

## Quantum - July 2003

### *Quantum Introduces Media Diagnostics with DLTSage*

#### What is DLTSage?

For years Quantum has been dedicated to improving its tape system offerings, primarily focusing on improving quality and increasing drive speeds and tape cartridge capacity. After all, isn't that what customers care about? Customers want quality drives that enable fast backups while reducing the number of media cartridges required to store large amounts of data. No one argues those are important criteria, however tape system vendors overlooked other key criteria that could help alleviate much of the pain of the backup process. Although backup applications exist that provide reports on the success or failure of jobs, it is very difficult for users to determine the root cause of many failures with existing tools. Until now, tape media vendors have provided little in the area of diagnostics that could help users prevent failures and determine the root cause of their backup problems.

With the introduction of DLTSage, Quantum has changed the playing field, providing intelligent maintenance for the tape system market. DLTSage enables users and third party ISV's to proactively monitor the health of both DLTtape drives and media with predictive failure analysis and the ability to drill down to the root cause of backup failures. Quantum has recognized the importance of backup diagnostics and is providing a comprehensive yet easy to use solution to help ensure the success of the backup process.

#### Who Needs DLTSage?

Administrators often state that backup is a top storage management issue. The success of backups is crucial, as the data must be available for recovery purposes. Administrators often struggle to determine if backups have been successful and if not, why they have failed. While backup applications do provide log files on the success or failure of a backup, often the log files are difficult to decipher. Users can rarely tell if the failures are related to the media, the drives or a glitch in the process. A few vendors have responded to those issues, delivering products which provide reports that "translate" the log files into easy to read error records. However, the granularity of the information those applications can provide is limited by the information coming from the library, the drives and the media itself.

Quantum surveyed hundreds of IT end-users and found they wanted a greater level of diagnostic information regarding the health of the drives and media. Users were specifically interested in predictive failure analysis, error tracking, usage tracking and cartridge meta- data (in that order). Respondents felt that predictive analysis, with the ability to know in advance when a cartridge or drive reaches a preset age, capacity or error limit was most important. This information could help prevent backup failure, users may be alerted to the fact that media was worn from use, or that a drive might be malfunctioning. This information could also help users pinpoint the exact cause of a failure so they can take immediate corrective action.

As data growth explodes, organizations need to backup significantly more data than ever before. Administrators cannot afford to have the performance of drives and media cartridges affecting the success of backups. Intelligent, predictive diagnostics that can help alleviate the possibility of failure and ensure data integrity are just as important as the speed and capacity of the tape system. We believe the information provided by DLTSage would be useful to any backup administrator.

#### How DLTSage Works

The DLTSage architecture is very flexible, allowing for a number of interfaces to the diagnostic information provided on the tape systems. The diagnostic information is gathered according to industry standards, library vendors and backup applications that support the standards do not need to modify their products in any way in order to present the diagnostic information.

The DLTtape drives and media cartridges support Quantum's version of the ANSI T-10 MAM specification, which outlines the type of diagnostic information tapes and drives should support. The specification defines the device, application and data characteristics that tape systems should track. Device characteristics include the load count, last 4 drives to see the media, lifetime of MBs read and written, number of errors and so on. The application characteristics are vendor, name, version, last write, bar code info etc. All tape systems should support these specifications, however only Quantum is providing an interface to easily read the information and proactively monitor for potential problems.

In addition, Quantum's version of T-10 MAM uses 64K of memory for storing the diagnostic information, vs. the 2K-4K of memory called for in the specification. That enables Quantum to store more information, which in turn could provide better diagnostics. Instead of only tracking the last four drives to see a cartridge, for example DLTSage could capture the history of a drive with all cartridges or the history of a certain cartridge with other drives. That historical information can help determine if a problem resides with a certain tape or drive, and help users prevent a failure from occurring.

The information gathered by DLTSage is viewed either through the Quantum x-Talk or i-Talk interfaces, or through a third party ISV application. The ISV application (ex: VERITAS Backup Exec, NetBackup 5.0, Backup Exec 9.0, CA Enterprise Backup 11.0, CA ARC Serve 10.0, Legato Networker 7.2, Arkeia Enterprise Backup 5.0) either communicates directly to the drives via a SCSI or FC connection, or via the library that houses the drives and cartridges. As long as the library and ISV support T-10 MAM, which most all do, there is no need to modify the software in order to read the diagnostic information.

Quantum's x-Talk product is a cross platform application which provides an easy to use interface for Window, Solaris, UNIX and Linux hosts. Administrators can communicate with the tape systems via SCSI/FC in order to view historical data, view alerts and alarms or review diagnostics in the case of failures. Quantum's i-Talk products (including laptop or pocket PC versions) interface to the DLTtape drives via an infrared link. These solutions are extremely convenient for on site diagnostics. However, the i-Talk products are limited in the amount of cartridge diagnostics they can gather. Quantum, wisely, did not want to allow two interfaces to connect to the cartridge during a backup as that could corrupt the integrity of the process. The infrared connection can be made at any time (vs. the SCSI/FC connection which would not allow diagnostics during the backup). For this reason the cartridge cannot talk to the infrared interface, so the i-Talk products can only gather drive diagnostics.

The DLTSage solution is available now for the SDLT 220 and SDLT 320 drives and cartridges and supports all of the T-10 MAM specifications. The next phase of DLTSage, due August of this year, will allow users to set thresholds on drive and cartridge specifications such as age, capacity, or number of reads and writes. Users can also define rules based actions that are triggered when

thresholds are exceeded. For instance, an email could be sent to an operator to remove a tape when it has reached a certain capacity, or exchange a drive based on error rates. This version will support the SDLT 600 on release. The third phase of the product will provide additional reporting and predictive analysis.

DLTSage provides much needed diagnostic information to help users manage their backup environments. We expect the backup application vendors will be quick to adopt the DLTSage solutions. We also believe that there is an opportunity for Quantum to partner with many of the enterprise storage management vendors who are targeting the Information Lifecycle Management market. Backup is an integral piece of the data lifecycle, and the information provided by DLTSage could prove very valuable to vendors looking to provide end-to-end management and diagnostics.

## The Bottom Line

We never really thought we could get excited about something related to tape systems. True, it is amazing how much data can be stored on a single cartridge these days, and yes the speeds at which drives can read and write are impressive. But we expect tape system (and disk) vendors to come out with faster, better products—that's just par for the course. However, we are impressed with the fact that Quantum recognized there was a hole in the backup management market and addressed part of that hole with DLTSage.

At ESG, we believe the backup market is woefully underserved from a management perspective. Backup application vendors do not provide effective reporting, prompting storage management start-ups to fill the void. Most library vendors have yet to step up to the plate and provide API's that provide substantial diagnostics and management capabilities. At least now, with Quantum's DLTSage, users have the ability to proactively monitor the health of SDLT drives and tape cartridges. Kudos to Quantum for providing a solution that will definitely help ensure backup processes are more successful. We would like to see all of the vendors that participate in the backup process step up to the plate and provide more management solutions for the user so that backup is no longer their biggest pain point.

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