

Active Archival Storage

Plasmon UDO or EMC Centera; What does ESG think?

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I was fortunate enough to come across a cost of ownership study run by the Enterprise Strategy group looking at the comparative costs of EMC's disk-based Centera and Plasmon's optical-based UDO library. This analysis is based on the actual case study of a financial services firm shopping for a 12 TB archive. The financial services firm needed a solution to archive 8 GB of new data and handle 2,500 queries daily. The cost of acquisition and ownership was measured over 3 years of operation. Only clearly quantifiable list prices were included in this study to avoid the effects of subjective interpretation.

What are the conclusions?

First of all UDO is much cheaper to acquire

"ESG Archival Cost Analysis, clearly indicate that the cost of a Plasmon G438 library populated with Ultra Dense Optical (UDO) technology is competitive with AIT tape and DVD optical technology and represents a fraction of the cost of a Centera disk or MO optical solution¹. As a matter of fact, our analysis indicates that 12 TB of parity protected Centera capacity is 361 percent more expensive than a comparably configured automated UDO optical library."

It gets better for Plasmon: "A closer look at the results reveals that the cost of a Centera solution is inflated significantly due to the price of software acquisition and maintenance, while the cost of MO optical is burdened by high hardware acquisition and media costs. A more careful examination uncovers noticeable power consumption costs for the disk-based Centera system compared to tape and optical."

Proponents of the Centera architecture might object to the conclusion that optical technologies like UDO are significantly more cost effective than a disk-based Centera system. They would argue that the self-healing and scalable Centera architecture reduces the cost of administration when compared to multiple tape or optical libraries.

However: "an automated UDO optical library is about 1/3rd the cost of a parity protected Centera. Since all of the media for the automated UDO solution is inside the library, there is no need for a system administrator to handle removable media. The EMC Centera is known for its ease of administration. However, customers may find it difficult to justify the \$698,638 difference due to reduced administration costs.

Further

The cost of QStar HSM software was included in this analysis. QStar HSM is an enterprise-class hierarchical storage management software package that supports tape, optical, and Centera hardware. Although there are a large number of software packages that can be used for a near-line archival cost analysis, the choice of archival software matters little in this analysis since the cost of archival software, and the server(s) it runs on, should be the same regardless of the hardware technology chosen for archival. Archiving software solutions that have not been ported to the Centera programming interface require the use of CUA servers and software so that a Centera can be accessed using standard network file system protocols. Because QStar HSM supports the Centera programming interface, the cost of Centera Universal Access (CUA) hardware and software was not included in this analysis.

Power

The cost of commercial power at \$0.07 per Kilowatt, floor space at \$3,235 per square meter, and cooling at 40 percent of the cost of power were included in this analysis. These rates, which are typical for a large US or European city, would need to be adjusted higher for areas like California and New York City. The cost of power for the Centera system, which ranged between \$5,000 and \$6,800 a year, was noticeable compared to the automated libraries, which averaged \$350 a year. The relative cost of floor space for all configurations was negligible, although a 12TB Centera configuration approaches a ton in weight, which is an order of magnitude higher than a UDO library.

Although the cost of disaster avoidance was not included in this analysis, media survivability and remote vaulting are issues that should be considered when implementing a long term digital archive. Data residing on optical media has a better chance of surviving a disaster (e.g. an earthquake or flood) than tape or disk. Removable tape and optical media are easy to replicate and transport to a remote site for safe keeping. Replicating a disk-based Centera system is also easy, but can be quite expensive due to the cost of another set of disk drives, EMC software at the remote site, and the recurring cost of WAN bandwidth.



The bottom line

Compliance regulations, corporate governance initiatives, and the explosive growth of unstructured digital content are driving the adoption of archiving strategies and technologies. Organizations supporting business needs with on-line disk technologies are evaluating the deployment of a new tier of cost effective near-line capacity for long term data archival. ESG Research has shown that the high cost of emerging near-line disk-based systems is a major concern for storage professionals and IT managers.

The true cost of acquisition and ownership of tape and optical solutions, compared to systems based on commodity disk drives, has been widely debated in the industry recently. Common mistakes made during such a comparison include a myopic focus on the cost of the raw media and an inflated estimate of system administration costs. Despite the fact that some vendors suggest that tape and library configurations require dramatically higher administration costs, the subjective costs associated with system administration were not included in this study. The Enterprise Strategy Group stands behind this assumption based on customer feedback that confirms the fact that modern tape and optical libraries can be configured with massive amounts of near-line archival capacity, which eliminates the system administration costs associated with removable media handling.

The intent of this analysis is to provide readers with a reasonable starting point for the comparison of the cost of archival technologies available on the market today. Although a variety of hard and soft costs were not addressed in this analysis, ESG believes that the methodology and results presented in this report form a valid relative comparison of the most significant costs of archival storage ownership. ESG encourages readers of this report who are considering an active archiving solution to perform their own cost of ownership analysis. We are confident that such an analysis will make a compelling case for the consideration of automated professional optical technology.