

## Deakin University simplifies storage management with IBM




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### Overview

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#### ■ The Challenge

*Deakin University was struggling to manage its storage that was directly attached to servers across five campuses. New applications such as online recordings of lectures and a database of digital educational materials were taking up large amounts of storage space. The physical realities of managing storage across five campuses more than 300km apart kept two staff busy full-time, while the university's innovative distance education services required reliability and 24x7 uptime.*

#### ■ The Solution

*To solve the capacity and performance demands, Deakin University augmented its existing storage with an IBM TotalStorage® DS8100 storage area network (SAN) supporting 40 terabytes of high-performance disk storage across two locations. The new storage system incorporates management features to make tasks such as allocating storage much simpler. It is designed to maintain data availability around the clock. Advanced virtualisation features will help the university offer storage and disaster recovery services to third parties.*

#### ■ The Benefits

*The university has greatly simplified its storage environment, allowing IT staff to focus on other tasks. It has improved performance, reduced the need for travel between campuses and sped up the process of allocating storage from days to hours. University IT staff are confident the new system will easily scale to meet their future needs as storage demands increase.*

#### About Deakin University

Deakin is one of Australia's largest universities, providing all the resources of a major university to more than 32,000 students. Established in the 1970s as one of the new generation of Australian universities, Deakin successfully combines a university's traditional focus on teaching and research with a desire to challenge conventional practices and to seek new ways of developing and delivering courses. Deakin has campuses in the Melbourne metropolitan area and in regional centres Geelong and Warrnambool.

#### Storage management running IT staff ragged

Pity the lot of the university IT manager, dealing with numbers of users that would make many enterprise CIOs blush but constrained by budgets that would make them weep. One of Australia's largest universities, Deakin University has more than 32,000 students, more than 3,500 staff and nearly 350 active courses spread over five campuses in metropolitan Melbourne and regional centres.

Deakin is one of Australia's leading providers of flexible study, allowing students to fit their study around work or family demands, including distance education and online learning. Running the online learning infrastructure adds to the usual load of administering the day-to-day IT requirements of running a university. As a result, the university's IT department was running nearly 100 servers and managing more than 50 terabytes of storage.

Recently introduced IT services were particularly taxing on the university's storage systems.

As a service for students who can not attend lectures, Deakin has outfitted 10 lecture theatres with the ability to capture audio and video recordings of lectures. This footage is automatically converted into a variety of formats and can be downloaded from the university website. With up to 12 hours of lectures being delivered each day in 10 lecture theatres, this generates enormous volumes of data.

*“We were spending way too much time provisioning and keeping our head above water with new service and project requirements. The physical space taken up with direct-attached storage was killing us. We were replacing a couple of disks per week due to failure and having to travel between campuses to add storage. It was a management nightmare.”*

— Craig Warren, Operational Service Provision Manager at Deakin University.

The university is also in the process of creating a database of digital assets such as pictures, audio and video called Digital Object Management System (DOMS). When staff are creating course notes, DOMS is a single, secure source for electronically stored educational materials. Each object is tagged with metadata including copyright status to ensure the material is used in the best way.

“It was critical to have 24x7 access to all our important systems,” said Warren. “Many of our on-campus computing laboratories are open 24 hours and they always have students in them, especially around assignment submission time. Flexible-learning and mature-age students often combine study with work which means their access to IT services is generally between 6PM and midnight.”

Maintaining the physical disks, allocating storage and providing an adequate level of performance was especially difficult when attempting to maintain systems distributed over five campuses more than 300km apart.

### **IBM TotalStorage DS8100: availability, scalability and control**

After evaluating systems from all major storage vendors starting in May 2005, Deakin University chose an IBM TotalStorage DS8100 system with 40 terabytes of storage capacity. The new system is hosted at Deakin's Waterfront campus in the centre of Geelong, with a secondary backup facility at the university's Burwood campus in Melbourne.

IBM's DS8000 series is designed to provide exceptional performance while adding virtualisation capabilities that help IT managers allocate system resources more effectively and better control application quality of service. The DS8000 series also offers powerful functions that are designed to help protect data from unforeseen events and maintain data availability, which can benefit businesses that must have round the clock access to information.

Timing and planning of the implementation was critical, because Deakin was installing the new storage system at the same time as building a new data centre at its Waterfront campus. IBM helped the university develop a precise provisioning timetable that ensured data was mirrored from the old data centre before switching over to the new one.

The DS8000 series takes advantage of IBM POWER5™ processor technology to deliver the IBM Virtualisation Engine, which is designed to bring the flexibility of logical partitioning used in IBM pSeries® and iSeries® servers to a disk storage system. This will help the university with its future plans to become a storage and disaster recovery provider for external businesses.

### **A platform for future growth**

Although IBM was already an existing and trusted technology partner for the university, the ability to deliver superior flexibility in provisioning the systems and financing the solution sealed the deal.

Once the system architecture was in place, IBM installed the new equipment and the university had the new system up and running within two weeks.

“We were very happy with the support and technical advice we received from IBM throughout this implementation,” said Warren.

As a result of the new system, the university has reduced its number of storage arrays from more than 40 to just five. Storage management tasks that used to occupy two people full-time can now be taken care of by one part-time person.

“All storage can be provisioned centrally from the Geelong Waterfront campus. We don’t have to spend days travelling to other campuses. Now we can provision storage in hours instead of days,” said Warren.

The IBM TotalStorage DS8100 system and management software gives Deakin University a storage infrastructure that can easily and seamlessly scale to meet future growth. The popularity of the university’s on-demand lecture recordings has prompted plans to expand the number of lecture theatres to be outfitted with the technology, requiring further expansion of storage.

The university already provides IT services to a number of on-campus businesses. Having an enterprise-class data centre located in Geelong, 75 kilometres from the Melbourne CBD, makes Deakin an attractive choice as a disaster recovery site for Melbourne-based businesses. Using the IBM Virtualisation Engine, which allows a single physical storage system to be partitioned into a series of completely separate virtual ones, the university will be able to provide services to these organisations while maintaining security and separation from its own data.

*“You can build a SAN using equipment from any of the major enterprise storage vendors, but IBM provided the most flexible solution with its storage management software, virtualisation capabilities and support for Linux™ and open systems.”*

— Craig Warren, Operational Service Provision Manager at Deakin University.

## For more information

If you would like to speak to an IBM Sales Representative, please call **132 426** in Australia or **0800 801 800** in New Zealand.



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