



National University of Singapore

The National University of Singapore was managing its car parks and parking permits using a Microsoft* Windows* NT-based application. By switching to a solution based on SUSE® Linux Enterprise Server virtualized on VMware* Server, the University saved approximately SGD100,000 (US\$68,000) in software licensing, cut IT administration headcount by three, and reduced operational costs by around SGD60,000 (US\$41,000) annually.

Overview

The National University of Singapore (NUS) is a multi-campus university of global standing, with distinctive strengths in education, research and business. With a cosmopolitan mix of more than 32,000 students from 88 countries, the University has a vibrant atmosphere and offers a truly global education.

Challenge

Car parking locations across the University's 42-hectare campus are at a premium, with spaces allocated to students, staff, visitors and contractors using a system of permits. The existing permit management application, running on Microsoft Windows NT, was not fully integrated with the backend servers, and the University had to manually process all requests for non-staff permits. This included checking names against databases to ensure they were legitimate university applicants, as well as processing payments and managing reminders, expirations and renewals.

After the mandatory permits had been issued, some precious car parking spaces remained, allocated on a lottery basis. The IT department was keen to eliminate any speculation

about the fairness of the paper lottery, and also wished to cut the costs of parking permit management by eliminating these manual processes. Extending the existing Microsoft Windows NT-based application would have been prohibitively expensive, with additional user licence fees adding significant costs to the department.

Solution

NUS decided to create an intranet portal, allowing students, visitors and contractors to apply online for parking permits. This first step would remove the manual workload from the IT department, with automatic validation of personal details and entitlement status.

The NUS Office of Estate & Development chose to develop the new portal and a related parking management application in J2EE*, working with Novell partner MJM Networks to develop an enterprise-class solution. In line with its aims to reduce costs, the joint team looked for the most cost-effective server operating system that could support tens of thousands of portal users, and selected SUSE Linux Enterprise Server with VMware virtualisation technology.

National University of Singapore at a glance:

Leading research and academic institution

■ Industry:

Education

■ Location:

Singapore

■ Products and Services:

SUSE Linux Enterprise Server

■ Results:

- Saved around SGD100,000 on software licence fees
- Cut IT administration headcount by three
- Reduced operational expenses by approximately SGD60,000 annually

“Deploying SUSE Linux Enterprise Server virtualized on VMware Server has saved NUS some SG\$100,000 in fees that would otherwise have been required for proprietary operating systems and user licences.”

Toh Yong Soon

*Manager, Office of Estate & Development
National University of Singapore*

“The great beauty of the solution is that a single server is able to get round all the human idiosyncrasies of parking management. SUSE Linux Enterprise Server has made it possible.”

Toh Yong Soon

*Manager, Office of Estate & Development
National University of Singapore*

www.novell.com

“SUSE Linux Enterprise Server provides NUS with a highly reliable and scalable environment capable of managing the very high demands placed on it during the scramble for limited parking places,” said Toh Yong Soon, Manager, Office of Estate & Development, National University of Singapore. “We deployed VMware to create separate virtual server environments for the portal and permits applications, enabling us to run everything on the same physical server to keep costs low.”

Using the new portal, staff, students, visitors and contractors with access to the university intranet are able to apply for permits online. The solution issues valid permits immediately by authorising a specific smartcard for entry to the appropriate car park. Sensors at car park barriers transmit data from unique smartcards carried in each car to the management system. Cars with valid permits for a specific car park are able to enter, and data is collected to allow current usage to help predict future parking needs. The solution communicates directly with university business systems, automating the validation of permit requests against university databases.

The portal handles payment processing, making automatic deductions from staff salaries through integration with payroll systems. The parking management application stores unsuccessful permit applications and automatically enters them into the lottery. It then makes a fully computerised, randomised selection, eliminating any possible doubts about the fairness of the lottery.

Results

With the new portal running on SUSE Linux Enterprise Server, staff, students, visitors and contractors can apply for and receive parking permits within a few minutes. Across 20 car parks, barriers immediately allow valid permit-holders to enter, and there is a full paper-free audit trail.

“Deploying SUSE Linux Enterprise Server virtualized on VMware Server has saved NUS some SGD100,000 in fees that would otherwise have been required for proprietary operating systems and user licences,” said Toh Yong Soon. “SUSE Linux Enterprise Server keeps running with very little need for administration, and the reduction in paper workload has reduced headcount by three. These staff and administration reductions combine to deliver a further SGD60,000 in annual operational savings.”

The solution has been so successful that the Singapore Botanic Gardens, which adjoins another NUS campus at Bukit Timah, now hosts its own parking management system on the same servers. In separate VMware partitions, duplicate instances of the parking management applications provide the same high levels of automation for the Gardens, producing a modest income stream for NUS.

“We generate automated monthly and daily reports of parking usage, essential data for planning the University’s infrastructure and growth, as well as managing all the permits themselves,” said Toh Yong Soon. “The great beauty of the solution is that a single server is able to get round all the human idiosyncrasies of parking management. SUSE Linux Enterprise Server has made it possible.”



For More Information:

To read more customer success stories, visit: www.novell.com/success

Contact your local Novell® Solutions Provider, or call Novell at:

Australia
1-800-NOVELL

China
(86-10) 6533 9000

Hong Kong
(852) 2588 5288

India
1-800-225777

Japan
(81) 3 5740 4300

Korea
(82) 11 3131464

Malaysia
(60-3) 7722 6100

New Zealand
0800 441 671

Singapore
(65) 6395 6888

Taiwan
(886-2) 2737 0946

Novell, Inc.
404 Wyman Street
Waltham, MA 02451 USA