Indiana University

To support its research efforts, Indiana University needed to upgrade the Linux* software running its Big Red supercomputer, as well as offer users a choice in both server and desktop platforms. With SUSE® Linux Enterprise Server, Novell® ZENworks® Linux Management and SUSE Linux Enterprise Desktop, departments can easily create and manage their own Linux environments, with a cost savings of nearly $200,000 per year.

Overview

Indiana University is the largest university system in Indiana, with eight campuses across the state, including more than 150 research centers and institutes. With an endowment of more than $1.3 billion, Indiana University has more than 99,000 students and 18,000 faculty and staff.

Challenge

As an extensive research institution, Indiana University gives its faculty and graduate students a choice of operating platforms and systems to best meet their research needs. As a result, the IT staff supports a heterogeneous environment and seeks to empower its users to manage their own technology. In keeping with university's commitment to offer a wide range of choices, the IT staff wanted to offer an additional Linux distribution for its departments that was not only easy to use, but also easy to set up and manage.

Indiana University's Big Red supercomputer was the largest of its kind owned by a university when it was unveiled in 2006. The university needed a Linux distribution that

would provide reliable, efficient updates and support, as well as support for large-scale computing on the IBM* Power architecture.

Solution

TIndiana University selected SUSE Linux Enterprise Server to power its 30-teraflop Big Red supercomputer and to replace many of its UNIX* systems. The IT staff also made SUSE Linux Enterprise Server, SUSE Linux Enterprise Desktop, and Novell ZENworks Linux Management available to university departments.

"Because we are a research university, one of our top priorities is providing our users with a top-tier infrastructure for their research," said Richard Knepper, manager of Research Technology Core Services. "SUSE Linux Enterprise Server was the best fit for our supercomputer's PowerPC architecture. Novell provides timely updates to ensure that we continually offer the best possible performance."

The university's Big Red supercomputer— an IBM e1350 BladeCenter* Cluster— runs SUSE Linux Enterprise Server on

Indiana University at a glance:
Largest university system in the state of Indiana

- **Industry:**
  Education
- **Location:**
  United States
- **Products and Services:**
  SUSE Linux Enterprise Server
  SUSE Linux Enterprise Desktop
  Novell ZENworks Linux Management
- **Results:**
  – *Improved stability and management of 30-teraflop supercomputer*
  – *Reduced administration time by 50 percent*
  – *Achieved cost savings of nearly $200,000 per year*

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Richard Knepper
Manager of Research Technology Core Services
Indiana University

768 dual-core servers. Big Red is part of the National Science Foundation TeraGrid and is one of the most heavily used supercomputers because of its superior performance. More than 3,200 users access Big Red to perform a wide range of large computational projects, including simulation and modeling, in areas such as life sciences, biology, astronomy, physics and chemistry.

In addition to its production environment, the IT staff makes SUSE Linux Enterprise Server available to other university departments to run specialized research applications, most of which are built on open source software.

"SUSE Linux Enterprise Server offers a wide range of packages and broad architecture support," said Knepper. "We are moving most of our proprietary UNIX systems to Linux to give our users greater flexibility to develop custom research applications. Having access to the open source community is a huge benefit to them."

The university takes advantage of VMware to virtualize its SUSE Linux Enterprise servers and significantly reduce the amount of physical hardware.

Novell ZENworks Linux Management makes it easy for individual departments to manage their Linux servers, reducing the workload on the university's centralized IT staff. Administrators can seamlessly distribute patches for different groups of servers, and install updates and new software from a central location.

"Novell ZENworks Linux Management allows us to provide individual departments with the ability to set up and manage their own Linux environments," said Knepper. "They can easily set up their own customized servers with tremendous control and flexibility."

The university's faculty and students have a choice of desktop software and many have selected SUSE Linux Enterprise Desktop. They like the depth of management tools they get with YaST*, a graphical interface-based management suite, and enjoy having access to world of open source software.

Results

By migrating to SUSE Linux Enterprise Server, Indiana University's Big Red supercomputer provides superior performance and stability for thousands of faculty and graduate students. The university can now perform monthly system updates in just one day. Moving from UNIX to Linux has helped the university reduce administration time by 50 percent and reduce software costs by $50,000 per year. Novell academic software licensing also helps the company save an additional $150,000 per year.

Novell ZENworks Linux Management gives individual departments the flexibility to set up and manage their own Linux-based research environments. By empowering end users, the university has significantly reduced the time its centralized IT staff spends on server administration.

"Our Linux solutions from Novell paid for themselves immediately," said Knepper. "Novell has allowed us to offer a superior level of flexibility and service to our users. We also appreciate the company's support of open source software initiatives."

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

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