LEADING BIOMEDICAL RESEARCH INSTITUTE CRACKS THE CODE ON COST-EFFECTIVE STORAGE WITH DTERNITY

INDUSTRY

Medical Research

IT PROFILE

- Dternity NAS
- Dternity Archive Media
- 250 Terabytes of licensed NAS capability
- StrongBox V80 library

BENEFITS ACHIEVED

- **Massive scalability:** Dternity is able to accommodate the spiraling data growth nature of the Institute's research projects
- **Data cascading:** Dternity allows data to seamlessly flow between their data tiers, depending on capacity requirements
- **Operating expense reductions:** simplified management drives lower administrative time and staffing requirements

WHITEHEAD INSTITUTE

Cambridge, MA
www.wi.mit.edu

OVERVIEW

Whitehead Institute is a world-renowned non-profit research institution dedicated to improving human health through basic biomedical research. By cultivating a deeply collaborative culture and enabling the pursuit of bold, creative inquiry, Whitehead fosters paradigm-shifting scientific achievement. For more than 30 years, Whitehead faculty have delivered breakthroughs that have transformed our understanding of biology and accelerated development of therapies for such diseases as Alzheimer's, Parkinson's, diabetes, and certain cancers.

THE CHALLENGE

The Whitehead Institute, based in Cambridge, Mass., takes on some of the most complex and important medical and scientific challenges ever presented to mankind. In the 33 years since its founding, it has become one of the world's leading molecular biology and genetics research institutes, employing multiple National Medal of Science winners. In fact, the Whitehead Institute was a key contributor to the 13-year Human Genome Project, a groundbreaking study that unlocked an entirely new understanding of how humans react to viruses, bacteria and drug therapy.

Research at the Whitehead Institute generates an enormous amount of data. Genomic sequences and microscopy images alone can add up to multiple terabytes a week. Information is further extracted from the raw data using a computing cluster that leads to the creation of processed data files. This all translates into a unique set of challenges for the Institute's IT team. Like the scientists they support, the IT team has had to address their challenges with innovative and experimental approaches.

"The scientists do everything from basic cellular process research to cancer and other diseases research," said Paul McCabe, Senior Unix Systems Administrator and Data Center Specialist. "It varies widely, but the common denominator is that our research generates a huge amount of very valuable data."

Due to the historical implications of their research, scientists at the Whitehead Institute constantly have to look back at previously collected data to forge ahead with their work.

![dternity logo]

"We tend to process data pretty heavily, and we have long-term data retention requirements," said McCabe. "We not only store the data while it's being actively processed by our researchers, but we also need to archive that data long after research papers are published in case the data behind the papers are ever challenged."

As the Institute's operations have become more dynamic and strenuous in nature, the legacy systems in place have had trouble keeping up with the increased workload and demand.

"Our organization had become a 24-hour endeavor, which was a challenge that was becoming more and more difficult to manage," explained McCabe. "We were backing up for eight hours a day, duplicating for eight hours a day, and archiving the remaining eight hours. The equipment was being pushed to its limits, and if anything went wrong... we were simply out of hours."

THE SOLUTION

As a result, McCabe and the IT team began researching high capacity data archiving alternatives that could meet their scalability, reliability and simplicity needs. At an IT tradeshow, the team was introduced to the Fujifilm Dternity, a data archiving system that combines the simplicity of disk and the economics of tape into a highly scalable, easy-to-manage solution.

"We also liked the way Fujifilm structures its licensing model in large bands, rather than the 'by the terabyte' model offered by other vendors. Overall, it matched very well with our requirements."

Currently, the Whitehead Institute IT team is storing 171 TB of unique data on the Dternity NAS, with room to grow to more than 400 TB.

THE BENEFITS

To date, the IT team has seen an overall decrease in administrative time associated with backing up and archiving research data due to the system's ease of use and scalability. There has been some cost savings already, but as the amount of data in the Dternity grows, the cost savings grows with it. It is significantly cheaper to keep archive data on tape as opposed to disk. "Capacity and scalability were obviously very important to us, but Dternity provided so much more," said McCabe. "Our backup team is thrilled with how easy the system is to manage and how it frees them up to focus on other tasks, but I would say the most noticeable benefit is the overall peace-of-mind the Dternity provides us. We're dealing with critical data, and I never have to worry because it is fully protected, backed up and available when needed."

> "We were immediately impressed with the Dternity's simplicity and ability to cost-effectively scale along with our needs."
>
> - Paul McCabe, Senior Unix Systems Administrator and Data Center Specialist

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