

Global Engineering Services Provider Gets Ready for Unified Fabric with Cisco Nexus

By upgrading its data center network to the Cisco Nexus platform, the Ausenco group improves the availability and service levels of its core enterprise applications, and sets the stage for a unified, “wire-once” fabric that brings storage and server resources into a virtualized architecture.

EXECUTIVE SUMMARY

Ausenco Group

- Engineering, project management and operation solutions provider for the global resources and energy sectors
- Headquarters in Brisbane Australia, with 2,200 people across 13 countries around the world.

Challenge

- Deliver enterprise applications to remote locations around the world
- Improve data center availability and disaster recovery
- Reduce complexity and cost of data center operations, and improve scalability for global expansion

Solution

- Consolidate I/O and server traffic onto a single, general-purpose, high-performance, highly available network using Cisco Nexus 5000 Series Switches

Results

- Virtualized infrastructure improves business agility and ease of future expansion
- “Wire-once” network fabric aggregates server and storage traffic, lowers costs and network complexity
- Increase speed of future application roll out

Introduction

The Ausenco group is a leading provider of engineering, project management and operation solutions for the global resources and energy sectors. Headquartered in Brisbane Australia, the group has around 2,200 people across 13 countries around the world.

The Ausenco group of companies has delivered on some of the most complex and challenging projects around the world, such as design, supply, construction and commissioning of a 20 Mtpa (million tons per annum) copper concentrator at the Lumwana Copper Mine in Zambia, reported to be Africa’s largest copper mine. Other notable projects also include the world’s first nickel laterite slurry pipeline system in Madagascar.

Business Challenge

Due to the nature of its business, Ausenco needed to provide IT services to remote sites all over the world. “The nature of being a project delivery service is that we work in very diverse geographical areas across the world, so the issue with that is getting your applications on to site, or close enough to site via links that will give a good experience to allow staff to perform their work,” said Ausenco

chief information officer Paul Young.

To facilitate its global expansion plans, Ausenco began a major virtualization and disaster recovery upgrade in early 2009 to improve the availability and service levels of its core enterprise applications. This move was driven in part by several key business challenges.



Firstly, environmental issues (such as power, cooling, rack space requirements) for its numerous servers were unsustainable for future application rollouts. With the amount of servers in place, that also meant that new applications would take longer to deploy. The company was also looking to reduce complexity in its data centers, particularly in terms of connectivity between servers, storage, and networks, and allow it concentrate more on providing the right applications to its users, and deliver close to 100 per cent technology uptime.

To address the challenges above, and support the business going forward, Ausenco decided to redesign the entire data center platform with the aim of creating a private cloud, capable of delivering hosted services to its users across the world, out of its Brisbane data centre (which services the US and Asia) and its Perth data centre (which services Africa). To do that, it needed to bring network, compute/storage, and virtualization platforms closer together to provide unparalleled flexibility, visibility, and policy enforcement into a virtualized data center environment.

Solution

As one of Ausenco's trusted partners and technology advisors, Cisco was brought in to help develop a high level architecture and business case for the implementation of the new data center environment. From various discussions over customer requirements, technology options and implementation considerations, the outcome was a plan for an agile architecture that provided a scalable platform for growth in line with business needs.

The solution called for a high speed backbone and server connectivity utilizing 10GE (gigabit-ethernet) for connectivity to Ausenco's core servers, built around Cisco Catalyst 6500 Series

Switches, virtualized into logical switches using the Cisco Virtual Switching System (VSS). However, in order to create a truly unified data center architecture that encompassed the storage infrastructure, Ausenco chose to deploy Cisco Nexus 5000 Series Switches. The Cisco Nexus 5000 Series can be used to implement a unified data center fabric, consolidating LAN, SAN, and server clustering traffic. By incorporating Nexus 5000 Series Switches into Ausenco's data center, both LAN storage area networks (SANs) can be connected and aggregated.

In addition, the management network as well as legacy servers were given 1Gbps connectivity using the Cisco Nexus 2000 Series Fabric Extenders. Cisco Nexus 2000 Fabric Extenders work in conjunction with Cisco Nexus 5000 Series Switches to provide high-density, low-cost connectivity to servers that require Gigabit Ethernet connectivity.

Results

In approximately three months, implementation of the data center network upgrade was completed. "Our technical staff were very impressed with the capabilities and performance of the entire solution provided by Cisco. It has set the stage for us to grow our virtualized infrastructure and introduce future services quickly" said Young.

According to Young, virtualization of the Australian region data center has resulted in 72 servers being reduced to 12 servers and five racks have been collapsed down to two racks. The increase in bandwidth requirements to for each server (now containing many instances of virtualized servers) were easily met by the Cisco Nexus platform.

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- Paul Young, Global CIO, Ausenco

On the Cisco Nexus platform, Ausenco can now synchronize its applications hosted across both data centers. "By synching-up applications in both locations I can provide a better capability to the world and get the benefit of a disaster recovery (DR) solution," said Young. "Typically disaster recovery sites just sit there not giving any benefit, and this way it lets us fully utilize the DR infrastructure while having the DR capability. We also have real time data between both sites giving us a better level of data persistence through the organization."

Cisco Nexus 5000 Series Switches have also allowed both data centers to move to a unified fabric at the data/application layer in the future. Rather than having to support multiple Fiber Channel links per server to access their storage networks, and Ethernet links for server-to-server connectivity, the Cisco Nexus 5000 supports Fiber Channel over Ethernet (FCoE),

significantly reducing the amount of cabling required, reduce capital and operational costs, and boosting the number of I/O connections per server without having to invest in additional adapters or ports.

Since virtualization is built into their data centers, and enabled by the Cisco Nexus platform, Ausenco has been able to address speed and reliability issues in the interim, while provide better disaster recovery and availability to clients and customers. The beauty of virtualization, Young said, is that by abstracting the hardware, and allowing more bandwidth per server, he can "at some later point drop new applications on existing hardware."

PRODUCT LIST

- 4 x Cisco Nexus 5020 Switches
- 2 x Cisco ACE 4710 Appliance
- 4 x Cisco ASA 5550 Security Appliance
- 4 x Cisco ASR 1002
- 4 x Cisco Catalyst 6500 Switches (2 x VSS Pairs)
- 2 x Cisco Nexus 2000 Series Fabric Extenders

Next Steps

With the successful implementation in Australia, Ausenco are looking to replicate the setup for their American operations in the near future.

For More Information

For more information on Cisco Nexus 5000 Series Switches, visit:

www.cisco.com/en/US/products/ps9670/index.html

For more information on Ausenco, visit: www.ausenco.com



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