Compaq Disaster Tolerant SAN
(DT-SAN) Solution

Mission-critical storage recovery

COMPAQ

Inspiration Technology

A new generation of business continuity solutions

As an IT director ultimately responsible for a mission-critical environment, you make decisions that affect the availability and security of your organization's vital information. As you seek ways to better protect your business against dangerous outages that restrict availability, you weigh the expense of advanced technology against the tangible benefit it provides to the overall operation. Cost is always an issue, because even though your data is vital to your business, you still have a limited operating budget to manage as well. And remember, as advanced as your enterprise computing environment is, it is not automatically designed to provide the absolute highest level of disaster recovery capability. In fact, if you want to ensure the fastest possible business recovery time (as little as 4–15 minutes) at the lowest possible risk, you need a Disaster Tolerant SAN (DT-SAN) Solution.

How do you achieve disaster tolerance?

There's no question that unexpected downtime or massive data loss will threaten the survival of your business. When you face an unexpected (possibly even unthinkable) disaster, your primary challenge is how fast you can get the operation back up and running. In fact, the survival of your company depends on it. With a DT-SAN Solution, you can continue to operate both during and immediately after any outage, planned or unplanned. To achieve true disaster tolerance, you need to employ sophisticated software tools that monitor your systems with an intelligence that senses any change in operations and notifies you immediately. If you've developed a split-site deployment, you will need to be sure you can maintain a live data exchange between the two sites, no matter what happens. Our research has shown that a solution constructed simply of two computer centers with mirrored or vaulted data rarely delivers full disaster tolerance for a business. That's why we designed a DT-SAN Solution that delivers true disaster tolerance.

Comparing recovery strategies
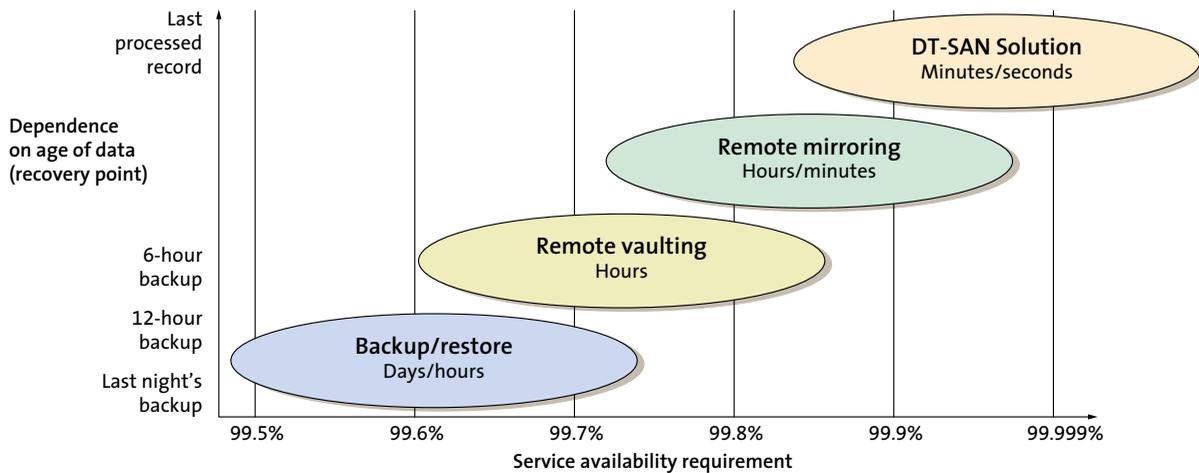
A DT-SAN Solution provides the fastest recovery and the highest availability for all records—even the most recently processed. No other solution is as timely or as reliable.

How much time can you afford to lose?

You can't afford to even consider the risk that a conventional disaster-recovery solution might be adequate for your business. Zero downtime is the only acceptable strategy for your business continuity planning. That's why *StorageWorks*™ by Compaq and Compaq Global Services developed this turnkey DT-SAN Solution. Even if you already are deploying a split-site solution, you'll find that our software tools make the disaster recovery process much easier to manage.

You will be absolutely certain that if an outage or disaster disables one facility, critical applications will fail over, transferring control to the second location in a matter of minutes. Remember: Days, hours or even minutes of downtime are no longer acceptable. Your applications are critical to the profitability or even survival of your business, so it is the business impact that determines the importance of the DT-SAN Solution and the heightened degree of availability it delivers.

True protection for your business

New breed of technology

Compaq has designed a turnkey DT-SAN Solution that gives you a single point of accountability to deliver a guarantee of maximum availability. Even after a major disaster, you can have your business back up and running in as little as 4–15 minutes. Compaq empowers you with all the tools you need.

Lost business scenario

Compaq can devise a Disaster Tolerant SAN Solution for implementation into every business scenario, because virtually every business needs sophisticated security for business documents. When you analyze the cost of downtime, you'll find that the real costs to your business will range from $18,000 per hour for lost ATM fees for a financial institution, up to $7.8 million per hour for an interruption in a brokerage operation.

Absolute access

Two of the most important examples include healthcare and finance. In a healthcare environment, maintaining patient records is literally a matter of life and death. Every healthcare institution must have complete access to patient records so care will not be interrupted under any circumstances. And in finance markets, any data loss will dramatically affect the livelihood, and key assets, of millions of people at any given time.

True business continuity through a DT-SAN Solution

What happens in a situation where a major disaster strikes your business? Imagine the worst-case scenario. Then rest assured that Compaq is ready to respond. The software that we've installed is able to sense that a situation is developing and can automatically send a page or e-mail to the appropriate contact with an alert about the scenario. Depending on your organization's needs, this alert can go out to one IT staffer or to 200 people at different locations. Or, the alert can go out to different people on different days. Whatever your organization needs, a Compaq DT-SAN Solution can be designed to deliver.
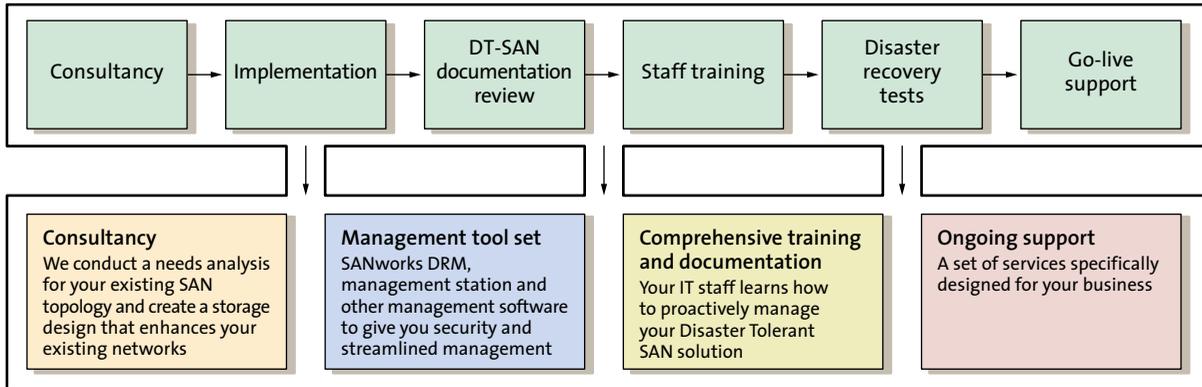
The costs of business interruption

Industry	Application	Average cost per hour of downtime (US$)
Financial	Brokerage operations	$7,840,000
Financial	Credit card sales	$3,160,000
Media	Pay-per-view	$183,000
Retail	Home shopping (TV)	$137,000
Retail	Catalog sales	$109,000
Transportation	Airline reservations	$108,000
Entertainment	Tele-ticket sales	$83,000
Shipping	Package shipping	$34,000
Financial	ATM fees	$18,000

It's easy to calculate the serious impact that any downtime will have on your business. A DT-SAN Solution will help ensure against crippling business losses caused by any outage.
Source: Contingency Planning Research

Developing your Compaq DT-SAN Solution

Consultancy	→	Implementation	→	DT-SAN documentation review	→	Staff training	→	Disaster recovery tests	→	Go-live support

Consultancy
We conduct a needs analysis for your existing SAN topology and create a storage design that enhances your existing networks

Management tool set
SANworks DRM, management station and other management software to give you security and streamlined management

Comprehensive training and documentation
Your IT staff learns how to proactively manage your Disaster Tolerant SAN solution

Ongoing support
A set of services specifically designed for your business

Because every enterprise storage environment is unique, the Compaq DT-SAN Solution follows this six-step process to ensure that each customer gets precisely what's necessary for true disaster tolerance.

Why Compaq DT-SAN?

The Compaq DT-SAN Solution is a turnkey, customized solution that includes consulting, hardware, software, implementation services and training for your staff. The solution offers a split-site implementation and near-instantaneous recovery that you can monitor from any location. The result is a near continuous computing environment that you can continue to operate during and subsequent to any outage — planned and unplanned.

How does the DT-SAN Solution benefit your business?

> Minimizes the risks and associated costs of downtime as it maximizes the use of your IT infrastructure

> Offers you application independence, providing continuous computing for mission-critical applications including Exchange, IIS, Oracle and SQL Server

> Predictably provides the fastest recovery times available — faster than any business continuity solution on the market

> Ensures a "live" synchronized set of data at each site, so there's no data loss in the event of an outage and routine maintenance does not cause a business interruption

> Scales easily and can be increased or modified without any business interruption

Compaq is with you all the way

A Disaster Tolerant SAN Solution engagement package with Compaq includes four key components:

> **Consultancy** – We conduct a needs analysis so we can partner with you to develop a system that achieves true disaster tolerance but is still easy to operate.

> **Management tool set** – We deliver true, best-of-breed software tools. We start with software engines from Heroix and add our own refinements for additional functionality. The tools constantly monitor your environment and update your operations staff with information about any potentially disruptive events. By starting with the best software tools, then enhancing them with unique Compaq technology, we ensure your DT-SAN Solution meets your specific needs.

> **Comprehensive training and documentation** – We work with IT staff to make sure they understand the specific software tools they will need to ensure the efficiency of the disaster-tolerant solution. In addition, we make sure that the technical staff understands the process of disaster tolerance.

> **Ongoing support** – Compaq Global Services provides full warranty support and offers extended warranties for the installation.

Manage your multi-platform infrastructure

The components of your DT-SAN Solution

One of the key components of your DT-SAN Solution is *SANworks*™ Data Replication Manager (DRM) by Compaq. What does DRM do for you? Essentially, DRM is a unique technology that enables robust, automatic data mirroring between locations. It performs real-time remote replication to enable disk-disk recovery and site-to-site failover for disaster recovery.

Long-distance flexibility

When you're running DRM, you have the widest choice of bandwidth, distance and availability options, including the capability to replicate data over distances up to 100 km at speeds up to 100 MBps using direct Fibre Channel links. In addition to this ability to scale your SAN with virtually unlimited distance capability, DRM helps you in the following ways:

> Empowers you to perform real-time data replication locally, regionally or globally to optimize your business continuance protection

> Offers multi-path support across multiple operation systems with *SANworks* Secure Path software

> Helps you manage clone and snapshot with *SANworks* Enterprise Volume Manager (EVM)

An ideal solution for mirroring data online
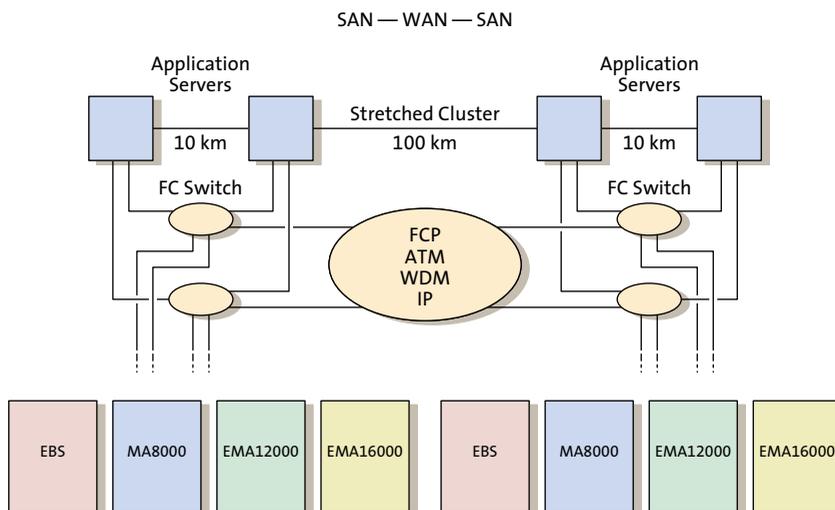
"We chose the SANworks DRM because it worked reliably in every instance— unlike many of the competitive products— which is an absolute requirement for a replication solution and a key element of our greater business continuity strategy."

Mark Clacy, Project Manager Department of Foreign Affairs and Trade, Australian Federal Government

Data Replication Manager (DRM) replicates data in real time to ensure business continuance. DRM offers the highest level of flexibility for local, regional and global networks.

Best-of-breed tools

In order to guarantee the best solution for your business, we've chosen monitoring tools from Heroix Corporation as the basis of our DT-SAN Solution. Our extensive testing tells us the Heroix software is the best package available for managing maximum availability. We've added our own enhancements to make these tools even more capable of monitoring and managing your multi-platform infrastructure. There's no doubt that this software will guarantee the availability of your data. Here's how these tools enhance your DT-SAN Solution:

> This software solves problems logically, in much the same way as an expert systems administrator. Because it works autonomously and automatically, it eliminates the expense of manual monitoring

> It adjusts to configuration changes in both the system and the application, so you can accommodate growth without adding staff

> Because this solution provides enterprise command, control and monitoring, your systems can be managed from anywhere. You not only monitor remote locations more effectively, you reduce associated travel and personnel costs

> You'll receive a range of management reports on the status of your infrastructure. This facilitates better management and helps you use your information to create a competitive edge

Fibre Channel array subsystems

Your turnkey DT-SAN Solution includes hardware along with services. The underlying storage infrastructure of your DT-SAN features *StorageWorks* Fibre Channel storage subsystems.

Leadership in services

Compaq Global Services is one of the top systems integrators in the world, so it's only natural that it would be a leader in the world of business continuity. With Compaq services, you're better able to accelerate time-to-results for your DT-SAN deployment. Here are the steps you can expect from our team:

> Analyze your IT environment and understand your expectations for growth and your organization's specific recovery needs

> Define the configurations for the split-site deployment and decide which configurations will best meet your mandatory performance levels

> Configure your systems, then customize and install your software environment

> Migrate all your data according to the plan and provision your infrastructure

> Test and verify your DT-SAN Solution. Provide a full knowledge transfer so your staff can immediately assume complete operating and technical management

> Complete disaster recovery tests to prove your DT-SAN Solution

Ready for anything

Here's how our DT-SAN Solution works for you

The Compaq DT-SAN Solution is built from best-of-breed technologies. These base components include *StorageWorks* Fibre Channel storage and *SANworks* Data Replication Manager (DRM). The system provides data protection as well as mirrored data that is split between two data centers. We combine this essential storage infrastructure with an operating system and specially configured management tools from Heroix Corporation. Your organization gets a unique combination of leading-edge high availability and unparalleled monitoring and manageability features. The result? A true disaster-tolerant solution.

## The Compaq DT-SAN Solution consists of the following components and services:

> *StorageWorks* Fibre Channel array subsystems

> *SANworks* Data Replication Manager software

> Standard operating system features and components correctly tuned and configured for split-site operation

> Management tools from Compaq Global Services that provide a platform for high availability as well as management and monitoring features

> Assessment, design and implementation services

> Customer training and documentation

For more information about the Compaq Disaster Tolerant SAN Solution, go to:

www.compaq.com/products/storageworks/solutions/dtsan

www.compaq.com/storage/continuity

www.compaq.com/services/bcs
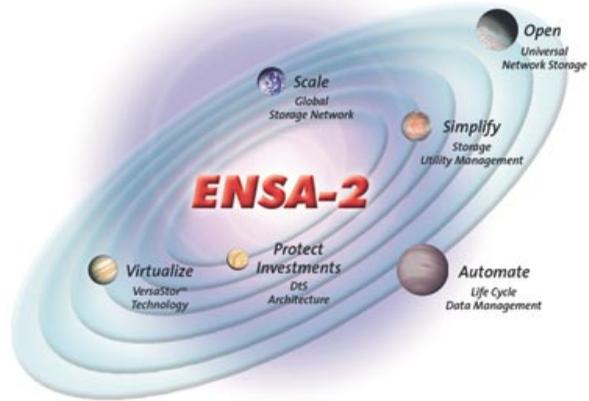
Visionary solutions

Building on the original *StorageWorks* Enterprise Network Storage Architecture, ENSA-2 provides significant extensions to ENSA, the foundation of today's successful business model. ENSA-2 encompasses six advanced technologies that enhance the ENSA storage utility to help customers solve their most pressing storage challenges. ENSA-2 provides a visionary roadmap for enabling customers to succeed and win in the increasingly competitive world economy with a superior networked storage infrastructure.

COMPAQ
Inspiration Technology