

Shipping Firm Centralizes IT with Data Center Network and WAN

The Panalpina Group uses Cisco LAN switching, storage switching, and WAN optimization to save US\$1 million.

EXECUTIVE SUMMARY

THE PANALPINA GROUP

- Air and Ocean Freight Services
- Location: Basel, Switzerland and New Jersey, United States
- Number of Employees: 14,000

BUSINESS CHALLENGE

- Shift IT spending from systems maintenance to delivery of innovation
- Avoid US\$500,000 in capital cost for Toronto data center upgrade
- Help ensure high employee productivity through excellent application performance

NETWORK SOLUTION

- Cisco WAAS for WAN optimization
- Cisco MDS 9500 Series Multilayer Directors for storage networking
- Cisco Catalyst 6500 Series Switches for data center networking

BUSINESS RESULTS

- US\$1 million of cost savings from data center centralization
- Increased employee productivity and data integrity
- Reduced operating costs

Business Challenge

Every day, over 14,000 employees at The Panalpina Group, in 500 offices around the world, are focused on getting their customers' freight to the right location at the right time. In 2005, Panalpina staff shipped 791,000 tons and 923,000 20-foot equivalent units of freight over air and ocean, respectively, through 240 warehouses to 140 countries.

Pivotal to Panalpina's success is state-of-the-art IT systems that provide operational excellence and around-the-clock flow control. And no one among Panalpina's almost 2000 North American employees in 83 offices understands the importance of these systems more than Armin Heinlein, VP of IT for Panalpina's North American operations.

To help maintain market leadership, Heinlein and his team must deliver new technology while also reducing management complexity and costs. To accomplish this, Panalpina decided to centralize IT operations, and by the end of 2005 his team had

consolidated operations from eight data centers to just three in North America. With all of Panalpina's critical applications centralized, it became clear that the existing storage area network (SAN) needed to be upgraded at the main data center in New Jersey. The existing SAN consisted of fabric switches that were not Director-class, were unwieldy to manage, and did not scale easily.

Storage Network Solution

Kevin Ball, Network Messaging and Windows Systems Manager at Panalpina, directed the SAN upgrade, selecting two Cisco MDS 9509 Multilayer Directors to form the core of the storage network which has dual redundant fabrics. "Moving from the old Brocade switches to the new Cisco SAN was a snap," says Ball. "We did it in just one weekend." The new SAN consists of 20 terabytes in enterprise storage on an IBM ES F40, and EMC CX700s and CX500s connected to Citrix Servers, Microsoft Exchange, Microsoft SQL, Microsoft Cluster Servers for file servers, and AIX Servers for in-house applications. "With the modular design and future roadmap of the Cisco Directors, we get investment protection because we can easily upgrade with new capabilities in the future," says Ball. "We also like the fact that the Cisco products are designed to be able to integrate and interoperate well together, and we have similar software platforms to manage." In addition,

Panalpina will take advantage of Cisco VSAN technology when they implement their disaster recovery site, which will also be based on Cisco MDS Directors.

The Next Challenge

In early 2006, Heinlein and his team had a critical choice—spend over US\$500,000 to upgrade the Toronto data center, or move all operations to New Jersey, where new IBM servers with virtualization, EMC storage, and Cisco® LAN and storage switching were driving critical business applications.

Heinlein had concerns about the productivity of the 200 staff in Toronto accessing critical business applications over the WAN, and was reluctant to remove local e-mail, file, and print servers. Yet the cost of increased bandwidth was prohibitive, so clearly a WAN acceleration solution was needed to allow Toronto staff to continue meeting their customer needs.

“With Cisco LAN and storage switching, and WAN optimization, we saved \$1 million in capital expenses from our data center centralization, and maintained LAN-like application performance over the WAN.”

—Armin Heinlein, Corporate Vice President, North American IT Competence Center, The Panalpina Group

Network Solution

Panalpina’s critical business applications include a custom-built freight-forwarding solution and SAP for enterprise resource planning, both of which are hosted in New Jersey. Microsoft e-mail, file, and print services—hosted in Toronto and New Jersey as of January 2006—are also essential. Thus, any WAN optimization solution selected needed to accelerate a variety of applications.

Heinlein and team conducted a thorough and deliberate search, not wanting to invest without confidence in their selection. “In the spring of 2006, we tested all the products and put our search on hold because we were not happy with any of them. But when Cisco delivered Wide Area Application Services (WAAS) 4.0 in September, it was immediately attractive to us because it surpassed other vendors’ solutions,” says Heinlein.

After testing the Cisco WAAS product and validating its strengths, Panalpina selected WAAS as a critical component for the Toronto-New Jersey consolidation project for the following reasons:

- Complete technology solution
- Global support from global vendor
- Transparent integration

Cisco WAAS includes compression, redundancy elimination, transport optimizations, caching, and content distribution. “WAAS offered us a complete solution, accelerating all the applications that we were looking to optimize, including Exchange, SQL, file and printing services, SAP, and our freight-forwarding system accessed through Citrix,” says Bill Fraser, VP of Operations for Panalpina. “After testing, we were confident that we would see benefits for all these applications and in printing, an area where Cisco’s competition was weak.”

Of particular concern was optimizing the transfer of Excel files between offices. “As file sizes have grown, the complaints from users all over North America have grown. It was taking too long to open and save frequently accessed large files,” says Fraser. “But WAAS significantly reduces waiting times.”

Additionally, Panalpina has been working to standardize its global IT infrastructure, so staff in all geographies can troubleshoot any system regardless of location, thus expediting resolution of shipment issues and increasing customer satisfaction. “With Cisco, we are confident that they deliver a global solution that can be deployed and maintained at all our locations worldwide. Other vendors present risks in this area.”

Further, Panalpina found the Cisco WAAS installation to easily integrate into their existing Cisco network of routers, switches, and IP communications solutions. “Kevin Ball on our team read up on the product and, given his Cisco expertise, quickly found that it would be simple to implement and manage. This was not a project where we needed to go spend consulting time or dollars and bring in all kinds of expert resources. It was straightforward for us,” says Fraser. “A non-Cisco solution would have added training and deployment costs.”

“WAAS fits extremely well in our centralization of operations to the New Jersey data center already equipped with Cisco MDS 9500 Series and Catalyst® 6500 Series switches. Cisco continues to design products that truly fill strong requirements for us and really understands our needs,” says Heinlein.

Business Results

Panalpina experienced an immediate benefit from WAAS during data relocation from Toronto to New Jersey, even before the production deployment. “WAAS accelerated the time necessary to move data and made the whole migration and centralization much easier,” says Fraser. “And although we were moving large amounts of data across the WAN, Toronto users did not feel any performance impact for applications hosted in New Jersey.”

With mirrored operations in Toronto and New Jersey, and WAAS installed at both locations, the cutover was extremely smooth. “The Toronto office can be quite demanding, so when we did not hear any complaints, we knew that our cutover was successful,” says Fraser.

During the first few weeks, application performance was monitored closely, and tests were conducted to validate the effectiveness of WAAS. In one such test, a 2 MB file was transferred between the two locations in 31 seconds without using the Cisco WAAS solution. With WAAS, the transfer took 2.8 seconds, a 10 times improvement, thus achieving LAN-like speeds over the WAN.

On one day in the early stages of deployment, the 3 Mbps Multiprotocol Label Switching (MPLS) link between Toronto and New Jersey unexpectedly went down due to a network provider issue. “WAAS really saved us because we had to move to a dial-in back-up scenario. The users did not really realize that there was a problem, but we were down for five hours. Without WAAS, this would have been a disastrous situation,” says Fraser.

Once established that WAAS was delivering on its promise, Heinlein and his team could confidently plan for the shutdown of the Toronto data center. Because of WAN acceleration, Panalpina was able to forgo US\$500,000 in impending upgrades in Toronto—US\$325,000 for storage and servers and US\$175,000 in cooling, cabling, generators, and other expenses. Further, savings from server utilization increases to 85 percent from 35 percent due to virtualization saved an additional US\$500,000.

"With Cisco LAN and storage switching, and WAN optimization, we saved \$1 million in capital expenses from our data center centralization, and maintained LAN-like application performance over the WAN," says Heinlein.

Panalpina has also seen strong benefits in reduced operating costs. Staff dedicated to server maintenance and backups in Toronto have been redeployed to further improve local services and increase employee productivity. And bandwidth cost increases have been avoided. Meanwhile data integrity has increased. "We can maintain the centralized servers and storage more efficiently because they are all on one maintenance cycle. And, in addition, we benefit from stronger data center services in the recently upgraded New Jersey facility."

PRODUCT LIST

- Cisco Wide Area Application Engine (WAE) Appliances
- Cisco Wide Area Application Services (WAAS) Software
- Cisco MDS 9509 Multilayer Directors
- Cisco Catalyst 6500 Switches
- Cisco Wireless Controllers

Next Steps

With the Toronto centralization complete, Heinlein and his team are now turning their attention to gaining further benefits from Cisco technologies:

- Houston—Deploying WAAS in Houston, and moving servers and storage in that location to New Jersey, will result in an estimated US\$100,000 upgrade cost avoidance.
- Miami will be the next office to receive the WAAS solution, with Atlanta, Chicago, Los Angeles, and San Francisco to follow, enabling further application acceleration and staff productivity improvements.
- Satellite offices—For some secondary offices on small network connections where bandwidth utilization has reached a limit, Heinlein plans to deploy WAAS and forgo increased operating expenses from WAN upgrades.
- SAP—Upon upgrading to SAP's mySAP applications where an internet browser is used as the client, Panalpina will utilize WAAS to increase application response times.
- Panalpina is also upgrading the wireless infrastructure at its wireless-equipped warehouses with Cisco wireless controllers for better security and easier management.

In summary, the Panalpina Toronto centralization project has been very successful. "I think that if you really want to do a data center consolidation, and you want to keep the user experience as if you had servers locally, you should not do it without Cisco solutions—the Catalyst, the MDS, and WAAS," says Heinlein.

For More Information

To find out more about the Cisco Wide Area Application Services solution, go to:

<http://www.cisco.com/go/waas>.

To learn more about Application Networking Services, go to

<http://www.cisco.com/go/applicationservices>.



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