case study

The University of Sydney Improves Student Learning with Virtual Desktops

Enhances learning experience for 50,000 students

industry:
Education

country:
Australia

business challenge:
Deliver a desktop architecture that allows a large number of students to access specialist course software from geographically dispersed computer labs.

solution:
Implement a new virtual desktop architecture based on Citrix, Microsoft, HP and VMware technologies.

services:

- Planning, technical support and deployment of new architecture.

results:

- Helped the University of Sydney select desktop virtualisation technology that could scale to meet its long-term requirements
- Ensured that the pilot 'went live' within seven months to meet federal government funding commitments
- Achieved an 85 percent 'good' or 'excellent' rating for the system from students participating in the pilot
- Established a platform to roll out desktop virtualisation to other areas across the University of Sydney

Executive Summary

As part of its Learning Network Program, the University of Sydney engaged Dimension Data to **assess, plan, design and deploy** a desktop virtualisation system to **improve computing services for students and enhance learning.**

Client Overview

Founded in 1850, the University of Sydney provides education and research services through several campuses, both in the Sydney metropolitan area and New South Wales. It has around 50,000 students, 7,585 staff (full-time equivalent) and 16 faculties and schools supporting a wide range of disciplines.

Business Challenge

The University of Sydney is creating a series of spaces within its new buildings that will encourage students to use technology for collaboration and learning. To ensure these spaces fulfil objectives, the University wanted to provide a flexible technology platform.

"We needed a system that would enable students to access a range of applications from a wide variety of locations, potentially using different devices," said Richard O'Connor, Project Manager, Information and Communications Technology (ICT) at the University of Sydney.

Previously, students were using computer laboratories around campus to access standard applications such as Microsoft Office and Internet Explorer. However students had to visit the relevant faculty and locate an available teaching lab to access specialist course-related software. Access to specialised teaching labs was not always convenient for students particularly during periods of high demand.

"Our aim was to provide those discrete, specialist applications through a virtual desktop that could be accessed through one of the standard laboratories," said O'Connor. "It also needed to provide students with access to research, engineering and mathematical applications, as well as a referencing and bibliographic tool."

Solution Delivered

ICT at the University of Sydney engaged Dimension Data to deploy a virtual desktop solution for students. The solution comprised of blade servers connected to shared storage, running VMware virtualisation software to provide server and desktop hosting.

The processing workload that enables a virtual desktop is distributed across multiple servers, ensuring high availability. Citrix technologies, including XenDesktop, are used for the provision and management of virtual desktops. The system also enables user profiles, delivering a personalised experience for each student. The system presents users with an environment based on Microsoft Windows 7.

Relationship History

Dimension Data has worked with ICT at the University of Sydney to deploy software and support its networks for several years. Dimension Data has completed multiple projects for ICT and maintains a strong relationship with the University.

"Dimension Data stood out because its staff **listened to what the University was looking for** and addressed our key requirements."

Richard O'Connor, Project Manager, Information and Communications Technology, the University of Sydney

How We Delivered

In 2010, the University of Sydney engaged Dimension Data to deliver a pilot project to evaluate the desktop virtualisation concept.

"During the initial request for quotation process Dimension Data stood out because its staff listened to what the University was looking for and addressed key requirements."

Dimension Data worked together with ICT to analyse the technical architecture to allow the operation of a desktop virtualisation pilot and to determine the best solution. Dimension Data engineers recommended a scalable system based on Citrix technologies.

"Because we are quite a large university, we wanted to pilot a system that could potentially support thousands of concurrent users," said O'Connor. "We found that other products had limitations on scaling. These would have been expensive to correct."

Dimension Data also helped ICT assess whether the Citrix solution met its speed and responsiveness to users requirements and the range of devices that could be used to access individual virtual desktops.

"The fact that Citrix works on multiple devices was useful as we don't yet have firm data on how students are going to be accessing these environments in 2012 or 2013," explained O'Connor.

The University of Sydney started the project in February 2010 with a requirement to 'go live' by September 2010.

Dimension Data sent two technology specialists and a project manager to ensure the pilot was completed to requirements and within budget. They carried out a range of critical tasks including designing and building the server-side virtual desktop infrastructure, configuring and testing the Citrix products, and packaging academic applications to enable them to operate in the virtual environment.

Dimension Data's engineers operated alongside the University's ICT team, who worked on installing the required storage hardware and ensuring the University network supported the virtual desktop project.

"We worked closely together as a team to deliver the project," said O'Connor. "We had to determine and have approved our technology selection, order the hardware, install and configure the system, package the applications and complete testing within a relatively short time frame, so team work was very important to our success. We also had to train our helpdesk staff and support teams which was vital for a successful implemention."

The eight-week pilot went live from September 2010 with 170 students selected to take part. A number of criteria were used for selecting the pilot participants. The University's primary requirement was that participating students should study a course spanning different faculties while also needing to access many applications.

Value Derived

The pilot ran to deadline and has met the University's internal targets. No compatibility or technical problems were experienced across the technologies, while local lab staff resolved user issues avoiding the need to escalate issues to other support or infrastructure teams.

The project also enabled the University to identify areas requiring further development, such as logon and application startup times, and to undertake fine-tuning ahead of a wider rollout.

Students involved in the pilot were also satisfied with the new system. The University ran several online surveys during the pilot to determine whether the virtual desktop system met its requirements.

"We gave the survey participants a choice of rating the system – 'poor', 'fair', 'good' or 'excellent' – and 85 percent rated it 'good' or 'excellent'," said O'Connor. "In addition, 97 percent said they recognised the benefits of a personalised computing experience."

Feedback from students improved during the pilot. During the first four weeks, 54 percent of students rated logon times as 'same' or 'better' than in the previous environment. This rose to 84 percent for the second half of the pilot.

The University's ICT team attributed these improvements to a number of factors:

- enhancements made through the pilot to address user concerns
- an increasing familiarity and confidence with the system
- the ability to customise the desktop using tools such as bookmarking
- improvements in system performance from the second usage and beyond.

The University is preparing to deploy virtual desktops into more computer labs and new teaching spaces that will be used by multiple faculties for many units of study.