



KEY HIGHLIGHTS

INDUSTRY: EDUCATION


DEAKIN
UNIVERSITY AUSTRALIA
CHALLENGE

Curb a rapid increase in server numbers, improve CPU utilization and address space, heat and cooling issues at the main datacenter.

SOLUTION

Adopting a virtualized server infrastructure has enabled the university to reduce hardware costs, improve resource usage, cut provisioning time and simplify server management.

VMWARE AT WORK

- VMware Infrastructure 3, including ESX 3.5 (Update 4), VMware VMotion, VMware DRS, VMware High Availability (HA)
- VMware vCenter Server 3.5
- VMware Update Manager 3.5
- VMware Converter Standalone 4

DEPLOYMENT ENVIRONMENT

- ESX on IBM System x3650 servers with two quad-core 2.5GHz Intel Xeon processors and 48GB of RAM
- IBM DS8100 SAN with 70TB of storage (Geelong datacenter) and IBM DS8100 SAN with 30TB of storage (Burwood datacenter)
- Guest operating systems: Microsoft Windows Server 2003, Microsoft Windows Server 2008 (32- and 64-bit); Red Hat Enterprise Linux 3, 4 and 5
- Virtualized applications: Microsoft IIS, Microsoft SQL Server, Microsoft WSUS, Development Microsoft Exchange, corporate applications such as Web, Apache Tomcat, and print servers

“VMware’s management features are ahead of the curve – the tools and infrastructure around the software is very appealing. The ability to undertake live server migrations is also great.”

Eric Stacey, Unix Administrator
Deakin University

Deakin University

Deakin University is a four-campus institution with around 34,000 students and more than 2,200 academic staff. The university maintains two datacenters housing around 250 IBM and Sun servers. Its main facility at Geelong housed about 75 percent of the server fleet and was experiencing network capacity and heating and cooling issues. Server numbers were exploding, yet the university was not maximizing the use of resources on the machines. “Every time a new project came to us, the answer was ‘buy a new server for it,’” said Eric Stacey, Unix Administrator, Deakin University. “A lot of applications were run independently, even though they could be sharing server space.”

In 2008, Deakin University turned to virtualization to arrest its server sprawl and better utilize resources. The institution had used VMware Workstation and VMware Server since 2001-02 to virtualize its Windows servers and domain controllers, and decided to upgrade to ESX 3.5. The first phase of the project in October-November 2008 involved a virtual-to-virtual migration, where virtual servers were moved from VMware Server to VMware ESX. This was followed by a physical-to-virtual server migration. By the end of March 2009, the university was running 115 virtual servers on 16-17 physical ESX hosts and had reduced its original server fleet by about 30 machines. The virtual servers run a number of corporate applications. “The aim is to take out another 50 physical servers by June 2009 and look at moving more complex applications such as our Oracle databases and Microsoft Exchange environment to the virtualized infrastructure,” said Stacey.

Results

- Saved around A\$200,000 in hardware costs by enabling existing server fleet to be repurposed
- Increased CPU utilization from 10% to 50–60%
- Aiming to achieve a server consolidation ratio of 20:1
- Cut server provisioning time from four to six weeks to one hour
- Reduced cooling costs by switching off one air conditioning unit in the Geelong datacenter

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