HP StorageWorks Modular Smart Array 1500 tiered storage with Princeton Softech Archive for Servers — business blueprint

Executive summary

With database storage continuing to grow at a rapid pace and becoming ubiquitous, database and storage administrators are finding the task of data and storage management in mission-critical environments to be increasingly difficult to maintain. Searching for ways to reduce database size with multiple production databases, as well as managing full-time, offline, and online database backup and recovery jobs, can make any IT manager's storage management role quite challenging. Additionally, improperly securing Database Management Storage (DBMS) data can also fail legal compliance criteria during audit activity. As these complex issues manifest themselves and new storage consolidation initiatives are developed to meet those demands, corporate database administration methodologies and concepts must evolve. Information management professionals will have to approach storage management in a modular fashion.

Information management professionals will gain much better control of their storage environments using the Information Lifecycle Management (ILM) methodologies that prioritize data and arrange it through the archival and purging processes. The goal of the ILM solution is to seamlessly stabilize the rate of production database growth, while at the same time, align with increasing business growth.

The Princeton Softech Active Archiving technology enables users of enterprise applications residing on top of complex relational database environments to easily identify, extract, archive, access, move, and restore complex sets of reference data.

Embedded in the Princeton Softech database archiving solution is the opportunity to deploy the HP StorageWorks Modular Smart Array 1500 (MSA1500) as an integral part of an effective ILM storage solution. Because archived data contains information that is accessed less frequently, the MSA1500, using Serial ATA (SATA) technology, is an ideal, cost-effective archive storage target.

The MSA1500 is a 2U 2-Gb Fibre Channel storage area network (SAN) attached controller shelf for the entry-level to midrange SAN. This system provides a low-cost, scalable storage system. The modular design of the MSA1500 enables you to easily add storage capacity up to 16.8 TB of SCSI or 24 TB of SATA storage behind one controller shelf. You can mix SCSI and SATA enclosures behind the same controller if needed.

Business needs

Businesses today are looking for applications to use with their storage arrays that will streamline archiving operations while meeting government regulations. Because databases are exponentially growing, IT administrators are encountering huge problems, such as:

- Missed service levels—Longer response times, decreased productivity, and frustrated customers
- Operational risks—Longer work cycles, low to no disaster recovery processes, and slow to comply to new regulatory requirements
- Skyrocketing IT costs—Hardware upgrades, software upgrades, and opportunity costs

Princeton Softech Archive for Servers and the MSA1500 with SATA enclosures were qualified together to meet and help with these problems by enabling you to safely and accurately move archive data to less expensive storage and remove complete sets of rarely accessed data from your production databases. This capability reduces database size by up to 50% or more. It also reduces the cost of storage, while simultaneously maintaining the archived data in an "active" state that enables easy access.

Such database archiving solutions dramatically improve application and system performance and reduce IT costs by removing or moving rarely accessed data from expensive storage systems and production databases to less expensive storage systems.

Princeton Softech solutions and the MSA1500 with SATA enclosures together can intelligently select this data for movement between tiers of storage, including production data, active archive data, secondary archive data, and near online or offline data—all of which can be seamlessly accessed by the end user.

HP realizes that businesses want fast, reliable storage systems that are easy to manage, along with comprehensive technologies for database archiving. They want to be sure that their data is accessible whenever there is need. The MSA1500 with either SCSI or SATA attached enclosures minimizes the likelihood of a device failure by offering:

- Advanced Data Guarding (RAID ADG) fault tolerance—RAID ADG is the highest level of fault tolerance.
- Hot-plug expansion and replacement support—The MSA1500 supports hot-plug expansion and replacement of hard drives, optional redundant controllers, power supplies, fans, Fibre Channel and SCSI I/O modules, and disk enclosures.

Solution summary

The continued explosion in storage capacity needs presents users with a variety of space and data management challenges. The adoption of a SAN solution affords the user the benefits of storage consolidation, such as greater disk utilization, higher level of data protection, and vastly increased ease of management.

The concept of a SAN solution such as the MSA1500 is built around consolidating all the storage presently attached to individual servers, moving it off of the Ethernet network and onto its own Fibre Channel network, and managing it at a central location. Fibre Channel host bus adapters, switches or hubs, and necessary cabling provide the infrastructure building blocks.

The MSA1500 gives scalability and performance at an extraordinary cost—less than one cent per megabyte. The unit can grow to 16.8 TB of SCSI or 24 TB of SATA storage with speeds of up to 30,000 I/O (cached) per second and throughput of up to 200 MB/s. Coupling these capabilities with direct attached storage (DAS) to SAN functionality and RAID ADG gives the user the most cost-efficient, reliable, high-performance, and easily managed shared storage available.

Return on investment

The MSA1500 has a high return on investment (ROI) because of its:

- Ability to manage more data with less staffing
- Increased computing infrastructure utilization for better overall system performance
- Reduced storage cost for remote and branch offices

Solution description

Princeton Softech and the MSA1500 archive solution provide proven technology and comprehensive database archiving capabilities. Companies can archive and remove precise sets of rarely accessed data, save that data in an archive file on the SATA tiered storage attached to the MSA1500, and keep it active for easy access when needed. Mission-critical data remains in the production database on more expensive storage technology for peak performance needs. Application performance and availability improve significantly, simultaneously with the total cost of ownership.
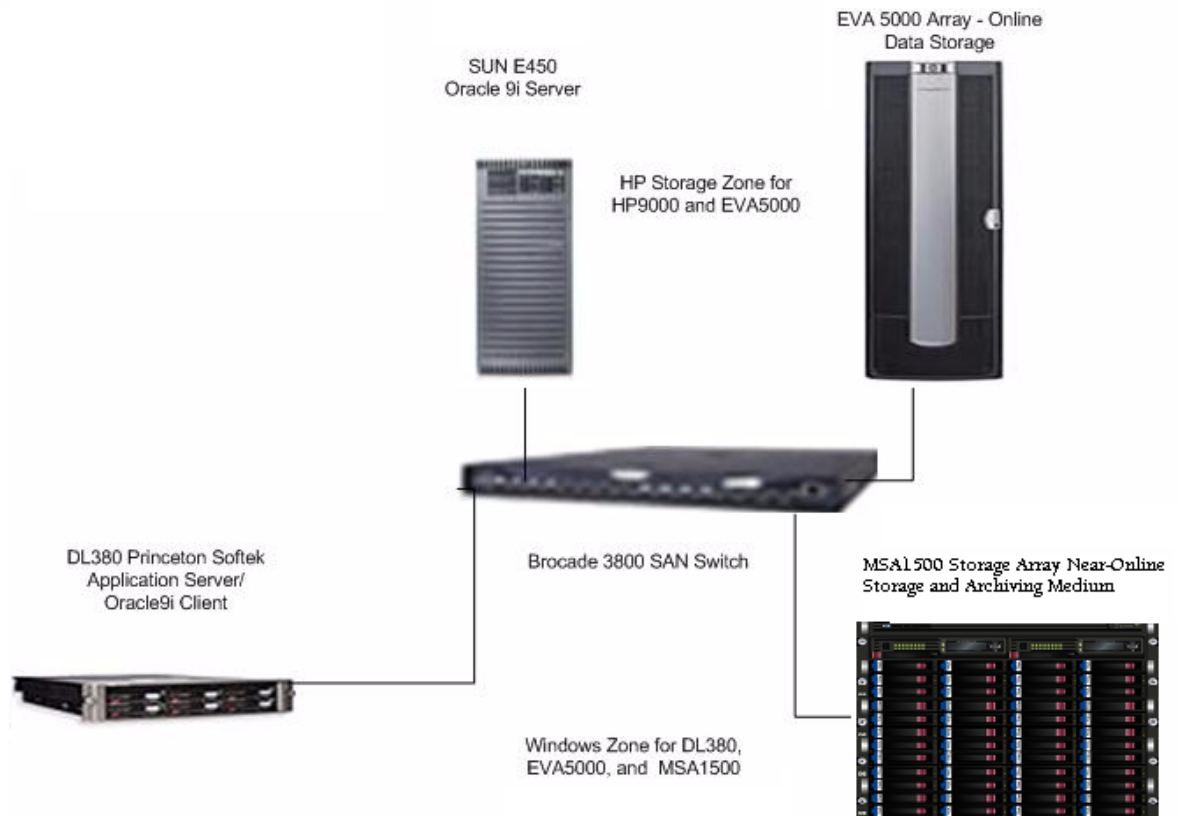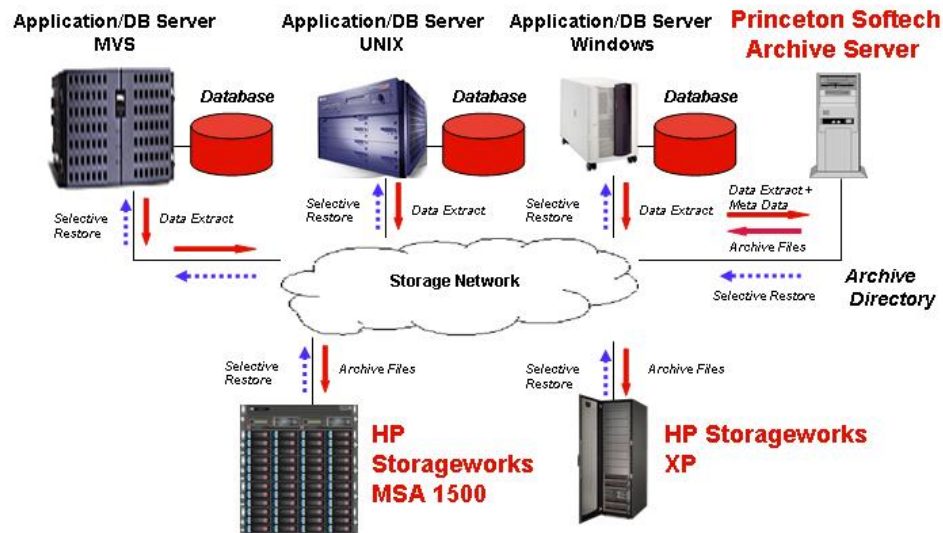
Figure 1.

Figure 1 reflects the configuration environment that was used to test Princeton Softech Archive for Servers solution with the HP ProLiant DL380, HP StorageWorks Enterprise Virtual Array 5000 (EVA5000), and MSA1500 with SATA storage enclosures for the archive medium.

Solution overview

Princeton Softech Active Archiving technology, along with the MSA1500 with SATA, enables users of enterprise applications residing on top of complex relational database environments to easily identify, extract, archive, access, move, and restore complex sets of referentially intact relational data in a tiered storage environment. The benefits to users include substantially improved application performance and significantly reduced database storage and management and administrative costs.

Database archiving can scale from entry-level to departmental applications to enterprise data centers, depending on your specific requirements. The benefit that HP and Princeton Softech bring to your company is the prequalification of hardware and software together, along with targeted service offerings to help you install, configure, and maintain your database archiving environment.

Figure 2.

The solution depicted in Figure 2 has been jointly certified for quality and reliability of the archive solution, driving higher customer satisfaction with a coordinated effort to offer the appropriate solution to each customer.

This solution provides strict compliance with records-retention regulations, enables adherence to rigorous best practices for disk-based management of regulated data, and lowers the total cost of ownership through adoption of a single architecture for all classes of archived data.

Value proposition

HP and Princeton offer complete ILM solutions addressing all classes of data, reducing total cost of ownership within your production environment. This solution heterogeneously supports all leading open systems (Oracle®, Sybase, UDB, Microsoft® SQL Server, Informix) and mainframe (DB2) production database environments. The solution is a component in addressing increased data retention regulations in industries, such as financial services, health care, telecommunications, life sciences, and government.

Services

HP Storage Services takes the existing storage product, along with the existing services, and creates a package of the storage hardware and appropriate services. The increased level of support provides you a higher level of storage system availability. The package includes 24 x 7 support with a four-hour response for three years, as well as installation and startup service.

Why HP

It is not about where information lives—it is about putting information to work, in real-time, throughout its life cycle, to unleash the value of information, improve competitiveness, and create new business opportunities. Today, HP StorageWorks helps businesses put information to work by:

- Providing investment protection through compatible, expandable, industry-leading products
- Leading in innovation, storage, computing, and networking expertise
- Offering unparalleled support and service
- Striving to bring to market industry-standard solutions that work in several environments

For more information

- HP StorageWorks Modular Smart Array 1500 controller shelf storage solutions
  http://www.hp.com/go/MSA1500cs
- ILM partner solutions
  http://h21007.www2.hp.com/dspp/pp/pp_Overview_IDX/1,1419,78,00.html
- HP/Princeton Softech partnership
  http://www.princetonsoftech.com/activealliance/partners/Storage/hppartnership.htm