

SRM's New Allure

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TERACLOUD

Storage Analytics: the value of knowing

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The SRM Market

Storage Resource Management (SRM) products remain an unfulfilled promise in the eyes of users. Users continue to find a market full of products that do specific tasks well but lack the comprehensive set of features storage administrators want and need. The expectations for SRM software today are that it needs to provide storage managers the ability to perform tasks such as manage multiple vendors' storage devices, do all types of reporting and identify performance problems before they reach the crisis level. Simply put, no vendor currently delivers an SRM software product that either does it all or does it well and for good reason.

Storage networks were built on the premise of offering a ubiquitous storage pool to mainframes where the underlying networking and storage complexity would be masked to the storage administrator. For large mainframe shops, the exact opposite has occurred. Available storage gets buried under JES Plexes, catalogs, ESCON and FICON directors, storage arrays and tape devices. This creates a situation where identifying, recovering, and reallocating storage without impact to an application becomes a time consuming and risky operation. As a result, storage administrators loathe using software products that are unproven in their environment.

With so much inherent complexity and risk to their infrastructure and no SRM product available that provides a cure-all, companies want to consolidate. This consolidation includes the amount of hardware and software products they manage and the number of vendors they deal with. As this consolidation occurs, what expectations should users have for SRM software now?

SRM's New Allure

The new allure of SRM software to organizations comes under the assertion that it now solves a business problem as opposed to a technical one. SRM software products provide the one item that organizations woefully lack when the time comes to make decisions about their storage infrastructure – information. This information may include the amount and type of available capacity that exists in their data centers, who is using it, how much of it they are using and how that data placement meets existing regulations.

SRM software addresses universal lamentations that companies make regarding their storage infrastructure – lack of visibility and control. Rapidly maturing SRM software allows organizations to gather and analyze data on their applications and infrastructure. They can use it to make better decisions as to if and when storage capacity needs to be purchased, what type of capacity they need to purchase and what data should be placed there. Currently this lack of knowledge costs organizations in numerous ways, including:

- ▶ Paying maintenance costs on aging storage hardware that may be replaced with newer, faster and cheaper storage hardware.
- ▶ Applications running on an inappropriate tier of storage hardware;
- ▶ Buying more storage capacity when existing capacity is available but is not known about, forgotten about, inaccessible or in the wrong physical location.

While organizations may be quick to dismiss these problems by simply purchasing more storage, this approach fails to help companies get ahead of the curve. Not knowing which applications are growing or stagnating or how well administrators are managing the data costs the company in multiple ways that can quickly add up. For example, stagnant data in application databases results in backups taking longer, more storage used for backups, more network bandwidth used during backups, and test and development databases used to model the production database need more storage space to run their simulations. SRM software allows companies to quantify these types of issues by forecasting application growth rates, measuring the different costs and placing data on the right tier of storage.

Even with this new appeal of SRM software, users still must weigh a number of items before selecting an SRM software package. Changing the focus of these products from managing the infrastructure to managing data from an application point of view also alters the requirements for an SRM package. This viewpoint dictates a service-oriented architecture that interfaces with applications, mainframe operating systems and storage devices in order to provide the type of information businesses want and need. Selecting the right tool requires that organizations know what features to look for in an SRM tool, what challenges they face in getting it implemented and what they should realistically expect the SRM tool to deliver after it is implemented.

The Right Stuff

A new class of SRM tools aimed at providing information that helps organizations understand their applications needs to provide three critical components:

- ▶ Installation and Configuration
- ▶ Data Gathering
- ▶ Access to Reports

Installation and Configuration

The first criteria any user needs to apply to any SRM tool under consideration is that of a fast and easy installation and configuration. Organizations rarely have the time or patience for software products that take months or years to install and configure. Key components that impact an SRM tool's speed and ease of install and configuration include:

- ▶ A vendor provided pre-install site check list
- ▶ The ability to access the management ports on storage devices through a LAN
- ▶ The ability to remotely configure and manage the mainframe OS/390 agents
- ▶ A database that houses information gathered from all sources

The vendor provided pre-install check list may seem like a small item but it reveals a great deal about how well the vendor understands their own product and how much experience they have in installing their product at their client sites. The pre-install check list also reveals at a practical level how vendor agnostic the product is, what levels of OS/390 and z/OS the SRM tool runs under, what storage devices it can discover, how it discovers them and what firewall ports may need to be opened up so the SRM tool can communicate with the different storage devices.

The ability to access management ports on storage devices may appear trivial but as organizations consolidate and re-organize, configuring access to these management ports becomes increasingly complicated. The physical locations of the storage devices need to be identified, networking cables need to be run, IP addresses assigned, permissions to report on and manage the devices obtained and network routes or firewall ports opened up. How complicated this process is and how long it takes to configure these devices depends upon the company size, business units and number of administrators involved.

Lastly users should look for SRM software that can store the data from the different mainframe operating systems and storage devices in a common database repository. This repository serves as the glue that pulls everything together and associates the application with the underlying storage resources that it uses in the infrastructure. Unless the SRM tool database contains this data as one logical pool, it becomes nearly impossible to correlate the data after it is captured.

Data Gathering

The ability of SRM software to gather enough of the right kind of data from different releases of OS/390 and storage devices is anything but a straightforward process. SRM software should be able to collect and provide configurable parameters for this data collection that control:

- ▶ How the data will be gathered
- ▶ The frequency with which the data will be gathered
- ▶ Which data will be gathered
- ▶ How much data will be gathered

Most SRM software still relies upon gathering data using proprietary methods – providing custom built interfaces for managed storage devices. While the new Storage Management Initiative Specification (SMI-S) initiative promises to help eliminate these requirements and simplify data gathering tasks in the next few years, users can not rely upon these standards now. However, organizations should look for both SRM software and storage devices that support these emerging storage technology standards to facilitate collecting data more easily in the coming years.

How frequently the data is gathered and the amount of data collected from storage devices and the mainframe are two other parameters that administrators will want to address early on. The capacity data from storage devices will likely be fairly static but the performance data on them can vary widely throughout the day. Of the two, data collection on the mainframe tends to be more problematic since both the amount of available capacity and performance data can fluctuate. Users will probably want to start out on the conservative side, configuring the tool to gather data once a day for storage devices and three to four times a day on the mainframe and then fine tune these parameters as they get more familiar with their environment or in response to specific needs.

Finally, SRM software should allow administrators to control how much information is gathered. Administrators will not want or need every piece of data that an SRM tool can gather from storage devices and the mainframe for a number of reasons. Negatively impacting the performance of the managed storage device or mainframe and network congestion are the most obvious concerns that administrators will have during the data collection period. Also, with different applications utilizing the same mainframe or storage device, only a subset of the total data available may be needed to generate the desired reports.

Access to Reports

The reports generated by the SRM tool will ultimately end up being the yardstick by which the SRM tool is measured within the organization. Everything else about the software – how quickly and easily it discovers data, how it stores the data and to what degree it impacts the performance of either the storage devices or mainframe – can be justified or accommodated if the reports enable management to make better business decisions about their storage infrastructure.

Organizations need to look for four key components within the reporting module of the SRM software tool to ensure it delivers what they expect:

- ▶ Immediate creation and access to reports
- ▶ A scheduler
- ▶ A report wizard
- ▶ A sophisticated report writing tool

Following the deployment of an SRM tool, there will be the immediate expectation for fast and easy access to reports. Even though the reports will need to be analyzed and reviewed for accuracy, management will expect the SRM tool to deliver at least an overview of their storage environment. From these reports, they can begin to quantify which of the reports they want to refine and use on a longer term basis.

Refining these reports requires they gather data and produce the reports on a regularly scheduled basis necessitating the inclusion of a scheduler within the SRM tool. The tool should be flexible enough to allow administrators to control which days and at what times of the day the data is gathered and the reports get created. Administrators should also understand which reports the SRM tool generates out of the box and how to add or delete reports to the list that gets created daily as companies may want to retain only certain ones for long term auditing or trending purposes.

The third of the four components, the report wizard, allows users to create ad hoc reports on the fly and will probably be the most critical component of the three in determining the initial success of the SRM product. Due to the dynamic structure of organizations, their shrinking head counts, and management's desire for immediate feedback, wizards provide administrators with the ability to create basic reports initially, establish the value of the product and help management identify what sort of reports they want longer term.

As reports are generated, the database of the product is populated and administrators and management understand more about the structure of the software, a more sophisticated report writing tool will be needed to mine and present the data. The sorts of tools that perform these tasks must do more than just traverse a single table in a database but enable joins across multiple tables with multiple different types of search and sorting criteria.

Implementation Intangibles

Despite all of the tangible obstacles that can block the successful implementation of an SRM tool, equally important intangible ones also exist that must be addressed. Lack of product ownership or visibility in the organization, inadequate staffing and training, and unrealistic deliverable dates can all contribute to a failed implementation even after the product is purchased.

As an organization pursues the implementation of an SRM tool, it needs to identify an individual to champion the product and see it through from start to finish. On the technical side, this individual should minimally understand the SRM market, what these products can and can not do and the technical challenges with which he will be confronted. On the business side, he or she must know the organization's policies and procedures, who the key decision-makers are and who to please first so the product maintains the appropriate level of visibility and priority within the organization. This ensures that the right reports are produced first, the value of the product is quickly demonstrated and, most importantly, management sees the product's value and OK's the allocation of more resources to ensure the product's long term survival.

While keeping SRM tools simple to install, configure and manage helps at the outset of the product, analyzing the data and generating the reports will get complicated. Data must be understood in light of the environment into which it is deployed. All reports must be tested and reconciled with real data to ensure their validity and that they stand up under the test of time. Doing this requires that staff be trained, available and for the most dedicated to this task, at least for the first couple of years, as the organization identifies, creates and generates the reports necessary to understand and optimize their storage environment.

The final obstacle that organizations will run into and must work closely with the vendor on is establishing realistic deliverable dates for product features and reports. SRM products simply can not replicate in their labs the complex computing and organizational structures that exist within companies. As a result, companies must view investments in SRM tools as strategic initiatives and work with these vendors to tailor the product for the dynamic nature of their environment. The cost savings companies initially realize will be in the form of better managed resources and delayed storage purchases. Longer term these savings will show up in the form of more informed purchasing decisions that should result in the appropriate tiers of storage being purchased for the applications they support.

The Deliverables

Over time SRM software delivers many business benefits that historically organizations have not focused on including:

- ▶ An inventory of their storage devices
- ▶ Their existing storage capacity and where it is located
- ▶ Storage utilization on their mainframe
- ▶ The ability to identify and recapture unused storage capacity
- ▶ The ability to optimize the placement of data on different tiers of storage
- ▶ Justification for buying the right tier of storage for applications

Yet the most important one is that it allows organizations to stop reacting to their storage problems and start understanding what they really are. Despite the vast amount of data that organizations have at their fingertips today, storage is often not even on the executive dashboard. This inability to even identify what storage components they have in their infrastructure much less where they are, what applications reside on them and how the data is being managed is inexcusable. These coupled with the existing and growing list of regulations such as Sarbanes-Oxley, HIPAA, and SEC 17a can leave companies exposed to a litany of legal problems if they can not explain where their most valuable assets are located, what is stored on them or who is using them.

All of these reasons begin to explain the new allure of SRM products like TeraCloud's SpaceFinder have to users. Only with SRM products like this can companies understand where the application data actually resides in the underlying storage infrastructure. It grants them the ability to gain storage efficiencies, make more informed storage purchases and improves their odds of complying with the new legal environment with which they find themselves confronted. Maybe most importantly, SRM software finally starts to fulfill some of the promises users have been patiently waiting for over the last few years.

About Us

TeraCloud storage-management solutions provide a comprehensive space-management, capacity planning, and data-management solution for mainframe and heterogeneous storage environments including consolidated mainframe and enterprise-wide monitoring, detection, analysis, and automated resolutions for DAS, NAS, and SAN environments.

This helps our customers centrally manage and control their data center storage as a strategic asset. Our mission is to help you optimize your data management practices and environment by delivering storage inventory solutions that are easy to use. With comprehensive storage management solutions to monitor, detect, analyze, and tune your storage inventory, TeraCloud keeps data and applications available in the most economical way, letting you save time, save money and regain control.