



Reduce the Overall Costs of Managing
Mainframe Storage Using BMC MAINVIEW SRM

SAVE MONEY & ENERGY - OPTIMIZE MAINFRAME STORAGE

Businesses rely on storage and require quick access to the data, whether it is located on disk or tape. Storage is growing in an explosive manner fueled by compliance regulations, application content requirements, and business growth. Technology has made storage inexpensive to purchase and as a result, the need to implement storage management processes have been deferred. Analysts' estimates indicate that storage is growing at a rate of 50 to 70% a year. With the raw cost of mainframe disk storage hovering around .02 cents/MB (\$20/GB), storage can be considered cheap. However, this does not cover the real cost of maintaining that storage. In fact, the cost is 3 to 7 times the raw cost, making storage resources no longer inexpensive.

RAID technology has enabled storage footprints to grow smaller, packing in large numbers of spinning platters into one frame and creating a large amount of heat as a byproduct. The cost of the energy required to cool and power the spinning disk drives can be a significant expenditure. According to Gartner, "An increasing number of clients are reporting cooling problems in their data centers, due to the growth rate and heat dissipation of new servers, storage and networking equipment. In a conventional data center, 35% to as much as 50% of the electrical energy consumed is used for cooling, as opposed to 15% in best-practice green data centers."¹ An EPA study reports that by 2011 energy consumption for U.S. data centers will have doubled over the previous four years, using more than 100 billion kilowatts per hour (KWh) at a cost of more than \$7.4 billion annually, requiring 10 additional power plants.

Mainframe storage management is leading the way in lowering energy costs by utilizing storage resources more effectively. There still is a big opportunity to lower costs, improve efficiency and lessen the impact on the environment.

ALLOCATION OF RESOURCES

As a result of storage management staff cuts, application programmers began over-allocating data files with limited knowledge of calculating the correct amount to be used.

This resulted in large amounts of idle space, which is space that is allocated but not used. The ability to make this unused storage available will save a considerable amount of money as it defers the purchase of additional storage.

The Data Assist feature of BMC MAINVIEW SRM reclaims this unused and idle space and makes it available for use (allocation). Using historical information about prior allocations, it adjusts the allocation amount to only what is needed, not what is requested by the application. Now idle space can be used by other application allocations.

TACKLING RAID

Storage vendors will often offer special pricing to sell additional RAID capacity (a series of physical spinning disks within a DASD frame). Some will be used as back-end devices for business continuity and some will be used for future growth. Understanding how the disks are being used can provide immediate cost savings, in both energy and capacity costs.

Data management policies that were valid five to ten years ago may no longer be applicable in the new environment. These invalid policies can result in data being allocated on the wrong device. For example, data that is accessed infrequently could be erroneously stored on an "expensive" fast device when in fact it should be located on a less expensive and slower device, such as a virtual or physical tape device.

BMC MAINVIEW SRM reporting capabilities determine the allocation efficiency and maximize the space within the DASD devices. These reports map the allocated capacity of the disk drives and enable consolidation of data from the volumes that are not fully utilized, providing the means to push out future DASD purchases. Additionally, the reports identify data and match it with the correct management policy. This means that the IT staff can ensure that the most efficient allocation is used.

¹ Gartner, "How to Make Your Data Center Cooling Last Longer," Dec. 2008, Paul McGuckin.

EFFICIENT USE OF OPERATING SYSTEM RESOURCES

Wasted MIPS cycles are a direct result of inefficient storage management practices. When a batch process experiences a space-related stoppage (ABEND), it has to be restarted after the offending space-related error has been corrected. The batch process is not always restarted from the beginning, resulting in additional CPU cycles being used for the re-execution of the ABENDING batch job.

As application requirements change, the data management policies must change with them. These changes often alter how the data is managed by IT backup and archiving products. When a DFHSM task attempts to process data that is managed incorrectly, DFHSM wastes CPU cycles by repeating the action several times before moving on to another task. This situation is made worse by a dwindling number of IT professionals who have the time and skill to examine each situation for the root cause and implement a permanent solution.

BMC MAINVIEW SRM provides automation and reporting processes that prevent out-of-space conditions, avoid an impact to business SLA's, and reduce wasteful duplicated effort. Using space recovery functions provided by MAINVIEW SRM Allocation will not only prevent the space-related issues, but also enhance the configured IBM storage environment by reducing the operating system memory requirements used by certain features of IBM configured storage. Detailed reports provide an audit trail of all actions taken.

CONCLUSION

Compliance regulations require that data be kept for longer periods of time in a readily accessible format, resulting in exponential growth of disk and tape storage media. Finding skilled staff to keep up with the growth will become increasingly more difficult as the current set of IT workers retire in the years ahead. Understanding the compliance rules and having the data available prioritizes the need for easy-to-use storage management solutions.

To be successful, businesses require readily accessible data with cost effective, easy to use, storage management solutions.

The need to minimize the growth of storage and maximize the resources already on-hand has put pressure on IT to find a storage management solution that:

- » Reduces CapEx by more than 20% by optimizing existing storage before buying new
- » Minimizes risk by ensuring access to data when it is needed to meet business SLAs
- » Minimizes cooling & floor space requirements
- » Improves productivity by making it easy for employees to manage storage effectively — even if they have other primary responsibilities

It is imperative to understand how storage impacts energy use and costs and push for greener data centers. Mainframe storage management is leading the way. However, there is still a big opportunity to lower costs, improve efficiency and lessen the impact on the environment. Reducing or delaying infrastructure resources associated with storage has the potential for savings of 10 percent or more in energy costs alone. Realizing the cost savings through automated storage management solutions and best practices will position your company for a bright future, something to consider in these economic times.

For more information on how BMC MAINVIEW SRM solutions can help lower your IT costs please visit [www.bmc.com/mainframe storage](http://www.bmc.com/mainframe-storage)

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