Success Story

Swinburne University of Technology

With growing IT requirements, Swinburne University's data centres were experiencing space and power supply constraints. The IT team decided to virtualise its file, print and Novell® GroupWise® environments on more compact HP* BladeSystem* servers, using Xen* virtualisation. The solution has not only resolved the data centre issues—it has also improved disaster recovery capabilities and accelerated server provisioning.

Overview

Melbourne-based Swinburne University of Technology has more than 45,000 students and 6,000 staff located across six campuses—five in Australia and one in Malaysia. Well-recognised both at home and abroad for its research and education facilities and programmes, the university provides a broad range of tertiary undergraduate, postgraduate, masters and doctoral degrees focusing on technology and science.

Challenge

Swinburne University's main IT infrastructure is distributed between five data centres at its Australian campuses. The main systems at these data centres include file and print servers and Novell GroupWise e-mail for 6,000 staff, all running on Novell Open Enterprise Server. There are also a number of Microsoft* Windows* servers running key applications.

"As our IT landscape grew, space in our data centres was at a premium, and it was becoming difficult to supply enough electricity for all the servers," said Brian Habel, Senior Systems Administrator at Swinburne University of Technology. "We decided to move to a more compact, energy-efficient hardware platform—but this alone wouldn't solve the problem. We needed a virtualisation solution."

The IT team was also concerned that its existing disaster recovery strategy would not be capable of restoring systems rapidly in the event of a major outage. The new solution needed to provide a significant enhancement in disaster recovery capabilities.

Solution

The Swinburne University IT team considered various hardware and software options for the new virtualised architecture, before deciding to implement SUSE® Linux Enterprise Server with built-in Xen virtualisation, running on HP BladeSystem servers and EVA storage hardware.

"We thought about VMware*, but when we looked at the pricing, it was way beyond our budget," said Habel. "By contrast, thanks to our Academic Licensing Agreement with Novell, we realised that we could implement Xen virtualisation at a very low cost. In the event, we didn't even need to pay for additional support to handle the implementation as our existing Novell support agreement covered us."

Swinburne University of Technology at a glance:

One of Australia's leading technology and research-focused institutions

- **Industry:**
  - Education
- **Location:**
  - Australia
- **Products and Services:**
  - Novell Open Enterprise Server
  - SUSE Linux Enterprise Server with built-in Xen virtualisation
  - Novell Cluster Services
  - Novell GroupWise
- **Results:**
  - *Created near-instant disaster recovery capability through virtualisation*
  - *Enabled provisioning of new server instances within 15 minutes*
  - *Saved data centre space and reduced power and cooling requirements*

"Xen virtualisation has enabled us to run two or three virtual instances of Novell Open Enterprise Server on each server—so we can utilise space and power supplies in our data centres much more efficiently."

Brian Habel
Senior Systems Administrator
Swinburne University of Technology

"Using Xen to manage virtualised instances of Novell Open Enterprise Server enables us to restore everything to another location quickly, so downtime and data loss are much less of a worry."

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After a detailed one-year planning phase, Swinburne University was able to implement the new architecture within just three months across all five campuses—despite the need to migrate nearly 20TB of data. The new HP EVA systems provide five times more storage space for users' e-mail and home directories, helping to increase flexibility and improve productivity.

"We now have 168 server blades in HP BladeSystems at the different campuses, replacing a much larger number of old rack-mounted servers," said Habel. "Xen virtualisation has enabled us to run two or three virtual instances of Novell Open Enterprise Server on each server—so we can utilise space and power supplies in our data centres much more efficiently."

The IT team estimates that Xen will be capable of running up to four virtual servers on each blade, providing sufficient capacity for the next four or five years without any need to purchase additional hardware.

To provide resilience, the university uses Novell Cluster Services™ to group virtual servers across several physical server blades. If a blade fails, the workload is handled by another server in the cluster, and users are unaffected.

In the event of a more serious failure at the main data centre, Xen enables the virtual servers to be restarted rapidly on a secondary BladeSystem at another location. The University is in the process of mirroring data from other campuses to the main data centre to extend this disaster recovery capability further.

Results

"Before we implemented Xen virtualisation and the new hardware, we would have found it quite difficult to restore our systems after a disaster," said Habel. "Now, using Novell Cluster Services with virtualised instances of Novell Open Enterprise Server enables us to restore everything to another location quickly, so downtime and data loss are much less of a worry."

The introduction of Xen virtualisation for Novell Open Enterprise Server has also accelerated server provisioning. When the University wants to deploy a new application or create a development environment, the IT team no longer needs to order new hardware, wait for it to be delivered, and find space for it in the data centre. Instead, automated scripts enable the creation of a new Novell Open Enterprise Server environment within just 15 minutes.

"Above all, Xen virtualisation is helping us make better use of the space in our data centres," said Habel. "With the ability to run a greater number of distinct environments on fewer physical machines, Xen not only gives us room for expansion—it also delivers key efficiency savings in terms of power and cooling. Having a more energy-efficient infrastructure will cut our operational costs and reduce our impact on the environment."

For More Information:
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