize companies seek to reduce the business risks posed by IT disruptions and to enable quick recovery from any downtime caused by outages or natural disasters. Unlike larger enterprises, midsize firms typically lack the resources to invest in and plan for such comprehensive disaster readiness. Yet they face the same disruptive impacts, such as floods, tornadoes, earthquakes, extended power outages, and more. Many know that such disasters could shut down their computers for lengthy, costly interruptions.

IDC research on HA and DR with nearly 400 IT managers in 2009 revealed the following factors as being the most critical concerns:

- ☒ Lost revenue for the business
- ☒ Lost employee productivity
- ☒ Systems downtime, taking PCs, servers, storage, or networking offline
- ☒ Getting the right skill sets in-house to address disaster recovery
- ☒ Impacts on customer retention/customer satisfaction

But despite the keen concern about being ready to deal with disaster recovery, many of the respondents told IDC that they feel they cannot afford to prepare for disasters without exceeding their IT budget limits.

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## **Can Technology and Best Practices Help?**

The evidence from IDC's Business Value research indicates that a combination of technology and best practices (including planning for potential disruptions throughout the organization) can help to boost preparedness. Effective DR implementations — implementations that ensure that multiple sites can run key applications and production data — not only reduce the likelihood of long business outages in a disaster but also can help midsize companies to save money through workload consolidation throughout the organization.

Tuned, pretested DR support capabilities and services are now helping midsize company managers reduce the risks of an extended business outage due to disaster, and at more reasonable costs than ever before. Today, it is possible to put in place disaster recovery technology and practices that may cost less per user supported than older technology that did not support DR.

These new DR implementations have provided some midsize companies with the means to avoid shutdowns when and if their IT centers go offline — reducing expected disaster-induced outage hours (downtime) per year. Importantly, research shows these implementations can reduce costs by more than 35% compared with unprepared centers using older technology.

Advanced processes and technologies can ease the backup process, introduce more automation into the data replication process, and enable IT staff to protect more applications with restart and recovery capabilities. IDC research found that IT staff time associated with backup and recovery procedures could be reduced by 85% to 90% when automation and new technologies were applied in midsize firms.

The following sections explain key enablers that deliver this business value, and they also discuss how the deployment of HP's solutions helps to deliver these benefits.

## **PRIORITIES: SAVE, SIMPLIFY, SUSTAIN**

Recent IDC research with small and midsize businesses (SMBs) shows that DR is one of many goals. SMB IT organizations consistently strive for three primary goals: reduce IT costs (save), simplify operations, and sustain operations (HA and DR).

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### **Keep Costs Down ...**

Given current economic conditions, midsize firms are paying careful attention to IT spending across the board. They must control any large expenditure and continually seek efficiencies in server, storage, software, networking, and services costs. They must also be aware of the opportunity costs associated with leaving aging technologies in place.

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### **... But Keep Operations Up and Running**

Managers at midsize companies have felt increasing pressure to keep systems up and running due to the potential losses to the business associated with downtime.

Assured uptime for applications and production data has become increasingly important, not just for acknowledged business-critical applications but also for "less critical" IT components of the business. For example, email messaging, desktop applications, and Web sites — usually not considered "mission-critical" aspects of IT infrastructure — often act as critical junctions for other, remote business-critical applications and servers. As a result, these seemingly less crucial IT assets could potentially become "single points of failure" for crucial applications if organizations do not provide backup systems or DR plans for them.

This multitier design of today's infrastructure — inclusive of Web servers, application servers, and database servers — results in end-to-end applications that span all of these computing tiers.

Without proper planning, more servers and applications would be vulnerable to disruption from outages than would be acceptable for business reasons. But because midsize organizations command fewer IT staff and lower IT budgets, they cannot support as much redundancy in their DR as, for example, a larger organization's hot standby site would require.

Therefore, they must establish their ability to recover from disasters more efficiently. They must combine new and already installed systems and then build on that infrastructure, adding hardware and software to support business continuity. The improvement in business continuity support occurs over time, as technology is refreshed and as IT implements "best practices" for DR across the company.

## **SOLUTION: BEST PRACTICE + TECHNOLOGY**

A more simplified approach can work. IDC's research with more than 25 midsize organizations implementing DR over the past four years shows measurable improvements not only in disaster preparedness (to sustain IT operations) but also in cost reduction (save) and simplification of the systems environment (by standardization of IT infrastructure).

Interviews with firms that had refreshed aspects of their infrastructure and improved IT processes revealed markedly improved readiness for disaster. With an increased number of options for moving storage devices and server hardware, and their associated workloads and network connections, from one platform to another, as needed, these organizations found themselves with more options to provide for DR capabilities.

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## **Baseline for DR: Simplified Infrastructure**

As an essential foundation step toward recovery readiness, these leading midsize firms began their move toward better DR by initiating some of the following key best practice initiatives:

- ☒ Extending management technologies that automate the process of asset management, system configuration, and software distribution (This reduced the number of steps that required hands-on intervention and reduced IT staff time.)
- ☒ Constraining their environment to a finite number of standard processors, operating systems, database products — making it easier to maintain and update
- ☒ Consolidating servers over a long-term road map, reducing the number of server "footprints" that had to be maintained and updated
- ☒ Standardizing IT practices, especially management of settings and configurations
- ☒ Providing protected storage space within the organization's storage resources and establishing rules for backup of mission-critical data (This ensured adequate capacity for backup and recovery procedures and for restart of applications.)

### ***Removing Aging Servers, Renewing the IT Infrastructure***

As part of these best practice improvements, midsize firms removed aging servers that represented "silos" with very different technologies than newer systems based on new processors and software. Some companies examined the way that the servers, storage, and networking components of their infrastructure worked together — and many found it economical to reduce cabling and deploy faster server I/O technologies.

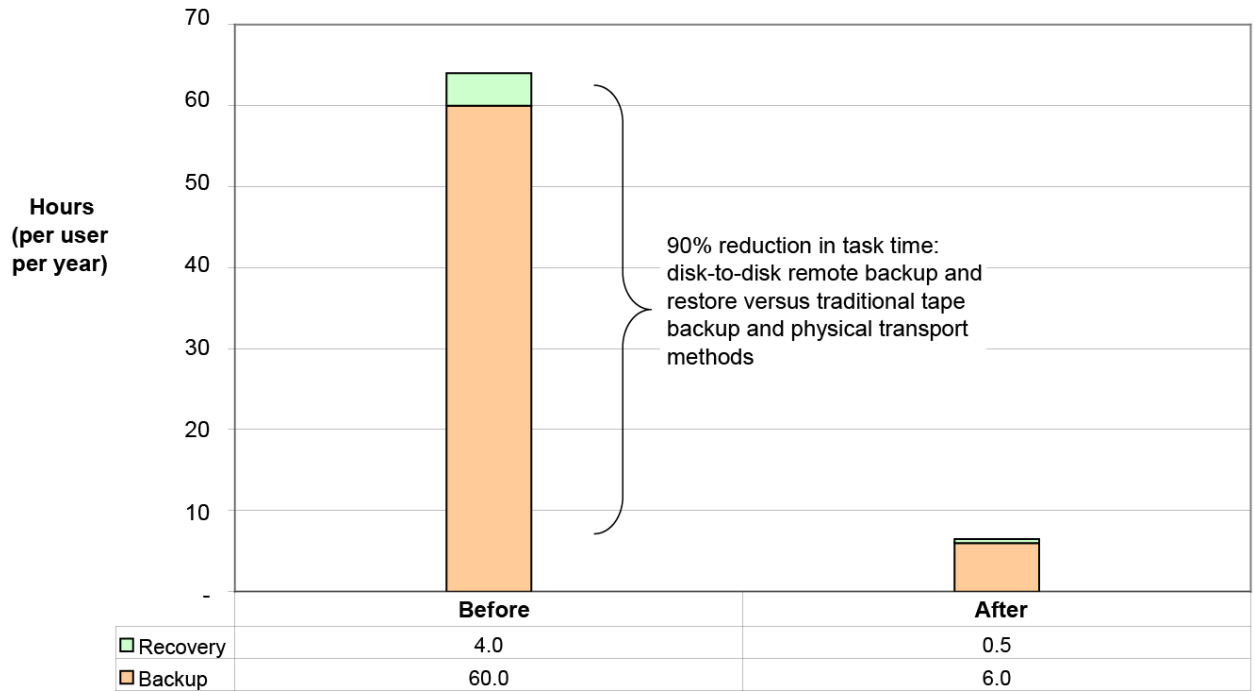
Many of the companies focused more intently on readying backup data and preconfiguring applications for rapid redeployment in the event of a disaster. Some replicated data within their own offices or branches, while others turned to outside services to provide the backup capabilities. By expanding the percentage of their critical applications that are continuously backed up with data stored offsite, midsize organizations can more quickly redeploy applications and recover them. The more effectively they do this, the more they can reduce the "disaster to full restore" time horizon and therefore reduce their business risk.

Research indicates that advanced storage, server virtualization (enabling workload consolidation and workload isolation), and systems management capabilities bring this promise of quick recovery closer to the midsize organization. For example, newer approaches leverage the ability to migrate virtualized server images (virtual machines or VMs) to alternate servers or storage devices for later startup. If IT has replicated production data, then it can resume work using the copied VM with replicated data.

As another example of advanced technologies enabling DR, surveyed sites found that backup processes that utilized advanced primary-to-remote, disk-to-disk backup reduced backup and recovery times by up to 90%, as indicated in Figure 1.

**FIGURE 1**

**Management and Technology Upgrades Reduce Midsize Organizations' DR Costs**



Source: IDC's Business Value Research, 2010

Using these and other newer technologies, IT administrators can minimize the backup cost per application and establish a secondary backup site with far fewer requirements than they could before. Though many of these organizations have not found the resources to fully duplicate a primary site within a remote recovery site, they have begun to establish a foundation for doing so later on.

**HP DR SOLUTIONS FOR MIDSIZE COMPANIES**

By combining cost-effective, very fast, and large-scale management capabilities that address storage, servers, networks, and infrastructure, HP technologies offer midsize firms an option for infrastructure standardization that can greatly enhance disaster readiness. Preparing for disaster involves critical steps that may require some level of assistance and guidance. DR solutions begin with a road map and a plan. HP has developed specific service programs for its channel partners and service providers to

support organizations throughout the DR life cycle, from initial assessment and strategy to the design, building, integration, and management steps. HP has built and pretested these business risk mitigation (BRM) solutions on technology platforms or "templates" that match a company's size, for companies ranging from 100+ to more than 2,500 employees. They include the technologies discussed in the following sections.

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## **Servers**

HP ProLiant x86 servers have energy-efficient design features that reduce power/cooling costs while preventing overheating in the datacenter or computer room. ProLiant servers use a "sea of sensors" inside the server itself to detect any overheating situations and remedy them by turning on cooling fans, as needed, helping to prevent outages caused by heat buildup.

These servers use multicore processors that provide more processing power in smaller form factors than was possible several years ago. They carry large amounts of memory and I/O capability — all of which allow small servers to support intensive workloads in a compact server cabinet or chassis. Multiple servers can run side by side in a typical scale-out configuration — and they can attach to shared HP StorageWorks storage devices for greater efficiency and capacity. The consolidation this enables limits the number of servers to recover and simplifies DR.

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## **Storage**

Given the importance of backup in DR, HP StorageWorks storage systems play a key role in the overall solution. These systems — coupled with storage mirroring software, which replicates changes in production data to one or more servers in any location — are a key ingredient for DR. By replicating only the bytes that change, storage mirroring software uses little bandwidth for continual backup while ensuring that business operations restore quickly with less loss following a downtime incident.

Storage management software supports the archiving of the data stored on the devices, making it possible to take snapshots of the data and to replicate images of this data store onto remote devices or onto tape. Because the production data is copied elsewhere, via archiving, it is possible to restore system functionality more quickly following any catastrophic outage at the primary site. HP storage solutions support deduplication, minimizing the total number of times that the same data is stored on the system, reducing capacity requirements, and controlling costs.

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## **Networking**

Effective networking capacity enables both remote and local DR capability. For network assurance, protecting the ability to switch to alternate resources, if needed, HP provides several types of networking devices, including routers, switches, wireless access points, and wireless controllers.

### ***Result: Moving to Improved Disaster Recovery Procedures***

Midsized organizations implementing these types of technology and practice solutions provide better DR than before, resulting in a "sustain" approach by moving from backup and recovery procedures within departments to more effective DR across the entire organization.

Given the pretested and preconfigured nature of the solutions, midsized IT organizations can deploy them more easily and with less cost than earlier approaches that depended on manual, hands-on intervention in the backup process. They offer more ways to prepare for disasters, to apply automation and consistency to these preparations, and ultimately to sustain business.

Overall, the use of automation in DR saves time and money. Automating the backup and data replication processes makes DR more affordable for midsized companies — and it demands less time for onsite IT staffers. This automation, when combined with best practices for consistent data replication across an organization, increases overall uptime and minimizes periods of downtime following outages.

## **CHALLENGES/OPPORTUNITIES**

Any new technology offers challenges for adopters, even as it opens doors to new opportunities to reduce future costs. Organizations must put in place the software and hardware and associated systems management tools that enable DR well before any outages occur. This deployment includes the following challenges and opportunities:

- ☒ **Investment and planning.** Moving to a disaster-ready infrastructure usually requires up-front investments in systems and IT skill sets; it also requires some planning for the organizational resources and people needed to support DR.
- ☒ **Business unit support.** Midsized IT organizations face the challenge of generating support from business unit executives for that initial investment in disaster readiness. Executives must agree on the business value.
- ☒ **Automation and DR outcomes.** HA and DR technologies built into a business' IT systems will increase the level of automation associated with disaster preparedness and reduce/change the IT skill set requirements needed onsite.

## **CONCLUSION**

Lengthy downtime, data losses, and security breaches can harm business results, bringing business to a halt: stopping the flow of orders, reducing sales revenue, and interfering with the supply chain. These downtimes could potentially impact a company's ability to compete with other organizations that were unaffected, or less affected, by a given incident, or outage, causing downtime. In a world that demands 24 x 7 x 365 connectivity, customers expect data services to be online and managers expect that business processes will continue following a brief outage. They expect effective DR.

Midsized firms can prepare systems for quick restart and enable business operations to resume after disasters, but they must prepare ahead of time and inventory their existing infrastructure for components that need to be updated or replaced. If DR planning and technology are improved, IT managers could extend the reach of their organization's disaster preparedness and increase the likelihood of rapid recovery from downtime if outages ever occur.

Selective DR solutions, such as those included in the HP Business Risk Mitigation Solution, and improved systems management can reduce business risk for midsized organizations. The combined efficiencies and new technologies can reduce the labor of preparing for and recovering from a disaster — up to 90% reduction in IT staff time spent backing up an environment and up to 87% reduction in time spent recovering from an outage. As a result, these combined approaches extend disaster preparedness to a wider range of organizations and increase the likelihood of rapid recovery should a disaster occur. In short, these approaches to DR solutions enable improved disaster preparedness and reduced DR-associated costs across the board.

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