CASE STUDY

RANDSTAD CREATES CENTRALIZED ARCHITECTURE WITH HELP FROM RED HAT

With more than 2,000 offices and 12,000 employees across the Netherlands, Belgium, Germany, Poland and the US, Randstad Holding is one of the largest temporary and contract staffing companies in the world, with group companies including Randstad, Yacht, Capac In-House Services and Tempo Team.

In 2002, Randstad Holding established a shared service center that supplies ICT services to the group's various companies. The shared service center is responsible for all IT administration, the setup of desktops and the development of new applications.

THE PROBLEM

In mid-2002, it became apparent that the administrative system used by the various Randstad Holding companies was not meeting the company's needs. In particular, Randstad's system for invoicing, salary payment and workforce planning was built around a complex, decentralized model. Each office had an IBM AS/400 server that was synchronized with a database each evening. Hidde Fennema, ICT project manager at Randstad, explains: "One of the disadvantages of this model was frequent data duplication. For example, if a temporary employee had registered with two different branches, such as Tempo Team and Randstad, the decentralized system was unable to detect the duplication."

In addition, implementing new technologies that gave the business a competitive edge was becoming far too time-consuming and expensive because each change had to be implemented in each office. "Any time we wanted to implement something new, we knew we had weeks of work ahead of us," Fennema said.

THE SOLUTION

Despite Randstad's creativity in overcoming such obstacles, the company decided that the most constructive solution would be for it to build its own custom, integrated administrative system with a central database, accessible from the local offices.

FAST FACTS

Industry: Temporary and contract staffing

Challenge:
- To centralize and consolidate a disparate administrative, invoicing, payroll and workforce planning system.
- To ensure system stability, reduce the administrative burden, but most important; make the system more flexible.

Solution:
- ***Platform:*** Red Hat Enterprise Linux AS and AIX
- ***Hardware:*** IBM eServer pSeries servers IBM eServer Bladecenter servers

Benefits:
- Simplified architecture.
- Dramatically faster server provisioning.
- Centralization of data.
- Better disaster recovery.
- Reduced administration and physical infrastructure.

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"We had built our key applications ourselves, mostly based around Oracle and UNIX. We tried hard to find a standard package that could be properly integrated with our existing applications, but there really wasn't anything on the market," Fennema explained. One of Randstad's key criteria for the new system was that it had to be future-proof. Randstad chose IBM's eServer™ pSeries® servers running AIX. Attached to these servers would be IBM eServer blade servers, running the new custom-built administrative application, based on the Oracle® Forms platform. The operating system for these servers would be Red Hat® Enterprise Linux® AS.

"Our Linux machines needed to be low cost and easily replaceable," Fennema said. "If anything went wrong, we planned to replace, not repair the machines." Thanks to Red Hat's Preboot eXecution Environment (PXE), which makes it possible to provision servers remotely, we can now remotely set up a new server with our custom built application, including a full instance of Oracle Forms and Reports, in just 23 minutes. We would never have been able to do this with [Microsoft®] Windows®."

Randstad has built significant scalability into the system, with a total of 50 Red Hat Enterprise Linux servers. "We also use Linux on a lot of other fronts, and have around 100 Linux servers in production," Fennema says. "We use Linux, for example, for a range of supporting systems, such as a network server system, and a web portal that distributes new desktop client log-ons to the application servers."

"The entire infrastructure is replicated in two separate datacenters for disaster recovery purposes," Fennema says. "Data is constantly synchronized between the two systems, and both datacentres have a high availability IBM SAN ESS storage system in place. This way, we're confident that we'll never lose data in the event of a disaster."

For Randstad's technicians, the choice between Linux and Windows was an easy one. Fennema explains: 'Our choice was strongly influenced by the fact that with Linux, we know exactly how it will work, right down to the level of the source code. So we're able to write a single script that sends an update to all application servers within minutes. We couldn't ever have done that with Windows. People with a Windows background get a bit of shock when they see the simplicity of the systems we've built around Linux."

THE IMPLEMENTATION

The time needed to set up and install all the hardware and software for the new administrative system was, in Fennema's words, "incredibly short." He explained, "From placing our orders to going live took just one year. The implementation for all of the individual offices is taking a bit longer, as it involves a significant amount of change--not to mention the fact that we have to get round to 800 individual offices in the Netherlands! We're working at a rate of about 25 to 30 offices a week, transferring data to the new central database. The AS/400 machines remain in use until we have all data transferred across."

Implementation is currently ongoing, and to date, 156 offices are now using the new system. "So far, two of the 40 servers available in the rack are in use," Fennema says. "We've already seen 300 people active on the servers at the same time, and there was not even a hint of latency or instability. Once we have the migration completed, we'll have 40 Red Hat Enterprise Linux application servers supporting 4,500 users in their daily work."

THE BENEFITS

Unusually, costs for requisitioning, management and support were not Randstad's primary concern in the project. "Cost wasn't a deciding factor. We chose this environment initially for strategic and technical reasons," Fennema said. "Of course, the fact that the costs have also remained on budget has been warmly welcomed by Randstad management. But for me, the really impressive thing is that with Red Hat, we have been able to put more compute capacity into 7m2 than we had in all of our 800 decentralized and 70 centralized AS/400 servers."

Fennema says that another major advantage of Red Hat Enterprise Linux is that management of the system does not require many administrators. "We don't have to worry about complicated things like Active Directory, Directory Service, Forest en Domain structures. This is a major improvement, because in the old system, we often had issues with replication that meant that multiple offices within the country were forced offline. With Red Hat, the structure is much simpler, much more accessible and manageable. What it does mean is that we have to have experts in house, but we are well covered with our two Red Hat Certified Engineers and one Red Hat Certified Technician."

Training and certification was an important consideration for Randstad in its choice of Red Hat over other Linux distributions. "The product was clearly more professionally put together than other distributions, and Red Hat Network and Red Hat Training teams played a key role, enabling us to have Red Hat certified teams before we started the implementation.

Red Hat's deep knowledge of the capabilities of its software, however, was the real deciding factor. "Two years ago, there was no implementation anywhere in the world that could be compared to this project," Fennema said. "We had to work it out for ourselves, using the tools and the knowledge that Red Hat put at our disposal."

"By the end of the migration, our new system will be taking care of millions of transactions every day. Most impressively, we'll be managing and paying the salaries of 80,000 temporary and contract workers each week using this solution. Red Hat was the best solution we could find that could do this reliably."

LOOKING AHEAD

Although the project is today focused on the company's main administrative applications, Randstad is also currently migrating a number of other environments to Red Hat Enterprise Linux, and building new systems on the operating system.

For the moment though, Fennema is looking forward to completing the rollout. "By the end of the migration, our new system will be taking care of millions of transactions every day. Most impressively, we'll be managing and paying the salaries of 80,000 temporary and contract workers each week using this solution. Red Hat was the best solution we could find that could do this reliably."

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