

# Independent Assessment

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## Enterprise Storage Management

Can any vendor pull it all together?

Talk to CIOs about storage and you hear a litany of complaints. Even in a down economic cycle demand for storage is increasing. Even with the price of storage systems plummeting the cost of storage is skyrocketing. Storage is too complicated and too labor-intensive. Storage administrators are too costly, hard to find, and harder to keep. Storage management tools are too low-level, focusing on individual storage devices.

No surprises here. Storage cries out for effective enterprise-wide automated management to address these issues. Organizations need to manage the entire storage process from configuring disk capacity on individual storage arrays to running storage backup across multiple storage subsystems to tracking actual storage utilization and reallocating capacity as needed, even on the fly. And they need to do so enterprise-wide, regardless of the type of storage, vendor, platform, operating system, application, or location.

This isn't easy. It calls for automated storage management tools that, for the most part, don't exist today. Instead, organizations are wrestling with myriad specialized tools that perform one function well, such as backup or provisioning, or work for one vendor's storage platform. Or they are working with high-level enterprise storage management products that are incomplete, awaiting important capabilities to be delivered in the future.

Vendors are rushing to fill this need. Some like Storability have built enterprise storage management solutions from the ground up just for this purpose. Others like IBM/Tivoli and Computer Associates are extending their enterprise system management solutions to storage. Still others, like Veritas, are expanding their point products to deliver broader functionality. But enterprise storage management isn't easy and success isn't assured. BMC extended its Patrol management suite to include storage only to suddenly pull the plug on the initiative leaving more than a few enterprise customers in the lurch.

CIOs need to carefully evaluate enterprise storage management vendors given that enterprise storage management is the key to finally reining in storage environments that are spinning out of control. It will also play a central role in any efforts to implement the utility computing visions being touted by IBM, HP, and Sun

Storability, maybe the least familiar, is a veteran of the enterprise storage management wars. It started as an ASP outsourcing remote enterprise storage management when the ASP model was being hailed as the wave of the future. The ASP model proved unsustainable for enterprise storage management, and Storability began offering its storage management software, which had already proven itself, as a licensed software product.

Today Storability provides Global Storage Manager (GSM), a multi-platform storage resource management tool that handles most vendors' SANs and NAS but also direct attached storage, which continues to represent the bulk of enterprise storage, 60-80% according to some estimates. It manages storage configuration, backup, capacity allocation, utilization, and performance. It provides real-time information and predictive alerts and enables the automation of routine storage operations. Using industry standards where available and by providing an open API, it integrates with other management systems and other applications in a straightforward fashion. Its tiered architecture, consisting of applications, messaging and aggregation, and distributed agents, readily lends itself to enterprise scalability.

Storability has produced an impressive product. The software can be deployed quickly and generate tangible results almost immediately. It can be implemented in the most heterogeneous of storage environments and is the only enterprise-level product of which I am aware that manages direct attached storage too. Finally, Storability cites an impressive list of customer implementations including Deutsche Bank, Zurich Financial, Cox Communications, and United Online.

IBM has bolstered its flagship Tivoli enterprise system management solution with storage resource management capabilities, Tivoli Storage Manager and Tivoli Storage Area Network Manager. These products clearly are designed and architected to manage the on-demand, autonomic enterprise systems environment IBM has envisioned. They provide capacity optimization and utilization and policy-based storage operations automation as well as error detection and fault isolation.

The Tivoli storage management products, however, are focused on SAN management. SAN is the likely future of enterprise storage, but today SANs make up only a piece, often a small piece, of an organization's storage environment. Tivoli may turn out to be best used in conjunction with tools like Storability's GSM or point products from vendors like Veritas.

Computer Associates offers BrightStor as its enterprise storage management tool. BrightStor currently provides basic SAN resource management (resource discovery, zoning, LUN assignments and capacity allocation) and backup management. The brightest piece is the BrightStor Portal, which enables browser access to consolidated data about diverse storage resources, storage management applications, and distributed storage operations. A number of third-party storage vendors support the BrightStor Portal.

Veritas is a storage backup vendor that has successfully expanded its offerings to cover storage resource management and SAN management. It has emerged as a storage management market leader and commands substantial market share. But despite increasingly broad and deep functionality its offerings still act much like a bunch of point solutions. In the end, whatever an organization deploys for high-level enterprise storage management, Veritas tools will likely sit underneath performing much of the actual low-level management work.

At this point, no vendor can deliver the complete storage management solution. For the next few years at least, I expect organizations to continue deploying low-level tools but increasingly tie them together with enterprise storage management products like Storability, Tivoli, or BrightStor. Information from these systems, ultimately, may be rolled into yet higher level enterprise systems management frameworks.