CASE STUDY

# How the University of Alaska Fairbanks Migrated Petabytes with Spectra Logic®

*University of Alaska Fairbanks campus. (Image: UAF)*

Facing an aging tape library, the University of Alaska Fairbanks partnered with Spectra Logic to migrate its TS and LTO technology into a new long-term, multi-media environment.

## THE CHALLENGE

As its IBM TS3500 tape library approached end-of-life, the University of Alaska Fairbanks (UAF) faced the daunting task of migrating petabytes of research data into new storage infrastructure. **Newer IBM models no longer supported its existing TS and LTO drives and media in a single tape library**, leaving the UAF storage team at risk of retiring functional hardware or operating two separate libraries.

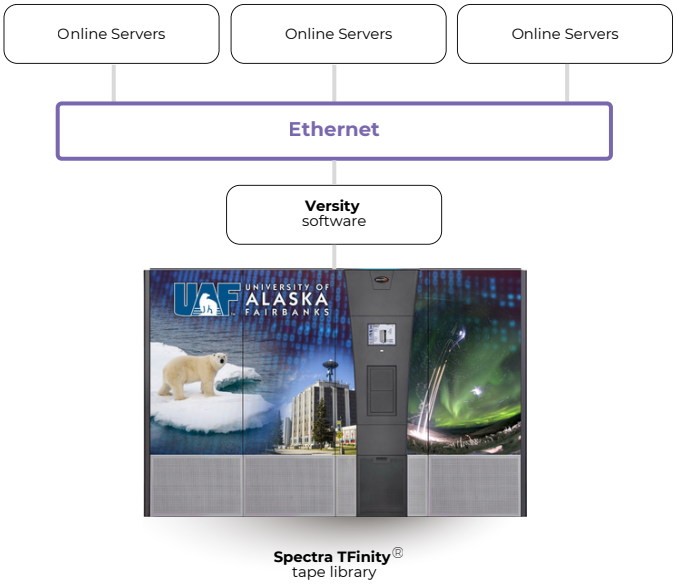
## THE SOLUTION

Spectra Logic partnered with UAF to protect the institution's investment in TS1140 and TS1160 drives and existing 3592 media — several thousand tapes. Spectra re-sledded, tested, and migrated a total of ten drives into a four-frame Spectra TFinity® tape library integrated with Versity software. The TFinity **enables a flexible, multi-media environment** supporting both TS and LTO technology.

## THE RESULT

**Spectra helped UAF seamlessly migrate its data** into an archive purpose-built for long-term preservation and environmental sustainability. With greater capacity in a smaller footprint, UAF is now positioned to confidently meet its storage demands of tomorrow's research initiatives.

## THE SYSTEM




**Spectra TFinity®**
tape library

## THE ENVIRONMENT SNAPSHOT

- TFinity® tape library, 4 frames
  - 8x TS1160 tape drives
  - 2x LTO-6 tape drives
- BlueScale® library management software*
- Versity HSM software**

**Plans to upgrade to LumOS software*
***Plans to upgrade to Versity ScoutAM software*

## THE STORY

Surrounded by wilderness and located just 200 miles south of the Arctic Circle, the University of Alaska Fairbanks (UAF) is one of the most remote universities in the United States. Yet despite its isolation, UAF stands as a stronghold of rigorous scientific discovery.

Since 1946, UAF has been home to the renowned Geophysical Institute — a premier Arctic and geological hub that produces critical Earth, atmospheric, and space data while training the next generation of scientists.

From predicting seismic activity to tracking the *aurora borealis*, this vital research helps scientists around the world better understand our planet.

UAF's Liam Forbes, Research Computing Systems Manager, and John Mitchell, Linux & Storage Systems Engineer, are key members of the lean team responsible for safeguarding this information for the long term.

Most of this data lives offline on a tape storage tier. Until recently, it was housed in an aging IBM TS3500 tape library with a mix of TS and LTO drives and media.

As the TS3500 approached end-of-life, Forbes and Mitchell sought a new tape library partner that could **support a multi-media storage environment and deliver hands-on technical expertise.**

Here's why Spectra Logic ultimately met these requirements.

## ABOUT THE GEOPHYSICAL INSTITUTE

*The C. T. Elvey Building, home to the Geophysical Institute at the University of Alaska Fairbanks. (Image: UAF)*

Since it was established by an Act of Congress in 1946, scientists at the Geophysical Institute have studied geophysical processes from the center of the Earth to the surface of the sun and beyond, turning data and observations into information useful for state, Arctic, and national priorities.

Fields of research disciplines include:

- Atmospheric Sciences
- Remote Sensing
- Seismology & Geodesy
- Snow, Ice & Permafrost
- Space Physics & Aeronomy
- Tectonics & Sedimentation
- Volcanology

## OVERCOMING MIGRATION CHALLENGES

Historically, the University of Alaska Fairbanks relied primarily on TS enterprise drives and media to store research data, with only a small portion of LTO tape technology used for university administrative purposes.

Looking ahead, however, the team wanted to adopt an LTO-first storage strategy. According to Mitchell, LTO offers high capacity, longevity, and is cost effective, a critical factor for a team responsible for preserving decades of scientific data.

When the time came to migrate data into a new tape library, Forbes and Mitchell initially considered purchasing the next model of their existing library.

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>
> It's incredibly valuable to know we'll have stability going forward.
>
> **John Mitchell**
> Linux & Storage Systems Engineer
> University of Alaska Fairbanks

But the team quickly encountered a roadblock. **Although their existing TS1160 drives were fully operational, the next version of the library didn't accommodate installing those legacy drives alongside LTO technology in a single system.**

UAF would have needed to either replace functional drives or operate two separate tape libraries, one for TS media and another for LTO — an unsettling, costly option.

Mitchell and Forbes faced a pivotal decision: retire working hardware and incur capital expense or identify a new storage provider that could enable a multi-media environment.

A Spectra Logic solution was the clear choice.

"Spectra was willing to take UAF's drives, re-sled them, update the firmware, install them into our new TFinity library, and provide support," says Mitchell. "I opened tickets, and Spectra worked on the drives, fixing them when needed. **That was important because it allowed us to move tapes from the old library into the new one, have them work, and be supported."**

With Spectra, UAF protected its existing drive and media investment while avoiding unnecessary replacement costs — a major win for the data storage team.

## LONG-TERM STORAGE & SUPPORT

The University of Alaska Fairbanks worked with its dedicated Spectra Solution Architect to migrate eight TS1160 drives (and two LTO drives) into a new four-frame Spectra TFinity library.

Two drives were shipped to the Spectra facility in Boulder, Colo., where they were tested and returned to Alaska. The remaining six drives were re-sledded and tested on-site in the UAF data center before being successfully installed into the TFinity by Spectra technicians, who also configured media partitions and validated robotic connectivity.

This level of **technical advice** — delivered through SpectraGuard Global Support — is essential for Forbes and Mitchell, who rely on vendor expertise due to their small team and geographic distance from other major cities.

*A two-stage NASA sounding rocket launches from **Poker Flat Research Range**, the world's only university-owned scientific rocket launching facility at UAF. The project is designed to learn more about aurora-produced nitric oxide in the upper atmosphere. (Image: Bryan Whitten, UAF)*

"The Spectra TFinity was our choice because we needed a long-term, supportable solution. **It's incredibly valuable to know we'll have stability going forward**," says Mitchell, who plans to visit the Spectra Boulder facility to train as a field engineer so he can respond rapidly to on-site issues.

By purchasing SpectraGuard in four-year increments — compared to the year-to-year contract they previously held — UAF achieved significant cost efficiencies, along with peace of mind that their archive can manage future storage demands.

"Tape technology remains a critical part of our storage ecosystem," explains Forbes. **"We have access to cloud-hosted services, but on-premises storage is still faster and often more cost-effective for long-term, multi-petabyte archives, which grow 10-20% annually."**

With its transition to the Spectra TFinity, UAF now has significantly more storage capacity than before. Its Research Computing Services is well-positioned to convert research data holdings to next-generation drives and media in the future. The team also leverages Versity software to automatically create two copies of data on tape, strengthening disaster recovery resilience.

## A TRUSTED STORAGE PARTNER

When they were notified that their previous tape library was reaching end of life, the storage team at the University of Alaska Fairbanks felt cornered. Retiring functioning drives or splitting their environment into separate libraries would have meant higher costs, added complexity, and more headaches.

Instead, Spectra collaborated with Forbes and Mitchell to design a migration strategy that preserved their existing drives and media and modernized the archive infrastructure.

While their prior path left them questioning their options, **Spectra supported them every step of the way to ensure a smooth transition into a scalable, future-ready solution.**

"Throughout this process, Spectra has demonstrated that they're a true partner, not just a vendor," says Mitchell.

**Contact Spectra Logic**

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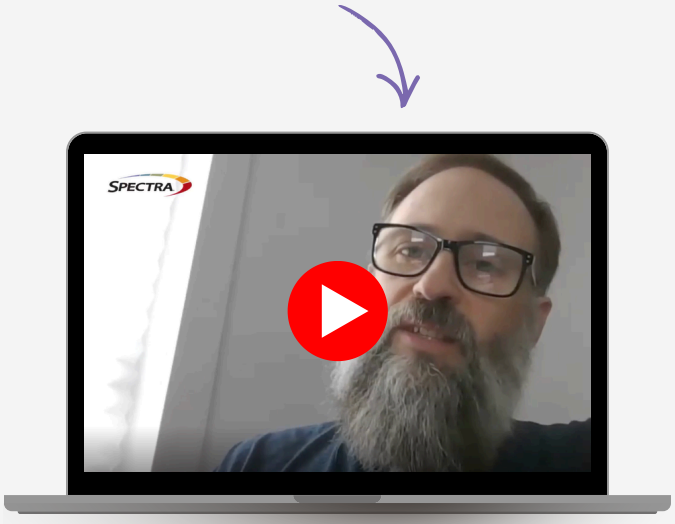
**John Mitchell**
Linux & Storage Systems Engineer
University of Alaska Fairbanks

## VIDEO TESTIMONIAL

Watch the interview on YouTube.

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