



CASE STUDY

Queensland University of Technology ensures data integrity and global access to shared research with Spectra Logic tape storage solution



We are seeing an unprecedented growth in research here at QUT with a 40% increase in the last 5 years. Our Spectra tape libraries provide us with a solution that will cost-effectively scale and upgrade in technology as our high-performance computing platform grows.



Chris Williams, Senior Manager, eResearch, Research Infrastructure, Queensland University of Technology

CHALLENGE

Facing unprecedented data growth that must be kept indefinitely, QUT had a pressing need to cost-effectively increase data storage capacity in support of its high-performance computing platform. With multiple connected technologies to manage across two separate geographic locations, QUT desired a common interface for all its storage equipment. QUT's tape archive was the only part of the research storage system that still required Fibre Channel over the WAN or over the links back to its two on-campus data centers.

AT A GLANCE

Challenges

- Preserving rapidly growing data
- Human error & equipment failure
- Multiple interconnected techs
- Reliability of PB Scale data repository of published research

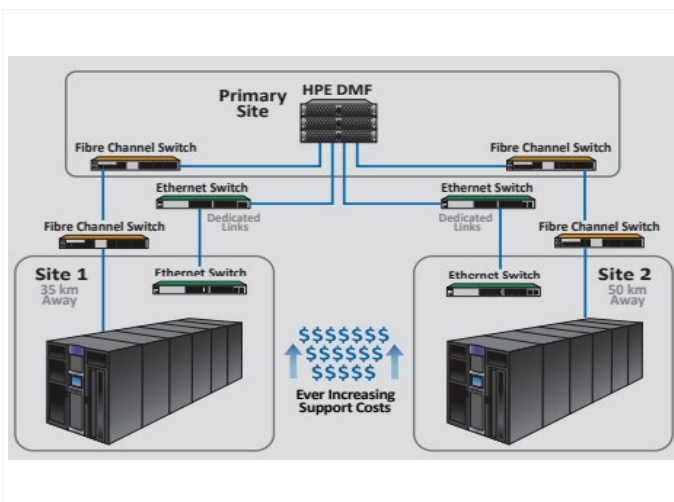
Results

- World's highest capacity storage system
- Proactive data monitoring & reporting
- Simplified connectivity to enterprise tape
- Unsurpassed accessibility with Ethernet connectivity

SOLUTION

When looking for a solution to support a central and secure data repository for the long term, Spectra worked with Australian-based HPC integrator XENON Systems P/L to engineer, support, and monitor the solution. QUT desired technology that could be quickly and easily upgraded to new tape drive generations in the future. The new solution needed to not only integrate with their archive and ensure researchers' findings are accessible at any time but also enable QUT's largest data repository to leverage the same infrastructure as the rest of their data center. Researchers at QUT generate applications addressing interdisciplinary problems in a number of fields, including health, law, business, the economy, society, engineering, and the environment. QUT must ensure the secure storage and management of data based on the varying requirements of different fields – upholding the highest standards of integrity and allowing access and reference to these data where possible to facilitate a transdisciplinary approach to research.





PREVIOUS ENVIRONMENT

SOLUTION INFORMATION

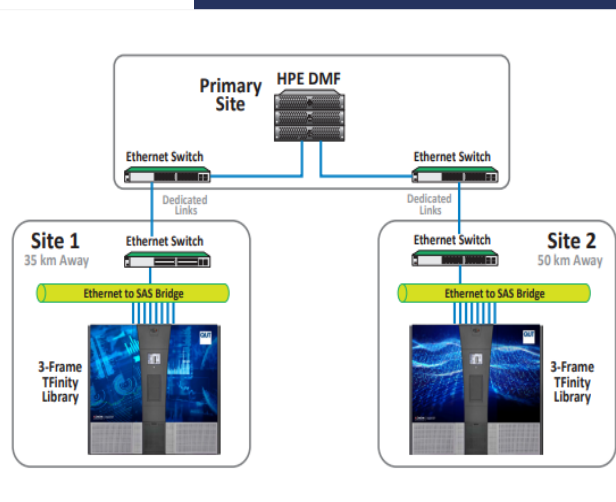
QUT deployed two three-frame Spectra® TFinity® ExaScale Tape Libraries with LTO-9 tape drives and media. Each tape library can store around 64PB of data native capacity 3550 x 18TB, or nearly 98PB compressed (average of 27.8TB per carts and 3550 slots available). The TFinity high-density architecture makes it the world's highest capacity, most scalable tape library. Each library can grow to over an exabyte of data to support QUT's needs.

The libraries are installed in two separate geographic campuses in Brisbane, where each library is 40 to 50 km from the primary data mover. The solution provides QUT with Ethernet connectivity, making tape connectivity between the libraries and their servers easier. It utilizes a RoCE v2 compatible, dual 40GigE interface that is locally switched to multiple SAS-connected LTO drives.

Ethernet connectivity allows QUT to leverage all of the same infrastructure and networking capabilities as the rest of the equipment in their data center, lowering data center cost. It also enhances network performance and efficiency by enabling shared and distributed workflows over Ethernet while removing the need for Fibre Channel equipment and expertise.

Finally, when using Spectra Certified Media, the tape libraries' management software provides extensive monitoring features, proactively reporting on the health of data, tape drives, and media to identify potential issues before they affect ongoing library operations. This ensures that data stored over any length of time can be retrieved as needed.

The system also allows QUT to employ a tape air gap – an electronically disconnected copy of data that prevents cybercrime from attacking data. By storing two copies of their archive data on tapes located in separate tape libraries many kilometers apart, QUT also protects against local natural disasters.



NEW ENVIRONMENT

ENVIRONMENT

- Two Three-frame Spectra TFinity ExaScale Tape Libraries
- Full Height SAS LTO-9 tape drives and media
- Ethernet to SAS bridges
- BlueScale® Software with standard encryption
- HPE Data Management Framework (DMF) software

BUSINESS OUTCOME

With this new solution, QUT can ensure research data's integrity and availability to advance global scientific discovery. The solution enables QUT to enhance performance and efficiency by providing Ethernet connectivity in their tape libraries while leveraging their existing data center infrastructure and networking capabilities.

ABOUT QUT

Queensland University of Technology (QUT) is a major Australian research university with a truly global outlook — QUT is heavily invested in collaborative learning and interdisciplinary research environments. Home to nearly 50,000 students, QUT provides real-world infrastructure, learning and teaching, and graduate skills to the next generation of change-makers