

PITTWATER COUNCIL DEPLOYS STATE-OF-THE-ART DISASTER RECOVERY INFRASTRUCTURE WITH EX4200 SWITCHES



Industry: Government

Challenges: To enhance the network infrastructure to enable more efficient transfer of data and to support new services such as virtualization

Network Solution: Juniper Networks EX Series Ethernet Switches

Selection Criteria: Simplicity in implementation and management, reliability, and cost

Results: Simplified day-to-day management of the network infrastructure and a resilient, redundant solution that utilized the Council's existing resources

Pittwater Council provides local government services for a 125 sq km area at the northern end of Sydney, Australia's Northern Beaches. The Council is tasked with conserving, protecting, and enhancing Pittwater's natural and man-made environment, and improving the quality of life of its residents. The Council provides a variety of community, emergency, transport, and recreation services, looks into environmental issues, and oversees building and development in the area.

As the local authority, Pittwater Council maintains a large volume of data ranging from historical records and building applications to child care records. For example, Pittwater residents have to file their plans for approval with the Council if they wish to embark on any rebuilding project or make changes to existing buildings. All of these records are backed up onsite to tape and also replicated to a remote disaster recovery (DR) facility located about 2 km from the main site. A full backup, which involves about 1.6 TB of data, is done each week, while smaller incremental backups are performed daily.

Challenges

In early 2008, Pittwater Council embarked on a technology refresh, as some of its existing switches were already about five years old. There were also occasional reliability issues with their existing infrastructure. For example, intermittent problems with the switches resulted in several hours of downtime every few months, and IT resources had to be mobilized to resolve the problem. This downtime also had a downstream impact on the operations of the Council, which relied on the network.

Besides addressing these issues, the Council also wanted to enhance its infrastructure to enable more efficient data transfer and support for new services such as virtualization, which would enhance its DR capabilities.

Selection Criteria

When it came to selecting a new infrastructure vendor, Pittwater Council considered factors such as implementation and management simplicity, reliability, and cost.

With these in mind, Candor Networks, which was working on the design and implementation of the new infrastructure, recommended the EX4200 Series Ethernet Switches from Juniper Networks.

The EX4200 Line is carrier-class networking solutions designed to address unique business challenges and create a secure, reliable network that meets today's requirements for converged solutions. The switches are powered by



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IT Manager, Pittwater Council

JUNOS® software—the same field-tested and customer-proven operating system used by all of Juniper’s high-performance networking solutions.

What really clinched the deal was Juniper Networks virtual chassis technology, which enables up to 10 EX4200 switches to be interconnected and operate as a single, logical system. With virtual chassis technology, EX4200 Series users get the reliability, performance, manageability, and high-port densities of traditional chassis-based systems in a much more cost-effective and compact form factor.

“The notion of just managing a single entity—rather than having loads of things to look out for—was very attractive to the customer,” said Mr. Mitch Barr, network consultant with Candor Networks. “If we had multiple devices, we would have needed multiple applications to manage them.”

Price-wise, the Juniper Networks solution was very competitive, costing about 20 percent less than its nearest competitor.

The EX4200 switch was also relatively easy to implement, according to Mr. Barr. The other options were not only very complex to deploy, they ultimately failed to provide the same level of resiliency as the Juniper Networks solutions. “To achieve similar performance, we would have had to take into consideration redundancy protocols for routing, and we would also need Layer 2 redundancy protocols,” said Mr. Barr. “There were loads of different options, but they were all complicated. With the Juniper Networks solution, you just had one switch. You could do the configuration on one box and it’s all done. All you had to do was tell it to forward the traffic to the IP addresses.”

The implementation process has been uneventful. “Candor Networks have followed through with their promise of getting

the very new-to-market Juniper Networks equipment up and working with minimal interruption to our daily operations,” said Mr. Chris Tubridy, IT manager with Pittwater Council. “After-sales support has been there for fine tuning.”

Solution

A total of six EX4200 switches were deployed as a single core, with three installed at the main site and the other three remainder at the DR site. As far as network management was concerned, all six platforms looked like a single switch. “Logically, it is just a single device, connected by the virtual chassis cable and 10 Gb fiber links,” said Mr. Barr.

The switches now form the major carrier between the two locations, handling most of the internal routing for Pittwater Council. With the new equipment in place, throughput between the sites has been given a significant boost, rising from 1 Gbps to 20 Gbps.

Results

The EX4200 Series switch implementation, which began in April 2008 and was completed in August of the same year, resulted in several key improvements for Pittwater Council.

“The Juniper solution has simplified the day-to-day management of the network infrastructure and provided a resilient, redundant solution that still utilizes our existing resources for a price that we thought was quite reasonable,” said Mr. Tubridy.

The deployment has also resulted in a higher level of network resilience. “There is no longer any requirement for Layer 2 resilience such as Spanning Tree,” said Mr. Barr. “Each switch has two power supplies. Any one can fail and the whole thing can carry on working.”

At the same time, there has been a reduction in network complexity and optimization of network usage, with the EX4200 switches allowing the network links to be used more efficiently.

With the enhanced infrastructure, Pittwater Council can now implement server virtualization with VMware, which will further boost its DR capabilities. With virtualization, all servers and operating systems will be mirrored on the remote site and can be brought back up if any system at the main site fails. Virtualization also enables Pittwater Council to consolidate 33 of its existing servers to just four physical servers at the main site and possibly six at the DR site.

Next Steps and Lessons Learned

Going forward, Pittwater Council is looking to phase out its older switches. "Our plans are to eventually replace all of our switches with our preferred vendor's switches," said Mr. Tubridy.

For More Information

To find out more about Juniper Networks products and solutions, visit www.juniper.net.

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.

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