When thinking of business interruption, there are common causes that come to mind—fire, flood, hurricane and earthquake. In fact, natural disasters account for only a small percentage of all downtime and data loss. There are other, more probable, causes that less likely come to mind—sprinkler discharge, roof cave in, construction, or even something you might have arranged yourself, such as system upgrades, routine maintenance or a data center move. Business interruption can be caused by many things. Is your business prepared for the possibility of downtime and data loss?

The cost of downtime and data loss goes far beyond the loss of revenue; cost factors also include lost productivity, and if you have no mitigating measures in place, replacing lost data. You may experience more severe damages including loss of goodwill, resulting in the loss of customers and future revenues. Many studies have shown that 93 percent of companies which suffer a significant data loss are out of business within five years; two out of five companies that experience a catastrophe or an extended system outage do not resume operations, and of those that do, one-third go out of business within two years. Ironically, more than 60 percent of businesses in the United States do not have a basic plan to mediate the effects of a disaster; and 90 percent of European companies with global revenues in excess of €100M have no formal business continuity plan in place. With these statistics, it is essential to find the solution that not only keeps your data safe, but also keeps your business alive.

HP StorageWorks Disaster Tolerant Solutions (DTS) provide the key that unlocks the critical difference between recovery from a catastrophic event and withstanding a catastrophic event. Traditional recovery products pledge that operations will resume following downtime. Disaster Tolerant Solutions guard against the possibility of downtime itself. With its capabilities, DTS confirms that data is available at a remote location, enabling constant business operations, without downtime or performance impact. Without this confirmation, cluster and storage failover independently—thus requiring a labor-intensive, manual process to monitor both the cluster failover as well as the remote mirroring process. It also requires the administrator to be knowledgeable about what to do in every disaster scenario. Disaster Tolerant Solutions are the integral link that brings the capabilities of cluster software and HP Continuous Access remote mirroring together to offer a completely automated process that requires no human intervention.
Key features and benefits

Protection against downtime
Automated failover and failback reduce the complexity involved in a disaster recovery situation. It is protection against the risk of downtime, whether planned or unplanned.

Protection against transaction data loss
The application cluster is extended over two sites and the storage is replicated at the second site using synchronous replication methodology—data exists ubiquitously with virtually no difference in the data storage from site A to site B.

No server reboot
Disks on the server on both the primary and secondary sites are recognized during the initial system boot in a DTS environment; therefore logical unit number (LUN) presentation and LUN mapping changes are not necessary during failover or failback—for a truly hands-free disaster tolerant solution.

Synchronous and asynchronous replication
Synchronous copy mode for real-time mirroring verifies that both the source and destination copies are identical and concurrent at all times.

Asynchronous copy mode for the highest performance in remote mirroring features a unique sequence-time-stamping function that safeguards the ordering of I/Os, which ultimately certifies data integrity at the remote site.

No single point of failure
Supreme redundancy is provided with the identical configuration of established storage area network (SAN) infrastructure redundancies implemented on site B.

Simplify implementation
Integration of HP StorageWorks Disaster Tolerant Solutions with HP EVA Continuous Access or HP XP Continuous Access software substantially streamlines the implementation process. Our rigorous testing takes the guesswork out of your disaster protection plan.

Cost-effective investment leverage
You need value that extends beyond traditional approaches to business continuity. HP StorageWorks Disaster Tolerant Solutions do just that; they have value even in non-disaster situations.

Planned maintenance can be performed when needed. You can manually failover operations to the secondary site while maintenance or upgrades are executed on the primary site; when maintenance is complete, failback to the primary site.

Lower total cost of ownership is achievable because all resources can be fully utilized for day-to-day operations. In addition, with all of the data replication solutions, businesses have the flexibility of scaling up as their needs grow.

Integrated solutions
Fast failover and failback times reduce the potential for downtime through rapid application-recovery time on the target site and prompt restart on the primary site. Providing this seamless integration, HP StorageWorks Disaster Tolerant Solutions are integrated with HP array-based data replication software, HP StorageWorks Continuous Access, and a number of OS-specific clustering software.

HP Metrocluster software for HP virtual arrays
• Integrates with the array-based HP EVA Continuous Access or HP XP Continuous Access for data replication
• Provides automatic and bi-directional failover of business-critical data and applications located up to 300 kilometers apart—so both data centers can be active, protected and capable of handling application failover for each other

HP Continentalclusters software for HP virtual arrays
• Integrates with the array-based HP EVA Continuous Access or HP XP Continuous Access for data replication
• Provides manual and bi-directional failover of business-critical data and applications over unlimited distance

HP StorageWorks Cluster Extension for HP virtual arrays
• Integrates with the array-based HP EVA Continuous Access or HP XP Continuous Access for data replication
• Provides automatic and bi-directional failover of business-critical data and applications located up to 500 kilometers apart for EVA configurations—so both data centers can be active, protected and capable of handling application failover for each other
• Provides automatic and bi-directional failover of business-critical data and applications over unlimited distance for XP configurations

When to implement
HP StorageWorks Disaster Tolerant Solutions are recommended when:
• Your business requirements mandate 24x7 data availability and applications must be restored within minutes of an outage.
• Your business is located in an area that is at risk from disasters or catastrophic events.
• Your industry is subject to government regulations that require you to maintain a recovery site.
Why HP?

- Comprehensive business-continuity portfolio, spanning a range of technologies (servers, storage and software) and services (design, implementation, education and support)
- Most robust and cost-effective solutions for disaster tolerance
- Flexible clustering architecture with many advanced features
- Proven high-availability and business-continuity solutions with more than 150,000 system licenses sold

Warranty and included services

HP warrants only that the software media will be free of physical defects for a period of 90 days from delivery. For more information about the HP Global Limited Warranty and Technical Support, visit www.hp.com/products/storageworks/warranty.

HP Care Pack Services

HP Care Pack Services offer upgraded service levels to extend and expand your standard product warranty with easy-to-buy, easy-to-use support packages that help you make the most of your hardware and software investments. They let you choose the support levels that meet your business requirements, from basic to mission-critical. They help you contain total cost of ownership.

HP Care Pack warranty extensions can be purchased along with HP products to cost-effectively upgrade or extend your warranty. For many products, post-warranty HP Care Pack Services are available when your original warranty has expired. For more information on these services, contact your local HP sales representative, authorized HP business partner or visit www.hp.com/services/storage_carepacks.

HP Factory Express

HP Factory Express is a portfolio of more than 50 flexible and robust pre-priced, customized and integrated factory configuration and deployment services—supporting HP products from the desktop to the data center with Microsoft® Windows, Linux and HP-UX 11i.

HP Factory Express is designed to help you get more from your technology investment, extend your valuable resources and accelerate your business results. It provides predictable, trusted and tested IT solutions designed to enhance your productivity. With Factory Express, you can customize hardware to your exact specifications at the HP factory—helping you plan and meet budget goals, cut costs, speed deployment and free up internal resources. To learn more, visit www.hp.com/go/factory-express.

Additional HP support services

HP Services provides a broad spectrum of services to commercial and enterprise customers, including performance and availability services such as proactive mission-critical services, as well as support management services for deployment of the entire IT infrastructure, including HP and multi-vendor environments. For more information on these services, contact your HP sales representative, authorized HP business partner or visit www.hp.com/hps/storage.
HP Services

HP Services has excellent, end-to-end expertise in delivering solutions that help you improve your business agility. From initial assessment and design to technical integration and ongoing support, HP Services can be your single point of contact and accountability.

HP related services:

- **HP StorageWorks Disaster Tolerant Management Services for HP EVA CA or HP XP CA** are designed and engineered in the HP StorageWorks Disaster Tolerant Solution Center to increase the effectiveness of the HP EVA CA or HP XP CA disaster-tolerant capability. This unique package of integrated services is available for in-sourced or outsourced solutions—and it addresses the key issues related to the daily operation of your environment, including storage, server and network monitoring, and fast recovery during a wide range of failure conditions.

- **HP Cluster Extension Solution Implementation Service**—is a required custom statement of work (SOW) deployment service, allowing you to tailor the implementation of HP StorageWorks Cluster Extension (CLX) software, the CLX environment and your HP StorageWorks XP and EVA disk arrays to address the specific needs of your disaster recovery solution environment.

- Other applicable HP storage services include:
  - HP SAN Solution Service
  - HP Backup and Recovery Solution Service
  - HP Data Replication Solution Service
  - HP Electronic Vaulting for Enterprises
  - HP Storage Essentials Solution Service
  - HP Vdisk/LUN Design and Implementation Service
  - HP Performance Analysis for the XP/EVA Disk Arrays Service
  - HP Data Migration Service

- **HP Care Pack Services**—is a comprehensive portfolio of services for maintaining the highest levels of IT availability.
  - Critical Service
  - Proactive 24 Service

- **Instant Support Enterprise Edition (ISEE)**—provides remote monitoring and support solution for your servers, storage and networks.

- **Business Continuity Services**—protect and reduce disruption to IT infrastructure and associated business processes against site outages, disasters and environmental events.

Across the globe, enterprise customers rely on HP Services to design, deploy, manage and support the IT systems that run their businesses. HP Services capabilities cover consulting and integration, outsourcing and support services. With more than 69,000 services professionals operating in 170 countries, acknowledged technology leadership and a heritage of innovation in services, HP Services can point to an extensive track record of helping customers improve their ability to support their changing business needs. For further details, contact your HP sales representative or visit [www.hp.com/hps/storage](http://www.hp.com/hps/storage).

Education services

HP offers a variety of training methods to fit your needs including traditional instructor-led courses at one of our 120 training centers worldwide, onsite training customized to your needs, in your facility, or even remotely assisted instruction learning that combines the best of traditional classroom training (including its live instructor and labs) with the best of online training (no travel required). And if you like learning on your own schedule, at your own pace, make use of e-learning opportunities on the award-winning HP IT Resource Center, a learning community with extensive on-demand resources that can be accessed 24x7. For more information on these services, contact your HP sales representative, authorized HP business partner or visit [http://education.hp.com/curr-storsan.htm](http://education.hp.com/curr-storsan.htm).

Financial services

HP Financial Services provides innovative financing and financial asset management programs to help customers cost-effectively acquire, manage and ultimately retire their HP solutions. For more information on these services, please contact your HP sales representative or visit [www.hp.com/go/hpfinancialservices](http://www.hp.com/go/hpfinancialservices).

For more information

To learn more about StorageWorks BC&A Solutions, go to [www.hp.com/StorageWorks/BCA](http://www.hp.com/StorageWorks/BCA).

To learn more about Disaster Tolerant Solutions and see a visual demonstration of Disaster Tolerant Solutions in action, go to [www.hp.com/go/DisasterProof](http://www.hp.com/go/DisasterProof).

To learn more about HP ContinentalClusters or HP Metrocluster, visit [www.hp.com/go/Serviceguard](http://www.hp.com/go/Serviceguard).

To learn more about HP StorageWorks EVA Cluster Extension, visit [www.hp.com/go/clxeva](http://www.hp.com/go/clxeva).

To learn more about HP StorageWorks XP Cluster Extension, visit [www.hp.com/go/clxxp](http://www.hp.com/go/clxxp).

For more information on HP Financial Services, please visit [www.hp.com/go/hpfinancialservices](http://www.hp.com/go/hpfinancialservices).

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