AUSTRALIAN UNIVERSITY IMPROVES I.T. SELF-SERVICE WITH RED HAT

UTS
UNIVERSITY OF TECHNOLOGY, SYDNEY

SOFTWARE AND SERVICES

OpenShift Enterprise by Red Hat®

Red Hat Enterprise Linux®

Red Hat Consulting

HARDWARE

2 x OSE Brokers using 2 vCPU, 8 GB RAM, 20 GB storage

IPM 2 x OSE Nodes using 2 vCPU, 8 GB RAM, 75 GB storage

The IT department of the University of Technology in Sydney (UTS) was experiencing service bottlenecks and wasted resources in three different areas: student experience, virtual machines, and legacy data. By deploying a pilot program of OpenShift Enterprise by Red Hat, UTS significantly improved the student experience, increased the ability of IT users to self-provision virtual machines, and reduced administrative burden on the IT department. Time and cost savings have been realized throughout the university, and the IT department has been freed up to focus on more valuable activities.

Sydney, Australia ●

HEADQUARTERS

"OpenShift supports students' diverse needs and offers self-service and automation features that reduce the amount of support users require. The pilot program has been a success, with a reliable implementation that has already withstood production-level demands."

JAMES LUCAS
MANAGER, SYSTEMS SERVICES,
APPLICATIONS SERVICES, UTS

EDUCATION

3,110 EMPLOYEES
39,000 STUDENTS

CUSTOMER SINCE
2003

BENEFITS

• Standardization and automation of development and operations (DevOps) processes

• Support for many coding languages and frameworks

• Reduced waste and costs with the ability to share many applications on the same infrastructure

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REDUCING THE NEED FOR MANUAL CONFIGURATION

University of Technology, Sydney (UTS)'s centralized IT services group provides a range of infrastructure-related and application services to the entire university, including faculty, researchers, and students. The UTS IT team found that they were experiencing bottlenecks in three ways:

- Throughout their time at the university, software engineering students work in teams to develop the full life cycle of an application, from development and testing to project management and architecture. Students spent a great deal of time manually configuring applications to work with networks and infrastructure, which distracted them from completing the actual course content.

- At the same time, UTS wanted to reduce the number of virtual machines used throughout the university and speed up the time to provision a development platform. A fleet of Red Hat Enterprise Linux and Microsoft Windows environments carries a "virtualize-first" policy, which requires that new virtual machines be added before physical machines are deployed.

- Finally, UTS needed a solution to help them manage long-lived but rarely used conference websites. These sites needed to stay live for at least five years so that event attendees could access the information stored on them. However, managing these various websites was time-consuming for the IT department, and it was possible that the sites could become unsecured and unmanaged.

UTS sought a solution that would service students, researchers, and faculty with one platform. The solution would address environment provisioning issues, reduce the cost of legacy applications, and address the infrastructure management issues associated with servicing up to 1,000 students at a time as they complete their capstone software engineering projects.

CHOOSING AN ON- OR OFF-PREMISE PLATFORM

UTS evaluated a number of potential solutions and ultimately chose OpenShift Enterprise by Red Hat, a Platform-as-a-Service solution. Because OpenShift was compatible with UTS's existing technology, users wouldn't need to modify existing applications to suit the new environment. Switching to OpenShift as the interface would be simple, and users would be more inclined to accept a solution that was fast and easy to use.

"The fact that OpenShift lets UTS deploy and control the platform on- or off-premise was crucial. From a legal compliance standpoint, we needed a solution that would be hosted in-house to maintain control over and access to student data," said James Lucas, manager, Systems Services, Applications Services at UTS.

OpenShift also allowed UTS to compartmentalize its event websites to keep them secure, while letting academics set up and provision the websites for themselves, reducing the burden on the IT staff.

MANY BENEFITS FROM ONE PILOT SOLUTION

UTS implemented an OpenShift Enterprise by Red Hat pilot project to run for 10 months. Users included 175 software engineering students, remote users of an open source learning management system, a network of environmental and energy sensors, and people involved in capstone and research projects.

COMPATIBILITY

OpenShift runs on Red Hat Enterprise Linux and uses standard components of the operating system, so it is compatible with UTS's existing systems.

UTS ran standardized setups for Red Hat machines straight onto virtual machines with no significant customization.

"Using standard integration meant it seamlessly integrated with DNS," said Lucas. "We also installed standard monitoring tools. The entire implementation was treated as a standard Red Hat Enterprise Linux installation."

PROFESSIONAL SUPPORT

UTS engaged Red Hat Consulting to help them implement the system in just one week.

A Red Hat technical consultant worked with UTS's system administrator for deployment, including helping decide which application to use in the pilot program. Then a Red Hat subject matter expert worked alongside the team to develop documentation.

"The implementation was not difficult—the UTS team could have done it in a few weeks," said Lucas. "However, we saved some time by engaging Red Hat's professional services team and the entire implementation was complete in one week."

STANDARDIZATION AND AUTOMATION

The PaaS pilot also helped some UTS professors, who may wish to set up applications depending on specific requirements for the courses they teach. The OpenShift environment allows instructors to manage their own applications, while the UTS IT team can provide customization, security patches, and upgrades without the day-to-day management responsibilities they had previously.

UTS can also preconfigure chosen applications with plugins that automatically integrate into the existing infrastructure. This lets engineers and developers spend more time on innovation, while instructors and students can start their projects sooner.

DEVELOPER SELF-SERVICE

IT staff no longer have to manage the entire provisioning process; by simply providing login details, they can let users provision their own resources.

Because OpenShift enables self-service, there is minimal user training required. Even when users contact IT for help, most responses come from online OpenShift documentation or open source community user forums.

BROAD SUPPORT

OpenShift provides full support for the many, varied coding languages and frameworks used at UTS and offers a choice of databases and development tools. OpenShift is also expanding its support for various languages through the extensibility offered by the cartridge framework.

"OpenShift supports a wide breadth of languages without the need for customization, which is ideal in the learning environment," said Lucas. "OpenShift also supports database platforms within the environment, letting users deploy it as part of their code with just the click of a button."

REDUCED WASTE AND COST

Previously, applications would be hosted on separate machines, even if they did not require a full machine's worth of power, so that applications were quarantined in case of attack or infection. The risk involved in hosting multiple applications on a single machine was higher than the cost of maintaining many machines, with multiple back-up services, client licenses, and patching processes.

Because many applications can share the same, compartmentalized infrastructure, OpenShift Enterprise by Red Hat has reduced costs significantly for the university.

A SUCCESSFUL PILOT, A PROMISING FUTURE

The pilot program confirmed that OpenShift Enterprise by Red Hat will solve UTS's IT challenges, despite the very wide user base, different requirements, and sizes of applications.

The implementation has been solid and reliable, and at the end of the pilot, the system was already being used in a production capacity. Engineering students can deploy and manage applications at will without losing time in complex integration work. Additional groups within the university heard about OpenShift and added their own successful projects, including one originally developed on a virtual machine but moved to a scalable instance of OpenShift.

The IT department has been able to focus on larger projects without risking a massively uncontrollable growth of IT infrastructure hosting.

"Previously, there was a potential risk of people setting up servers under their desk, which was replaced by a virtual machine in the server room, providing no net gain. Now, the IT team provides login details for OpenShift and lets users manage and deploy their own resources," said Lucas.

OpenShift Enterprise reinforces UTS's model of practice-based learning by providing a platform that can easily support the diverse range of technologies and skills that students are likely to encounter in the workforce. This approach to self-service and automation enables the IT services group to respond quickly to student needs in a manner that ensures appropriate security and controls without getting in the way of their research.

ABOUT THE UNIVERSITY OF TECHNOLOGY, SYDNEY

UTS is a dynamic and innovative university in central Sydney. One of Australia's leading universities of technology, UTS has a distinct model of practice-based learning, strong research performance, and a leading reputation for engagement with industry and the professions. Founded in 1988, UTS has more than 39,000 students and 3,110 staff across two campuses. It offers more than 130 undergraduate and 210 postgraduate courses across traditional and emerging disciplines such as architecture, built environment, business, communication, design, education, engineering, information technology, international studies, law, midwifery, nursing, pharmacy, and science.
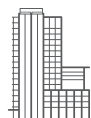
ABOUT RED HAT

Red Hat is the world's leading provider of open source solutions, using a community-powered approach to provide reliable and high-performing cloud, virtualization, storage, Linux, and middleware technologies. Red Hat also offers award-winning support, training, and consulting services. Red Hat is an S&P company with more than 80 offices spanning the globe, empowering its customers' businesses.

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