Holmesglen TAFE

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Holmesglen TAFE Reduces Server Hardware Costs by 30%, Uses 50% Less Space in the Data Centre

Holmesglen TAFE engaged Dimension Data to implement a disaster recovery solution to improve application delivery and protect data.

Industry
Education

Country
Australia

Challenge
Replace ageing servers and network equipment to provide a more relaible service to students and teachers

Solution
New network, server and storage infrastructure at the TAFE's data centre as well as a new wireless network across three campuses.

Results

- Reduced server hardware costs by 30% and used 50% less space in the data centre
- Created virtual machines on a smaller number of physical servers, which reduced hardware costs
- Reduced the time it took to provision new servers from days or weeks to minutes
- Offered wireless connectivity to 50,000 TAFE students
- Will build a disaster recovery centre to eliminate downtime in the event of a server failure or disaster at the primary site
- Will reduce maintenance times; IT staff won't have to work over Christmas and Easter to conduct server maintenance

Holmesglen upgraded its ageing core network, server and storage infrastructure at its data centre to reduce costs and support growth in student numbers and services to the business. Holmesglen also commissioned a new wireless network across its three campuses and plans to finalise the design of disaster recovery site to eliminate system downtime.

Client Overview

Established in 1982, Holmesglen is a large vocational education and training provider based in Victoria, Australia. The institute operates from three major campuses in Chadstone, Glen Waverley and Moorabbin, and through offshore partners. Holmesglen currently offers more than 600 courses to over 50,000 students.

Business Challenge

In 2009, Holmesglen began a project to refresh its ageing core network and servers and deploy a new wireless network after receiving a grant from the Victorian government and committing its own funding.

This refresh would enable the institution to deliver application services more efficiently and support 10% annual growth in student numbers.

The institution was also looking to reduce data centre costs and eliminate system downtime.

"We had a big requirement to upgrade our storage infrastructure and build a new disaster recovery site where we could replicate data across our network," said Chris Puchalski, Operations Manager at Holmesglen. "We had simple backup systems in place but it would sometimes take weeks to recover lost data and rebuild the systems."

The TAFE was also under pressure from the business as well as from Victorian Auditor-General's Office, which put disaster recovery clearly on the agenda.

"We had also grown to a point where our users expected the system to be available all the time and were reluctant to accept outages," said Puchalski.

"We needed to have better options to protect our data and eliminate unnecessary system downtime."

Solution Provided

In April 2009, Holmesglen engaged Dimension Data to design a new network. The new infrastructure model was initially deployed at its Chadstone campus and then the solution was replicated to a secondary site in Glen Waverley. The infrastructure is based

on six Cisco UCS Blade Server Chassis, Cisco Nexus 7000 Series switches, Hitachi Universal Storage Platform VM, VMware ESX (used to create virtual servers), a 10Gb/s Ethernet access layer upgrade, and Cisco wireless access points.

Holmesglen has deployed an 'active-active' data centre infrastructure where both data centres are running at the same time. Data is replicated to the disaster recovery site in real-time with full fail-over solution expected to be completed by the end of 2010. This will provide protection for the department's data in the event of a system failure or catastrophic event such as a fire at one of the sites.

The TAFE would also leverage its existing fibre optic connectivity to increase bandwidth and deliver redundancy for its network traffic.

The Cisco UCS blade server chassis, which are housing eight half-width Cisco UCS B-Series Blade Servers,

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>
> Chris Puchalski, Operations Manager at Holmesglen TAFE.

have replaced older servers to increase performance and optimise space in the data centre. The TAFE's web, teaching and property management applications, email system, anti-virus software, virtual server applications and Linux environments have all been moved across to the Cisco blade servers.

A Cisco wireless network is available up to 50,000 students with access to services from their own portable devices such as laptopsand smart phones. The TAFE has deployed six Cisco Wireless Controllers and more than 280 Cisco wireless access points across its Chadstone, Moorabbin and Glen Waverley campuses.

Holmesglen is also trialling VMware View, a software tool that delivers a virtual desktop to users across the campus and remotely. Students will have access to some applications and tools that complement their classroom. Teachers will be able to access corporate databases and student management systems from a virtual desktop.

Relationship History
Holmesglen TAFE had an existing maintenance and managed IP telephony service agreement with Dimension

Data for its Cisco equipment and worked with Dimension Data on a range of other projects.

How We Delivered
In April 2009, Dimension Data started work with the TAFE's internal IT staff to draft a plan for each project. Workshops were held over a few months to determine how the new data centre and disaster recovery site would be built and the connected with each campus.

Holmesglen upgraded cooling and power protection systems at each wiring closets before Dimension Data engineers deployed around 100 Cisco Catalyst 3750 Power-over-Ethernet switches, replacing switches that were reaching end-of-life.

"There were hundreds of old switches that needed to be replaced across our sites and the process took several months," said Puchalski. "Without Dimension Data's help, it would have taken us a year to complete this task."

Dimension Data provided three technical staff to remove existing core Cisco Catalyst 6500 Series switches and replace them with Cisco Nexus 7000 Series switches during

the evenings over the Easter break in April 2010. These new generation switches provide more bandwidth and rich feature set, which are is necessary for the institute's move to a 10Gb/s Ethernet backbone and extra network redundancy.

"This was a complicated exercise that we could not have completed on our own," said Puchalski. "The hard part was removing the old switches and replacing them without upsetting the business. The assistance that Dimension Data provided was crucial to the success of this upgrade."

Dimension Data engineers also connected the Cisco UCS Blade servers to the Cisco switches and Hitachi storage and demonstrated how the TAFE could take advantage of this new technology.

"Dimension Data's technical staff also provided us with valuable feedback about trends in the market and the directions that we should take with our technology infrastructure," said Puchalski. "This has enabled us to make the right decisions about which technologies will benefit us now and in the future."

Value Derived

The new data centre infrastructure has ensured Holmesglen can reliably deliver around 1,000 applications to users across its TAFE network. Students and teachers benefit from more dependable infrastructure that is always available.

"When the disaster recovery centre in Glen Waverley is completed at the end of 2010, we will be able to completely eliminate system downtime in the event of a server failure or disaster at our primary site," said Puchalski.

"We will be able to do upgrades and patching during the day. Our IT staff will no longer have to work over Christmas and Easter to conduct server maintenance."

The rollout of the Cisco UCS Blade Server Chassis has enabled Holmesglen TAFE to reduce server hardware costs by about 30%, increase processing power, cut the amount of space in the data centre required to house its servers by half and save on power and cooling costs.

"The CPUs and memory in the blade servers are packed together tightly in the rack, which means that one blade server can do the job of six or seven of our old servers," said Puchalski. "We now have room to grow as the TAFE network expands in the future. We can also reduce our carbon emissions."

Solution at a glance

- Cisco UCS Blade Server Chassis
- Cisco UCS B-Series Blade Servers
- Cisco Nexus 7000 Series Switches
- Cisco Catalyst 3750 Power-over-Ethernet switches

Virtual server technology also enables Holmesglen to create virtual machines on a small number of blade servers, which has helped reduce hardware costs.

"Virtualisation also reduces the time it takes to provision new servers from days or weeks to minutes," said Puchalski. "We save time and money and our IT staff can focus on more important tasks."

The new Cisco wireless network enables students to access applications from any location within the three campuses.

"We have around 4,500 desktop PCs around our Institute and with the recent growth in demand for IT resources we always have had a shortage," said Puchalski. "Students can now use their laptops to access the network without having to find a PC in the library or computer lab."

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