Success Story

The Faculty of Engineering of the University of Porto (FEUP)

The Faculty of Engineering of the University of Porto has built a major academic information system using Oracle* 10*g* running on SUSE® Linux Enterprise Server. This groundbreaking solution offers high availability and performance for critical administrative systems, with a low cost of ownership.

Overview

Founded in 1911, the University of Porto is one of Portugal's leading institutes of higher education. A total of 40,000 students, including 4,000 postgraduates, attend courses offered by its 15 principal schools. The University employs 2,300 academic staff and 1,600 technical and support staff.

Challenge

In addition to providing undergraduate and postgraduate courses, the Faculty of Engineering of the University of Porto (FEUP) plays a key role in the administration of the entire university. Its SIGARRA system, established in 1996, is the University's principal academic information system—a Web-based repository for information and services for both students and staff. This information system is currently deployed across 13 of the University's schools, as well as 11 external organizations.

SIGARRA covers practically every aspect of the University's operations, from the planning of courses and student registration to human resources and procurement. As the information system touches tens of thousands of people and drives management processes worth tens of millions of Euros, keeping it available to users at all times is a high priority. The challenge for FEUP is to deliver enterprise-level availability and performance, within the tight budgetary constraints of an educational institution.

Solution

FEUP built the SIGARRA information system on Oracle relational database technology, originally running under Tru64 UNIX* on proprietary hardware. When this hardware was required for another purpose, FEUP chose to migrate the information system to SUSE Linux Enterprise Server. This made it possible for the University to run its Oracle-based system on generic Intel-based servers.

In its current incarnation, SIGARRA consists of a three-node Oracle Real Application Cluster (RAC) 10*g* running under SUSE Linux Enterprise Server 10 on Intel* Xeon-powered Dell PowerEdge* servers, with an EMC* storage area network. The main Oracle database contains more than 65GB of data and is growing rapidly. The system as a whole generates an average of 250,000 Web pages every day, with peaks of 500,000 pages per day.

University of Porto at a glance:

Leading Portuguese educational institution

- **Industry:**
  Education
- **Location:**
  Portugal
- **Solutions:**
  SUSE Linux Enterprise Server
  Oracle Real Application Cluster 10*g*
- **Results:**
  - *Reduced software licensing costs by more than 50 percent*
  - *Nearly 100-percent system availability*
  - *Doubled speed of procurement processes*
  - *Ability to generate and serve 500,000 Web pages daily to more than 40,000 users*

"With Oracle 10*g* on SUSE Linux Enterprise Server, we have a cutting-edge solution that provides the stability and reliability our users demand, with a relatively low cost of ownership."

Manuel Machado
Information Systems Manager for Engineering Faculty
University of Porto

"With SUSE Linux Enterprise Server, we have reduced our licensing costs by more than 50 percent, and increased availability from 90 to almost 100 percent."

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"This is a critically important system for the Faculty of Engineering of the University of Porto, because it helps to improve internal efficiency, reduce administrative costs and deliver a clearer view of the status of procurement processes," said Manuel Machado, Information Systems Manager for the Faculty of Engineering. "With Oracle 10*g* on SUSE Linux Enterprise Server, we have a cutting-edge solution that provides the stability and reliability our users demand, with a relatively low cost of ownership."

The SIGARRA information system acts as the central repository for practically all of the University's information, and helps the management of diverse processes including finance, software development, IT assistance, estate management and procurement. The University's aim is to free up staff and students from routine tasks, using automation where appropriate to leave them with more time to focus on tasks that add more value.

"The system provides a full workflow solution for procurement processes, and enables us to see exactly where a particular purchase is in the cycle of approvals," said Machado. "As well as enabling us to measure staff performance, this Linux*-based solution has reduced the average procurement cycle from 30 days to just 15."

Results

By running its central information system on Oracle RAC 10*g* and SUSE Linux Enterprise Server, the University of Porto has achieved its goals for high availability and scalability, with a low cost of ownership. The solution is fully portable, enabling FEUP to choose hardware on the basis of price-performance and removing its previous reliance on a single vendor.

"With SUSE Linux Enterprise Server, we have reduced our licensing costs by more than 50 percent, and increased availability from 90 to almost 100 percent," said Machado. "The performance of Oracle on SUSE Linux Enterprise Server is excellent—our solution shows Linux working perfectly in an intensive environment."

The University can now automatically measure staff performance in areas such as procurement, student administration and the IT helpdesk, and can identify and resolve potential delays in processing information. The solution is helping to drive up productivity and reduce administrative cost, and is seen as a model for other Portuguese universities, some of which have already deployed it.

As the information system grows to cover more functional areas, it will become an even more important tool for staff and students, further increasing the need for FEUP to guarantee total availability. "One of our most important achievements with Oracle and Linux has been to achieve complete uptime, with full redundancy of services and load-balancing," said Machado. "SUSE Linux Enterprise Server is certified under Oracle's Unbreakable Linux initiative, and the joint support from Oracle and Novell® helps guarantee high availability for the future."

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