

Product Brief

Spectra Logic BlackPearl Deep Storage Appliance for Web Applications and the Cloud

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Abstract: Today, balancing the problem of explosive data growth with the need for extended data protection is a given for IT departments. Cloud computing introduces the ability for a self-service consumption of storage capacity, increasing storage management problems. Tape systems traditionally solved the data growth problem with tape archives and data protection—however, tape systems have been only accessible to IT operations, not the end-user. Spectra Logic's BlackPearl Deep Storage Appliance can be accessed like any other cloud device via a RESTful API that is based on a modified version of AWS S3 called DS3. BlackPearl also includes embedded SSD cache designed to accelerate access to the tape library as object storage.

Overview

IT departments are constantly challenged by the explosive growth of data within their businesses, whether that growth is due to new web scale applications, data harvested for big data analysis, mobile accessibility, or the proliferation of super-rich media data. Much of this new data also needs to be retained longer due to increasingly stringent regulatory requirements. Recent ESG research indicates that 62% of the companies' surveyed dispose of less than 10% of their data annually, and 78% dispose of less than 15%.¹ ESG research has also found that 8% of the companies surveyed keep their backup data indefinitely. Many IT departments also desire to make the move to private and public cloud services to reduce costs, provide the potential for infinite scale, and increase business agility. Yet cloud services, by definition, are on-demand and self-service, creating another set of problems for IT. The business usually budgets around annual cycles based on a fixed allocation of resources as opposed to the on-demand model that the cloud affords.

IT Data Challenges in the Cloud Era

The following list represents several common challenges facing IT today as they try to cope with the accelerating change happening to many businesses:

- Explosive data growth new types of data and more of it requiring scale
- Data distribution on-premises and off-premises at cloud providers
- Analytics as Hadoop and analytics tools become more pervasive, copies of data explode
- Forever retention regulations and business uses driving the need to keep data forever
- Cost primary storage still in the \$1/GB range
- Ease of use on-demand and self-service consumer usable cloud services

With this set of challenges, it has become evident that a new method for long-term storage is needed—a comprehensive approach that scales easily and supports long-term access, while being inexpensive and future proof. The solution has to not only work in legacy environments, but also in applications designed in the context of cloud for scale and durability. Traditional tape library systems solve some of these problems, including scale, long-term retention, and low cost for media. However, traditional tape libraries lack the ability to efficiently stream large storage objects such as Hadoop's analytic systems, and don't have interfaces for the cloud's on-demand and self-service functionality.

¹ Source: Research Report, <u>Defensible Disposition in Practice: Perspectives from Business and IT</u>, December 2012.



BlackPearl and the DS3 Interface

<u>Spectra Logic</u> has been delivering first-to-market, innovative storage solutions for more than 30 years and installed 1.2 exabytes of tape library storage capacity worldwide in its last fiscal year, ending June 30, 2013. Tape libraries and tape media have evolved over that time from very proprietary data formats run by operations to open formats now available as-a-service to end-users for objects, files, and archives.

Companies that want to implement long-term deep storage can now do so for pennies per GB with capacities ranging from 15TB to 3.6EB with Spectra Logic's new BlackPearl Deep Storage Appliance. Spectra Logic's solution is designed to bring tape libraries into the cloud era by incorporating high-speed SSD cache for optimized read and write performance with deep storage REST extensions to the DS3 API. SSD cache helps the tape library solution support fast client response times while handling large streaming operations efficiently at scale. Incorporating an S3-like interface, DS3 makes it simple for client software to manage the solution as bulk storage for read/write operations by using familiar "put" and "get" commands. BlackPearl does all the hard work by managing where the objects are placed on tape and ensuring high performance and reliability for the client software. The secret sauce of BlackPearl is inherent in its design, which has been proven over the years but maintains the simplicity and scalability that cloud has to offer.

As with any solution that abstracts the underlying hardware with software intelligence, BlackPearl provides extensibility and customization. BlackPearl is made extensible with custom Spectra Logic software clients designed with a Hadoop software client for big data applications (e.g., retail, media, entertainment) and other clients that support the needs of surveillance- and geophysics-based applications. The ISV community has also began support of moving data to DS3. Spectra Logic also realizes the power of communities and has established a formal Software Developer's Program with a community portal that customers and developers can use to share custom client applications, scripts, and helpful hints.

Analysis

At the same time that the business is demanding the retention of increasing amounts of data for longer periods of time, IT must find ways to run cost-effectively and leverage high-performance deep storage solutions. In addition, the needs of the business continue to drive it toward cloud-based and on-demand solutions, and IT toward new and innovative ways to keep data safe and available. The Spectra Logic BlackPearl Deep Storage appliance offers the necessary scale and easy-to-use client interface on a cloud-like object store that is built on inexpensive tape media. By solving the problems of slow retrieval and bottlenecks in bulk I/O operations, Spectra Logic has designed a deep storage solution that solves these problems and allows the business to implement a cloud-ready archive. Integration into cloud services is made simple through the API that allows end-users to leverage deep storage as an extension of storage services right from their service catalogs.

The Bigger Truth

The IT industry has been proclaiming that tape storage is dead, but this couldn't be further from the truth. Spectra Logic's BlackPearl solution provides one of the most compelling cost-per-GB storage solutions available with the massive scalability and performance needed to meet the needs of the enterprise. Spectra Logic's innovations of adding state-of-the-art flash for performance and RESTful object-based APIs enable it to meet the needs of the newest cloud-based architectures. Today's IT departments that find that they are challenged to deliver more cost-effective ways to handle data as well as the cloud should consider this new generation of tape libraries that can provide the capacity as well as cloud capability, on-demand.

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