

Keeping Data Center and Disaster Recovery Sites “Always On”



EXECUTIVE SUMMARY

Customer Name: Victoria University at Wellington

Size: 22,000 students, 2,500 academic and professional staff members

Location: Wellington, New Zealand

Industry: Education

“The primary impact is that we wouldn’t be able to carry on our business if we lost our main data center. Our past setup wouldn’t have been able to handle it if we had lost it. As far as the business is concerned, that would be huge. We couldn’t teach students.”

Simon Warren
Senior Networking Engineer
Victoria University of Wellington

University’s consistent security policies and simplified operations protect data, maintain uptime

The Ring of Fire is a well-known geographic area surrounding much of the Pacific Ocean. It regularly experiences active earthquakes and volcanic eruptions. Victoria University of Wellington, New Zealand’s globally ranked capital city university, is no stranger to this activity.

Out of necessity, the university’s Information Technology Services (ITS) team found a unique way to build safeguards and security into its network and technology environment using Cisco® firewall geo-clustering technology. This has helped to ensure the campus network and applications are always available to its 22,000 students and 2,500 academic and professional staff across three city campuses.

Challenges

- Link the campus data center with a mirrored disaster recovery site, located 7 kilometers from the main Kelburn campus
- Help ensure high availability of data centers in multiple locations in an earthquake-prone region
- Streamline operations and security policies, while reducing IT costs needed to support a large academic community

“This new data center and firewall configuration was incredibly easy to set up. We had the actual clustering up and running in a couple of hours.”

Simon Warren
Senior Networking Engineer
Victoria University of Wellington

Site Setup Required Simpler Solution

Previously, Victoria’s ITS team planned to upgrade its disaster recovery site. That meant changes were required to the university’s DNS and IP addresses, and to different subnets at the various sites, according to Simon Warren, a senior networking engineer from Victoria.

“The plan was difficult and time-intensive to implement. As a result, the team was focusing on only the top 10 applications to mirror between sites,” he said.

Once the team learned about the Cisco firewall geo-clustering solution, deployment became simple. Victoria’s ITS staff experimented with moving the services between the data centers, while streaming video. Results were positive.

Needed to Help Ensure High Availability

The network and security team—who make up part of Victoria’s 100-strong ITS team—embarked on an ambitious plan that added a disaster recovery site. The team also refreshed the university’s main data center, including two sites plus the disaster recovery site. These actions ultimately saved time, resources, and expenses.

By using the geo-clustering capabilities, Victoria’s ITS team has been able to cost-effectively consolidate security policies across all sites in the city.

First to Ride It Out in QuakeSurfer®

To help ensure an extra measure of protection, Victoria’s ITS team built QuakeSurfer. On this proprietary physical platform, the data center and firewalls can ride out the toughest earthquakes. Victoria’s data center from Cisco is the first to test the efficacy of QuakeSurfer, and to date, it has been highly successful.

The genius of QuakeSurfer is that it uses sliders and giant shock absorbers to handle violent horizontal and vertical movement to further protect sensitive, business-critical data. Many organizations across the world are looking at this technology to support their environments.

Solution

- Cisco next-generation firewalls with geo-clustering capabilities, paired with a refreshed Cisco data center

Simplified Site Integration, Replication

Victoria University’s new data center site configuration has helped to enable deeper integration of the university’s networking solution, including switches, and security products—notably, the firewalls.

According to Warren, geo-clustering has made setting up the multiple sites that could run the university much easier.

“We are able to run the same subnets on both sites. There is no need to change IP

Products and Services

Security

- Cisco Next-Generation Firewalls

Data Center

- Cisco Nexus® 7000 9-Slot Switch
- Cisco Nexus 5510 Switch
- Cisco Nexus 5548UP Switch
- Cisco Catalyst® 3750 Switch
- Cisco Catalyst 2960 Series Switches

Routers

- Cisco ASR 9010 Router
- Cisco ASR 9006 Router
- Cisco ASR 1002 Router

Network Management

- Cisco 5508 Wireless Controllers

addresses to bring the systems back up again,” he says.

Additionally, a simple Layer 2 connection to the upgraded disaster recovery data center, for back-ups and data replication, is all that is required. The team is running Cisco Overlay Transport Virtualization between the two sites, using geo-clustering, so traffic is routed locally at each site and only traverses the Overlay Transport Virtualization link when required.

Two 10 GB links are used to connect the main data center to the disaster recovery data center, where QuakeSurfer is located. The geo-clustering setup stops a lot of traffic from burning along that link, which is a huge benefit, notes Warren.

Results

- Helped enable consolidation of multisite data center policies that are easy to set up and use
- Facilitated data center-to-data center redundancy across multiple sites, helping to ensure high availability in an unstable environment prone to earthquakes
- Lowered cost of ownership by 20 percent

The team quickly realized that it was awkward to do a mirrored site any other way. It always would be a bit of a compromise, says Warren.

“With the geo-clustered configuration, the team was able to manage hundreds of applications all in-house, and easily share security policies,” he added.

The main impact, said Warren, was that Victoria University wouldn’t be able to carry on its main business if the primary data center was lost.

“I don’t think we would have been able to manage the environment with the previous setup. The loss of Victoria’s main data center would have a huge impact on our business—both operating the university and teaching students,” he explained.

Victoria’s ITS team has also found that the new configuration has benefits when dealing with government compliance requirements. These pertain to student health records and privacy issues, as the university has a student health facility on campus.



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
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