

Providing Next-Generation Security for Students and Faculty



EXECUTIVE SUMMARY

Department of Education Western Australia

- Education
- Perth, Australia
- 40,000 teaching staff, 280,000 students

Business Challenge

- Centrally manage 798 school sites over 2.5 million km² area
- Help improve Internet availability
- Easily facilitate BYOD for students and staff

Network Solution

- Eight Cisco ASA 5585-X Series Next-Generation Firewalls

Business Results

- Improved availability and reliability
- Improved performance
- Increased end user satisfaction

Department of Education, Western Australia increases secure network availability and reliability with Next-Generation Firewalls.

Business Challenge

The Department of Education in Western Australia is the education authority for approximately 40,000 teaching staff and more than 280,000 students. The organization oversees nearly 800 school sites across 2.5 million square kilometers. For perspective, this is 20 times bigger than England and 11 times bigger than the state of Texas in the United States. Much of the schools' information and communications technology (ICT) is centrally provisioned from the Department's main office in the state capital, Perth.

"We have some of the most remote schools in the world," says Glenn Veen, director of infrastructure and telecommunications for the Department. "One is about 3.5 hours flying time away on Christmas Island, while others are right in the middle of the desert region of Western Australia."

With 11 full-time staff and 80 contractors to handle all of the technology needs, the Department needs to ensure that infrastructure in schools and central and regional offices is reliable and available. "We have a stunning amount of Internet traffic," says Veen.

At the beginning of the year, the Internet traffic was 63 terabytes per month. The Department negotiated with its Internet provider to allow up to a petabyte of data a year.

And that's just the pure Internet traffic. The Department also hosts applications that are provisioned for the schools' learning environment.

In addition, during 2013, components of the Department's legacy Internet service delivery solution failed on average once a week. While the clustered nature of the solution meant that most users were unaware of the failure, the unlucky few connected to the failed servers encountered service outages of up to 33 minutes.

“One of the benefits we’ve found with the Next-Gen Firewall is that it’s a far more stable platform. Internet access is really something users take for granted these days – they just expect it to be there. And with the Next-Gen Firewall, it is. Now we’ve got a stable solution. Since the introduction of Cisco Next-Gen Firewall as a filtering solution, there have been no related service outages.”

Vaughan Castine

Infrastructure Architect, Department of Education, Western Australia

Network Solution

With more than 60 terabytes of Internet data a month and more than 1 billion emails a year, the network for the Department is part of the organization’s core educational foundation. “We had an aging, legacy infrastructure that was no longer going to be supported,” says Vaughan Castine, infrastructure architect. “And its stability was lacking, which is the nicest way I can put it. We chose the Next-Gen Firewall, because it was cost-effective and gave us the ability to provide Internet service delivery.”

Today, eight Cisco® ASA 5585-X Series Next-Generation Firewalls help the Department balance productivity with security, not only filtering inappropriate content, but also increasing capacity, connectivity, and scalability. The Next-Generation Firewalls also allow the Department to meet a diverse set of security needs while reducing the hardware footprint and simplifying the infrastructure.

“We have a layered approach to security. We filter the most inappropriate sites,” says Veen, “but schools have an ability to determine what’s right for their students at a local level. It’s a real challenge to determine what a student in year 11 or year 12 can see versus what a student in year 4 or 5 can see.”

About half the schools have a common networking environment managed centrally by the IT team. “We call it a standard operating environment or SOE, and the services are rationalized and simplified, creating a flat network with identity management,” says Veen. Although the SOE is cost effective, education budget allocation affects its use, which means only half of the schools fall within the SOE. “The other schools are still using a localized identity management system and separate domain for curriculum and administration,” Veen says.

According to Veen, Independent Public Schools in Western Australia have a lot of autonomy when it comes to their ICT budgets. Because of this, they can decide if they want to use the standard operating environment provided by Veen and his team. “It’s a way of reducing their total cost of ownership and their delivery costs. Of course, associated with this is all the security provided by the Cisco gear.”

Business Results

The Cisco ASA 5585-X platform upgrade is already yielding benefits in the areas that matter most: reliability and availability.

“One of the benefits we’ve found with the Next-Gen Firewall is that it’s a far more stable platform,” says Castine. “Internet access is really something users take for granted these days – they just expect it to be there. And with the Next-Gen Firewall, it is. Now we’ve got a stable solution. Since the introduction of Cisco Next-Gen Firewall as a filtering solution, there have been no related service outages.

“Additionally, using Cisco Prime Security Manager, we are able to see more of a global picture of traffic traversing our network, and have the capability to report against security issues and threats that we’re being protected from.”

In addition, the bandwidth has been increased by an order of magnitude. “Prior to the introduction of the Cisco ASA-CX modules, the Department’s bandwidth usage peaked at one gigabyte, and we were only utilizing half of the available capacity of our Internet feeds,” says Castine. “Following the implementation of the Cisco ASA-CX modules, the peak utilization immediately rose to two gigs, confirming that the legacy system bottleneck had been far greater than previously known.”

In fact, even though 100 new SOE schools came on-board last year, since the new network has come online, help desk calls are down by 33 percent. But most importantly, the Department knows students and the network are safe. “The real-time reputation filtering is something we’ve never had before, and that’s been a blessing for us. It keeps the students away from the sites that could damage our network, increase spamming or malware. That’s been a big plus for us. It’s a reliable, dependable solution, and we hope it continues down this path,” says Veen.

Finally, the new firewalls also help with compliance. “We are governed by the Auditor General’s Office, a government agency here in Perth. It’s crucial that we meet our regulatory requirements,” says Veen.

Castine closes with a point of pride. “The standard operating environment that we built with Cisco products is now the recommended solution for accessing the Internet. We’re going to decommission the old system as soon as we have evaluated the business impact to schools that have not yet had an on-site technician cut-over their individual devices. But, when you consider that we began this deployment within the last two months, and we’ve got 50 percent across the line, it’s incredible,” says Castine.

PRODUCT LIST

Security

- Cisco ASA 5585-X Series Next-Generation Firewall, ASA5585 with SSP-CX20
- Cisco Prime Security Manager

Routers and Switches

- Cisco ASR 1002, 2821, 2921, 3825, 3925 Series Aggregation Services Routers
- Cisco Catalyst 6506-E, 6509-E Series Switches
- Cisco Nexus7004, Nexus 7009, 2950, 2960, 2960G, 2960S, 3550, 3560, 3750G, 3750X Series Switches

Wireless

- Cisco 5508 Series Wireless LAN Controller
- Cisco Aironet 1140, 1240, 3500, 3600 Series Access Points

Data Center

- Cisco ACE 30 Application Control Engine Module
- Cisco ASA Services Module

For More Information

To find out more about the Cisco ASA 5585-X Series Next Generation Firewall, go to: <http://www.cisco.com/go/firewall>.



Americas Headquarters

Cisco Systems, Inc.
San Jose, CA

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