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Backup Jobs Driving You Crazy? Archive That Old Data!

RFG believes IT executives should, if they have not done so already, examine archiving policies, principles, and processes to determine the benefits of a true, active archiving strategy combined with disk-based recovery. Archiving solutions have matured substantially in recent years. Archival solution vendors now offer robust products for a variety of key applications and environments. Those enterprises contemplating installing or upgrading an archiving solution that leverages disk-based recovery should consider a deeper commitment to a preferred provider, co-developing a plan that results in the lowest total cost of ownership (TCO) at the least risk.

Business Imperatives:

- The most immediate and obvious impact of archiving will be improved backup and recovery procedures, as older, inactive data is moved off high-speed production storage media to the second or third tier of online storage, or offline entirely. IT should assess how much data could be archived, how much storage space can be reclaimed, and the cost of that space. While often requiring support and approval from lines of business (LOBs), IT can jump-start such efforts with historical information to demonstrate data inactivity and candidates for archival. Additionally, IT should assess the impact of archiving on current backup and recovery procedures, since much less data will need to be repetitively backed up (and recovered). The resulting performance and storage utilization benefits should present an attractive TCO that makes implementation of a more pervasive archival strategy an imperative.
- Several archiving products are on the market from full solution providers as well as storage hardware and software vendors. The most appropriate solution for an enterprise may be a blend of products from multiple vendors, or it may be an integrated solution from a single solution provider. When multiple vendors are involved, it is important that IT becomes comfortable dealing with these parties. IT's ability to work with vendors for the foreseeable future becomes critical in avoiding situations where the user is caught in the middle of a dispute between vendors.
- As IT begins developing an implementation plan, the team should work closely with the chosen vendor(s) to build a conservative road map with measurable, attainable milestones or checkpoints. Testing the plans and processes, and training for key personnel, become critical to the overall success of the initial implementation and ongoing support. IT should ensure that the archiving endeavor complements and contributes to any related information life cycle management (ILM) efforts. This is a perfect opportunity to (re)engage LOB executives or application owners on the business side in a dialog about data classification and IT issues surrounding their applications.

Imagine an 18-wheeler moving truck. The trailer is 50 feet long. The owner/operator of the truck requires you, the driver, to always carry a significant quantity of spare parts to meet any on-the-road contingency. The first 10 feet of the trailer are chock full of batteries, extra gas cans, spare parts, tires, and even a full set of tools with which to address any breakdown.

Some 20 percent of the trailer's load-carrying capacity is given up to hauling around these heavy, if seldom used, parts! Efficient? No. Costly? Yes. By definition, 20 percent of the revenue generation capability of this hypothetical trailer is frittered away. And, of course, it requires more fuel to transport all of this dead weight all of the time. Wear and tear on the tractor increases too.

The analogy is simple. Existing backup and recovery procedures "transport" or "move" significant quantities of inactive data every time the procedure is executed, unless that data is archived out of the primary systems. Industry statistics indicate that as much as 80 percent of an enterprise's data is inactive or

unused. With the growth in the amount of information that must be stored increasing dramatically (due to regulatory compliance requirements, for example), removing old, unused data from the system becomes almost compulsory.

Backup and recovery procedures and archiving techniques are different, but complementary. The sum of the parts is greater than the whole. Backup copies are secondary copies created to protect the enterprise from device failure or media failure of the primary version, and to address data protection and availability concerns. Archiving is functionally similar to backup tasks, in that in both cases, files are copied to alternate media on a predetermined basis.

The difference with archiving, however, is that the old data is removed from the production system, and generally kept for long periods of time. Without archiving, the same old data will be copied every time the backup process is run (nightly, weekly, monthly, etc.) Archiving, then, frees up storage for re-use, lessens the duration of the backup job (with less data to back up), and can accelerate application performance with smaller databases and files.

Since applications will often maintain real-time access to the archived data for business analysis or general usage, less costly, disk-based media is becoming a leading choice for this purpose. With the lower cost of serial attached ATA (SATA)-based systems today, disk-based archives offer improved performance and manageability and an excellent TCO.

To look *only* at the archival infrastructure when making this enterprise change would be short sighted. The efficiencies that will be gained by reducing backup content through active archiving offers a perfect chance to reevaluate how that data is backed up. While disk-based archival solutions have become popular, disk-based backup and recovery solutions are also receiving significant attention in the IT industry. The reasons are obvious: disk-based systems offer predictable backup and recoveries, with much greater performance and manageability than tape environments. In most cases in these environments, disk will complement tape, and help users better plan and manage what copies get put onto tape for off-site requirements.

In short, backup and recovery tools are intended to make copies of data for protection, security and/or disaster recovery use. Archiving data provides for longer-term preservation of data while ensuring that retrieval of old, archived data is reliable and rapid when needed. For both environments, different disk-based solutions and disk-tape solutions should be evaluated for manageability, performance, and reliability reasons, as well as TCO or ROI.

Backup and recovery (or data protection) and archiving are two of the six facets of RFG's ILM model. The others include data security, disaster recovery and business continuity (DR/BC), record retention (of e-mails, instant messages (IMs), hard copy paper, etc.), and regulatory compliance requirements.

It should be obvious that copying data to meet a backup and recovery objective has a strong implication on the enterprise's DR/BC plan. And, the necessity of meeting all of the requirements of these tasks is only exacerbated by the explosive growth in the amount of data having to be stored and protected. When the ever-increasing need for data retention – due to corporate governance, legal concerns, or regulatory compliance – is added into this picture, it becomes clear that this problem needs to be dealt with sooner rather than later.

RFG believes backup and recovery tools and archiving solutions are complementary. IT should ensure that these processes and procedures support the enterprise's efforts for the larger picture of ILM.

While selecting an archiving solution, RFG further believes that IT executives should issue requests for proposals (RFPs) to storage hardware vendors (e.g., Hitachi Data Systems (HDS), Network Appliance, Inc. (NetApp), and Storage Technology Corp. (StorageTek)). In addition, they should send RFPs to software vendors (e.g., FileNet Corp., IXOS Software AG, Princeton Softech, Inc, OuterBay Technologies, Inc., and Veritas Software Corp.) and broader solution providers (e.g., EMC Corp., Hewlett-Packard Co. (HP), IBM Corp., and Sun Microsystems, Inc.).

IT should also examine not just the functionality of the proposed solution and compatibility with installed hardware and software, but also assess the ability of the vendor to become a trusted business partner with and for the enterprise. IT should look carefully at the other IT companies with which the archiving vendor has entered into partnership agreements, as these can indicate not only vendor support, but also third-party vendor commitment to the solution.

Partnerships of this sort need to be the type that can stand the test of time, as most customers are implementing archival solutions that have data retention time frames measured in years. Given that the enterprise has decided to explore, if not commit to, an archiving project, a number of steps should be considered in building the implementation plan.

Vendors should propose a number of (professional) services offerings as well (some free, some at a charge). They should provide at least an initial assessment of the overall project's cost, ROI, and TCO. Vendors should also be able to estimate, with the user's assistance, the storage savings to be realized once archiving is fully implemented. This assessment should be sufficient to provide IT management with the confidence to move forward to a specific implementation plan and sizing.

Vendors that can help IT understand and assess the backup and archive environments simultaneously will best deliver a picture for overall change in the environment, the ROI of the solution, and how the complementary pieces come together. A good partner will also build the necessary collateral to influence corporate executives among LOBs and executive row. Relationships must be managed carefully by IT, but a vendor partner needs to be a partner at all levels within the organization.

As the project gains momentum, or even in the planning process, it may be advantageous for IT to contract with the vendor for professional services. Implicit in implementing an archiving strategy is the necessity of knowing and understanding all about the enterprise's use of data. A significant part of the implementation effort will be concerned with data classification or data tiering. This includes determining which data can be archived and the optimal storage device for storing archived data (as well as the backup strategy). The six elements of ILM come to the fore again. This is when engaging the application and data owners becomes critical to the process, and getting both acceptance and support can help avoid costly delays down the road.

Working with the chosen solution providers(s), IT should begin building a comprehensive implementation plan. This plan should propose an attractive financial proposition for the enterprise, and demonstrate that this backup and recovery and archiving project is of low risk with a high probability of success – on time and on budget. At a minimum, the implementation plan should address the following items (in logical order).

- The archiving solution provider(s) should assist in developing initial estimates for ROI and TCO (for free).
- The vendor(s) and IT should estimate the impact of archiving on the storage hardware infrastructure (e.g. devices to be removed and the cost avoidance of acquiring more storage).

- Develop a data classification or tiering schema.
- Examine archiving in the context of the other five elements of ILM and the synergistic impact on each.
- With vendor assistance as needed, develop a more detailed implementation plan that includes:
    1. Training for all affected personnel
    2. Milestones and checkpoints
    3. Actual implementation scenarios (by application, database, hardware systems involved, etc.)
    4. Phasing the actual migration with the ability to back out and restart should problems arise
    5. Performance considerations for both backup and recovery and archiving
    6. Testing and more testing
    7. Measurement of the realization of the anticipated benefits (ROI, TCO)

These are illustrative of the items oftentimes ignored in an implementation plan, and suggest that IT needs to work in partnership with its vendors to address the full depth and breadth of the road map.

RFG believes archiving, especially when coupled with advanced backup and recovery strategies, can address a number of current and future requirements for IT. These include a reliable, high-performance, storage infrastructure, appropriate data protection for component failure, DR/BC and/or compliance initiatives, and containable costs. Backup and recovery and archiving strategies complement one another. Employed intelligently and effectively, each can leverage the impact or results of the other. With this kind of synergy, justifying an archiving project should be relatively simple, and should create a compelling value proposition for both IT and LOB executives.

RFG analyst Ed Broderick wrote this Research Note. Interested readers should contact Client Services to arrange further discussion or an interview with Mr. Broderick.