



# CASE STUDY

## Korea's Institute for Basic Science advances the frontiers of research and knowledge with archive solution from Spectra

“ The institute must select world-class infrastructure that meets global standards. Our Spectra Logic solution helps us preserve research data that is vital to increasing Korea's national basic science capacity. This will ensure the creation of new knowledge that will help with significant societal transformations. ”

*Muyoung Heo, research assistant, Institute for Basic Science*



*Spectra StorCycle, T950 Tape Library and BlackPearl Converged Storage System*



### About Korea's Institute for Basic Science

Established in November 2011 as Korea's first dedicated basic science research institute, the Institute for Basic Science (IBS) is focused on advancing the frontiers of knowledge and training the leading scientists of tomorrow. IBS believes scientists unleash their creative potential most effectively when they conduct research in an autonomous environment with world-class research infrastructure, including RISP, the rare isotope accelerator, to enable major scientific advances.

### The Challenge

The Institute for Basic Science specializes in long-term projects that require large groups of researchers. Scientists at IBS work together in the same laboratory base with a long-term perspective on research. By developing strong synergies from outstanding talents, autonomous research support systems, and world-class infrastructure, the institute is steadily growing into a major basic science research institute that meets the global standards of excellence.

The institute recently purchased a new cryo-EM microscope. Cryogenic electron microscopy (cryo-EM) is a technique applied on samples cooled to cryogenic temperatures to determine biomolecular structures at near-atomic resolution. The process uses electron microscopes to create high-resolution images of molecules. This data is written to their Lustre primary storage and processed as required. The institute expects these research efforts to create around two terabytes of data per day, and sought a high-capacity system to affordably store data and expand as needed.



*The institute's cryo-EM microscope creates high-resolution images of molecules.*

# CASE STUDY: Institute for Basic Science

## The Solution

The Institute for Basic Science deployed Spectra's StorCycle Storage Lifecycle Management software, a Spectra BlackPearl Converged Storage System and a Spectra T950 Tape Library with LTO-8 tape drives. StorCycle enables the institute to identify and migrate data off of primary storage and onto a Perpetual Tier of storage that can include cloud, NAS, object storage disk and object storage tape. Per the institute's storage policies, StorCycle acts as a data mover, scanning data in their primary Lustre file system and writing new data daily to BlackPearl, which in turn writes two copies of the data to tape. BlackPearl provides an object storage gateway to tape, which complements the organization's existing Primary Tier of storage with a lower-cost, scalable archive. In addition, StorCycle provides seamless, familiar access and recovery of single files or entire data sets.

Currently, the solution gives IBS a total capacity of 16PB, which they plan to double in the coming months by expanding the tape library to store a total of 32PB. The new system helps the Institute of Basic Science pursue excellence in research, and will store an estimated one petabyte of new data per year.

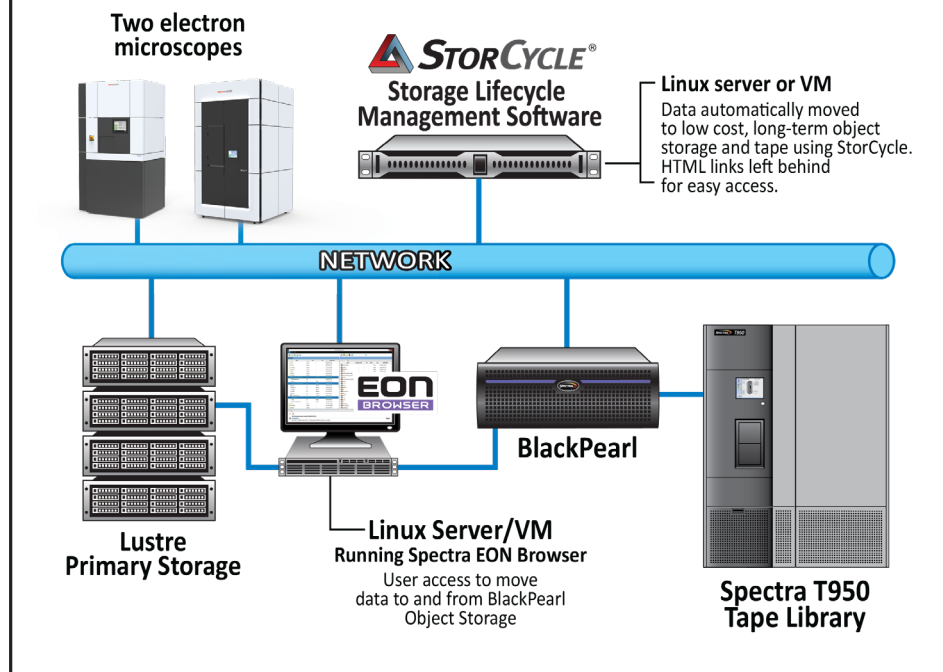
## Environment Snapshot

- Spectra StorCycle® Storage Lifecycle Management software
- Spectra® BlackPearl® Converged Storage System
- Spectra® T950 Tape Library with LTO-7 and LTO-8 tape drives
- BlueScale® Software with standard encryption

## Why Spectra?

- Automated data movement
- Familiar access to archived data
- Scalability and integrity of object storage tape
- Open standard technology

## IBS – Electron Microscope Archive



## Solution Recap

**Spectra StorCycle** – StorCycle is a storage management software that automatically identifies and moves inactive data from primary storage to a lower cost tier that includes cloud, object storage disk, network-attached storage and object storage tape. Users can manually archive project-based directories and make additional copies for data protection. Providing seamless, familiar access and recovery of single files or entire projects, StorCycle enables organizations to manage, share and preserve their data for unparalleled long-term protection and access.

**Spectra BlackPearl Converged Storage System** – BlackPearl provides a modern, simple portal to a multi-tier storage architecture that breaks away from legacy solutions based on capacity licensing models that

drive greater cost when scaling. BlackPearl's simple RESTful API and integrated advanced bucket management (ABM) retains and manages organization's assets at very low per-gigabyte costs, enabling users to create a storage architecture that is cost effective, easy to manage and scalable to exabytes of data.

**Spectra T950 Tape Library** – The T950 library is designed for data integrity, data security and high reliability. The T950 affordably scales in capacity and throughput, and supports multiple generations of current and future tape formats. For data archive, backup and recovery, this elite library leads the field in innovation. From the greatest storage density to proactive media management, the T950 is always protecting your data.