

A cluster of low-cost Dell servers running Red Hat Linux on Oracle delivers high performance at a great value to truly change the way the City of Cairns does business

M e t r o m o

CITY OF CAIRNS

»**CHALLENGE** Support the city council's mandate and vision to provide staff and citizenry access to services and information around the clock; improve performance, availability, and reliability of business-critical applications; and contain costs while providing an enterprise-class infrastructure

»**SOLUTION** Work with Dell, Oracle, and Red Hat to implement a fully redundant, load-balanced, clustered platform running the Linux[®] operating system on Dell[™] PowerEdge[™] 2650 and 6650 servers, a Dell/EMC[®] FC4700-2 storage area network (SAN), and Oracle[®] 9i Real Application Clusters (RAC)

»**BENEFIT** Low total cost of ownership; solid return on investment; reliable architectural redundancy; and high level of post-implementation support

Customer Spotlight

With the Wet Tropics Rainforest at its back and Australia's Great Barrier Reef on its doorstep, the City of Cairns is home to some of the most spectacular scenery and wildlife on Earth. The city council recently decided to move toward providing staff and citizens with access to public records information and all municipal services around the clock, ensuring that any issues that arise receive prompt attention. That goal gave Cairns—home to 120,000 people—the opportunity to reevaluate, and then replace, its entire inward-facing IT infrastructure.

Out with the old...

Because Cairns' old best-of-breed system was neither integration-friendly nor adept at running batch processes, its performance left a lot to be desired. "Our applications did not perform well on our old servers," says Cynthia Crane, CIO for the City of Cairns. "It was difficult to move information from one application to another. But to realize our goal of sharing information with our staff and citizens, we first had to accomplish the task of sharing information among applications."

Crane and her team turned to Dell, Red Hat, and Oracle for a combination of hardware, operating system (OS), and

application—a combination that the three vendors worked together to optimize. The new architecture leverages the latest clustering technologies available in Dell[™] PowerEdge[™] servers and Oracle[®] 9i Real Application Clusters (RAC) in conjunction with the powerful cost-savings of a Red Hat[®] Linux[®] OS. The joint solution not only raises the bars in service, performance, functionality, and reliability for Cairns, but it also gives the city substantial savings in hardware, maintenance, and licensing—Crane estimates 75 percent or about AU\$300,000—over the course of its three- to five-year IT refresh cycle.

"Now we have an architecture that lets us take advantage of affordable hardware such as the Dell PowerEdge 2650 and 6650 servers," Crane says. "And, we have a consistent hardware platform throughout our data center, so we don't have to incur the higher costs associated with supporting multiple platforms."

The savings in hardware, and the savings in maintenance and support costs associated with standardization, allow the city to provide staff with information they never had available in the field before, such as archival records and specific case histories. "Our staff must be ready to handle all kinds of emergencies, from animal control



r p h o s i s

Cairns female hummingbird butterfly image © Gerry Ellis and Michael Durham/Getty Images.

to natural disasters, seven days a week, twenty-four hours a day. They all need access to data while in the field, and this infrastructure helps us deliver it to them.”

Higher service levels, lower costs

Cairns runs Oracle Financials 11i; Mat-Man, which is an asset and work order management program; and a local government product, Authority. When Cairns upgraded to Oracle 9i on its new Dell/Linux-based architecture, Crane says she saw a dramatic improvement in performance. “The batch processes were taking some 23 hours to run, and now they take just over an hour,” Crane says. “That’s about a fifteen-fold improvement.”

Perhaps the most comforting benefit from the new implementation—which took three months to plan and another three months to test—is the high availability it ensures. “We didn’t have appropriate redundancy in our infrastructure before now,” Crane says. “Because we were using proprietary systems, just to achieve the same amount of redundancy in our old environment would have cost us at least AU\$1.5 million. This whole new solution cost us much less and we get to take advantage of the clustering technologies and other functionality it enables.”

Take the issue of load balancing, for example. With 450 staff at headquarters and another 500 people at outlying regional offices, Crane says everyone makes high demands on the city’s IT infrastructure, especially on the financial applications. “We run a lot of concurrent processes that used to degrade the responsiveness of the system. Now, we can balance the load across a secondary PowerEdge server so there’s no impact on the day-to-day operational processes. We have some unique scripting in the Oracle applications that allows us to designate where each transaction will be processed and under what circumstances. And once we start balancing and monitoring across the applications, we expect to see even more improvements in availability.”

Look before you leap—and with whom you’re leaping

Some would say the City of Cairns’ leap to open-source software was a brave move, but Crane had no reservations about it. “I have known the Linux operating system for a long time now and I have watched it mature over the past 10 years. At first, I was concerned that some of the tools available with Linux were not solid or well developed. But in working with Dell, Red Hat,

and Oracle, those concerns were addressed quite easily.”

The teams behind the implementation were just as important as the solution itself. “Cost was a component, but price wasn’t our sole criteria,” Crane explains. “We considered the companies behind this collaboration and how they were going to help us succeed. We took note of the expertise and support quality of Dell, Oracle, and Red Hat. And, we ensured their strategic directions were in line with our future plans.”

The decision to migrate enterprise applications to a Dell/Linux platform also gave the City of Cairns a good excuse to upgrade its storage area network (SAN). “The complexity of the applications and the amount of data they enable are growing significantly, so we could foresee the need to increase our storage capacity. Today, the Cairns repository holds about 1 TB of data. But Crane and her IT team predict that, over the next five years, the amount of data will grow to between 3 TB and 4 TB. To accommodate that growth, Crane and her team selected a Dell/EMC® FC4700-2 storage array. That way, as Cairns’ needs grow in the future, the city will be able to preserve not only its heritage in the natural world, but its digital one as well. **D**