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CASE STUDIES

The Benefits of a Data Center Redo

Migration to a Cisco Unified Computing System, coupled with professional services, cuts costs, streamlines management and earns new business for an Atlanta-based law firm.

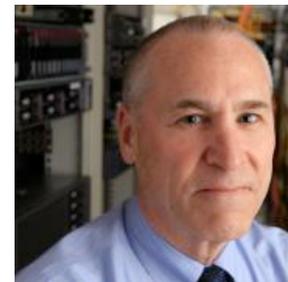
by [Karen D. Schwartz \(/author/karen-d-schwartz\)](#) posted Oct 12, 2011

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Like many law firms today, McKenna Long & Aldridge relies heavily on technology for everything from managing and storing records to quickly serving clients. Paramount to MLA's tech savvy is an IT team on the cutting edge, adopting new technologies as they mature and increasing computing capacity as necessary.

Until 2009, MLA's main data center, located in Northern Virginia, was able to keep up with most of its needs. But as the Atlanta-based law firm began to grow in earnest, it became clear that its data center infrastructure — both the technology itself and the available space — just wasn't keeping pace with the company's expansion.

"We had pretty much maxed out the data center in terms of capacity, scalability, physical space and power," says Bob Lamy, MLA's former chief technology officer. "In addition, the options provided by the host vendor didn't give us the flexibility we needed to grow."



Bob Lamy, former chief technology officer for McKenna Long & Aldridge
Credit Paul S. Howell

The lack of flexibility and agility from its existing data center collocation provider made expansion highly unlikely. The firm's IT team was concerned that its current configuration could not support evolving business continuity requirements. And, the new data center would also need to support the firm's 24x7 operations in North America and Europe.

After briefly considering retrofitting the existing data center, Lamy and his team decided that it made more sense to build a new data center infrastructure from scratch. Reducing costs, supporting 10 Gigabit Ethernet connectivity and accommodating growing data stores were among the firm's goals.

Growing Storage Needs

While a number of factors set MLA on a quest for a new data center, its need to keep up with storage growth, while keeping costs down, proved salient.

Along with its client base, the firm's data growth rate was staggering. The staff uploaded gigabytes of data daily — straining the storage facilities dispersed throughout the firm's nine U.S. offices. Limited scalability options within the existing data center compounded the problem, increasing constraints on both power and space.

A new data center would have to be able to accommodate the vastly expanding stores of data. Shifting from a highly distributed storage network architecture to a more centralized, unified strategy was considered the best way to meet the need.

The 10 Gig-E connectivity was earmarked to provide more flexibility, higher performance and significant cost savings. Rapid provisioning and the ability to support new applications, business models and revenue opportunities were additional reasons for tapping the power of 10 Gig-E.

MLA's management approved the request for a new data center build-out in a new Northern Virginia carrier-neutral facility. The new facility would serve as a primary data center for applications running on the firm's VMware virtualization platform and as a backup site to ensure business continuation in the event of a failure at other MLA facilities.

A backup data center in Atlanta would serve as a disaster recovery site to ensure business continuity in the event of a failure at the northern Virginia production facility. And future company plans called for enhanced business continuity options between the East and West Coasts.

"Since we were already doing a significant amount of virtualization at the old site, we decided that this was a perfect opportunity to set up a new state-of-the-art data center that would increase our efficiency, reduce our footprint and 'future-proof' our IT operations," says Sam Robin, senior network engineer at MLA.

From Vision to Reality

The first step was deciding what technology to port from the existing data center and where it made sense to start fresh with new technology or a new approach.

The firm chose Cisco's Unified Computing System (UCS) for its server and networking infrastructure because a unified computing platform like Cisco's would simplify management while providing the flexibility to grow and change with the firm's business requirements. The new architecture includes the VMware server virtualization platform, for which Cisco UCS is fully optimized.

UCS also provides deep incorporation of a 10 Gig-E unified network fabric ideal for enterprise-class servers, high performance and scalability. Other factors included its single management domain, end-to-end optimization for virtual environments and efficient form factor to help shrink facility costs.

The next step was choosing the right carrier and facility. The team chose Net2EZ, a national provider of network services and collocation solutions, to provide the collocation environment, scalable bandwidth and redundant connections to reliably support the new data center. As a locale, MLA chose a DuPont Fabros collocation facility in Northern Virginia.

Net2EZ now supports the data center and its interconnection with McKenna Long & Aldridge offices around the country. However, the DuPont Fabros location is carrier-neutral, giving MLA the future option of changing carriers without relocating physically.

NetApp's deep integration with VMware, 10 Gig-E support, plus deduplication and replication technologies, made it the best solution to complement the infrastructure and to meet performance and efficiency requirements. The team ultimately chose to structure the firm's unified data management strategy with its unified storage architecture around a NetApp FAS3140 cluster and its NFS and iSCSI protocols to consolidate growing storage requirements.

Today, the VMware-based infrastructure supports more than 200 virtualized servers running on two half-width Cisco UCS B200 blade servers and two full-width B250 blade servers based on the Intel Xeon E5520 (Nehalem) processor. The Cisco UCS connects over 10 Gig-E to a pair of Cisco Nexus 5010 Switches and to a NetApp high-availability FAS3140 Universal Storage System that provides 30 terabytes of storage capacity via NFS and iSCSI to the VMware environment.

The team also has recently implemented NetApp's SnapManager for Microsoft Exchange to protect its Exchange 2010 environment; Enterprise Content Management Suite version 5.2.1; Elite Enterprise Financial Management, WebView and time- and expense-tracking software; plus dozens of business-essential systems running in Microsoft Windows Server 2003 and 2008 environments.

"Initially, with this mix of new technologies, we were concerned with the risk factors," Lamy says. "In our tight timeframe for the move, we could not afford to slow down for any obstacles to integration. But after meeting with Cisco, NetApp and CDW, we decided that this was the technology we needed.

The architecture that was presented looked very solid," he adds. "Furthermore, the risk factors as we learned during the mapping process would be minimal. For the long term, we knew this was the foundation we needed to build on."

The next step was actually moving to the new data center. The Cisco, NetApp and CDW project team worked closely with the law firm's own IT staff to ensure that all components of the new architecture were configured, tested and fully prepared for integration upon

delivery, before the termination date on the expiring collocation contract.

At the same time, MLA's IT staff prepared the site and was on hand to load the equipment into the racks the minute it came through the door of the data center.

Reaping the Benefits

The new data center has already proved its worth in a number of ways:

Data storage: First and foremost, it has allowed MLA's IT staff to keep up with the firm's expanding growth. The litigation department alone is adding gigabytes of information to the firm's data stores every day.

"This data center has given us the capability to deal with that growth, not only because of its increased storage capacity, but because of the virtualization infrastructure it employs," Robin says. "It only takes us minutes to bring on a new server plus storage, compared to the weeks it would have taken us with the old data center."

The new data center infrastructure also makes it much easier and faster to add new capabilities that help the firm grow and become more efficient. Just recently, for example, the IT staff decided to mimic its SharePoint environment for development and training.

Backup and data protection: This has become simpler, more secure and cost-efficient.

"With the new facility, we have the ability to more quickly install telecom circuits that allow us to replicate data from our data center to locations on the West Coast for the purpose of backup and recovery if necessary," Lamy explains. "Previously, we didn't have the ability to replicate gigabytes of data in real time in a safe, secure session."

The NetApp storage infrastructure also provides the scalability to support growth plans for the firm on another level, such as implementing new business models for billing or revenue-generating services like e-discovery litigation support.

"In the past, we had to limit the size of our litigation databases and the total amount of data we could house — restrictions that made it impossible to deliver vendor-class e-discovery services," Lamy notes. "Today, we have both the scalability and performance essential to supporting a capacity-hungry application like e-discovery where court deadlines drive schedules and audit trails are essential."

Service to end users: Capabilities offered to end users — both internal and external — are greatly improved.

"By providing our legal staff with the best level of service we can, they can provide a like level of service for their clients," Lamy says. "This data center gives us the flexibility to do that."

"For example, members of our applications development staff often request resources in order to test new applications and need it delivered on a very tight schedule," he adds.

"With the old infrastructure, a request to test something like our IntApp Wall Builder information security application would have taken weeks while we re-allocated or purchased and provisioned new equipment. Today, we use VMware templates and NetApp technology to provision virtual servers and capacity in minutes."

Smaller footprint and dollars saved: The Cisco UCS/VMware/NetApp infrastructure also delivers enhanced performance in a significantly smaller footprint than the previous systems required.

Essentially, the Cisco UCS collapses many services into a single framework. Its extended-memory blades enable deployment of more virtual machines on a single piece of hardware.

That capability, combined with UCS converged cabling and NetApp storage efficiencies, has allowed MLA to deploy a very productive environment while reducing data center rack space by 60 percent. Lamy estimates that the firm is now saving about \$5,000 per month in facility costs alone.

There are many other cost savings as well, not only in data center real estate, but in power and administrative costs. The Cisco UCS blade server/network system has reduced the power requirements and physical footprint of the data center facility, producing additional cost savings by reducing cooling needs.

And even as more services have been consolidated in the new infrastructure, the IT staff has been able to avoid a full year's worth of capital expenditures on new servers and storage capacity.

Manageability and staff productivity: The automated nature of the new equipment has resulted in a headcount status quo despite growth in computing power.

"The Cisco UCS/VMware/NetApp infrastructure is proving to be in large part a no-touch solution that requires minimal care and feeding," Lamy says.

"We have not expanded our staff of two network engineers who administer the facility, and today they're managing more capacity with time available to focus on higher value-add projects."

Beyond cost reduction, the new data center enables almost instant response to processes such as evaluation of new practice management tools.

"We have been able to scale up our litigation support systems very quickly," Lamy says. "This enables us to move to enterprise models away from the distributed environment we have been operating under for the past several years. As a result, we are seeing much more and much better collaboration between our practice teams who were a little apprehensive about going to a centralized environment in one location."

A Beneficial Move

The McKenna Long & Aldridge law firm has seen many benefits from the new data center, including:

- Seamless weekend cutover to the new data center
- Performance boost with 10 Gig-E (fast storage and processors)
- Avoiding one year's server/storage capital expenditure (CAPEX)
- New revenue streams with scalable capacity
- Expanded infrastructure size/services with flat IT headcount
- Reduced rack space (60 percent) and facility costs

Building a Partnership

Highly coordinated teamwork led to the successful launch of McKenna Long & Aldridge's new data center. CDW's project team worked closely with Cisco, NetApp and the other providers to ensure that all components of the new data center architecture were configured, tested and fully prepared for integration upon delivery.

The technology partner team, working closely with the law firm's own IT staff, plotted a timeline to complete delivery, installation and cutover of data center services ahead of the termination date on the old collocation contract. As CDW coordinated deliveries to the new facility, MLA's IT staff had the site prepared and was on hand to assemble the new data center.

CDW's professional services team provided an onsite engineer to work with MLA's staff on the initial site survey, assuring that power, cooling and other aspects of the location were as needed. Once the equipment was in place, the engineer returned to assist with cabling of the Cisco UCS and NetApp systems, working with the partner representatives remotely to ensure that all of the connectivity was locked in place.

The CDW onsite engineer's primary mission was to configure and integrate the Cisco UCS systems, providing knowledge transfer as he worked side by side with the law firm's team. At the time, MLA was one of the first law firms in the United States to deploy the relatively new Cisco UCS system. CDW's extensive experience with the platform enabled cutover and migration of the data center within five working days from the start of assembly.

"Knowing that we have collaborative support from CDW, Cisco and NetApp helps us sleep a little better at night," says Sam Robin, senior network engineer, McKenna Long & Aldridge.

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