

# Public Trust Turns to Grid Computing to Reduce Costs and Boost Reliability



Public Trust  
Wellington, New Zealand  
www.publictrust.co.nz

## Industry:

Financial Services

## Employees:

450

## Oracle Products & Services:

Oracle Clusterware  
Oracle Real Application Clusters  
Oracle Data Guard  
Oracle Application Server  
Oracle Grid Control  
Oracle Warehouse Builder

## Key Benefits:

- Promoted flexibility in use and cost of computing power
- Improved application reliability due to access to easily swappable blade server hardware in a grid environment
- Enabled faster completion of substantial processing tasks

*“Oracle grid computing has improved the speed and reliability of our applications while lowering our costs by delivering computing power on a flexible basis.” – Simon Brock, Principal Database Specialist, Public Trust*

Public Trust is a government-owned trustee organization providing legal and financial services such as family trusts, education and funeral trusts, wills, and estate planning and administration. Established in 1873, the Public Trust Office of New Zealand was renamed and became a Crown entity in 2001.

The need for a scalable platform to support emerging products and services and growing reliability problems with aging hardware prompted Public Trust to upgrade its information technology. With a mantra of not only being trusted but also being seen to be trusted, Public Trust realized the new solution had to combine cost-effectiveness with reliability and flexibility.

In 2004, Public Trust approved an upgrade to a grid environment, including shifting its customer relationship management (CRM) system and data warehouse onto Oracle Real Application Clusters 10g on a Linux server infrastructure. The project later expanded to include moving the organization’s document management system to Oracle Real Application Clusters 10g from a Microsoft Exchange platform. Following internal training and testing, the implementation process started in February 2006 and was completed nine months later.

“The new grid computing architecture has delivered enhanced reliability while allowing us to cost-effectively scale our processing capacity in line with demand,” said Public Trust Principal Database Specialist Simon Brock. “Our CRM system and data warehouse were already running on Oracle9i so shifting to Oracle Real Application Clusters 10g was a natural progression.”

## Aging Systems Threaten Reliability

Before the project got underway, Public Trust’s ability to deliver existing services and exploit opportunities offered by its new

structure was constrained by its legacy environment. The organization's five-year-old IBM servers running AIX were exhausted and performance and reliability problems were plaguing network peripherals such as tape drives.

A document management system hosted on an unsupported Microsoft Exchange platform was also presenting persistent reliability difficulties. The size of several repositories had exceeded the limits of the platform, leading to weekly failures in the database and daily failures in the search engine. Later supported versions of the document management software required migration from Exchange to either Microsoft SQL Server or an Oracle database.

### **Maximizing the Trust Dollar**

Public Trust considered purchasing a high-end proprietary server to accommodate forecast growth over the next three to four years. The idea was shelved because the organization realized any substantial variation to its forecasts would place the effectiveness of its information technology systems at risk.

"If our forecasts were too low, the new server would not handle the processing task efficiently and if they were too high, we would be spending money on computing power we do not need," said Brock. "An Oracle grid environment allows us to use cheaper hardware and purchase additional nodes to expand processing capacity as the need arises."

In December 2004, the board of Public Trust signed off a technology platform upgrade that included shifting the CRM application and data warehouse from Oracle9i Database on SMP servers to Oracle Real Application Clusters 10g running on four HP blade servers combined with a Storage Area Network (SAN). The project later expanded to include shifting the 80-20 Software document management system from a Microsoft Exchange back-end to Oracle Real Application Clusters 10g. The grid environment was expanded by another two nodes to accommodate the system.

Public Trust migrated the document management system to Oracle Real Application Clusters 10g and went live in April 2006, while the data warehouse was moved in September and the Vantive CRM system went live in October.

### Inefficiency Culled as Task Speed Improves

The document management system is now delivering consistently reliable performance with much faster search times across the document store. The system has not experienced a single outage since being shifted to the new platform six months ago.

“The system is also now part of a stable of key business applications on the Oracle platform instead of being orphaned in an Exchange environment,” explained Brock. “This has also allowed the document database to be protected by Oracle Data Guard data protection software, with all document changes now replicated in real time to the Public Trust disaster recovery site.”

Shifting the data warehouse to an Oracle grid environment has already yielded benefits. The daily processing of updates to data is now performed two-and-a-half times faster than in the previous environment. Daily processing includes information on key sales activities to enable internal marketing and management teams to assess performance.

“This is important to us because the overnight data loading process is halted if any data inconsistencies are encountered and the load cannot be resumed until a data analyst has resolved the problem in the morning,” said Brock. “With staff unable to access the latest information while the delayed processing is completed, they now only have to wait until around 9:30 a.m. rather than lunchtime as under the old system.”

The new environment has also reduced the time taken to complete month-end processing. The time taken to process one complex report has been reduced from 29.5 hours to 72 seconds. Aggregated data summaries, known as materialized views, can now be created four to eight times faster than they used to be.

“These benefits are over and above those outlined in our original business case, which was based more around implementing a solution that would improve reliability and financial flexibility,” Brock said.

The flexibility of the Oracle grid environment helped Public Trust avoid embarrassment when the project scope was expanded beyond the data warehouse and CRM system to include the document management system. The business simply increased its hardware capacity by cheaply buying two more nodes to slot into the environment rather than draining its budget on expensive hardware.

The project's success has caught the eye of Public Trust's finance department, which is interested in upgrading its Online Accounting System (OLAS) to Oracle Real Application Clusters 10g later this year.

### **RAC Team Chews through Database Difficulty**

Public Trust is one of only two customers in the region to participate in the Oracle Real Application Clusters Strategic Customer Program and joins weekly conference calls with Oracle Real Application Clusters experts to discuss problems.

"We've been impressed with the deep knowledge of the Real Application Clusters team and their willingness to come up with solutions to any issues we have without 'over-nannying' us," said Brock. "They've really helped us by being able to work across boundaries within Oracle rather than on a single incident or product basis."

In one instance, the RAC team coordinated the integration of fixes into a patch to resolve a complex problem that saw a standby database for the document management system fail consistently six hours into the initial standby creation.

The RAC team also arranged for one of the Grid Control development managers to join the organization's weekly conference call once Public Trust had started actively using Oracle Enterprise Manager Grid Control, helping the project to progress more smoothly.

Oracle Support Services also provided valuable assistance to Public Trust during the project's implementation. The team answered more than 50 calls and supplied a Real Application Clusters specialist to undertake a Quality Assurance assessment of the project using a standard checklist and deeper knowledge of the products.

### **Why Oracle?**

Oracle has been one of two preferred organizational database platforms at Public Trust for more than 10 years. It has been the long-term platform for the CRM system, data warehouse, and finance system and is now used by the document management system.

As part of the infrastructure refresh project, a review was carried out to determine the best way to exploit the Oracle platform and a

decision was taken to move to a grid environment rather than a single server.

Public Trust's business involving wills and enduring powers of attorney means that in any disaster it is essential that customer information is available very quickly. A resilient platform with excellent disaster recovery capability was seen as an essential component in delivering high-quality customer service.

### **Implementation Process**

Public Trust chose an implementation approach where the knowledge of the new platform was retained in-house. While they had consultancy support from both Oracle and HP, the end production environment was entirely installed by the internal team. The small team comprising two database administrators (DBAs) and one network specialist meant implementation was relatively slow, but Public Trust is confident in the long-term ability of the DBAs to manage the environment.

Two staff received training on courses covering Oracle 10g, Oracle Grid Control, Oracle Data Guard, Oracle Application Server, and Oracle Recovery Manager. They traveled to Australia and Singapore as specialized 10g courses were not commonly offered in New Zealand at the time.

Public Trust used Oracle consultants to audit the environment before it was put into production.

In parallel, an infrastructure team was implementing a new voice over internet protocol (VoIP) network, eDirectory environment, and Linux server infrastructure. Extra care was taken to confirm that the development and pre-production Oracle environments were stable.

### **Advice from Public Trust**

- Factor plenty of time for training, both formal and hands-on, in the project plan
- Ensure the interconnect and networking infrastructure tying together your grid implementation is solid and reliable to guarantee Oracle Real Application Clusters 10g stability

- Recovering an entire Oracle Real Application Clusters 10g environment can be more complex than for a single-instance of Oracle. Set up a two-node 'sandbox' cluster for testing and debugging and regularly practice recovering from the loss of an entire SAN

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