

StorageWorks Modular SAN Array 1000  
by Compaq

Easy. Safe.  
Affordable.



**COMPAQ**  
Inspiration Technology

# Choose the right SAN

Why buy Compaq? It is the single source for all storage needs, offering integration and optimization with the industry-leading Compaq ProLiant platform.



Why are SANs such a hot topic? Most IT managers acknowledge that a storage area network, or SAN, would make their professional lives much easier. They need the unlimited data capacity as well as the enhanced capability that a SAN storage solution offers. What's keeping them from implementing a SAN? IT managers are extremely concerned about the reality of implementing a SAN solution. Many perceive the SAN as too risky and too expensive. And a migration from Direct Attached Storage (DAS) to SAN is complicated. There simply has not been a readily available, straightforward path to follow in migrating from DAS to a full-blown storage area network.

Until now. Enter the *StorageWorks™* Modular SAN Array 1000 (MSA1000) by Compaq. This fully capable, scalable SAN solution fits into the departmental operation by providing an easy and natural step for DAS-to-SAN migration for Compaq *ProLiant™* customers. It's fast, easy and cost-effective. And, because the MSA1000 is modular and secure, it can be deployed in stages, reducing the risk previously associated with a full-scale SAN migration.

You can buy this SAN solution with confidence because it comes from *StorageWorks* by Compaq, the brand leader in storage technology and the global SAN market. Compaq is committed to customer choice, so when you choose Compaq as your storage partner, you're choosing an open solution that maximizes the flexibility, reliability and profitability of your storage infrastructure.



## StorageWorks MSA1000 by Compaq benefits at a glance

DAS to SAN in just one step.

- › **Reduce costs:** you'll better utilize storage capacity, reduce disk drive costs and increase IT productivity
- › **Double your SAN performance:** achieve next-generation bandwidth when you migrate from 1 Gb to 2 Gb
- › **Protect your investment:** seamless data migration delivers quick upgrades and protects your drive investments. The MSA1000 is compatible with both 2 Gb and 1 Gb Fibre Channel fabrics
- › **Simplify backups:** speed backups by moving them off the LAN, and reduce the overall backup window from days to hours
- › **Reduce downtime:** clustering support along with a host of redundant features and components dramatically reduces the risk of unplanned downtime
- › **Deploy with confidence:** the MSA1000 is a cost-effective SAN solution built on tested and proven Compaq components
- › **Scale dynamically and simplify management:** SANworks™ Virtual Replicator by Compaq supports online growth, storage virtualization and snapshots
- › **Get platform flexibility:** supports Microsoft Windows NT and Microsoft Windows 2000. Additional OS support, including support for Novell NetWare and Linux, coming in 2002



# Top SAN capability

The new StorageWorks MSA1000 by Compaq creates an instant upgrade path from Smart Array controllers and drives to a SAN, minimizing set-up time and expense.



*Building on the original Enterprise Network Storage Architecture (ENSA), 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 you solve your most pressing storage challenges. ENSA-2 provides a visionary roadmap for enabling you to succeed and win in the increasingly competitive world economy with a superior networked storage infrastructure.*

The MSA1000 DAS-to-SAN solution addresses every IT operation's key concerns of simplifying complexity, enhancing security and reducing expense with features available only from Compaq.

**Here's how the StorageWorks MSA1000 by Compaq addresses your business challenges:**

**> Reduces SAN deployment complexity.**

The unique Compaq DAS-to-SAN (DtS) architecture makes the migration from Direct Attached Storage to the storage area network as simple as removing drives from the current array enclosure and installing the drives in the MSA1000.

**> Guarantees the security of your data.**

Another unique Compaq feature, Advanced Data Guarding (ADG), is a RAID technology that boosts read performance and enables the system to withstand two simultaneous drive failures without downtime or data loss.

**> Saves space and installation costs.**

With an optional 2 Gb embedded switch, the data center saves the rack space normally dedicated to the switch and saves the additional time (and cost) associated with cabling and wiring.

**A StorageWorks SAN by Compaq serves your business**

Of course, the explosion of data volume requires the virtually unlimited scalability of the MSA1000 to accommodate future growth. Features like the Web-based configuration utility and browser-based interface mean that remote management streamlines resource management. And all data is absolutely secure through the protection of tools like Virtual Replication Manager.

# What can the StorageWorks MSA1000 by Compaq do for your business?

The MSA1000 meets the primary needs of IT management in a SAN deployment. Here's what each department can achieve:

## › High availability

Clustering support is one important way that the MSA1000 protects data and maintains availability. And *SANworks SecurePath* software offers redundant paths from server to storage to ensure around-the-clock uptime and performance.

## › Storage consolidation

An effective storage consolidation strategy reduces hardware expenses because the storage system can better utilize existing capacity. The MSA1000 offers Selective Storage Presentation (SSP) which consolidates storage across multiple platforms.

## › Dynamic growth

The explosive growth in data has created a dramatic and problematic shortage of IT resources. The MSA1000 lays the foundation for scalable storage capacity in a full-fledged SAN.

## › Remote configuration and management

The Web-based Array Configuration Utility (ACU-XE), along with the browser-based interface, lets the user monitor and configure storage from a central location.

## › Streamline backup and restore

Virtual Replicator helps manage dynamic growth of storage by creating a logical list of blocks and allocating partitions so the server thinks it has its own drive—eliminating the need to “front load” storage. This software also streamlines backup/restore operations by making instantaneous snapshots that can either remain on the disk or present to backup.



# An easier SAN

The StorageWorks MSA1000 by Compaq comes with firmware that allows dynamic allocation and configuration of centralized storage among hosts and applications.

The new MSA1000 is an affordable, scalable, high-performance storage system designed for midrange departmental and remote office SANs—with innovative features such as the unique Compaq DtS architecture that protect existing storage investments and maximize resources.

## Deploy high-availability clusters

As more applications operate with business-critical importance, and as e-commerce increases the cost of downtime, clustering offers heightened data-protection. The MSA1000 supports high-availability clusters.

## Compaq is committed to customer choice

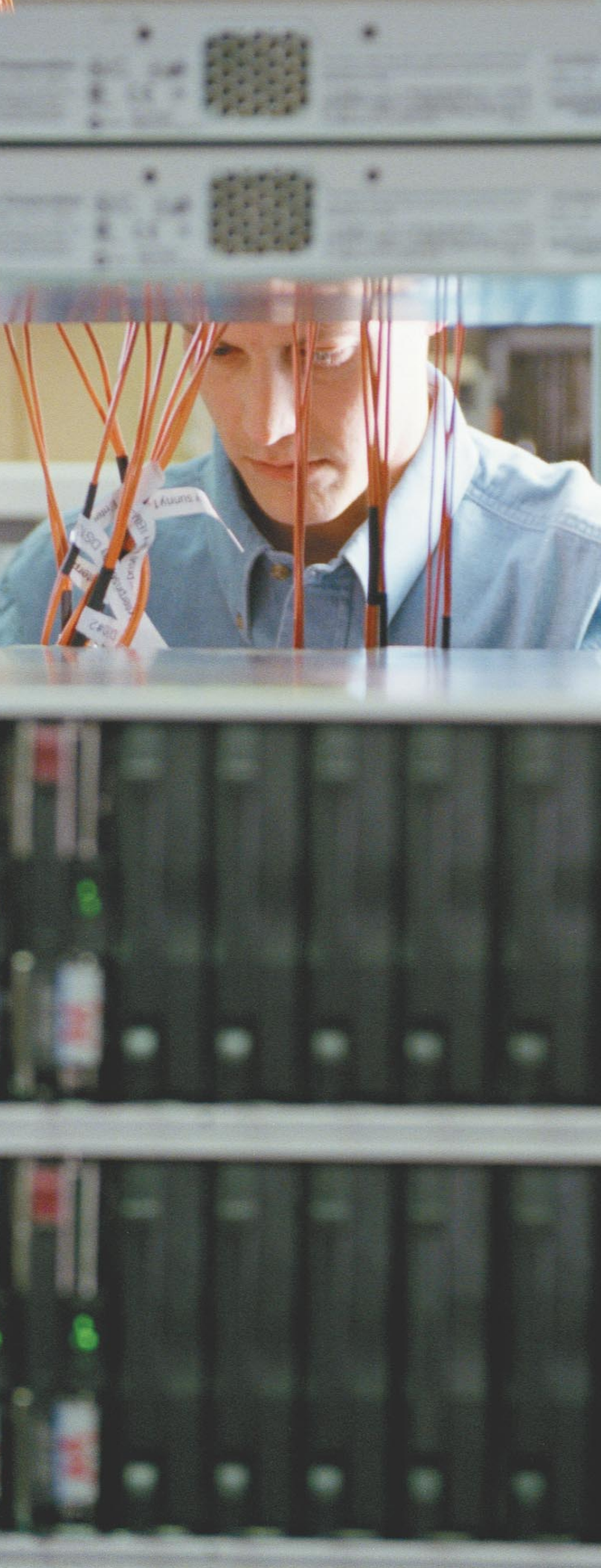
Advanced SAN solutions from Compaq help you consolidate all storage resources and create a unified storage strategy with the interoperability that's crucial for seamless integration. It will be interoperable and capable of communicating with industry-standard storage equipment, operating systems and support software. You can rest assured knowing that every storage solution from Compaq will be completely expandable, scaling easily to meet your requirements tomorrow and far into the future.

“The *StorageWorks* Modular SAN Array 1000 took the complexity out of SAN implementation. I was able to convert my Direct Attached Storage into a consolidated SAN storage environment in literally a matter of minutes— instant data transfer.

“We've wanted to implement a SAN for some time now, but it seemed excessively expensive. The *StorageWorks* Modular SAN Array 1000 allowed us to turn our existing Direct Attached Storage into a SAN, by simply moving our drives into the MSA1000 with all data intact. We quickly consolidated our storage and realized significant savings by leveraging the existing disks.”

— Steve Driesens  
Enterprise Solutions Specialist  
VL Systems





# Only from Compaq

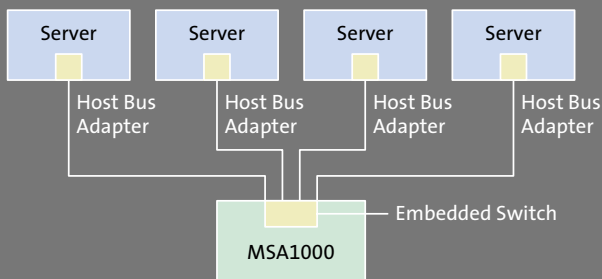
The MSA1000 is a next-generation 2 Gb Fibre Channel storage product designed for the midrange x86 market. Three features make it unique:

- An exclusive Compaq DtS architecture makes migrating drives from servers to storage seamless, fast and easy, dramatically reducing migration complexity and costs. When drives are moved, the new array “sees” configuration information, so the migration is as easy as a hot swap
- Optional 2 Gb fabric embedded switch integrates with the MSA1000 chassis, saving valuable rack space. And, when the switch is embedded, there is no need for additional cabling or wiring
- ADG is a unique RAID technology that boosts read performance and enables the system to withstand two simultaneous drive failures without downtime or data loss

StorageWorks MSA1000 by Compaq product overview:

- Scalable to 3 TB
- Fully redundant components
- Ultra3 SCSI—1" universal drives
- Integrated 6-port, 2 Gb FC fabric embedded switch
- High-performance controller design

## The StorageWorks MSA1000 by Compaq SAN solution





## Service and support designed for the StorageWorks MSA1000 by Compaq

- Three-year, on-site Limited Warranty<sup>1</sup>
- Software product services
  - Stand-alone telephone support
  - Rights to new license version
  - Media and documentation updates
- Hardware product services
  - Installation services
  - On-site maintenance (includes warranty support)
  - Response time upgrades during the warranty period
  - Post-warranty coverage
  - RAID setup and performance consulting via statement of work
- Compaq CarePac<sup>SM</sup> Services
  - 3-year, upgrade to 9x5, next-day response
  - 3-year, upgrade to 9x5, 4-hour response
  - 3-year, upgrade to 24x7, 4-hour response

## Ordering is easy

For a non-redundant configuration of the MSA1000, order:

- The MSA1000 (includes one controller and one single-port Fibre Channel I/O module)
- 2 Gb host bus adapter
- Optional 2 Gb Fibre Channel interconnect (replaces I/O modules)
- MSA Fabric Switch 6
- Fibre Channel cables

For a redundant configuration of the MSA1000, order the non-redundant configuration (above) plus the following additional components for each server:

- Two host bus adapters
- An additional controller and I/O module or fabric switch
- Secure Path software

## Compaq contact information

- [www.compaq.com/products/storageworks/msa1000](http://www.compaq.com/products/storageworks/msa1000)

## VersaStor Technology

Compaq *VersaStor*<sup>TM</sup> Technology can help you eliminate the boundaries of your physical storage. How? When you implement Virtual Replicator with your MSA1000. Virtual Replicator enables flexible storage management, continuous availability of production data and maximum utilization of all storage resources. The combination of Compaq storage arrays and Compaq server storage virtualization with Virtual Replicator is the essential cost-saving solution for your entry-level or departmental storage area network. For more information on *VersaStor* Technology and Virtual Replicator visit:

- [www.compaq.com/products/sanworks/vr](http://www.compaq.com/products/sanworks/vr)