

More Agile and Responsive Technology for Country Fire Authority



Executive Summary

- **Customer Name:** Country Fire Authority (CFA)
- **Industry:** Public Service
- **Location:** Melbourne, Australia
- **Number of Employees:** 2000 employees; 58,000 volunteers

Challenge

- Help ensure high availability of critical applications and services for rapid emergency response
- Reduce operational risk, as well as power, cooling, cabling, and server provisioning time
- Offer more and better technology services without additional budget

Solution

- Virtualization reduces data center footprint and power requirements
- Cisco UCS helps transform data center into active-active environment
- Cisco Nexus 1000V Series Switches provide security, scalability, and high availability

Results

- Increased amount and quality of services offered with same personnel and reduced data center footprint
- Allowed IT to provision new servers up to five times faster
- Reduced back-up and restore of critical emergency email accounts

Australia's Country Fire Authority partners with Cisco to build highly available data centers and robust technology services.

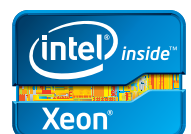
Challenge

CFA (Country Fire Authority) is a largely volunteer fire and emergency services organization that serves 3.3 million people in more than one million homes and properties across the Australian state of Victoria. Founded in 1945, CFA has almost 60,000 members. More than 58,000 of them are volunteers, but the organization also has 550 career firefighters and a support staff of approximately 1100 employees.

Bushfires are a fact of life in Australia. They are an essential part of the continent's ecosystem, because many native plants and trees depend on bushfires to reproduce. Yet out-of-control bushfires can result in devastating losses of both property and life. In Victoria, the catastrophic "Black Saturday" bushfires of 2009 destroyed 450,000 hectares (1.1 million acres) and killed 173 people. In response, the Australian government established a Royal Commission to improve the way that communities prepare for and respond to bushfires.

One of the recommendations coming out of the Royal Commission was that the technology in CFA had to be run less like a volunteer organization and more like a professional one. As a first step to reach that goal, CFA deployed Cisco networking equipment that helped enable it to extend the reach and performance of its WAN communications across greater geographic areas and support rapid responses to emergencies.

Once its WAN communications capabilities had been upgraded using Cisco solutions, CFA turned its attention to the data center. At the time, CFA had a single data center built using a client-server architecture with most applications running on single 1U, 2U, and 5U servers. It also had a second data center that it used as a disaster recovery site in an active-passive architecture.



“Cisco UCS has helped to revitalize our operations. We can focus on delivering higher-value, innovative new services to citizens and spend less time troubleshooting issues and performing routine tasks.”

– Gary Phillips
IT operations manager,
CFA



Due to severe data center space constraints and power concerns, CFA had started virtualizing its servers, but was running into challenges. “Once we kicked in our virtualization strategy, it became very hard to manage our environment because we had this collection of independent VMware hosts,” says Jude Xavier, systems administrator at CFA. “The backups were hard to perform, we had to do too much cabling, and getting a new server up and running took a long time.”

More significant, however, was the operational risk. Previously, in the case of a hardware failure, applications or services running on that server that did not already have redundancy built into the code would be unavailable until the disaster recovery site was activated. For an organization responsible for responding to life-or-death incidents, this situation was clearly unacceptable. “We knew we had to move towards a multidata center approach,” says Gary Phillips, IT operations manager at CFA. “Our vision was to build a scalable, highly redundant, highly available data center infrastructure that would deliver a level of service that is expected of an emergency service organization.”

Solution

The CFA team found that flexible and scalable infrastructure in a data center solution consisting of the Cisco Unified Computing System™ (UCS®), VMware, and NetApp. “Cisco was already a trusted partner due to many successful networking initiatives,” says Glenn Kerr, network administrator at CFA. “But more importantly, UCS was clearly the most appropriate solution for CFA. And when we looked at the benefits we’d get by combining UCS with VMware virtualization and NetApp storage, we realized we had a great fit for achieving our high-availability goals.”

Today, CFA has two data centers that are approximately 140 kilometers apart in an active-active architecture. As part of the UCS solution, CFA deployed Cisco® UCS B200 Blade Servers, 5108 Blade Server Chassis, and 6120XP Fabric Interconnects. Cisco Nexus® 1000V Series Switches were also added to provide visibility to virtual machines at the virtual access layer and virtualization intelligence to the network, while Cisco MDS 9124 Multilayer Fabric Switches, Cisco Catalyst® Switches, and Cisco ASA 5520 Firewalls round out the highly reliable infrastructure. Cisco 3900 G2 Series Integrated Services Routers also help provide a foundation for providing services on demand.

CFA uses Cisco UCS to host the Microsoft Exchange email service for emergency email communications for emergency management agencies in Victoria, taking advantage of the scalability and redundancy of the architecture. In addition to Exchange, CFA relies on UCS to support its Microsoft SharePoint, SQL Server 2008, and Symantec Enterprise Vault, as well as providing some application support to other agencies

“Cisco UCS was selected to support both our standard operations and enhance disaster recovery strategies,” says Phillips. “UCS allowed us to rethink our previous disaster recovery site and create a second active data center. The highly scalable architecture has enabled us to grow the number of applications and services offered, as well as continually evolve our data center strategy.”

Cisco UCS Manager has been key to managing the new infrastructure. “In a single pane you can see the servers, the networking gear, the chassis, and get some fantastic statistics about how the network is performing,” says Xavier.

Product List

Data Center Solutions

- Cisco Unified Computing System (UCS)
 - Cisco UCS B200 Blade Servers
 - Cisco UCS 5108 Blade Server Chassis
 - Cisco UCS 6120XP Fabric Interconnects

Routing and Switching

- Cisco Nexus 1000V Series Switches
- Cisco MDS 9124 Multilayer Fabric Switches
- Cisco Catalyst Switches
- Cisco 2900 and 3900 Series Integrated Services Routers G2

Security

- Cisco ASA 5520 Firewalls

Collaboration Solutions

- Cisco Unified Communications Manager 8.5

Applications

- Microsoft Exchange, SharePoint, SQL Server 2008
- Symantec Enterprise Vault
- VMware

Storage

- NetApp

Results

With its new Cisco UCS-based data center architecture, CFA can achieve greater value from its data center investment and provide more enhanced services. “We’re now delivering more services with the same support base and within the same footprint,” says Phillips.

Building a new server takes about 20 percent the time as previously. “The time we save in deploying our physical servers gives us more time to invest in designing even better services,” says Kerr. “Before, we deployed point solutions. Now we deploy highly available and redundant solutions. If we had to do the same task using a physical approach, it would take us four or five times longer than it does under UCS.”

“With the resource pooling we can do because of virtualization, we can focus more resources at a particular application running on UCS, where previously there was the possibility that services could run out,” says Xavier. “With NetApp storage and 10-gig Ethernet, in three or four minutes I can have my whole next-generation environment backed up. And to restore from one of those backups takes just 10 minutes. Previously, we had to find the right tape, then load it, catalog it, and restore it. It took us three weeks to get three Exchange mailboxes. In the UCS environment, it takes maybe 20 minutes.”

The increased systems reliability and performance, as well as improved ease of management, offered by Cisco UCS have also positively affected CFA IT morale. “Cisco UCS has helped to revitalize our operations,” says Phillips. “We can focus on delivering higher-value, innovative new services to citizens and spend less time troubleshooting issues and performing routine tasks. Most importantly, we have the hardware and the tools to support high-performance applications and services.”

Next Steps

On completion of the virtualization of our Windows environment, CFA IT will investigate virtualizing Solaris. “Based on our success using Cisco UCS, we are confident that other critical services can be virtualized on the platform and delivered more efficiently and reliably,” says Phillips.

Key features in Cisco data center and network solutions, such as overlay transport virtualization (OTV), will support a rapid migration of services and applications. In addition, Cisco UCS has helped unlock new opportunities for CFA, allowing it to look towards an emergency service private cloud and other advanced services.

For More Information

To find out more about Cisco Unified Data Center solutions, go to: www.cisco.com/go/dc. To find out more about CFA and its use of Cisco technology, go to: http://www.cisco.com/en/US/prod/collateral/routers/ps10537/case_study_c36-647408.pdf.

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