

Forsyth Barr Case Study

Executive Summary

Forsyth Barr is a leading New Zealand full service sharebroking and investment advisory firm based in Dunedin with 18 offices nationwide and 240 employees.

In early 2004 Forsyth Barr's information technology system was centralised to a data centre in Dunedin. In the unlikely event that this data centre went down as the result of a fire, earthquake or hardware or telecommunications failure, the firm relied on a tape back-up and recovery process.

In 2009 Forsyth Barr's IT team resolved to look at new technologies to reduce the recovery time after a data centre disaster to one hour. With the help of IDATA, VMWare and EMC, Forsyth Barr's IT team developed a three stage plan:

1. A new EMC storage area network mirrored between Dunedin and Auckland
2. Virtualisation using VMWare
3. High speed replication and recovery

The new system has cut Forsyth Barr's IT system disaster recovery time from 48 hours to less than one hour. Virtualisation enables the firm to get new applications up and running faster and without the expense of new servers. And sharing applications across server hosts makes better use of server capacity. "The result is excellent," says Head of Information Technology Bruce Milne. "We are now able to manage the environment much more easily than we could with a physical host."

"The new system has cut disaster recovery time from 48 hours to less than one hour."

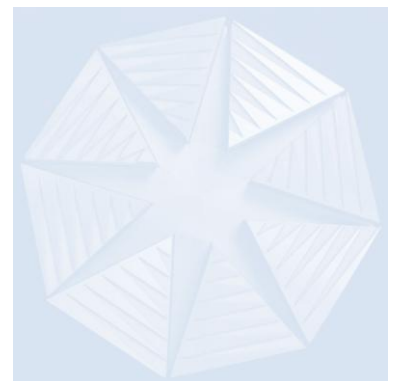
Client Background

With a history spanning over 70 years, Forsyth Barr is one of the best known, most trusted and highly respected names in the New Zealand financial services industry. The company is proudly New Zealand-owned and has 18 offices nationwide with 240 employees.

Having started as a share broking business, Forsyth Barr has evolved into a full service research-based based firm providing a wide range of private, habitual, wholesale and institutional client services.

Today Forsyth Barr:

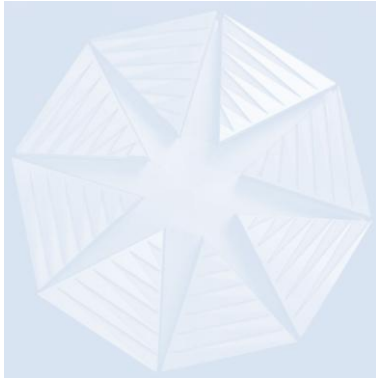
- Has 100 Investment Advisors in 18 offices plus 140 research, IT, administration and support professionals
- Is a market leader in equity and fixed interest issuance and trading
- Supervises \$12 billion of client assets, of which \$4 billion is managed directly by the firm
- Has international partnerships with JP Morgan and Ord Minnett in Australia, and UBS, Fortis and Standard & Poors globally
- Has retail services including share broking, fixed interest investment, cash management services, foreign exchange trading, the Forsyth Barr KiwiSaver Scheme, investment funds and portfolio services



Business Challenge

In early 2004 Forsyth Barr's information technology system was centralised to a data centre in Dunedin hosted by Telecom and connected through a Multiprotocol Label Switching (MPLS) network to 13 locations around the country. The system was based on IBM servers running Citrix to connect to staff mainly using

Wyse thin client terminals plus a few using conventional fat client laptop computers. The software at the heart of Forsyth Barr's business is its share broking trading platform SecuritEASE which manages the process of buying and selling shares and reporting to clients. SecuritEASE links directly with the New Zealand Stock Exchange (NZX) system. The two other main applications used throughout the firm are Microsoft Office productivity software and IRESS, which provides live market information on the New Zealand and Australian Stock Exchanges. Other applications such as accounting software plus design and publishing software are used by the relevant specialist staff.



The key business challenge for Forsyth Barr was the risk to its data centre as the result of a fire, earthquake or hardware or telecommunications failure. In early 2009 the firm's contingency if it had ever lost the use of its data centre was a contract to use the servers of a business continuity services company. This was based on a slow tape recovery process which meant the company's share broking operations could be out of action for up to 48 hours

Mr Milne explains: "In the unlikely event that the data centre had been hit by a disaster or serious equipment failure we would provide our business continuity company with a back-up tape to load into their servers. The last test tape read time was 22 hours and when you add on time required to get the system up and running it would have taken up to 48 hours to recover our systems from a major failure."

Other business drivers for change were:

- Obsolescence of current server equipment
- Manageability of the server environment
- Redundancy within the primary data centre

"IDATA listened to us and could demonstrate how their solution would work. We were impressed."

IDATA Solution

Mr Milne and his team began looking at virtualisation using VMWare with the goal of reducing a recovery time of 48 hours down to one hour. Mr Milne says a team from IDATA joined representatives from VMWare and EMC to work through the options. "We were impressed. They were prepared to travel to Dunedin from Auckland and listen to us and invest their time with the prospect of business later on. Their proposed solution was an excellent fit for Forsyth Barr, tailored to meet our specific requirements and budget. The proposal covered everything we needed and they were able to demonstrate how their solution would work."

Using the information provided by IDATA and other suppliers Mr Milne and his team prepared a paper for the Forsyth Barr Board outlining the benefits of virtualisation and seeking their approval to proceed with a three stage plan:

1. A new EMC storage area network mirrored between Dunedin and Auckland
2. Virtualisation using VMWare
3. High speed replication and recovery

The Forsyth Barr Board gave its approval in June 2009 and the new system was up and running by September 2009.

Forsyth Barr's new system includes the following components mirrored between Dunedin and Auckland:

- Five HP Blade BL460 GL Blade servers each with two quad core CPUs and 48GB of memory
- EMC Celerra unified storage platform
- VMWare vSphere and VMWare Site Recovery Manager (SRM)
- EMC RecoverPoint

Mr Milne says IDATA sent two people to Dunedin for the implementation of the VMWare and three to Auckland. "The implementation was very well managed by the IDATA team – there were no issues, it was on time and well documented with a good handover. We didn't expect to have replication for a while but they put the replication circuit in and had it up and running pretty much straight away. They organised the appropriate training courses and have provided very good service whenever we have needed it."

Result

The main result of the new system is that Forsyth Barr has cut its disaster recovery time from 48 hours to the target of less than one hour. In fact the downtime in a simulation exercise carried out by the company one weekend in November 2009 was 41 minutes.

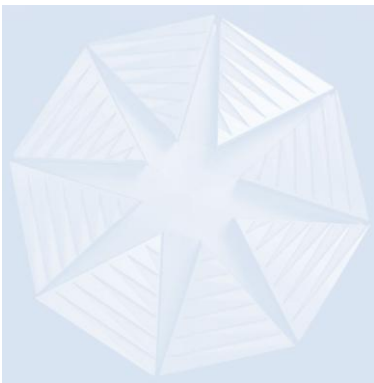
“We simulated a disaster recovery in Dunedin by turning the power and router off. An exact copy of the Dunedin site came on-line in Auckland and we had staff around the country log in over the wide area network and test their access to the system,” says Mr Milne.

“We’ve demonstrated that we can recover in a very short space of time. If we ever have to cope with an emergency we can just switch to Auckland. It also means if we have maintenance to do in Dunedin we can do the same.”

“RecoverPoint allows us to replicate our EMC Celler to our second EMC Celler in another data centre at the other end of the country providing a close to real time copy for disaster recovery. Site Recovery Manager (SRM) has made disaster recovery testing easy and quick and has allowed us to perform disaster recovery tests regularly.”

“The goal of the project was that in the unlikely event of a disaster, downtime will be less than one hour and we’ve achieved that.”

“The result is excellent. We can manage the environment much more easily than we could with a physical host.”



Mr Milne says the recovery time could be reduced further by clustering but this would be decided on cost benefit. “When you look at the cost of downtime from a disaster, it is a case of balancing what we think is a reasonable level of downtime against higher system costs.”

He says VMWare and SRM have enabled Forsyth Barr’s IT team to manage and maintain servers more efficiently including switching applications across its five host servers as the need arises for maintenance, or in the unlikely event that any server should fail. People familiar with VMWare and VMotion will understand. It also enables them to get applications up and running quickly and easily. “We have had to put in new applications since we went live and because of virtualisation we didn’t have to build new physical servers which is time consuming and costly.”

The Citrix servers, which used to be physical hosts, have also been virtualised and performance has improved. “With VMWare we have much better use of our computing capacity. We have halved the amount of RAM we need from 32GB to 16GB.

“The EMC Celler has also allowed us to have tiered storage levels, creating different cost points for different applications. This includes network attached storage (NAS) functions including de-duplication and write once read many times (WORM) locking for archiving functions such as e-mail.”

Mr Milne rates the final result as excellent. “In short, through virtualisation, we are now able to manage the environment much more easily than we could with a physical host.”



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