

# SCC VOICE

Thoughts and ideas from The Systems Consulting Consortium

## Managing Enterprise Storage Infrastructures with Storage Automation

Today's enterprises run dozens, often, hundreds of applications, on hundreds, often thousands of servers and storage devices from many different vendors. In the case of storage, a variety of architectures, including DAS, SAN, and NAS are found in nearly every large enterprise in the world. While enterprise storage devices are typically configured with sufficient capacity, a storage environment based on application-specific silos precludes its efficient use. Forward-thinking IT departments know that they must evolve their storage strategy because they know that storage can only optimally support their businesses when it is treated as a fundamental infrastructure layer.

### Challenges Facing IT

Current storage solutions operate in isolated silos. Individual storage systems have grown organically to support individual enterprise applications. Typically, they are configured to handle the peak load of that individual application, while seldom-used data continues to reside on expensive storage devices. These application-specific, heterogeneous storage resources today must be managed separately, a very labor-intensive and costly proposition.

While some storage-hungry applications fight for scarce resources, gigabytes and terabytes of other storage resources lie idle, reserved for future, unspecified use. The logical, if not physical, isolation of these storage islands prevents them from being used when needed. Analysts' estimates of storage utilization rates vary - some as low as 35%, but most agree that it is currently under 50%. In a typical enterprise, with 10s to 100s of terabytes of storage capacity, this represents millions of dollars worth of "dark" storage.

First-generation Storage Resource Management (SRM) products have provided users with the ability to understand how storage resources are being utilized on a logical level. These SRM applications collect usage information on multiple levels, i.e., from volumes to files, and from individual users to groups, etc. This information enables administrators

to improve their capacity planning based on historical utilization patterns.

But basing storage provisioning decisions on last week's (or last month's) utilization patterns and then manually provisioning storage to meet tomorrow's anticipated need is a time-consuming, error-prone process. Businesses, and the underlying applications that serve them, are in constant flux. One set of priorities can be superseded by another in just a few moments. Effective provisioning must be real-time and pro-active instead of reactive.

### How ASRM Solutions Benefit IT Managers

Second-generation Automated Storage Resource Management (ASRM) solutions can help simplify enterprise storage, freeing overburdened IT employees and scarce IT capital dollars to address other, more leveraged IT needs. ASRM software can consolidate some or all available storage resources into one centrally managed storage infrastructure layer spanning any physical connection, vendor, or storage architecture.

ASRM software makes intelligent decisions about where to best locate data based on actual, real-time usage patterns as well as administrator-selected policies. It continuously monitors and dynamically optimizes storage allocation. Read-to-write ratio, I/O data length and other parameters are accumulated to create an exact storage usage profile. The software then automatically and transparently moves data at block-level granularity to the storage resource that provides the best match of capacity utilization, performance, and synchronous or asynchronous data protection for each application. As a result, storage capacity utilization increases from the typical 40%-50% to over 90%.

With new ASRM solutions in place, enterprises can handle the current demand for storage and manage it for additional capacity, performance and availability, within current capital and operating budgets.

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