UNIVERSITY OF MICHIGAN

CASE STUDY

Spectra Logic solutions help Brooks Lab at the University of Michigan archive research data

> For nearly a decade our Spectra storage library and disk solutions have met or exceeded our research group's storage needs at an affordable price point."

David Braun, Lab Manager,
Brooks Lab at the
University of Michigan

CHALLENGE

The University of Michigan is one of the top public research institutions in the United States and houses nearly 20 individual colleges ranging from dentistry to public policy. Researchers at the Brooks Lab alone have produced almost 400 publications since the group's inception in 1980 in the form of journal publications, manuscripts in press, conference proceedings, books and chapters. Their research documentation and simulation data needs to be preserved for long periods of time, in case any of it is ever academically challenged. The Brooks group also oversees developing and supporting six different research software programs that facilitate their theoretical experimentation. For example, a molecular mechanics and modeling software called CHARMM focuses on high-performance computing on large parallel and distributed supercomputers, including accelerated molecular dynamics using GPUs.

SOLUTION

Over two decades, the Brooks Lab at the University of Michigan has used various data storage options: ATL, magnetooptical, StorageTek® Powderhorn, DLT libraries, and Spectra Logic tape and disk products.

For seven years, the lab has solely relied on Spectra Logic tape and disk solutions to archive critical research data. In 2011, they installed a Spectra T380 Tape Library with LTO-5 drives and media. In 2013, they upgraded to a Spectra T680 Tape Library and deployed a Spectra NAS. Spectra's modular architecture allows seamless upgrades as needs grow.

Disks remain 60–80% full, with the T680 tape library handling weekly incremental and full backups. The lab's 7,000-core cluster stores nearly a petabyte on disk. The Spectra T680 library offers tools for easy management, while Spectra NAS enables expandable capacity, essential since their binary data resists compression.

AT A GLANCE

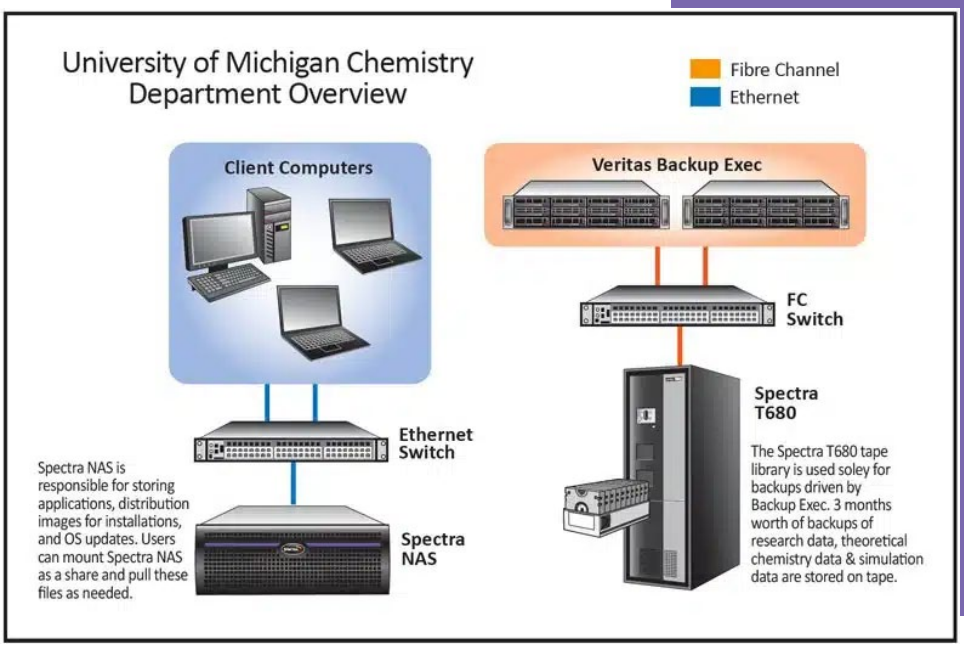
Challenges

- Long-term data preservation
- High volume of research output
- Managing diverse software tools
- Supporting advanced simulations

Solution

- Spectra tape for backups
- Spectra NAS for storage
- Seamless library upgrades
- Expandable storage capacity

SPECTRA



The University of Michigan's Workflow

UNIVERSITY OF MICHIGAN'S ENVIRONMENT

SOLUTION INFORMATION

Spectra Enterprise Tape Libraries are designed for incremental growth, as they accommodate the storage requirements of organizations in every state of their growth lifecycle. When data growth requires more slots than the library's current capacity, Spectra transfers the components of the existing library and puts them in a larger chassis. As data needs expand, all that changes is the outgrown frame.

The Spectra NAS Solution is the optimal disk platform for storing mid-tier data, including primary storage offload, data staging, backup and archiving. Flexible, simple and affordable, the Spectra NAS delivers file storage for as low as 7.5 cents per gigabyte. The expandable NAS disk solution provides raw storage capacities from 48TB to 10.7PB. Designed for various workloads, a single NAS solution supports three different disk drive types, including 4TB, 8TB, and 12TB enterprise drives; 8TB archive drives; and high-performance SSD drives. Reliable, economical and archive-ready, Spectra NAS simplifies the data storage process.

Why Brooks Lab Chose Spectra

- Ease of use
- Disk and tape offerings
- Reliability
- Affordability
- Multi-year bundled support
- Trusted long-time relationship

ENVIRONMENT

- Spectra T680 Tape Library
- Eleven LTO-5 Tape Drives
- Spectra NAS Disk Solution, 4U
- Ten 4TB Disk Drives
- Dell, HP and Supermicro Servers
- Veritas Backup Exec

ABOUT BROOKS LAB

Brooks Lab is a theoretical chemistry lab led by primary investigator Charles L. Brooks III in the Department of Chemistry and Biophysics Program at the University of Michigan. The university, a renowned Big 10 school based in Ann Arbor, Michigan, is considered one of the foremost research universities in the United States. Research in the Brooks Lab is focused on the application of statistical mechanics, quantum chemistry, and computational methods to chemically and physically oriented problems in biology.