A Simplified Answer: Manageability of Storage using the SAN Volume Controller and Storage Resource Manager

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As your company expands, IT complexity increases, and the need to manage your storage growth, availability, and utilization also increases dramatically. Frequently, your storage is spread over a variety of locations and heterogeneous devices which can further complicate your job. Today, I'm going to concentrate on two ways of helping you manage your storage, control costs, and increase your storage utilization. The first is Storage Resource Manager (SRM) and the other is Virtualization with the IBM SAN Volume Controller (SVC) software. Both are part of IBM's TotalStorage® Open Software Family.

First, let's look at the task of managing your storage. Gartner notes "Most of our clients report that they can afford to buy storage, but they can't manage it." (Nick Allen, Vice President, Research Director). SRM helps you visualize your storage resource, and can return immediate value to your environment, as it helps you contain storage growth and proactively manage that environment. As IDC recently reported (InfoStor, February, 2004), the fastest growing segment in the storage software market is the Storage Resource Management segment, growing at 19%.

The following key questions can help you determine if you could benefit from SRM:

1. What is your estimated annual storage growth?
2. What is driving the growth?
3. What is your average storage utilization?
4. How long do backup jobs take to complete and is this within your window?
5. What percentage of downtime is storage related?
6. How do you determine when and where additional storage resources may be needed?
7. How do you proactively detect storage problems before they become severe?
8. How do you analyze the data you are storing?
9. How fresh or stale is the data you're storing? (One SRM customer realized after their first scan that 80% of their data, more than ten terabytes, hadn't been accessed in more than a year.)
10. Which computers will run out of storage first? (These computers will bring a business to a standstill, and must be identified and dealt with immediately.)

SRM Value Proposition

- Detailed asset view of all servers, including make, manufacturer, model, processor type/speed/count, OS Type/version, disk capacity, controllers, disks, volume capacity etc;
- Disk and file system capacity analysis to determine total capacity by server, amount of owned, allocated and unallocated capacity, file system free or used space;
- Analysis of server load based on number of files being accessed, modified, or created on a daily, weekly, monthly basis and user analysis to determine users per server.
- Assessment of all data stored to make more intelligent decisions as to what data to consolidate, migrate, archive or expire.

Now let's look at Virtualization of your storage environment. According to International Technology Group, September 2003, storage resources accounted for more than 17 percent of Fortune 500 IT expenditures in 2003. In 1996, the comparable figure was around 11 percent. On current trends, it will exceed 22 percent by 2007.

While IBM's Tivoli Storage Resource Manager (TSRM) can help you analyze your storage, SVC can help you virtualize, or pool, your heterogeneous storage for storage optimization, improved application availability, reduced costs, and flexible replication. These are all shown to be today's key storage challenges.

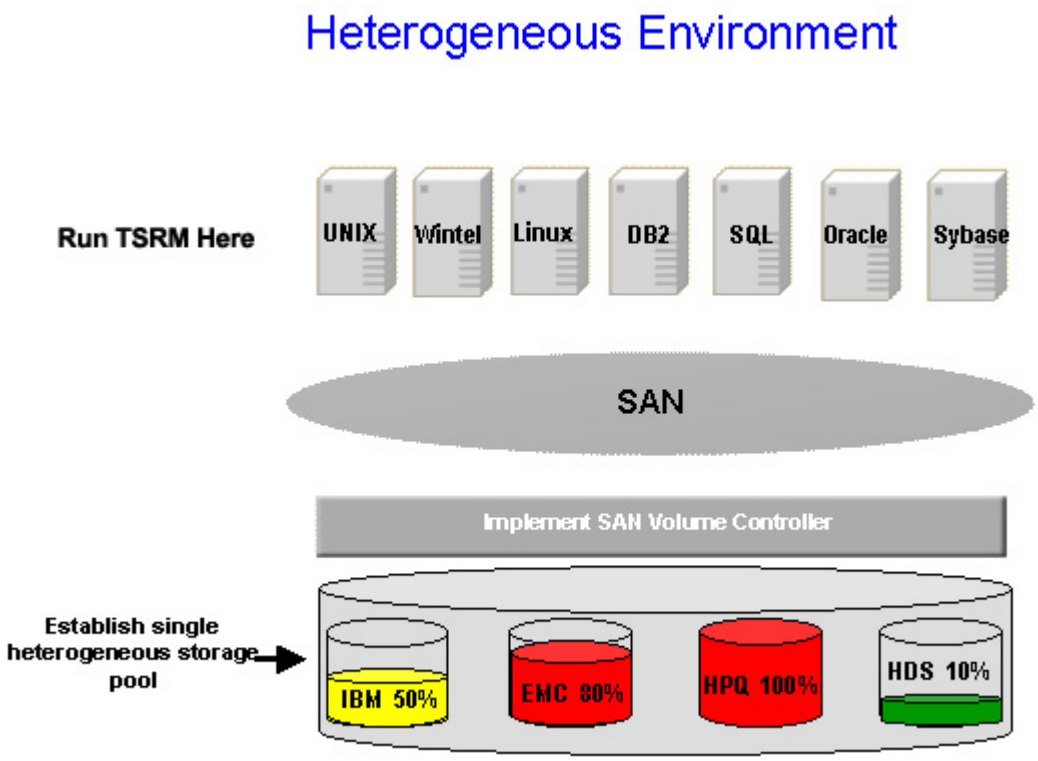
TotalStorage SVC allows you to make changes to your company's physical storage with minimal or no disruption to applications, enabling your business to dynamically adapt to variable environments. This in turn can allow you to better match the cost of your storage to the value of your data. The IBM Virtualization Engine™ can provide a comprehensive set of systems services and technologies that can help you achieve your integration goals by aggregating pools of resources into a single, logical view

If you use the Cisco MDS 9000, IBM has a SVC specifically for this environment. It includes iSCSI connectivity through the Cisco MDS 9000 IP Storage Services Module. SVC storage software is embedded into a pair of Caching Services Modules for the Cisco MDS 9000 family of switches and directors. Overall the SVC Value Proposition listed below is very strong.

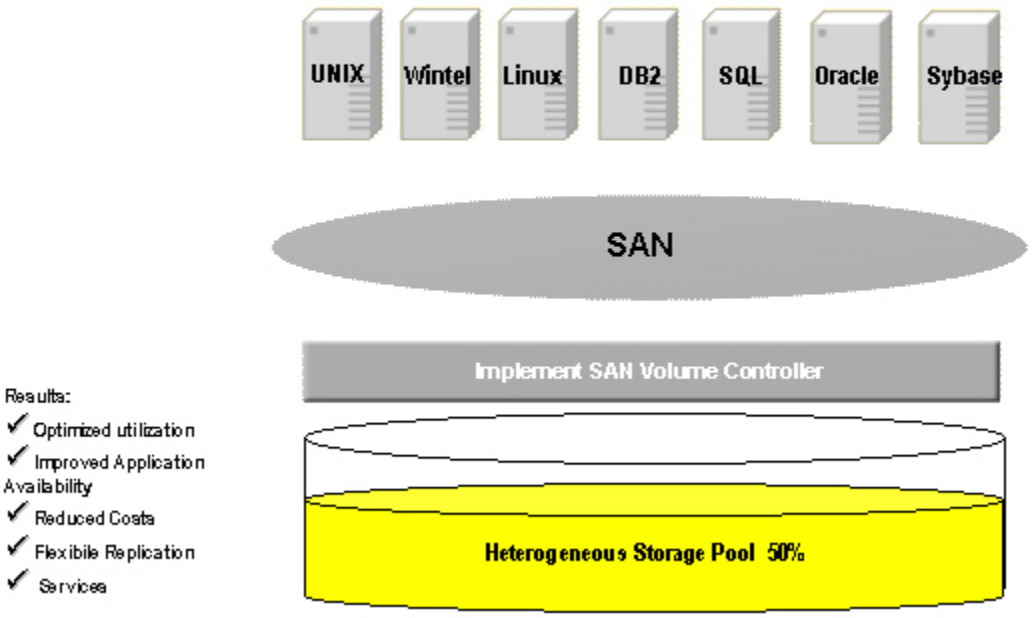
SVC Value Proposition
Incorporating the SAN Volume Controller into your storage environment can help you to:

- Consolidate disparate storage devices into a common storage pool from which to provision and allocate capacity as needed, without impacting applications
- Create common replication management services, regardless of storage device

Below is a graphic example of how both SRM and SVC can work in your environment:

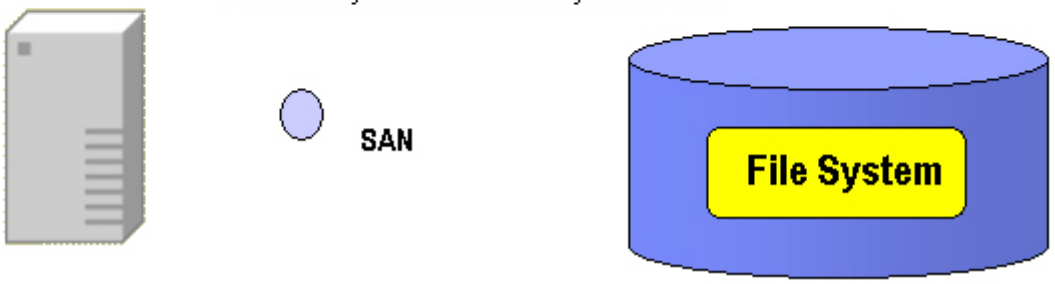


TSRM Helps you to Analyze Utilization
SVC Helps you Allocate Storage on Demand

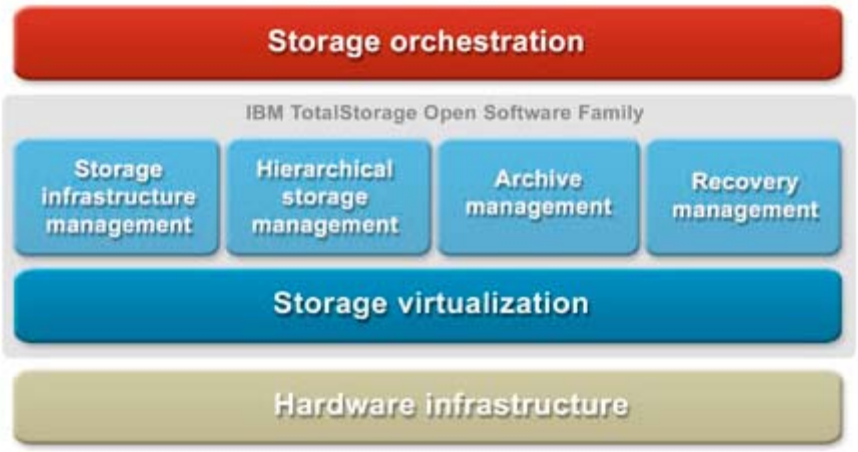


TotalStorage and how SRM/SVC can help:

- File System hits capacity threshold of 90% full
  ACTION: SRM automatically extends the File System 150%
- File System grows and again hits capacity threshold of 90% full **AND** disk volume capacity is full
  ACTION: Use SVC to provision additional disk capacity 150% **AND THEN** SRM automatically extends the File System 150%



Storage and network administrators face some tough challenges today. Demand for more storage continues to grow. Enterprises require increasingly resilient storage infrastructures to support their on demand business needs. Compliance with legal, governmental, and other industry specific regulations is driving new data retention requirements. Software solutions can help you address these storage management challenges - today. Let Datatrend Technologies help you work through these challenges, with innovative and affordable solutions, coupled with a knowledge of your work environment. Together, we can make storage management and Storage Virtualization a reality for you!


Storage orchestration
IBM TotalStorage Open Software Family
Storage infrastructure management
Hierarchical storage management
Archive management
Recovery management
Storage virtualization
Hardware infrastructure
