

hp storage

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business  
blueprint

# hp rapid restore for SQL server 2000 solution

**table of contents**

- executive summary ..... 3**
- business needs ..... 3**
- solution summary ..... 4**
- return on investment (ROI) ..... 5**
- solution description ..... 5**
  - business value of Vsnaps and snapclones ..... 6**
- value proposition ..... 7**
- services..... 7**
- for more information ..... 7**

## executive summary

Both large and small companies trust Microsoft® SQL Server 2000 for their most critical enterprise databases. And, when a database is that important to your business, lengthy application disruptions for backups, restores, and growth can be extremely costly. That's why HP developed the Rapid Restore Solution designed specifically for SQL Server environments.

The Rapid Restore for SQL Server 2000 Solution allows you to increase SQL Server 2000 application availability while enhancing your data recovery strategy.

Through the use of local replication of online disks and volumes, this proven solution will allow you to recover your SQL Server 2000 environment in just minutes, compared to hours utilizing conventional tape or disk-based restore methods. This parallel processing capability offers workload compression so you can significantly increase efficiency and productivity while maintaining continuous support for the production needs of the enterprise. The solution is based on HP StorageWorks Enterprise Volume Manager and the HP StorageWorks Enterprise Virtual Array. A free *Implementation Blueprint* provides best practices, performance information, steps, and tools needed to plan for and recover a database environment quickly in the event of data corruption or loss.

## business needs

Local replication of online disks and volumes is emerging as the technique of choice for protection of critical data. To an unprecedented extent, companies today rely on online, frequently accessed, constantly changing SQL databases to run businesses. Unplanned events that prevent the availability of data can have negative consequences for business operations. Even with a well executed backup strategy, administrators face lengthy delays when restoring an SQL environment. The Rapid Restore for SQL Server 2000 Solution, which is based on local replicated volumes, reduces the restore time from hours to minutes and causes minimal disruption to end users. You can achieve a highly available SQL environment with a complete set of hardware, software, and supporting utilities.

With the Rapid Restore for SQL Server 2000 Solution, you can

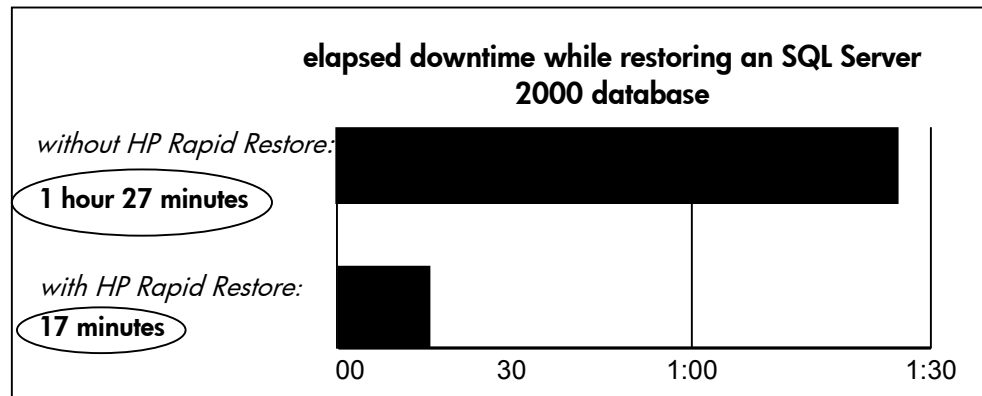
- Maximize hours of online processing to increase revenue
- Accomplish backups quickly, frequently, and without disruption
- Recover from an unplanned outage, quickly restoring your business to operational mode
- Load or update data warehouses as needed
- Perform application testing with real production data while business continues
- Eliminate job step copies, saving batch processing time

"Microsoft SQL Server 2000 customers put their trust in the performance and reliability of the database. HP StorageWorks solutions for SQL Server 2000 help provide even more robust storage solutions for our customers. Rapid Restore for SQL Server and Virtualized Storage Management for SQL Server 2000 are pretested and automated solutions that take advantage of our highly scalable and versatile storage management software. Together, HP StorageWorks and SQL Server 2000 offer enhanced application availability and organizational agility in fast-paced environments."

**Stan Sorensen, Microsoft Corporation**  
Director, SQL Server Product Marketing

## solution summary

This solution is a quick and complete method of recovering clustered Microsoft SQL Server 2000 databases with minimal disruption. Using HP StorageWorks Enterprise Volume Manager (EVM) v2.0D and HP StorageWorks Enterprise Virtual Array (EVA) v2, you can create local replicated volumes—Vsnaps and snapclones—of your SQL Server databases and resume full operation of clustered (or non-clustered) SQL Server environments in minutes. A Vsnap is a virtually capacity-free snapshot that is a space-efficient point-in-time copy of the data. A snapclone is a complete physical point-in-time copy of a data volume. Both Vsnaps and snapclones can be used to perform an **extremely rapid restoration** of application environments.



The solution provides the following benefits:

- Dramatically improved restoration times for SQL Server 2000 databases
- Best practices to maximize SQL Server 2000 availability during database recovery scenarios
- Simplified implementation and management, including script examples
- Data integrity and engineering within Microsoft guidelines
- Investment protection by leveraging existing HP hardware and software, supporting multiple configurations and providing interoperability with future products
- Integration with third-party tape backup applications—specifically tested with VERITAS NetBackup and HP OpenView Storage Data Protector

## return on investment (ROI)

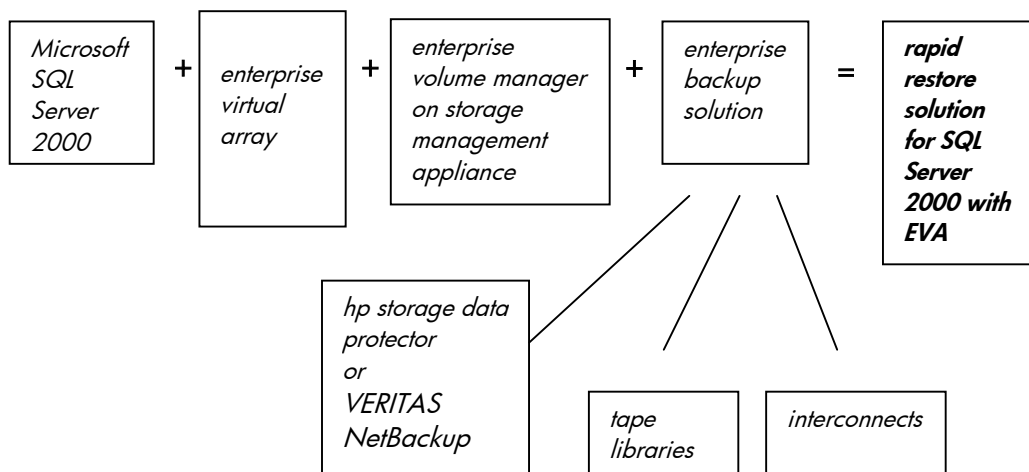
Downtime, even for planned backup and routine maintenance, can mean financial loss. A lengthy recovery can have significant business cost. In the always-on e-commerce world, the impact of system downtime in lost transactions and profits is obvious; however, even for more traditional organizations, downtime and recovery can result in delays to order processing, customer contact, and supplier transactions—all of which can impact revenue.

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

Source: Contingency Planning Research

## solution description

The Rapid Restore Solution for SQL Server 2000 is a validated and fully integrated configuration that provides a SAN-based backup-and-restore infrastructure for end-to-end data protection. This solution leverages the capabilities of EVA and EVM with SQL Server 2000—and it includes the optional components of HP OpenView Storage Data Protector or VERITAS NetBackup and the HP StorageWorks Enterprise Backup Solution, as illustrated below:



- Microsoft SQL Server 2000: You can configure the SQL Server 2000 application and database on any Windows® 2000 server and use clustered configuration for improved application availability.
- Enterprise Virtual Array (EVA): The SQL Server 2000 database volumes must be located on the Enterprise Virtual Arrays. EVA is a high-performance, high-capacity and high-availability “virtual” RAID storage solution that eliminates the time, space, and cost boundaries of traditional storage. EVA can save significant disk space and improve disk utilization efficiency because it does not reserve the same amount of disk capacity as the production volume being copied.
- Enterprise Volume Manager v2.0D (EVM): EVM is browser-based storage management software that facilitates controller-based clone operations to make a block-to-block copy of a storage volume. With EVM, you can create, run, and manage automated storage replication jobs as well as link them with external jobs.
- Enterprise Backup Solution (EBS, optional): EBS provides a consolidated backup infrastructure consisting of multiple servers connected over a high-speed Fibre Channel SAN to centrally attached SCSI tape libraries. EBS significantly shrinks backup windows with a flexible approach to data protection.
- Enterprise Backup Solution with HP OpenView Storage Data Protector v5.0 or VERITAS NetBackup v3.4 provides SAN-based backup-and-restore operations for snapclone-based tape backups.

A comprehensive Implementation Blueprint describes best practices, test procedures, and results and includes a script kit and utility software to enable pausing and restarting the database for consistent copies. This utility results in minimal impact and ensures the solution is engineered within Microsoft guidelines.

## business value of Vsnaps and snapclones

The EVA allows you to create demand-allocated snapshots (**Vsnaps**) and instantaneous **snapclones**, powerful recovery technologies used in the Rapid Restore for SQL Server 2000 Solution. These technologies maximize hours of online processing to increase revenue by accomplishing backups quickly, frequently, and without disruption. Additionally, vnsaps and snapclones are strong data protection tools as they enable recovery from unplanned outages, quickly restoring your business to operational mode.

Vsnaps allow on-the-fly space allocation. You can replicate data instantly by taking a “picture” of the data within seconds, without reserving an equal amount of capacity. Similar to traditional snapshots, Vsnaps are point-in-time copies of data volumes; however, once the snapshot is taken, the Vsnap takes up very little capacity, resulting in the most cost-efficient use of storage.

Snapclones are complete, physical point-in-time copies of data volumes and are ideal for reducing I/O loads on the production volumes. These copies can be used for backups to tape, disk-based backup, as well as application testing and data mining that will not impact production data. Snapclones are snapshots that normalize into clones. A snapclone has the same property as a snapshot so it is instantly available. Similar to a snapshot, a snapclone can be instantly mounted or backed up to tape. However, with snapclones you have an exact copy of the database. This is especially useful for fast restores if a catastrophic failure happens.

## value proposition

The HP Rapid Restore for SQL Server 2000 Solution delivers nearly instantaneous restoration of critical SQL databases and ensures the integrity of the recovered data—maximizing your online processing time to increase revenue.

## services

While technology is a key component of the Rapid Restore for SQL Server 2000 Solution, technology alone does not solve complex business problems. Protecting your critical business operations takes some preparation. HP can help you design, build, and implement a solution that protects your entire environment—including planning, disaster tolerance, and recovery services. Contact your HP representative for more information.

## for more information

To learn more about HP Rapid Restore for SQL Server 2000, contact your local HP sales representative or visit our Web site at:

<http://www.compaq.com/products/storageworks/solutions/rapidrestoresql/index.html>

For Microsoft SQL Server information:

<http://www.microsoft.com/sql/default.asp>

For HP StorageWorks Enterprise Virtual Array information and documentation:

<http://www.compaq.com/products/storageworks/enterprise/index.html>

For HP OpenView Storage Management Appliance information and documentation:

<http://www.compaq.com/products/sanworks/managementappliance/index.html>

For HP StorageWorks Enterprise Volume Manager documentation:

<http://www.HP.com/products/sanworks/evm/documentation.html>

For EVM integration with Enterprise Backup Solutions including VERITAS NetBackup:

<http://www.HP.com/products/storageworks/ebs/documentation.html>

For StorageWorks Secure Path information and documentation:

<http://www.compaq.com/products/sanworks/secure-path/documentation.html>

For HP OpenView Storage Data Protector information and documentation:

<http://www.openview.hp.com/products/dataprotector/index.asp>

For VERITAS NetBackup information and documentation:

[www.veritas.com](http://www.veritas.com) >> [Products](#)

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