

Global Law Firm Selects Switch Solution and Storage Upgrade for Data Center

McDermott Will & Emery deploys Cisco Nexus 5000 and MDS Directors to consolidate I/O and unify SAN fabrics.

EXECUTIVE SUMMARY

McDermott Will & Emery

- Legal
- North America
- 2000+ world wide

Challenge

- Implement scalable data center design for implementation of Virtual Desktop Infrastructure across all locations
- Consolidate and centralize servers and storage

Solution

- Upgrade to a 10G Ethernet switch solution to unify I/O and consolidate hardware in the data center through virtualization
- Upgrade storage area network (SAN) fabric to centralize and consolidate storage.

Results:

- 60 percent reduction in servers through virtualization
- 100 percent SAN connectivity and a centralized data center with a much smaller footprint

Challenge

Founded in 1934, McDermott Will & Emery (MWE) is a premier international law firm with a diversified business practice. MWE represents a wide range of commercial, industrial, and financial enterprises, both publicly and privately held. The firm has 1100 lawyers and 15 offices that span across Europe and the United States. MWE also has a strategic alliance with MWE China Law Offices in Shanghai.

MWE runs several applications from their data center located in Lisle, Illinois including Microsoft Exchange; CMS, a financial software package; and Interwoven for document management. The firm has an HP-centric environment that utilizes HP's rack-mounted servers with plans to move into blade servers for their Virtual Desktop Infrastructure (VDI).

"We were planning to build out a brand new data center from scratch and decided to move into the

new unified fabric technology and a 10 GbE network architecture to prepare for upcoming VDI implementation," says Carroll. "As a law firm, I believe we were one of the first to move in this direction from a technology perspective, and I think this is the direction that most companies are heading in because of cable management issues and reducing CAPEX [capital expenses] through a smaller footprint."

As Carroll moved into the planning phase for the new data center, he and his team members—Harold Anthony, Mark Combs, Chris Dorsey, Charles Hill, Ed Hodge, Steve Mac and Alex Perez—were challenged with how to run all communications out of the data center while managing the surplus of hardware that MWE had.

"When we began looking at the build and managing the sheer amount of hardware we were up against, we began thinking about how to consolidate hardware and bring costs down by not having to purchase so many HBAs [host bus adapters] and NICs [network interface cards] for the servers and for all the different networks," says Carroll. "The bottom line of what we wanted was a smaller footprint and increased performance along with the ability to virtualize and consolidate using blade servers and Nexus 5000 as we moved in this new direction for our data center."

“We looked at few other solutions, but didn’t find any vendor that could come close to competing with what Cisco had to offer in the Nexus 5000, especially as it related to bringing down costs by deploying FCoE and Unified I/O and the option that it gave us to connect back to the Cisco MDS 9513 Multilayer Directors through native Fibre Channel.”

— Edward Carroll, Network Architect, McDermott Will & Emery

Solution

Carroll and his team began looking at available solutions and decided that they wanted to begin a VDI process that would allow them to incorporate blade servers through 10 Gbps architecture within the data center. After a short evaluation period with a few top vendors, Carroll and his team selected a design with Cisco Nexus 5000 Series Switches and Cisco MDS 9513 Multilayer Directors.

“We looked at a few other solutions, but didn’t find any vendor that could come close to competing with what Cisco had to offer in the Nexus 5000, especially as it related to bringing down costs by deploying FCoE [Fibre Channel over Ethernet] and Unified I/O and the option that it gave us to connect back to the Cisco MDS 9513 Multilayer Directors through native Fibre Channel,” says Carroll. “Fewer number of HBAs, NICs, switch ports, and lower power requirements, helped cut back on expenses, and when we examined our return on the investment, what we would get with the Nexus just made sense to me, and my director wholeheartedly agreed.”

Carroll says being able to consolidate servers and reduce hardware in the data center, as well as centralizing server and storage has been a key result from deploying the Nexus 5000.

“We’re moving towards centralizing everything, including storage, and managing IT for all our offices from the one data center,” says Carroll. “We installed Emulex cards in the servers at our new data center to intelligently connect with our SAN, which gave us faster gigabit speeds. We’re confident that by the end of 2009, we will have reduced the number of servers by more than 65 percent through virtualization, and the Nexus 5000 solution would also help with its VM-optimized services solution.”

According to Carroll, the combination of the storage area network (SAN) fiber, the Emulex Cards, and the Nexus 5000 have created the perfect solution for the MWE data center. “Prior to having a SAN, the data was predominantly stored on local servers, but now that we deploy Unified I/O through the Nexus, storage that was once on the HP servers is going directly to the SAN,” says Carroll. “We needed a way to speed traffic from Ethernet connections to the SAN fiber, and the Emulex Converged Network Adapters combined with the Nexus 5000s are the perfect solution for us. Many of the applications and server storage is going to be housed on the SAN, and that connection speed, which needs to be high, is key for us.”

Efficient use of bandwidth is another result that Carroll says MWE has experienced from the upgrade. "We've been able to more efficiently utilize bandwidth since moving to the Nexus 5000," says Carroll. "Instead of having two HBAs directed to each specific MDS, they're now being trafficked to the Nexus and then through the trunk link going to the designated MDS for better utilization."

Results

The ability to add more applications in storage is a result of the upgrade according to Carroll.

"The Nexus 5000 and MDS 9513 solutions have helped us facilitate adding more applications in storage," says Carroll. "In addition to our key applications such as our CMS and billing software, we will be directing our document imaging, Exchange, and all email. This gives us true centralization with a much smaller footprint than what we had with the previous data center."

Carroll says the enablement of 100 percent of SAN connectivity was a result of the Nexus 5000 Unified Fabric solution.

"Prior to the upgrade, about 10 percent of our servers were SAN connected, because what we had on our SAN was predominantly email and document management," says Carroll. "But since the upgrade, we have enabled a 100 percent SAN connectivity through a centralized data center that has allowed us to put all of the storage on the SAN and make all of our servers storage-attached."

In terms of return on investment, Carroll says the greatest return that he and his team have seen is high performance for a smaller spend and the consolidation of hardware. He estimates that a standard 40 server redundant design, would have a total cost of over \$100,000. But the Nexus 5000 server redundant design costs half that much at around \$50,000. In addition, the high density of 10 Gbps Ethernet on the Nexus 5020 enabled MWE to deploy a middle of row Nexus 5000 solution with SFP+ Copper Twinax for cost-effective server connectivity.

"It makes sense for us to streamline and have a smaller footprint, and it also makes sense to virtualize servers and take advantage of more processing power," says Carroll. "The return, as I see it, is tremendous when everything is added together. We're consolidating because we can get the same performance and better for a lower cost than doing it the old fashioned way."

Carroll says the Nexus 5000s and MDS 9513s have also helped MWE with their green initiatives.

"Reducing the number of servers and virtualizing them has been a huge benefit to us in terms of power consumption, but we've also benefited from reducing the number of adapters and switches," says Carroll. "With fewer NICs, the server uses less power, and that really does help. By virtue of being able to virtualize and use fewer servers, fewer NICs, less fiber, and fewer blades on the MDS to support our activities, all equates to using less power."

Next Steps

Next for MWE, according to Carroll, is to replicate the new U.S. data center in Europe.

"We're really impressed with our state-of-the-art data center in the United States and would like to follow the same structure for our next data center in Europe, which we plan on deploying in calendar Q2 of 2009," says Carroll. "The European data center will be on a slightly smaller scale than our data center in the United States, but we expect it to have the same leading 10 Gigabit infrastructure in place on the backend for the servers to communicate with one another, especially for quick backups and restores."

PRODUCT LIST

- Cisco Nexus 5000 Series Switches
- Cisco MDS 9513 Multilayer SAN Switches

For More Information

To find out more about Cisco application, storage and switching solutions, please visit

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



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV
Amsterdam, The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

CCDE, CCENT, Cisco Eos, Cisco Lumin, Cisco Nexus, Cisco StadiumVision, Cisco TelePresence, Cisco WebEx, the Cisco logo, DCE, and Welcome to the Human Network are trademarks; Changing the Way We Work, Live, Play, and Learn and Cisco Store are service marks; and Access Registrar, Aironet, AsyncOS, Bringing the Meeting To You, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, CCVP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, EtherFast, EtherSwitch, Event Center, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, iQuick Study, IronPort, the IronPort logo, LightStream, Linksys, MediaTone, MeetingPlace, MeetingPlace Chime Sound, MGX, Networkers, Networking Academy, Network Registrar, PCNow, PIX, PowerPanels, ProConnect, ScriptShare, SenderBase, SMARTnet, Spectrum Expert, StackWise, The Fastest Way to Increase Your Internet Quotient, TransPath, WebEx, and the WebEx logo are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0809R)