



CASE STUDY

Pacific Biosciences uses Spectra Logic's BlackPearl and T380 tape library solution to affordably archive genomics data

“ Scientists and bio-informaticists generate a daunting amount of data, and recreating data can be really expensive. Spectra's combined tape and BlackPearl solution blew the competition out of the water due to high-quality, well-proven technology, and the company's attentive, knowledgeable support staff. ”

Jay Smestad, Senior Director of Infrastructure Architecture, Pacific Biosciences



Spectra T380 tape library and BlackPearl disk appliance



About Pacific Biosciences

Pacific Biosciences is a biotechnology company headquartered in Menlo Park, California. It was founded in 2000, based on research done at Cornell University, with the goal of developing a Single Molecule, Real-Time (SMRT®) approach for nucleic acid sequencing.

Through the design, development and commercialization of their innovative products for biological research, Pacific Biosciences aspires to transform the way humankind acquires, processes and interprets data from living systems.

Combining recent advances in nanofabrication, biochemistry, molecular biology, surface chemistry and optics, PacBio created a SMRT® technology platform (PacBio RS) that enables real-time analysis of biomolecules with single molecule resolution. In April 2013, they released the PacBio RS II, an updated sequencing instrument, which they believe maintains key attributes of currently available sequencing technologies, while solving many of the inherent limitations of previous technologies.

The Challenge

Pacific Biosciences was in need of a cost-effective, automated archiving solution, to replace the expensive backup software they had been using previously. They needed to safely store their genomics research data indefinitely, while allowing multiple scientists access whenever needed. In addition, it was important that the solution be able to scale for unpredictable growth over the next three to five years and continue to fit their budget as technology matures. To meet budget requirements, the storage staff decided to explore archiving technologies. They looked into 3 options: SATA-based spinning disk archives, public cloud archives, and tape based LTFS solutions. The SATA and cloud options were quickly determined to be too expensive to align with their budget. Tape was inexpensive but did not offer everything that Pacific Biosciences needed a standalone solution.

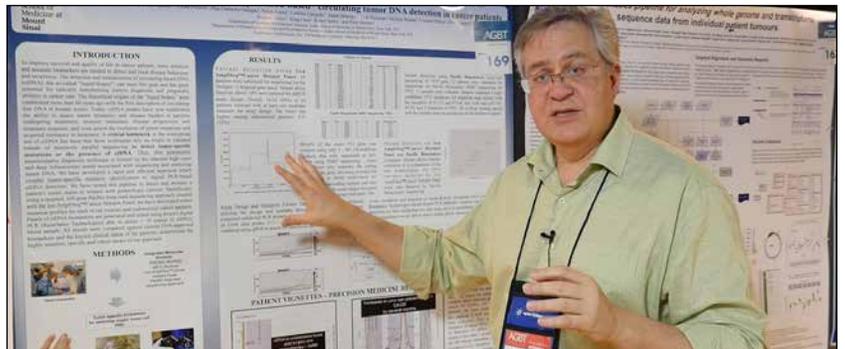


Image from the Pacific Biosciences video web page.

CASE STUDY: Pacific Biosciences

The Solution

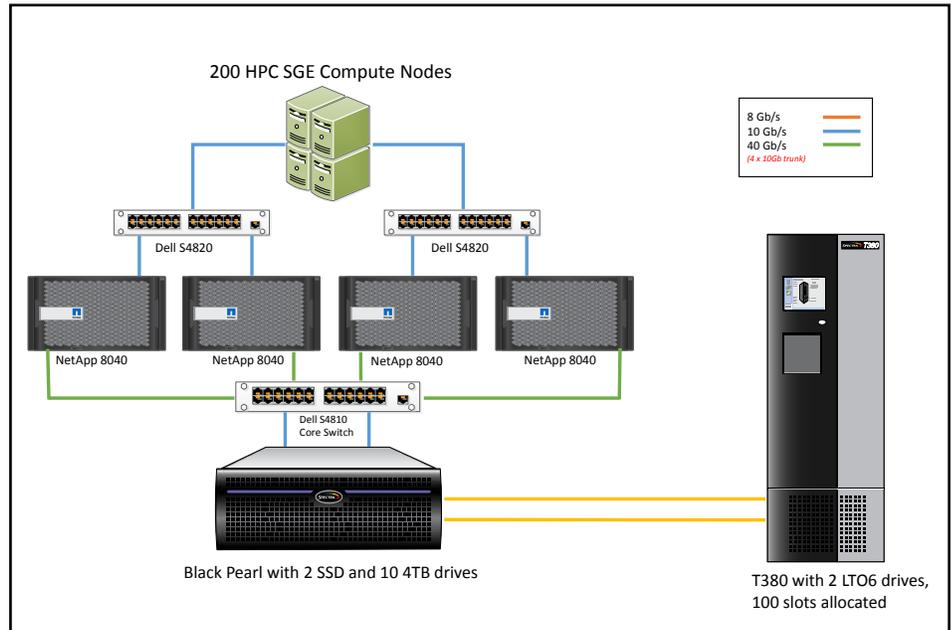
Pacific Biosciences chose a Spectra T380 and BlackPearl Deep Storage Gateway solution to address their archiving needs. BlackPearl offered an alternative to Hierarchical Storage Management (HSM), through object storage, which was a natural fit for genomics research provided its unpredictable data growth patterns caused by technological advancements. BlackPearl also eliminated the need for costly middleware software, thus bringing down the overall expense. Utilizing the Deep Storage Browser and Java CLI interfaces, they were able to implement an automated archive solution that would identify data sets that had not been accessed for over three months and flag them for archive. If that same data was not accessed for another month, it would be sent off to BlackPearl and tape for archive, allowing them to free up costly primary storage space. The Spectra BlackPearl and T380 gave Pacific Biosciences the scalable, cost-efficient and robust solution they needed to archive their data.

Network Environment

- Spectra Logic BlackPearl® Deep Storage Gateway
- BlackPearl Deep Storage Browser, Java CLI interface
- Spectra® T380 tape library
- 2 LTO-6 drives, 2 partitions
- Media Lifecycle Management
- NetApp Snapshots
- 200 HPC SGE Compute Nodes

Why Spectra?

- Cost effective
- Scalable
- High quality
- Robust back-end to maintain data integrity
- Data is easily retrieved
- No license required
- Top notch support



“Spectra Logic sold itself. We have all we need and more with our T380 and BlackPearl solution at just 2-3 cents per gigabyte.”

Adam Knight, Senior Systems Engineer, Pacific Biosciences

Solution Recap

The Spectra® T380 is designed for Enterprise performance and accommodates the storage requirements of organizations in every stage of their growth lifecycle. When your storage requires more slots than your library's current capacity, there's no need to buy a whole new library. By investing in a Spectra Enterprise library like the T380, all you need to change is your outgrown frame. Spectra transfers the components in your existing library and puts them into a larger chassis.

Spectra BlackPearl® Deep Storage Gateway allows data to move seamlessly into mass tape storage in a way not previously possible. The technology provides direct http access to a tape library, at the application and end user level. It enables users to deploy a tier of deep storage that is cost effective, easy to manage and scalable to Exabytes of data. With Black Pearl's simple RESTful DS3 interface and embedded tape management software, organizations will confidently store all of their data forever at costs as low as pennies per Gigabyte.