

Tools4ever - SpaceGuard SRM

Return on Investment

The Challenge

Increasing storage demands require effective methods to regulate and control disk space usage. Users tend to quickly fill up all the available space with Internet downloads, MP3 and video files, email attachments and their documents. Simply expanding storage capacity won't do the trick, since that will only add another point of failure, more operational costs and more backup requirements.

IDC, the leading provider of IT intelligence, research and guidance for users and providers of information technology, anticipates storage capacity to grow at a staggering compound rate of 89% a year between 1998 and 2003. This signifies that by 2003, the average environment will have 14 times more storage capacity than it did in 1998. New studies will confirm the increase in storage demands, making storage management a top priority task of every network administrator.

Some of the contributing factors to the increase of disk space shortage are: low cost per hard disk, increased use of email with larger attachments, increased internet connectivity speeds resulting in more JPG and MP3 file downloads.

A Closer Look at Storage Costs

The environment used in this cost justification is a midsize network using 18 file servers with 73Gb of storage capacity each. The network consists of 5000 end users with their own home directory on these 18 servers.

IDC tells us that, if no restrictions are applied to storage consumption, end user storage usage will increase by 89% annually. The total storage capacity of our target network is 1314Gb, lets assume that each user consumes 100MB, making the total storage consumption at that moment 500Gb, which is roughly 38% of the total capacity. A year later, the end user storage consumption would increase by 89%, requiring 445Gb of extra capacity.

According to a study by Gartner, an enterprise spends an average of \$3 managing storage for every \$1 spent on storage hardware. An article in the May 2001 issue of Computerworld also confirms this; it states that for every \$1 spent on disk and tape storage, an additional \$4 to \$7 is spent over its life for management. The calculations in this document will be based on the Gartner average of \$3.

Every network administrator can tell you that hard disks are never used at 100% efficiency. Disks are not used as a single storage pool, but rather partitioned and divided into network accessible shares. This leads to a average of 50% fragmentation of available free storage space for each disk. Garther Group confirms this figure.

Storage Cost Breakdown

Storage expansion requirements will be, based on IDC and Gartner Group figures:

Total required capacity after 1 year = 500Gb + 89% = 945Gb

Total available capacity = 657Gb (18 * 73 * 50% because of fragmentation)

Total capacity investment = 945Gb – 657Gb = 288Gb

Hard drive costs (based on Dell® pricing, November 2003):

73.4 GB SCSI Hard Drive for Dell® PowerEdge™ Servers and PowerVault™ Systems, \$499

Storage hardware and management costs will be, based on the above figures:

Total required capacity = 288Gb

Amount of disks = 288Gb / 73Gb = 4 disks. Using the 50% storage fragmentation figure, 8 disks will be required for this capacity increase.

Total hardware costs = 8 * \$499 = \$3,992

Based on the above figures, management costs will be \$3 for each \$1 spent on storage hardware.

Total storage investment = \$3,992 + (\$3,992 * \$3) = \$15,968 for the first year and \$3,992 * \$3 = 11,976 per subsequent year.

The Solution: SpaceGuard SRM

SpaceGuard SRM will quickly repay itself by cutting storage and backup capacity expansion costs, and will save time by preventing network administrators from regaining disk space from end users. In many cases, the initial investment in unmanaged storage space is more expensive than licensing SpaceGuard SRM.

According to Gartner, in a distributed storage environment, after 90 days, 60 percent to 80 percent of data typically remains untouched. Maintaining optimal balance in this type of environment requires vigilance by the network or storage manager.

By deploying SpaceGuard SRM, end users will get a quota according to a storage policy. We have seen the reports from Gartner that typically an average of 70% of the end user data remains untouched, which means the data is not necessarily needed for the user to operate within an organization. By using a fixed quota, a typical organization can effectively halt the storage consumption increase by causing user awareness.

Note: the calculations below are based on the savings when using SpaceGuard SRM for only the first year. Savings will increase further when considering the anticipated storage requirement increase of 89% annually.

Cost savings for the first year:

Total annual storage investment without SpaceGuard SRM	\$15,968
SpaceGuard SRM licensing costs for 18 servers and 1 year maintenance	<u>-\$9,450</u>

Cost savings for the first year:	\$6,518
SpaceGuard repays for itself within 7 months	

Annual cost overhead reduction after the first year:

Total annual storage investment without SpaceGuard SRM	\$11,976
SpaceGuard SRM annual maintenance and upgrade costs (20% of retail price)	<u>-\$1,890</u>

Additional annual cost savings after the first year:	\$10,086
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