

Oakland University Case Study - 12-03-07

COMPANY OVERVIEW

Oakland University, a state-supported college in Rochester, Mich., teaches some 18,000 students across its liberal arts, business administration, health sciences, engineering and computer science schools.

The 3,000-student School of Engineering and Computer Science (SECS), like many like-minded institutes, has deep roots in the Unix world. Just a few years ago nearly every professor had a Sun workstation and a Windows PC to keep current with both the server- and desktop standards in their field. The school ran on a bevy of high-end Sun servers.

Clearly there was an opportunity to cut some costs by replacing old and very expensive server hardware and related software licenses.

BUSINESS CHALLENGE

The engineering and computer science faculty teaches students the technologies and skills they need to succeed in this era. That makes Linux a required skill set. As is Windows. Despite the religious wars waged over operating systems, there are precious few real-world sites that do not run both environments. On the other hand, the appeal of old-school-and very pricey-Unix is fading.

The trick here was to provide laptop-toting professors and students with the technology they need in a uniform set up to ease maintenance and support.

In addition, the school needed to preserve the computing muscle of its servers - and the applications they run - but trim the cost of acquiring and running them. Those older Sun servers could easily cost up to \$80,000.

SOLUTION

SECS now runs an amalgam of Linux and Windows infrastructure and analogous open-source and commercial software up and down the stack. The server rooms hum with AMD- and Intel-based Hewlett-Packard DL-series Proliant servers running Ubuntu 6.06.1 and Ubuntu 7.10 on the LTSP or Linux Terminal Server Project thin client servers.

As for the rest of the stack, the classes run a ton of MySQL databases and the school hosts database servers to accommodate them.

There were some abortive attempts to run Oracle on Linux for higher-end transactional applications, but there were problems getting it to work, said Ken Simon, computer networking administrator for the school. Some professors are now leaning towards PostgreSQL, rather than Oracle, for heavier-duty, transaction-oriented databases.

The Eclipse IDE is a popular selection among students and faculty, although some prefer Sun's Netbeans, both running on the Sun Java 6 platform. No matter to Simon's IT team: both are easy to install. In computer science, as opposed to engineering, Visual Studio remains the toolset of choice for both students and faculty.

Oakland embarked nearly four years ago on a Solaris-to-Linux migration and has it pretty much completed.

Unix had been a tough nut to crack in engineering because most of the CAD/CAM/CAE applications originated on proprietary Unix and hardware. But, those application providers have since moved their wares to Windows and Linux as well - eliminating one more checkbox item for those two operating systems.

Oakland teaches such CAD packages as Unigraphics and Catia - both utilitarian choices given that Unigraphics is the General Motors standard and Catia is Chrysler's. If you're training a workforce for employers, it's good to

teach what they use.

The thin client technology allows users to run most of these applications from their laptop environment of choice and that was a huge turning point at the school, Simon said.

Once people got used to the whole thin-client model, "There was a huge surge in usage," says Simon. These users started finding good HTML editors and other utilities in Linux.

Ubuntu first came in the door when the school moved to SAN-based storage from a Red Hat-based storage appliance. Ubuntu made a very good front end to that new SAN, says Simon. "Ubuntu had good support for our fibre channel and integrated very well with our Active Directory."

The Oakland ecosystem is also on Apache Web servers and Samba file share technology. The ability of Samba to work really well with Microsoft's Active Directory was a huge selling point, Simon noted.

Another reason for choosing Ubuntu is the software's easy installation and packaging system. That system, or apt-get, "Is just excellent. It's what really sets the Debian-based distributions apart," says Simon.

Users were able to keep using their productivity tools of choice even as the bulk of the back-end infrastructure supporting them changed.

Most faculty and some grad students remain faithful to LaTeX, the venerable non-WYSIWYG word processor on Linux or Unix. Students are more likely to use Microsoft Word on Windows.

THE RESULT

Simon sums up what happened at Oakland: "We replaced the proprietary Unix technology. We pretty much eliminated every last bit of Solaris from the server room." The "ordinary PC servers" running Ubuntu cost a fraction of what the old hardware cost.

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