Hitachi Data Systems worked with partner, XMA, to provide a complete infrastructure solution that covers SAN, NAS and backup environments for Lancaster University. Together, they helped the highly rated, research-led institution to face data demands that were predicted to increase from 300TB to 4PB within five years.

**Challenge**

As one of the United Kingdom’s top 10 universities, Lancaster University is a research-led institution with an ambitious strategy to become truly globally significant. The university required a robust, high-quality and scalable storage and backup solution to support its business applications and research data storage for at least the next five years.

The existing infrastructure was approaching full capacity and unable to continue supporting its growing data demands. The NAS environment (provided by EMC) was reaching maximum capacity and did not have a nondisruptive route for expansion of its research data storage. The existing EMC backup hardware had also reached end of life, and the backup window and tape quantity was at the practical capacity limit.

A key requirement for the university was ease of use for the IT team and the end users, more than 30,000 students and staff. With this number growing every year and presenting ongoing management challenges, Lancaster University required a solution that would accommodate a 25% year over year increase in storage capacity, concurrent with use as we grow.

Hitachi Data Systems Research-Data Storage Solution Gets High Marks From Lancaster University

**Challenge**

Growth in demand for storage at Lancaster University is accelerating rapidly. Forecasting our future data requirements is difficult, and particularly challenging when it comes to research data. We are confident that the Hitachi Data Systems solution has provided us with a reliable, futureproof infrastructure, designed to scale with us as we grow.

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**Lancaster University**

**INDUSTRY**

Higher Education and Research Facility

**SOLUTION**

Storage and Scalability

**HARDWARE**

Hitachi Unified Storage VM platforms, Hitachi Unified Storage 150, Hitachi NAS Platform 4100, Hitachi Content Platform (virtualized), Hitachi Data Ingestor (virtualized)

**SOFTWARE**

Hitachi Command Suite Analytics, Hitachi Command Suite Data Mobility, Hitachi Base Operating System, Hitachi Remote Replication, Hitachi Dynamic Tiering

**Benefits at a Glance**

- Improved access to research data.
- Accelerated performance.
- Increased scalability.
- Reduced costs through virtualized environments.
connections, and total I/Os to support their virtual server infrastructure. With approximately 90% of the infrastructure virtualized, it was important that any new solution was able to support and be supported by Microsoft® Hyper-V® and VMware vSphere environments that were already in place. Another consideration was expertise in disaster recovery and backup as the solution needed to support failovers and provide resilience between two data center locations.

Recent changes in government policy mean that the university is now mandated to retain research data for up to 10 years. Lancaster University needed a single vendor to manage its entire storage estate, including SAN, NAS and backup environments, with the ability to manage a predicted increase of research, personal and departmental data from about 300TB to 4PB over the next 3 to 4 years.

**Solution**

Hitachi Data Systems along with partner, XMA, utilized the National Server and Storage Agreement framework to provide a solution for Lancaster University that covered SAN, NAS and backup environments. Migration was completed in two phases, and two separate NAS platforms were proposed for each main data type: user and research data. For research data, concurrent users, number of open files, and edits to files are retained for decades with a multiple petabyte capacity. User data is only retained for a few years and has a maximum capacity in the hundreds of terabytes.

For cost efficiency, Lancaster University’s user data is now stored in Hitachi NAS Platform (HNAS) with intelligent tiering based on access frequency. To ensure scalability and reliability, research data is stored in a virtualized Hitachi Content Platform (HCP). HCP is ideal for the management of business-critical information and utilizes Hitachi Unified Storage (HUS): HUS 150 via HUS VM. To provide a high-performance gateway and ensure fast file retrieval and additions, research data is presented via HNAS to users with Hitachi Data Ingestor (HDI) across the two data center locations.

With the university’s current environment composed of about 90% virtualized infrastructure, the optimal solution was to consolidate all data into the virtualized HUS VM, a competitive, cost-effective solution that delivered flexibility and scalability.

Best-in-industry capabilities were installed across all areas using HNAS and HUS 150, with backup-free architecture put in place for high-performance NAS research data using HCP.

**Benefits**

Hitachi Data Systems with partner, XMA, delivered a solution that provided Lancaster University with high-performance, resilient technology to meet the storage needs of today and scalability demands as the organization grows.

Upon installation of HDS solution, a benchmark test proved its high-performance capabilities, superseding IOPS requirements by 250%. The difference was highly notable as end-user services greatly improved, allowing students, faculty members and administrative staff to work more efficiently, access required services, and maximize use of the research data produced by the university.

Due to virtualization and advanced flash technology, Lancaster University has accelerated application performance and reduced costs. The university also manages capacity and services more efficiently. To meet government guidelines, data retention was important and Lancaster now has the flexibility to support its projected data growth over the coming years.
The university’s commitment to energy efficiency was also at the forefront of the solution design. For example, HCP and HDI servers were virtualized into the existing VMware vSphere platform to reduce floor space and power usage in the data centers.

Hitachi Command Suite allows the university to predict and forecast change and plan for impact without compromising service levels. Hitachi Dynamic Tiering software helps simplify storage administration and minimize costs for NAS storage. Backup windows were also reduced by 80%, as well as the need to back up research data.

"We had come to a natural end with our existing infrastructure and wanted to be much more forward-thinking in how we approach data. Hitachi Data Systems came to us with a proposition that not only simplified and optimized our IT, but also delivered a platform that gives our students the ability to go deep into the archives and collaborate much more effectively than before," said Dr. Matthew Storey, systems technical coordinator, Lancaster University. “Our new infrastructure holds even more capabilities which we’re still actively looking to exploit, particularly concerning unlocking research insights from the data we hold as an organization.”

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**Lancaster University Innovates With Information**

Universities conduct vital research that shapes world policy across many fields. Hitachi Data Systems is proud to assist Lancaster University in transforming access to their research data with trusted services that perform and scale to any need and provide the flexibility for predicted future data growth, from managing 300TB to 4PB.