VMWARE CASE STUDY

INDUSTRY
Financial Services

LOCATION
New Zealand

KEY CHALLENGES
- Replacing physical firewalls
- PCI DSS compliance

SOLUTION
- Deploy VMware vCloud Networking & Security (vCNS) to replace physical firewall
- Use vMotion to make server workloads portable.

BUSINESS BENEFITS
- Significant and immediate CAPEX savings
- Reduced downtime
- Disaster recovery

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AIA builds a PCI DSS-compliant virtual infrastructure

AIA New Zealand replaced its physical firewalls with VMware vCNS with immediate results; significant CAPEX savings, reduced downtime and an agile disaster recovery solution.

The AIA Group is a publicly listed financial services organization that was established over 90 years ago in Shanghai. It has assets of well over AU$147 billion and operations around the Asia Pacific region, including New Zealand, Australia, Hong Kong and Singapore. AIA Group has over 27 million policy holders and offers a range of products including life, accident and health insurance, as well as investment plans.

The Challenge

In 2011, AIA New Zealand upgraded some of its IT infrastructure to comply with the larger AIA Group's requirements. Part of these changes required an upgrade to its SonicWall firewalls.

Physical firewalls form a critical piece of the IT infrastructure, acting as the main egress point between a corporate network and the outside world. However, they are expensive and notoriously difficult to maintain.

Because AIA processes financial transactions, it is obliged to comply with the Payment Card Industry Data Security Standard (PCI DSS), which is a stringent set of security standards designed to protect sensitive data.

One key aspect of PCI DSS is that computers processing financial data, such as credit card transactions, need to be firewalled away from other non-payment processing systems. Traditionally, this means installing and configuring a physical firewall device in the network to protect the vulnerable computers.

This requires significant capital expenditure: in order to provide redundancy, at least two separate firewall devices are required. Additionally, the entire setup is usually duplicated in the organization's software testing, quality assurance and disaster recovery systems.

Brannan Hunter, CTO of AIA New Zealand wanted transformation; a shift from physical firewalls, enhanced data security, higher availability, mobility for flexible customer engagement and of course reduced IT spend.

Hunter said "The team (AIA New Zealand and VMWARE) worked together to determine the best solution which satisfied all of the above drivers and the final decision was to go with virtual firewalls. Our technical specialist Yadav Narayan made this happen for AIA New Zealand with Kevin Harvey the Infrastructure Services Manager giving him the full support he needed."

AIA New Zealand had already successfully deployed VMware vSphere, and based on this relationship VMware Professional Services were engaged to develop blueprints and architecture to expand the virtual environment, including virtualizing the firewalls.

AIA New Zealand was keen to investigate a virtual firewall because of the additional benefits that come with a virtualized solution.

"In a physical environment, it's difficult to perform maintenance or relocate servers without causing disruptions, which means inconveniencing customers with scheduled maintenance breaks. We sought help from VMware Professional Services to help make more use of our existing virtual infrastructure." Harvey said.

"When there is a disaster, rather than putting in more hardware or reconfiguring other firewalls, we can recover the firewalls. We have done it twice now where we have recovered vCNS. The ability to recover our firewalls and not just the VMs is a major win."

Kevin Harvey
Infrastructure Services Manager

The Solution

A virtual firewall is a piece of security software that is 'wrapped' around a virtual machine to provide the same protection as a physical firewall but without 'hard-wired' limitations.

The virtual firewall logically separates VMs processing financial transactions from those that are not; it allows both firewalled and non-firewalled VMs to share the same physical hosts while maintaining PCI DSS compliance.

Patrick Hanley, Services Manager at VMware Professional Services explained that while VMware's vCNS provides the same protection as a physical firewall, accepting that it's possible for software to perform the same task that has traditionally been carried out by expensive and proprietary hardware is a big step for most organisations.

"It's like trusting a lock. A physical lock with a key may have worked for all your life but then I come along and say my new device can be fitted to your door and automatically lock and unlock it for you as you come and go." said Hanley.

Achieving PCI DSS compliance for the vCNS setup was critical to solving this issue.

"Security auditors from the credit card industry - who are safeguarding billions of dollars of potential fraud - do not want to move away from the traditional paradigm, which is physical firewalls and physical separation. So getting this setup successfully implemented for AIA and authorised to be PCI compliant is a massive achievement." Hanley said.

The move from a physical firewall to a virtual firewall has since proven itself for AIA New Zealand but the implementation wasn't completely smooth sailing.

When the initial switch was made, one of AIA's applications in Hong Kong was not part of the VMware environment and vCNS could not talk to a machine outside of that environment, said Hanley.

"We realised that we needed to add additional functionality to the product in order to deal with the AIA's network setup. VMware Professional Services took ownership of the situation, liaised with the product team, got the change made and implemented the new system within weeks." he added.

Harvey and his team at AIA were ecstatic with the result.

"VMware came to the table for us. Both companies worked together. We can't speak highly enough about VMware Professional Services. As soon as they realised it wasn't working, all parties - from NZ, the US and Australia - got involved and we worked together to solve the problem. It was really fantastic." said Harvey.

"If that solution hadn't worked we would have had to go down the physical firewall path and it would have set the project back two or three months." Harvey added.

Business Results & Benefits

VMware vCNS was approximately half the cost of purchasing a physical firewall solution.

"SonicWall firewalls are very expensive, so there is all this hardware we would have had to purchase," said Harvey.

In a traditional network with physical firewalls and servers, moving a server would require remapping the network and reconfiguring firewall rules. With virtualized servers and firewalls, when a virtual server is moved into another environment, all its firewall rules move with it.

AIA New Zealand employs VMware's vMotion to facilitate the transfer of virtualized server workloads from one physical host to another. vMotion can also be deployed as a load balancing tool, which allows organisations to enjoy significant energy savings by reducing the number of hosts employed during quiet periods - such as at night or weekends.

"These are savings we realised straight away. There were initial upfront costs because we had to get new hosts but we are not using as much electricity - the cooling systems and UPSs are not working as hard, so it's all these little things that you don't generally take into account but it all adds up." said Harvey.

Not only did vCNS provide the same protection as a physical firewall, it also reduced downtime, as virtual servers could simply be moved without any disruption when physical hardware failed or required maintenance.

"Our day-to-day maintenance is a lot easier. If we want to make any changes, we can do that on the fly now. There are

"VMware has enabled us to undertake a fundamental transformation in how we operate." Brannan Hunter
Head of Information Technology

VMWARE FOOTPRINT

- VMware vCloud Networking & Security
- VMware vCenter Operations Management
- VMware vCenter Infrastructure Navigator
- VMware Technical Account Manager
- VMware Professional Services

APPLICATIONS VIRTUALIZED

- Microsoft SQL Server
- Microsoft Internet Information Services
- SunSystem accounting application
- IBM Websphere

PLATFORM

- IBM System x3650 M2 servers
- NetAppFAS3210/FAS2040 storage
- CiscoMDS 9124 fabric switch
- Microsoft Windows Server 2008 R2, Microsoft Windows Server 2003

a lot of benefits that come with using the VMware infrastructure." said Harvey.

"When there is a disaster, rather than putting in more hardware or reconfiguring other firewalls, we can recover the firewalls." continued Harvey. "We have done it twice now where we have recovered vCNS. The ability to recover our firewalls and not just the VMs is a major win."

This minimisation of downtime is particularly important for a company that deals with life insurance claims from one of the world's most active earthquake zones. In September 2010 and again in February 2011, the southern New Zealand city of Christchurch was rocked by devastating earthquakes.

"You have to look at it from a Christchurch, New Zealand point of view. Once the dust has settled, people immediately call their insurance companies, so we can't afford to be down." said Harvey.

The implementation of vvCNS also provided an extremely important additional benefit for AIA - a disaster recovery (DR) solution.

Financial services firms are extremely dependent on disaster avoidance techniques but often, even the best laid plans fall apart when tested in the real world. The fundamental benefit of using a virtual environment is that server workloads are portable.

"Previously, if the physical firewall malfunctioned there would have been a severe business outage. With vCNS in place, if we had a host failure, the vCNS firewall will restart automatically on another host." said Hanley.

Harvey agreed. "It's a real big deal that one of the side-effects of going down this virtualization path is that DR actually becomes doable end-to-end." he said.

"We are a financial organisation and we have to be there for our customers, so anything that improves our service is a major factor." added Harvey.

Looking Ahead

"VMware has enabled us to undertake a fundamental transformation in how we operate. At this stage we have really only started the journey and there is a lot more to come. It's very exciting." said Hunter.

The next step in AIA New Zealand's journey into the virtualized world is fully automating the disaster recovery process using VMware's Site Recovery Manager (SRM).

SRM requires setting up new hosts in a remote office, which can at the press of a button switch server workloads from one physical location to another.

"In a disaster, most people aren't thinking about their IT infrastructure, they are thinking about their loved ones. At the moment we still have to manually recover our systems and although the process is completely scripted, the process can still be affected by human error." said Harvey.

"SRM it makes this process seamless. It takes the human error out of DR." he said.

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