Network Computing's storagepipeline

Questionnaire

ENTER CATEGORY
Comparative Review

Dear Data/Information Lifecycle Management Solution Provider,

The following is a questionnaire for our use in understanding and evaluating the numerous solutions that are collectively called data or information lifecycle management solutions by vendors. Our working definition of these types of solutions is “a software and/or hardware solution for migrating data through the storage infrastructure using automated policies that match data content and/or access characteristics to storage platform capabilities and costs.” If you would like to suggest amendments or revisions to this definition, please make your suggestions as part of this questionnaire.

Please respond as per the cover letter attached to this questionnaire. You can edit this document directly to provide your information.

Per StorageTek: ILM is more than the software or hardware to manage the data. The most effective implementations are through a total systems approach - including the storage infrastructure and processes.

Usage Scenarios

Since the capabilities of these solutions may vary, we are going to assess their effectiveness in the context of different usage scenarios.

Capacity Utilization Efficiency. These users mostly use a D/ILM solution to place data on platforms or media that are least costly, most capable and best suited to their access characteristics and “inherited” requirements in terms of retention, security, and criticality. Automated data migration may also be seen as a strategy for reducing TCO by reducing or capping administrative staff requirements.

Capacity Allocation Efficiency. These users are primarily interested in D/ILM as a mechanism for sharing capacity in the most efficient way and for eliminating unnecessary replication or junk data – often to defer additional hardware purchases. Automated capacity allocation may also be seen as a strategy for reducing TCO by reducing or capping administrative staff requirements.

Disaster Recovery and Business Continuity. These users seek to use a D/ILM solution to segregate data by its restoration priority in the wake of a disaster and to route data to the appropriate protection process (mirroring or continuous data protection, snapshot or disk-to-disk replication processes or tape backup). These users may also seek to leverage D/ILM to provide input to change management processes designed to keep plans up to date with burgeoning data.

Questions

Development Status and Objectives. Describe your vision of D/ILM and identify what features or functions your platform currently provides and what features or functions are still in development.
ILM is a sustainable storage strategy that requires balancing the cost of storing and managing information with its changing value over time, providing a practical methodology for aligning storage costs with business priorities.

Implementing an ILM strategy begins with applying the right mix of hardware, software and services to information at each stage of its lifecycle. To start, companies must assess how they use, protect, and keep their data while servicing end-users. StorageTek's approach is grounded in four basic concepts:

- Use data efficiently by matching performance needs to storage options,
- Protect data appropriately by matching data value to protection options,
- Keep the right data over time by matching legal, compliance, and business continuance requirements to archival options,
- Service users' needs, maintain Service Level Agreements, and maintain control of the data center by matching data requirements to service options.

Today StorageTek delivers all of the elements for an end-to-end ILM solution (via StorageTek solutions/IP/services and strategic partnerships), offering ILM reference architectures for both open and mainframe environments. Among the solutions to be developed by StorageTek to further augment its ILM solution portfolio: a policy-based data classification software solution, and virtual tape solution for open systems (coming soon).

StorageTek offers best of breed solutions up and down stack. StorageTek's positioning in ILM is based on the "bottom-up" approach – focus first on a solid "core", then move out from there. StorageTek manages copies 2 through N. By this we mean we'll work with anyone's performance disk, and we aren't driven to drain this profit pool. Perhaps most importantly, StorageTek's reference architectures make ILM very real today. Our products are integrated and work now.

Other vendors are talking ILM, but in fact are pushing performance disk, and either servicing those profit pools or buying their way up in the information stack (e.g., ECM layer) thereby reducing customer choice of best of breed across the value chain.

Software, Software Based Appliance, Service Solutions today include:

- Storage Management Software, including GSM and BRM SRM software, and Application Storage Manager (ASM) software for policy based automated data movement and retrieval across the device hierarchy
- Enterprise and management services, including:
    - Enterprise Support Services (ESS)
    - Remote Managed Storage Services (RMS)
    - Proof of concept and optimization assessments
    - Backup and recovery services
    - SAN and SRM assessment services
    - Storage Architecture Consulting (SAC)
    - MirrorStore data replication appliance
    - SANtricity software for D-Series and B-Series management
    - Email Xcelerator e-mail management software suite

Today's Hardware Solutions include:
StorageTek's portfolio of hardware solutions spans the storage device hierarchy, including

- Online (StorageTek V-Series Virtual disk solutions and StorageTek D-Series primary disk solutions)
- Inline (StorageTek BladeStore secondary disk solutions, EchoView continuous data protection appliance)
- Nearline (L-Series and SL-Series automated tape libraries, StorageTek T-Series tape drives, LTO and DLT drives
- Archive/Retention (Automated tape solutions, VolSafe WORM media).

Solutions Tomorrow include:

- Enhanced policy based data movement tools
- Improve storage management software offerings
- Provide storage management software offerings

- Provide deeper visibility tools across customers' entire environment (including tape and backup)
- Improve services in ESS and SAN services

Development Partners. List the vendors with whom you are working to deliver your D/ILM solution functionality.

Brocade
CA
CNT
IXOS
FalconStor
LSI
McData
Veritas
Storability
Sun
Tivoli
Legato

Data Naming Scheme. What is your method for identifying data storage requirements or characteristics and for using those requirements or characteristics in building policies?

Anything requiring multivendor ILM solutions will be CIM based. Our reference architectures offer comprehensive methodologies to protect information and provide business continuity - from professional services, to solutions, to break fix services, to data protection software, to every tier of hardware needed across the hierarchy. We are going forward into the management environment, and are working with SNIA to become CIM compliant.

Access Frequency. Identify the mechanism by which your solution identifies how frequently specific files or datasets are being accessed and whether and how access frequency is used in migration policies.

Storage Management Software: GSM and BRM SRM Software
Policy based data movement software (ASM)

In the open systems world, this is an opportunity. In our product roadmap we have plans to meet customer requests in this area.

Storage Platform Characterization. Explain the mechanism that your solution provides for characterizing the performance capabilities and costs of specific hardware platforms for data storage so that this information can be used to target the appropriate storage platforms as destinations for automatically-migrated data.

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End of Useful Life. Explain how your platform facilitates the automated removal and clean-up of data that has outlived its useful life and restoration of freed capacity for use by applications.
StorageTek's solution is build around GSM, where we determine which data has not been used frequently and move it to a more economical media. Our email solution is similar in its time-based capacity, as an example of one automated vertical solution.

Policy Articulation. Describe how policies are created and how they are applied to existing data.

Policy implementation and management are the biggest challenges to implementing effective lifecycle management. This includes the need to classify data, manage access and placement, and move data between storage platforms. This means that the leadership in the IT shop will need to be assertive with his application owners, his customers, and seek to prioritize some data as higher criticality and cost than others. ASM gives the power to administrators to have complete control over how data is managed through the lifecycle based on the following rules

- date creation stamp
- last access stamp
- last modify stamp
- data type
- data location

Device Support. What storage devices does your product support? Are there any proprietary devices (controllers, arrays, HBAs, switches, SAN topology, virtualization products, etc.) that are required for your solution to work?

Note: This question is a little narrow. We don't view ILM as a specific product but rather as a strategy, to which we have applied many products.

We have our own proprietary mainframe VSM virtualization solution. We also offer ASM, an open systems ILM solution, which utilizes a Solaris OS and Sun hardware and connects to any client running NFS or CIFS. Our ASM solution supports Brocade, McData and Cisco Fibre channel Switches, Fibre Channel attached disk storage, Fibre channel attached tape, and StorageTek tape libraries and meets all Fibre channel standards. We have professional services and ILM assessments to apply SAN, and partner for all the typical HBAs, most controllers, and arrays – we're generally pretty open.

MirrorStor disk replication appliance supports all major Fibre channel Switches, Fibre channel attached disk storage, StorageTek tape libraries, and meets all Fibre channel standards. MirrorStor also supports our own D- and B-series arrays with their associated controllers, as well as all SAN topologies and all major clients and HBAs.

EchoView journal protection scheme supports Windows 2000 and Solaris 8.0, 9.

Resource Consumption. How much bandwidth and server CPU "overhead" is introduced by your solution (e.g., to support polling processes, migration processes, agent processing, access frequency counting, etc.).

Minimal to none. Outside of EchoView, which uses a thin agent, StorageTek doesn't use server resources. GSM is on par with other SRM products in regards to server overhead – it has a temporary impact.

Flexibility. Does your solution have multi-vendor support? Can data, once integrated into your D/ILM scheme be migrated readily between your solution and other solutions in this space? Is your solution interoperable with other solutions in this space?

Yes, it is interoperable. Anything that isn't is not really an ILM solution. We don't expect customers to use single-vendor solutions, but rather a best-of-breed approach.

Customers need the ability to integrate 'best of breed' components into total Information Lifecycle Management solutions. The specific components will require common interfaces, allowing different components to work together. These interfaces must become standardized. For example, SNIA is working on defining the Common Information Module (CIM) to allow more robust information exchange between management components. Standards like CIM,

and organizations like SNIA are instrumental in making Information Lifecycle Management real.

Speeds and Feeds. How should a prospective customer compare the relative performance of competitive solutions in this space? What are the appropriate performance measures or metrics to use in evaluating competitive solutions?
The traditional speeds and feeds storage criteria still hold, however, speeds and feeds are a secondary issue. The flexibility of data movement and placement policies and how easy your business can be supported by ILM is the primary consideration.

Interconnect Support. List the network or fabric interconnects that you support. Is there an optimal interconnect for data movement for your solution? What about for management?
We support all the standard protocols and standard fabric configurations, and the optimal interconnect depends on the customer's environment. We support that with SAN configuration services. This holds for management as well.

Protocol Support. List the storage networking technologies supported, including FCP, Ethernet, iSCSI, FCIP, iFCP, Parallel SCSI, SAS, and network file system protocols (NFS, CIFS, HTTP, DAFS).
All of the above, either directly or through partnerships.

Data Type Support. List the data types supported by your solution, including file types and file systems, databases, and hybrids such as email. Comment on the granularity of your D/ILM solution: will it support the migration of database components or subsets, subsets of email files, etc.?
We support all file systems. We support Exchange email databases with our email archive solutions. Db2 databases are supported in the mainframe environment.

Cost. List the cost of your solution or provide some means for calculating cost for a specific environment.
Depends on the configuration and services required. Regardless of the solution we offer competitive rates.

Standards. List any relevant open standards upon which your product is built.
CIM, SNMP, Fibre channel and SCSI, IP

Other features. List other pertinent aspects of your solution.
We see an ILM appraisal as a critical first step. An appraisal of data, backup/restore history and requirements, and SAN/LAN utilization can reveal how much raw disk is available for system use, the percent of data that is accessed over time, read/write performance and other factors that direct the shape ILM should take for an organization.

Miscellany: Please note any additional information that you think would be worthwhile for prospective customers to consider about your solution or other solutions in this space.
ILM is a bigger issue than technology. Most customers are risk averse. ILM can look complex and risky to them, and they aren't sure it's worth cost savings. We show how they can achieve hardware TCO savings and management savings, and keep risk the same or drive it down. Our approach is to start slow – with an ILM appraisal - rolling in one or two technologies in the middle of performance disk and tape backup. Once we prove value we roll out from there per the customer's needs. Our approach focuses on infrastructure and investment protection. The key is to start small, demonstrate TCO savings in a pilot and expand from there.