

## Construction Materials Provider Centralizes Branch-office Servers with Cisco Data Center Solutions

Lafarge deploys WAN optimization and SAN switches to centralize branch-office servers and storage into the data center.

### EXECUTIVE SUMMARY

#### Lafarge North America

- Construction
- North America
- 90,000

#### Challenge:

- Reduce branch-office server and storage costs
- Centralize storage into the data center
- Reduce number of vendors to help ensure best compatibility

#### Solution

- Use WAN optimization solution to eliminate branch server footprint while helping ensure LAN-like application performance
- Upgrade storage area network (SAN) fabric to director-class switches to provide for future growth and functionality

#### Results:

- Over US\$700,000 annual cost savings in operating expenses
- Scalable director-class storage solution for present and future needs
- Streamlined IT management with a single vendor for both SAN and LAN technology in the data center

### Challenge

Lafarge North America is the largest diversified supplier of construction materials in the United States and Canada. The company's products are used in residential, commercial, and public works construction projects across North America. Lafarge North America is part of the Lafarge Group, a world leader in building materials that is active in 76 countries, and employs 90,000 people.

Lafarge North America has a primary data center located in Virginia and a secondary data center in Illinois. The company has a wide variety of Cisco® technologies deployed in the data centers including Cisco Catalyst® 6500 Series Switches and Cisco ASA 5500 Adaptive Security Appliances. Lafarge utilizes several key applications including Lotus Notes for email, Oracle's JD Edwards EnterpriseOne for enterprise resource planning (ERP), Cognos for business intelligence, Oracle database software, and Altiris for software and patch

deployment. Lafarge's 16,600 North American users are spread across over 750 locations in the United States and Canada connected by IP Multiprotocol Label Switching (MPLS) or Dynamic Multipoint VPN (DMVPN).

Historically, Lafarge North America operated with regionalized pockets of IT and multiple disparate systems supporting business processes across North America. According to Brent Wolfram, lead architect for enterprise infrastructure with Lafarge North America, the IT organization made a decision to standardize on a common ERP platform for all business processes and build a centralized IT infrastructure and application team to support all IT systems. Centralization and consolidation efforts led to several expansions of the data center footprint and necessitated the need for a more scalable and robust storage area network (SAN) fabric.

On the storage side, Wolfram says, a SAN switching solution from another vendor was not able to scale and the company needed a more robust solution.

“After determining that we needed to scale the size of our SAN fabric to accommodate an increasing data center footprint and appetite for storage, we concluded that we needed to move from lower-tier SAN switches to director-class SAN switches,” says Wolfram. “It was also important that we reduce the number of vendors that we were managing and look for commonality between how we manage and support our LAN and SAN fabrics.”

On the server side, Wolfram says Lafarge North America still had a vast number of antiquated distributed systems in the field that needed to be centralized to the data center.

“At the same time we were rebuilding our SAN and performing a major expansion of our data center footprint, we needed to come up with a strategy for consolidating legacy servers in the field to the data center without affecting user performance,” says Wolfram.

**“We are saving over three terabytes of network traffic per month in application traffic alone through Cisco WAAS. We estimate that we will be over four terabytes in network traffic savings by the end of the year.”**

— Brent Wolfram, Lead Architect for Enterprise Infrastructure, Lafarge North America

## Solution

Prior to deciding on any one vendor for the new SAN switches, the team conducted careful studies of the various vendors and their technology roadmaps. Following the evaluation, Wolfram and his team unanimously decided on the Cisco MDS 9500 Series Multilayer Directors for their SAN fabric.

“Our main goal with the Cisco MDS was to provide for future growth and scalability of our SAN fabric, provide the immediate port density for our data center expansion, and provide future functionality for improved SAN extension capability over our IP network,” says Wolfram.

“We have over 300 terabytes of critical business data being managed through Cisco MDS directors across our two core data centers,” says Wolfram. “We have multiple EMC, HP, and 3PAR storage frames, in addition to several virtual and physical tape libraries. The MDS gave us a centralized solution to reduce data center management and operational costs.”

With regards to the Lafarge WAN, Wolfram says, the Cisco Wide Area Application Services (WAAS) was the obvious choice because of its ease of integration into the company's existing network infrastructure.

“We performed a pilot deployment across three locations in Canada,” says Wolfram. “By deploying Cisco WAAS technology at these locations, we were able to decommission all local file, print, and messaging servers at these locations (six servers in total), while both improving application performance and reducing bandwidth utilization. Due the success of the pilot, we have begun to deploy this solution to many other locations across North America, initially targeting locations that have unsupported and/or failing legacy equipment.”

“We purchased 90 Cisco WAAS (WAE-512, WAE-612, and WAE-7326) devices in phase one that we've deployed to 50 plus sites with the goal of deploying them into a total of 65 sites by the end of the year,” says Wolfram. “Cisco WAAS performed better than anything we tested. The WAAS not only solved the challenge of providing fast, LAN-like access to remote sites, but it also gave us the

added benefit of accelerating multiple applications, including our ERP system, while optimizing new platforms and a variety of critical business applications.

“In the end, Cisco WAAS had the most compelling offer because it had the capability of being an integrated solution. We were already a Cisco technology shop in the data center and out in the field, and it would have had to be a very compelling offer for us to put another vendor in the mix and take a chance that the solution would not assimilate with what we had in place. We also had the ability to embed the Cisco technology into the existing technology platforms such as our ISR routers or into a refresh of the technology platforms without any problems.”

“The Cisco MDS directors allowed for a robust and scalable storage fabric in the data center to host all user files across North America, and the Cisco WAAS solution made it possible for users to access their files centrally through the EMC NAS without degraded performance.”

## Results

A central storage solution and reduction in distributed servers was the initial result that Wolfram and his team experienced from the Cisco WAAS deployment.

“As soon as we installed the WAE appliances, we had several users tell us that the performance was noticeably improved for various business applications,” says Wolfram. “The fact that we’ve taken away servers that were 50 feet away and replaced them in our data center that’s roughly 500 miles away and no one experienced a noticeable drop in performance is significant.”

In terms of cost savings, Wolfram says the Cisco WAAS will save Lafarge over US\$700,000 per year in operating expenses by optimizing their WAN and centralizing services in the data center.

“Cisco WAAS is saving us over [US]\$250,000 per year in operating expenses by not having to support legacy email servers outside the data center and over [US]\$420,000 in operating expenses through not supporting legacy file, print and directory services in the field,” says Wolfram. “In addition to that, Cisco WAAS is helping us save over [US]\$100,000 in annual operating expenses by reducing helpdesk, change, and service tickets associated to legacy servers and storage footprints.”

“Additionally, we are saving over three terabytes of network traffic per month in application traffic alone through the Cisco WAAS,” says Wolfram. “We estimate that we will be over four terabytes in network traffic savings by the end of the year.”

Cisco WAAS and MDS were both selected because of the ability to leverage existing infrastructure, internal Cisco knowledge, and price discount structures, in addition to being able to capitalize on strong product feature sets, according to Wolfram.

## Next Steps

Continued virtualization on the server and storage side is next on the list of priorities for Wolfram and his team, who are also exploring ways to leverage Cisco WAAS for this endeavor.

“Our intention in the end is to be somewhere around 80 percent virtualized on the server side within the data center,” says Wolfram. “We currently have a large physical to virtual migration under way, where we are taking three-year-old servers and migrating them to virtual machines by leveraging HP blade technology and VMware virtualization software. Our intent is to ultimately reduce power and floor space consumption in the data center over the next few years as we continue to embrace virtualization technologies.”

“Lafarge is also looking into how we can leverage new virtualization enhancements in Cisco WAAS in the near future. We are very excited about the embedded Cisco WAAS virtual blade technology and will certainly look to take advantage of this capability in our branch office technology footprints.”

### PRODUCT LIST

- Cisco MDS 9000 Series Multilayer SAN Switches
- Cisco Wide Area Application Services (WAAS)
- Cisco WAE 612
- Cisco WAE 512
- Cisco WAE 7326
- Cisco Catalyst 6500 Series Switches
- Cisco Firewall Services Modules for Catalyst 6500
- Cisco ASA 5500 Series Adaptive Security Appliances

### For More Information

To find out more about Cisco application, storage, security and switching solutions, please visit <http://www.cisco.com>.



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