

## University of East Anglia boosts storage flexibility with IBM and Tectrade



### Overview

#### ■ The Challenge

*Match storage capacity to organisational growth; support all operations with reliable, high-performance data storage; centralise storage resources and implement standardised management procedures*

#### ■ The Solution

*Worked with Tectrade to implement a storage area network (SAN) based around IBM TotalStorage DS4500 and DS4100 storage systems, with IBM System Storage SAN Volume Controller virtualisation technology*

#### ■ The Benefit

*Robust, centralised storage environment offering excellent performance, non-disruptive scalability and significant reductions in administrative cost and effort*

The University of East Anglia (UEA, [www.uea.ac.uk](http://www.uea.ac.uk)) has around 9,900 undergraduate and 3,300 postgraduate students enrolled in a total of more than 300 courses. Located in 320 acres of parkland two miles outside Norwich city centre, UEA was named one of the UK's top three universities for student satisfaction in 2005.

As demand for data storage at the University grew, the two central file servers could not longer deliver the required capacity or performance. To get round the problem, individual departments within the University had begun to add their own file servers and storage solutions, effectively creating islands of storage dotted around the University.

Iain Reeman, IT Systems Director at UEA, comments, "The locally owned and managed storage devices

generally lacked resilience and an enterprise-level backup solution. Moreover, their performance was moderate at best, due to their location at the edge of the University's network infrastructure. Our aim was to implement a flexible and scalable storage area network, thus creating a robust, centralised platform for the whole University."

#### Improved performance

Following a public procurement exercise, The University of East Anglia chose to work with IBM Business Partner Tectrade ([www.tectrade.co.uk](http://www.tectrade.co.uk)) to design and implement a storage area network based on IBM System Storage disk, tape and software technologies. Iain Reeman comments, "It was clear that Tectrade had a genuine understanding of the IBM technologies, and excellent ideas on how UEA could use it to drive maximum value from our investment."

The new solution, implemented by a joint Tectrade-UEA team, is built around an IBM TotalStorage DS4500 storage system with six EXP700 enclosures, providing 10TB of fibre-channel disk capacity suitable for database serving and other I/O-intensive functions. For less demanding applications, UEA implemented four IBM TotalStorage DS4100 storage systems with 12 EXP100 enclosures, offering 45TB of cost-effective SATA disk storage.

The majority of the disk space is managed by IBM TotalStorage SAN Volume Controller (SVC) software, which virtualises the capacity and presents it as more than 100 virtual disks to the central and departmental servers. IBM Tivoli Storage Manager backs up the entire SAN to an IBM TotalStorage 3584 Tape Library with five LTO2 drives and three LTO3 drives.

“The headline benefits of the Tectrade and IBM solution are better performance, increased capacity, easier management and greater scalability,” says Iain Reeman. “We can now provide all the data storage resources that the University needs from a centralised point of control, and we can increase capacity flexibly and cost-effectively. From the compliance point of view, centralisation provides better assurance that we are managing and protecting data in line with regulations and guidelines.”

### **An end to growing pains**

With IBM SVC virtualisation technology, UEA now has a far more flexible and resilient storage infrastructure. The complexity of the underlying physical disk environment is hidden by the SVC, which makes it easy for administrators to move data from one storage pool to another, with no disruption to users.

Scalability has also significantly improved, as Matt Livermore, Storage and HPC Systems Specialist at UEA, explains: “If we need more storage capacity, we can plug in another DS4100, point it at the SVC, and have it up and running without any additional configuration and without taking down the SAN. This flexibility is a real benefit when you consider that we have already added 30TB of SATA disk to the SAN in the last 18 months.”

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*Iain Reeman, IT Systems Director, UEA*

### **Simple value**

The IBM and Tectrade solution has simplified the storage infrastructure at UEA, creating a flexible central resource that can be used to support the University’s growing requirements. One option under consideration is the introduction of tiered storage for users’ mail files, where old mail could be archived to tape and moved offline, enabling the University to offer virtually unlimited personal storage to users.

“The SAN has given UEA a more robust and flexible storage infrastructure that also requires less management,” says Iain Reeman. “As a result, our operators spend less time on routine backup/restore administration, representing a significant increase in efficiency. The IBM and Tectrade solution therefore delivers excellent value both in IT and business terms.”



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