Lafarge

Building materials leader transforms IT to accelerate innovation and reduce costs

ESSENTIALS

Industry

Building materials

Company Size

€15.8 billion in 2012 sales

Business Challenges

- Existing technology platform presented availability and scalability challenges and lacked a holistic support model
- Scattered, disparate storage costly to manage and protect

Solutions

- VCE Vblock System
- EMC VMAX enterprise storage
- EMC VNX and VNXe unified storage
- EMC VPLEX
- EMC Avamar
- EMC Data Domain
- EMC Data Protection Advisor
- EMC RecoverPoint
- VMware vCloud Suite
- Oracle JD Edwards, Oracle Database, IBM Cognos, WebSphere, IBM Maximo, CommandAlkon, Software AG webMethods, Microsoft SQL Server, Microsoft SharePoint, Lotus Notes

CUSTOMER PROFILE

OVERVIEW

Lafarge is a world leader in building materials with top-ranking positions in the cement, aggregates, and concrete markets. With operations in 64 countries and 65,000 employees, Lafarge is distinguished by its focus on innovation, sustainable construction, and architectural creativity.

BUSINESS CHALLENGES

Lafarge's intensive product development operations were driving explosive data growth across its global business. When its previous HP-based technology platform began suffering from scalability issues and frequent hardware failures, the company's IT department was finding it difficult keep up with new business demands. It also was becoming more costly for Lafarge to manage and protect business-critical applications on its heterogeneous storage environment of legacy HP, 3PAR, and earlier-generation EMC storage systems.

Responding to increased business pressure to reduce costs and improve efficiency, IT evaluated solutions from IBM, HP, Dell, VCE, and EMC. After exhaustive score-carding of each solution, Lafarge selected VCE Vblock® Systems, along with EMC® VMAX® enterprise storage and backup and recovery solutions, as the foundation for creating a private cloud and delivering IT as a Service (ITaaS).

Brent Wolfram, director of technology and security architecture, Lafarge Americas, explains, “We chose Vblock systems because of their simplicity and the single line of support we could get from VCE. As we evaluated the various vendors, the technical teams from VCE, EMC, VMware, and Cisco demonstrated a genuine passion for their technologies, which gave us a comfort level in their ability to deliver and support the solution.”

SOLUTIONS

Lafarge replaced its HP infrastructure with a Vblock converged infrastructure comprised of EMC VMAX enterprise storage with EMC FAST™ VP (Fully Automated Storage Tiering for Virtual Pools), VMware® vSphere™ virtualization, Cisco Unified Computing System (UCS) servers, and Cisco networking. Lafarge also is using the VMware vCloud® Suite to build and manage its private cloud running on the Vblock Systems. Lafarge has virtualized approximately 80 percent of its environment and plans to reach 100 percent virtualization in two years.

The Vblock Systems run Lafarge's critical applications, including Oracle JD Edwards enterprise resource planning (ERP), Oracle Database 11*g*, IBM Cognos business intelligence, IBM WebShpere application infrastructure, and Software AG webMethods application integration.

A separate VMAX storage array with FAST VP supports other key business applications, including IBM Maximo plant maintenance, CommandAlkon ticketing, Microsoft SQL Server, Microsoft SharePoint, and Lotus Notes.

EMC²

Results

- Saved $500,000 in OpEx and $150,000 in energy costs for storage infrastructure
- Reduced storage floor space by 72 percent and power usage by 54 percent
- Shortened backup windows from 24 to 48 hours to 15 minutes
- Reduced backup data by 90 percent
- Saved $300,000 initially and $150,000 annually due to reduced expenditures for backup tape, licensing, and maintenance

EMC VNXe® unified storage also functions as an Advanced Management Pod, which centralizes management of Vblock System components. Lafarge also uses EMC VNX® unified storage for the company's Microsoft CIFS file shares.

For backup and recovery, Lafarge relies on EMC Avamar® deduplication backup software and system, along with EMC Data Domain® deduplication storage systems and EMC Data Domain Boost software.

For high availability, Lafarge's Vblock, EMC storage, and backup and recovery systems will be replicated between two separate data centers which operate in an active-active metro cluster configuration, separated by a distance of approximately 40 km. Lafarge also is implementing EMC VPLEX® Metro data mobility and EMC RecoverPoint™ remote data protection solutions to optimize disaster recovery and enable active-active clustering across the two sites.

Lafarge worked closely with EMC Professional Services throughout the implementation.

Mariano De Luca, a technology architect at Lafarge, comments, "EMC Professional Services were very helpful in enabling our transformation. EMC is a vendor that is easy to work with and is capable of hitting the ground running. The engineers were very skillful and sharp and really know their stuff."

"By innovating with virtualization and IT as a Service, we're managing resources with more precision and aligning IT services to the individual business units' needs. So we're reducing our costs while helping the business grow and innovate."

Brent Wolfram
Director of Technology and Security Architecture at Lafarge Americas

IT ALIGNED WITH THE BUSINESS

By consolidating its infrastructure and building a private cloud on Vblock Systems and EMC storage, Lafarge IT is transforming into a true service provider. While business units previously maintained their own physical infrastructures, now Lafarge IT hosts each business unit in a secure, multi-tenant cloud environment that delivers higher performance, greater agility, and better cost control.

Wolfram remarks, "By innovating with virtualization and IT as a Service, we're managing resources with more precision and aligning IT services to the individual business units' needs. So we're reducing our costs while helping the business grow and innovate."

DRAMATIC SAVINGS IN FLOOR SPACE AND OPEX

One of the biggest impacts of Lafarge's transformation has been cost savings. By replacing physical equipment with a private cloud, Lafarge is reducing its data center footprint dramatically. The company will reduce operating expenses by more than $500,000 and save another $150,000 beginning in 2013 from decreased power consumption.

"Moving to a virtualized infrastructure will ultimately enable us to reduce our floor space by 72 percent and our power usage by 54 percent," reports Wolfram. "Our IT OpEx is running at 33 percent less than it was five years ago and we're delivering more applications and new hosting services to the business units."

“In fact, we added a second data center in the U.S. for disaster recovery while remaining cost neutral,” Wolfram continues. “This is testament to how efficient we've become with the cloud.”

CHARGEBACK DELIVERS GREATER TRANSPARENCY

To manage costs more efficiently, IT wanted to charge business units for the IT resources they used. The Vblock system, virtualization, automated tiering provided by FAST VP, and VMware vCenter Chargeback Manager were some of the key technologies that made this chargeback system possible.

“With EMC, VMware, and VCE solutions, we've gained a more granular view of the environment so we can charge back based on a consumption model that accurately accounts for what resources each business unit uses,” De Luca explains.

He continues, “The EMC and VMware tools have made chargeback easy enough for non-IT people to use. It removes some of the burden from IT and provides full transparency and greater accountability for the line-of-business owners.”

> “With Vblock systems and EMC VMAX, we can manage resources with much greater precision and align IT services exactly to each business unit’s needs.”
>
> Brent Wolfram
> Director of Technology and Security Architecture at Lafarge Americas

IMPROVED AVAILABILITY, PERFORMANCE

With Vblock and VMAX, Lafarge has recorded improved availability for its business-critical applications, particularly Oracle's JD Edwards ERP, which manages business services from order processing to delivery at the construction site.

“Our JD Edwards ERP is so intertwined with our business processes that if it goes down, we impact delivery of our products to our customers,” says De Luca. “The lack of availability of key business processes such as distribution, sales, and operational logistics would have significant cost and resource impacts, costing many thousands of dollars per hour. Now that we've moved to Vblock and VMAX, availability and performance have improved dramatically such that our operations are far more reliable and predictable.”

In addition, VMAX storage and FAST VP dramatically increased performance of JD Edwards and other critical applications such as Cognos business intelligence.

“Application performance has improved by more than 40 percent for some application environments,” De Luca reports. “We no longer have those bottlenecks that used to drag down productivity and slow down the pace of business.”

CLOUD ENABLES INCREASED AGILITY

To smoothly respond to business fluctuations, Lafarge's agile infrastructure enables IT to ramp services up or down, practically on the fly.

When JD Edwards financial and reporting applications spike in activity toward the end of the month or quarter, for example, FAST VP automatically moves I/O workloads to higher-speed Flash drives. Following the spike, those resources are freed again for other functions such as order management.

Through virtualization and automation of many provisioning tasks, Lafarge IT can also deploy new infrastructure services faster than ever before.

“We’ve reduced the typical deployment time of a new server from two weeks to two hours,” Wolfram relates. “Now our teams can focus on tuning application performance and working on other important projects, as opposed to simply deploying basic infrastructure components.”

De Luca shares another example of how increased agility from the cloud has paid off.

“One of our co-location facilities supporting several countries in South America was in a region prone to earthquakes. Since we were virtualized, we moved that entire data center to our U.S. site within a couple of months. If we had to do it the old way, it would have taken a year. Fortunately, we completed the migration just before another quake hit, which knocked out power for nearly three weeks.”

> “EMC has the technologies and services expertise we need to move our transformation to the next stage and capture even more value and efficiency from our IT investments.”

Brent Wolfram
Director of Technology and Security Architecture at Lafarge Americas

REDEFINING IT ROLES

VCE and EMC solutions have not only transformed Lafarge as a company, but have also profoundly transformed the IT organization. Specific job functions and the relationship between IT and the business have changed to enable greater responsiveness and efficiency. For example, while Lafarge operations in individual countries no longer have their own data centers, they do have IT staff but with significantly changed roles.

“IT employees in our business units often times function more like business analysts than technologists,” Wolfram explains. “From the corporate IT perspective, we really do have to operate like a service provider because the business units are comparing us against managed services from outside firms like Amazon and Verizon's Terremark.”

In response, Lafarge IT is striving to increase internal awareness of the value of its services and soon will be launching an online service catalog.

“We're defining specific service tiers and branding them so it’s clear to the business users why our services provide more value than public cloud offerings,” says Wolfram. “Our service catalog will offer a common set of services across the Americas, Europe, Middle East, Africa, and Asia Pacific. The services will range from ‘platinum’ level, which deliver stretched-cluster redundancy across data centers, to ‘bronze’ level services, which restore non-critical systems from disk backup. So the business units can match their business processes and application environments to the appropriate service level.”

De Luca adds, “We’ve simplified our offerings so much that we no longer need siloed skill sets. Instead of having separate compute, network, and storage specialists, we now have generalists who can work with any aspect of the infrastructure. That’s allowing us to be much more responsive. If an application team comes to us requesting ten virtual machines, we can do that in an hour. There’s no waiting six weeks for delivery like before.”

TRANSFORMING DATA PROTECTION

Data protection is another area Lafarge has transformed with its virtualized, centralized infrastructure. Local tape backup systems spread across multiple countries, for example, are being decommissioned and replaced by a centralized, disk-based backup and recovery infrastructure.

The Avamar deduplication backup and recovery solution protects all of Lafarge's critical applications on the Vblock System, VMAX, and VNX storage, as well as file systems in 30 remote offices. Integrated with Data Domain Boost, Avamar also manages backup of transactional data from Oracle and SQL Server databases to a Data Domain deduplication storage system. Lafarge uses EMC Data Protection Advisor for unified monitoring, analysis, and reporting across its backup environment.

“Before, we couldn't centrally back up our remote sites so it wasn't very efficient or consistent” notes De Luca. “With Avamar deduplication, we've reduced our backup data by 90 percent, so we're using a lot less network bandwidth and our backup times have improved across the board.″

“For example, Avamar uses variable-length deduplication to identify unique changed data on a daily basis from our 40 TB environment,″ he continues. “Then it stores it as a daily full backup in 15 minutes. This used to take up to 48 hours using traditional backup software and tape.”

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>
> Mariano De Luca
> Technology Architect at Lafarge

Data Domain Boost has also increased backup performance substantially.

“With Data Domain Boost, backing up one terabyte to Data Domain takes less than fifteen minutes,″ De Luca says. “To get that one terabyte onto tape would have taken more than 12 hours.”

SIGNFICANT BACKUP AND TIME SAVINGS

Replacing tape and older disk libraries with a Data Domain system has led to substantial financial savings. In fact, De Luca estimates nearly $300,000 in initial savings with ongoing savings of $150,000 annually due to reduced expenditures for tape, licensing, and maintenance. The manageability and ease of use of the EMC backup infrastructure also has improved IT productivity.

“Traditionally, managing backups was a full-time job,” recalls De Luca. “We used to get a daily report on thousands of data points and then spend hours every day chasing the few backups that had gone bad. Now, we have greater than 99 percent backup success rate, and if a problem crops up, we can pinpoint and resolve it very quickly with EMC backup and recovery tools.″

Recovery is not only faster, but also provides a new level of reliability to business operations. Avamar and Data Domain both perform daily data integrity checks to ensure all data is backed up and ready for restore. Avamar’s tight integration with VMware is exemplified in Avamar's extremely fast Changed Block Tracking for restore, where only changed blocks are needed to recover a virtual machine.

“We've improved our SLAs by providing a much better recovery time objective. In fact, we are now capable of recovering data within minutes, which greatly reduces risk to the business,” De Luca adds.

Having a single, centrally managed backup infrastructure also has reduced the need for specialized backup expertise for each backup environment.

"We used to have one person doing UNIX backups, another one handling Linux and database backups, a separate person for Windows and SQL Server backups, and so on,” De Luca explains. “Now, people can access the EMC backup infrastructure with minimal training because it's so easy to use and serves up a centralized view across all of our backup environments.”

"We've reduced our overall weekly time spent managing backups from ten hours to four hours on average. There's a lot more time for value-add projects,” he says.

TRANSFORMATION DRIVES IT INNOVATION

Lafarge’s transformation is enabling IT to move forward on new innovative projects that would not have been possible just a few years ago. The latest example is Lafarge's use of Vblock, VPLEX, and RecoverPoint solutions for a metro cluster of two data centers that enables improved data protection and workload mobility.

“Without our IT transformation and virtualization, we would not have been able to create a metro cluster across two data centers,” explains Wolfram. “The combination of Vblock, VPLEX, and RecoverPoint will allow us to federate application processing across locations and enable workload mobility. We're also fine-tuning our metro cluster to provide the exact recovery point objectives and recovery time objectives across our full range of critical application environments."

Wolfram continues, "EMC has the technologies and services expertise we need to move our transformation to the next stage and capture even more value and efficiency from our IT investments."

CONTACT US

To learn more about how EMC products, services, and solutions can help solve your business and IT challenges, contact your local representative or authorized reseller—or visit us at www.EMC.com.

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