

hp storage

january 2003



business
blueprint

hp StorageWorks solutions for Oracle

executive summary

Businesses are faced with a number of daunting problems today. With the need to service customers 24 x 7 due to online ordering through the Internet and dispersed geographies, production systems and the storage they use must always be available. With HP storage solutions, Oracle customers can be assured their data is secure and accessible when they need it, providing business continuance and peace of mind. HP solutions for Oracle have the following attributes:

- Predictable—Tested solutions with characterized performance
- Manageable—From a single pane of glass
- High performance—Industry-leading performance with minimal impact on application operations
- Available—Up to 99.999% uptime
- Upgradeable—Additions and changes without application downtime
- Scalable—Solutions to meet different, growing database sizes
- Open—Industry-standard components and technology
- Flexible—To meet your needs and run your business while utilizing current investments
- Application aware—Tested with Oracle applications in HP laboratories
- Automated—Minimized operations involvement for managing more with less
- Serviceable—Implemented and maintained by HP Services or authorized partners
- Dependable—Tested to work under all conditions

business needs

- Have accessible global business protection
- Effectively manage explosive data demands
- Control costs
- Leverage information in a timely manner
- Maximize operations

Companies are becoming bigger and more complex, and they cover multiple geographies in a variety of time zones. To Oracle users, it is not just having access to the data in a reliable manner—it is also having access to the information that allows better decision-making at a faster pace.

To achieve business velocity, an organization needs a sound business continuity strategy that allows it to reduce planned and unplanned downtime.

Despite being able to act quickly on information at their fingertips, Oracle customers may also be thinking, “What happens if we cannot access information? Are we no longer competitive? Have we automatically lost market share? How do we mitigate risk in our business without having constant access to information at real-time speeds?”

According to a study by Giga, the cost per hour of downtime in an organization can range from thousands to millions of dollars, depending on the industry. The downtime per hour of ATM access costs approximately \$18,000, while the downtime per hour is almost 8 million for brokerage operations.

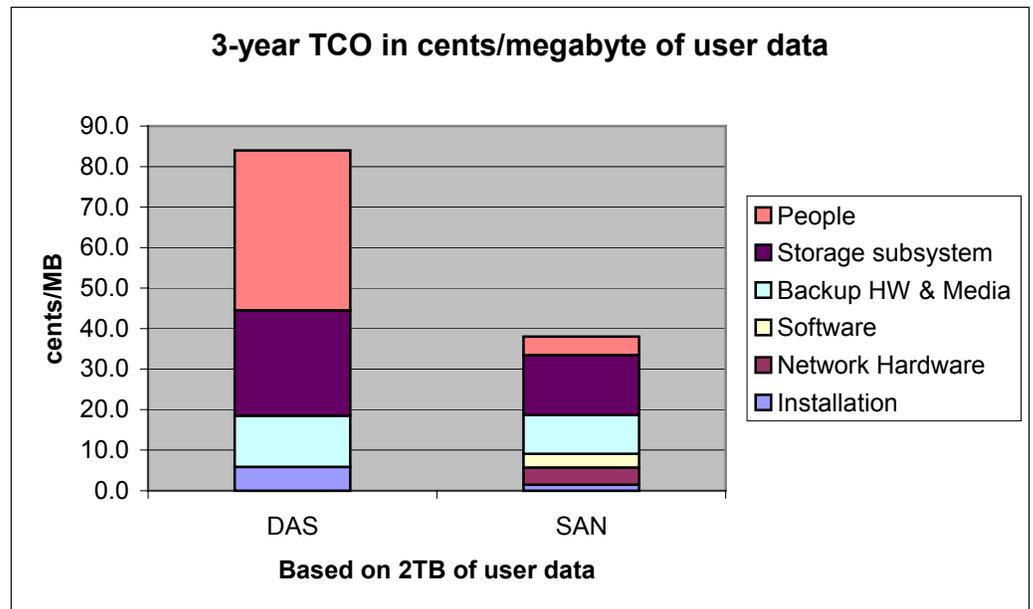
HP solutions for Oracle and the underlying infrastructure of servers, software, and storage from HP can provide uptime in the 99.999% range while managing explosive growth and control costs.

solution summary

HP offers a comprehensive array of solutions for Oracle applications, including HP StorageWorks arrays and HP OpenView storage software, and integration with Oracle, industry-leading data protection products, high-performance computing platforms, the innovation of HP Labs, and the knowledge of HP Services.

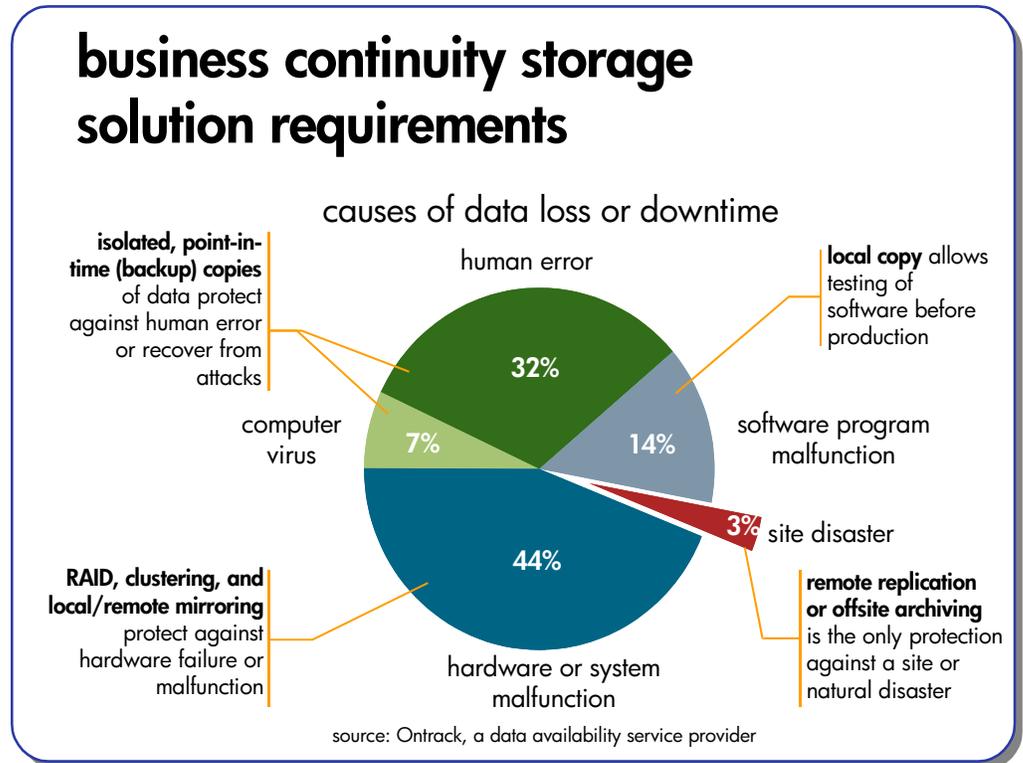
StorageWorks products implemented across a dedicated Storage Area Network (SAN) support data movement at high speeds and long distances between servers and storage. SAN attributes inherently drive positive returns on investment. For example, centralized storage increases productivity of IT staff. Adding storage to or reconfiguring a SAN can be accomplished without affecting the applications. Therefore, SANs enable efficient use of storage assets, which contributes to lower capital acquisition costs.

Figure 1 compares total cost of ownership (TCO) of a SAN with direct attached storage (DAS).



Data protection, security, and availability are critical to the success of Oracle customers. These customers require a computing solution that protects their information systems from disasters such as power outages, earthquakes, fires, floods, or acts of vandalism. HP solutions for Oracle are integrated and tested in an Oracle environment. They provide proof points on how HP products provide backup and disaster-tolerant capabilities to enhance Oracle configurations.

Figure 2 cites causes of lost data and solution requirements.



Data corruption can occur in many ways, for example, undetected errors or errors introduced by the I/O path of the operating system or an application writing to the wrong disk. The Oracle Hardware Assisted Resilient Data (HARD) initiative has been implemented in the HP StorageWorks Disk Array XP128 and XP1024 to prevent the introduction of data corruption through problems in the I/O path of the operating system or unauthorized writers.

Zero-downtime backup and instant recovery are available for all HP StorageWorks arrays and provide the protection you seek without the need to either take the system down for backup or adversely affect user response during an online backup. And you have a choice of products to use: HP OpenView Storage Data Protector, VERITAS, Computer Associates, or Legato.

Clusters provide multiple paths to data and failover in case of server failure. Whether local, metropolitan, or continental clusters, HP provides it all.

Data replication over Fibre Channel links or ATM provides exact copies of your data at a remote site and protects this asset from disaster should something happen to your primary computer site.

OpenView management software enables you to manage the servers and storage from a single pane of glass by using a Smart Plug-in for Oracle.

return on investment (ROI)

solution features	impact on Oracle environment	ROI effect
<ul style="list-style-type: none"> • Zero-downtime or non-disruptive backup 	<ul style="list-style-type: none"> • Has minimal impact on operations 	<ul style="list-style-type: none"> • Eliminates backup window resulting in higher availability
<ul style="list-style-type: none"> • Remote mirroring or disaster recovery 	<ul style="list-style-type: none"> • Provides increased data protection of critical business information 	<ul style="list-style-type: none"> • Provides ability to maintain business operations
<ul style="list-style-type: none"> • Data integrity check 	<ul style="list-style-type: none"> • Eliminates the prime cause of data corruption 	<ul style="list-style-type: none"> • Reduces unplanned downtime
<ul style="list-style-type: none"> • Stripe and Mirror Everything (SAME) 	<ul style="list-style-type: none"> • Provides performance tuning 	<ul style="list-style-type: none"> • Automatically performed, increasing productivity and efficiency of staff
<ul style="list-style-type: none"> • Instant recovery 	<ul style="list-style-type: none"> • Minimizes downtime resulting from data loss 	<ul style="list-style-type: none"> • Restores operations within minutes, not hours
<ul style="list-style-type: none"> • Storage consolidation 	<ul style="list-style-type: none"> • Provides alternate paths to data, increasing availability 	<ul style="list-style-type: none"> • Simplifies management
<ul style="list-style-type: none"> • Oracle Storage Compatibility Program 	<ul style="list-style-type: none"> • Ensures that storage meets Oracle standards 	<ul style="list-style-type: none"> • Ensures that storage performs as required
<ul style="list-style-type: none"> • Oracle backup solutions program 	<ul style="list-style-type: none"> • Enables tighter integration with Oracle applications 	<ul style="list-style-type: none"> • Provides reliable backup and recovery solutions
<ul style="list-style-type: none"> • Fully integrated, tested, and supported by HP 	<ul style="list-style-type: none"> • Mitigates business risk and prevents negative impact on operations 	<ul style="list-style-type: none"> • Reduces complexity and time to implement

solution description

HP solutions for Oracle is a suite of products consisting of an uncompromising storage infrastructure providing:

- Superior scalability with investment protection
- Non-disruptive backup or disaster recovery solutions
- State-of-the-art clone- and snapshot-based data replication capabilities
- StorageWorks arrays with the ability to hot-swap components and perform online upgrade
- Complete server and storage management from a single pane of glass
- Industry-leading performance as measured by TPC-C and TPC-H
- HP solutions for Oracle optimize your return on information technology investments.
- HP storage products enable maximum usage, security, and scalability of existing assets and integrate new technologies to **optimize system performance, return on investment, and productivity.**

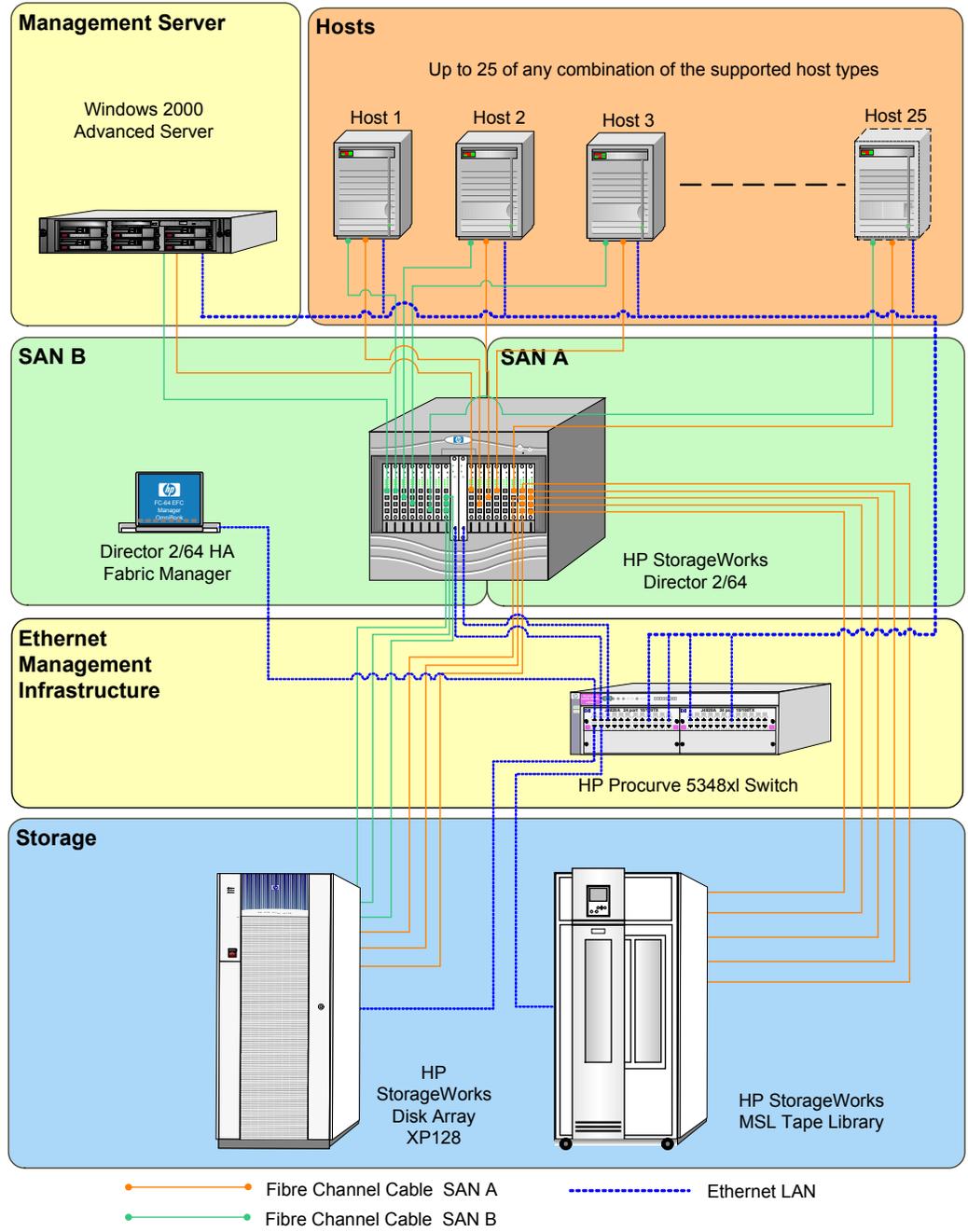
value proposition

- You experience **faster time to deployment** because HP provides **complete integration across the environment**—servers, storage, applications, partner-ready components, and a full range of services. You get a **trouble-free deployment**, pretested and preconfigured for **faster installation or customization.**
- HP infrastructure products provide a **manageable, integrated, dependable,** networked infrastructure that **reliably** connects and manages processes and resources, inside and outside your organization, while **protecting your company's most valuable asset**—data.
- The HP storage portfolio holds industry-leading performance and ease of management tools allowing you to **access your business data** in the time required to make **informative, timely business decisions.** Joint development and testing with Oracle ensures that the solution performs as you would expect.
- You get full control over all your resources—system, network, and storage—with HP OpenView storage software, which enables **ease of management of your infrastructure** and **higher productivity** while **lowering your storage maintenance costs.**

risks and mitigation

risks	mitigation
Technology evolution invalidates current storage equipment	Investment protection with HP StorageWorks in heterogeneous environments
Geographically dispersed resources and talent	Advanced IP replication and extended clusters and SANs
Security of information	Reputation and history of data security, from LUN masking to zoning on Fibre Channel using password-protected management tools
Delay in access to vital Oracle customer data	Industry-leading performance and up to 99.999% uptime

Enterprise SAN with multiple paths to data for continuous operations



services

HP has incorporated its experience into a variety of services and tools that help you plan, design, and architect your Oracle environment. These services include planning, design, implementation, performance, and capacity planning. For example, HP was named by Oracle as their preferred vendor for Oracle CRM *FastForward* Flows. Based on this customer-proven methodology, HP Rapid IT for Oracle CRM combines HP consulting services and IT infrastructure products that enable you to deploy business flows for marketing, sales, and services in 90 days or less. HP Services helps you realize measurable business value from their IT investments. By linking business and technology, the people of HP Services help you to reduce costs, extend and optimize enterprise assets, and keep IT up and running all the time.

- HP Services, with 65,000 employees in 160 countries, is the No. 1 in mission-critical infrastructure services and is the No. 3 IT services provider.
- HP is equipped to meet your needs better through the combination of its people, its approach, and its portfolio of offerings. By pulling from the extensive set of HP services in support, consulting, and integration, and managed services, HP Services adds value to and differentiates HP products and solutions. Complemented by the global reach and partnerships, HP Services can offer solutions that address your toughest problems.
- HP Services can enter the engagement lifecycle at any point, depending on your priorities. For example, HP Services can help you design a solution, build it, integrate it, manage it, and evolve it. In taking on any specific problem, the global team of experts draws on a comprehensive set of offerings, complemented by a network of global partners.

additional services

IT Infrastructure Solutions provide IT organizations with the data center infrastructure, architecture, IT/IS strategy, technology solutions, and related IT processes to meet their business and service-level objectives.

- HP Consulting helps to analyze your needs. These consultants can design, build, and manage mission-critical and disaster-tolerant IT infrastructure solutions (based on UNIX and Windows NT servers) that provide the essential foundation for e-service success. HP Consulting personnel consult on the technology, people, and processes you need to meet, sustain, or exceed your service-level objectives for user availability, performance, and security.
- High-availability services help you to plan and design disaster-tolerant solutions to effectively manage and utilize your systems and decrease implementation time, based on the expertise of the HP high-availability specialist.
- Startup integration services are fixed-price services that design hardware, disk layout, operation software configuration, and patching to significantly reduce implementation time and overall project costs. These services also include basic configuration design services for core IT components such as MC/ServiceGuard and Storage Data Protector.
- Mission-critical e-infrastructure services and solutions help to plan and design mission-critical solutions providing up to 99.999% availability.
- Performance and capacity planning services provide fixed-price and consulting services to diagnose the root cause and solve the performance problems involving IT infrastructures.

why hp

HP co-developed the Oracle 9iRAC, which was stress-tested with the HP StorageWorks XP512. Oracle chose HP for its CRM development systems and internal email system. There is more than a decade of collaboration and aligned support processes with Oracle, providing immediate information exchange and faster time to results.

As a full-service provider of servers, storage, software, and infrastructure, only HP can:

- Ensure continuous uptime by systematically eliminating single points of failure across the board—from the hardware to the Oracle application level. HP solutions for Oracle provide instant, automated switchover for the hardware, operating system, database, and Oracle components, ensuring service continuity in the event of failure.
- Deliver rock-solid security with solutions that perform encryption for secure transactions and instant authorization and authentication checks.
- Prepare you for sudden load peaks by keeping extra processor and storage capacity on standby for instant activation whenever needed.
- Enable rapid deployment of Oracle solutions because HP consultants, cooperating closely with Oracle, use a structured approach based on Oracle best practices to help you design and implement the IT infrastructure that your enterprise needs to ensure a smooth, speedy rollout of Oracle solutions.
- Provide end-to-end control of the entire Oracle environment with management tools and support services that manage every component, from hardware to applications—even in distributed, Internet-based system environments.
- Enable faster recovery time to ensure that your Oracle environment is restored with minimal impact to your business.
- Provide the highest level of storage performance in the industry, which contributes to higher productivity of your Oracle resources.

for more information

To learn more about HP storage, contact your local HP sales representative or visit our Web site at www.hp.com/go/storage.

To learn more about HP application solutions, visit:

<http://h18006.www1.hp.com/storage/solutions/application.html>

To learn more about HP storage blueprints including SAN, disaster recovery, backup and restore, and storage area management, visit:

www.hp.com/products1/storage/promos/blueprints/hp_all_blueprint.html

To learn more about the HP industry-leading TPC benchmarks, visit the TPC Web site at

www.tpc.org.

To learn more about HP business continuity solutions, visit:

<http://h18006.www1.hp.com/storage/solutions/bcontinuity.html>

To learn more about the HP alliance with Oracle, visit: www.hp.com/solutions1/oracle/

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