



## NEW ENGLAND LAW | BOSTON UPGRADES CRITICAL EMAIL SYSTEM/SERVICES AND ENHANCES PERFORMANCE—WHILE CONSERVING SPACE AND ENERGY

*The HP server and storage infrastructure gives us higher performance—with the added benefits of a reduced footprint and decreased power and cooling needs.”*

– Nathan Reisdorff, Director of IT, New England Law | Boston

- OBJECTIVE:** Provide a highly available data center to support enhanced email services with higher performance and reliability
- APPROACH:** Upgrade datacenter environment with HP BladeSystem and HP StorageWorks disk array and tape library
- IMPROVEMENTS:**
- Virtualized environment provides 24x7 system availability
  - New high-performance, highly reliable Microsoft® Exchange email solution
  - Easier management with HP software
  - Reduced full backups from three days to 14 hours
  - Faster network cuts user response time from SQL Server databases up to 90 percent
  - Enhanced disaster recovery with HP StorageWorks Storage Mirroring
- BENEFITS:**
- Complete solution from one supplier simplifies management
  - Upgrade supports critical services for students and staff
  - Reduced datacenter operating cost with 30 percent lower power and cooling demand
  - Decreased datacenter floor space requirements by 50 percent with server blades
  - Improved productivity with faster system response to user requests
  - Enables delivery of new solutions quickly and economically
  - Lower power and cooling costs—help reduce impact of 50 percent electricity rate increase

Founded in 1908, New England Law|Boston (NELIB) needed a top-to-bottom upgrade of its aging technology infrastructure as the school approached its centennial—and had to accomplish that task within the limits on space, power and cooling of the institution's compact location in downtown Boston. Top priority was its outdated Novell email system, which broke down regularly.

Director of IT Nathan Reisdorff explained, "Because of the need for a paper trail of documents, for a law school, email is even more critical than telephone. Our professors are working lawyers, and NELIB runs a free legal clinic that focuses on domestic abuse cases. Students and faculty are working, often pro bono, with real clients, on real cases. And if email is down, we might miss a court date, for example, with real-world consequences. In addition, almost all law school student recruitment, admissions, and career services are implemented using the Internet; so if our website is down, we may lose a potential student or a job opportunity for a graduate."

### THE VERDICT IS IN: BLADES AND VIRTUALIZATION

Working with HP Platinum Reseller partner Worldcom Exchange Inc. (WEI), NELIB installed Microsoft Exchange Server 2007 email running on HP server blades. The school uses a BladeSystem c7000 enclosure, populated with three HP ProLiant BL685c server blades with AMD Opteron™ 64-bit processors and five HP ProLiant BL480c server blades with Intel® Xeon™ 32-bit processors. "We wanted 64-bit processors for specific applications to give us better performance," says Reisdorff. "For instance, we run our Microsoft Windows® Active Directory Server on a 64-bit server blade. On the other two we loaded VMware Infrastructure 3 and the Exchange environment on seven virtual servers, giving us load balancing and redundancy. We also have VMware loaded on an HP ProLiant DL380 server as backup for the BladeSystem."

### HIGH AVAILABILITY IS THE LAW AT NEL|B

System storage is on an HP StorageWorks Enterprise Virtual Array (EVA), with a StorageWorks MSL4048 tape library for backup. For fast disaster recovery, HP StorageWorks Storage Mirroring Software replicates data from the EVA to a disk array in another building.

NELIB worked with HP and WEI to make sure the new system met the school's No. 1 priority: highly available email for 1,200 students and 150 staff members. "The new system is up 24x7," says Reisdorff. "The BladeSystem c7000 has redundant power supplies, fans and I/O. We load balance across two servers, and if one goes down we can switch to the other."

With a virtualized infrastructure, Exchange and other applications share servers and storage resources, maintaining a high level of utilization while decreasing costs associated with underutilization and over-provisioning. Plus, if there is a problem with a virtual server, the application just gets reassigned to another virtual server and keeps running.

Virtual servers let the NELIB technology team do maintenance without interrupting service. Reisdorff explains, "To upgrade an application on a virtual server, we just copy the application to another virtual server, where it keeps running as usual. When the upgrade is tested and ready we cut it back over."

Virtualization also gives NELIB the tools to recover quickly after an accident or a virus attack.

"VMware takes snapshots of each machine periodically," says Reisdorff. "If there is damage to a machine, we can go back to an earlier clean version. We also do snapshots of the SAN, using HP StorageWorks Storage Mirroring software, so we can go back and restore the SAN to an earlier point."

### **AN OPEN-AND-SHUT CASE FOR SAVING SPACE AND ENERGY**

"We have eight server blades in the BladeSystem enclosure," says Reisdorff. "These blades take half the rack space eight rack-mount servers would take. We consolidated three racks into one and a half racks – and we have more servers. Our data center is very small, so that is a critical benefit." The server blades also use an estimated 30 percent less energy and generate 30 percent less heat than the same number of rack-mounted servers.

"Our technology staff really likes HP Integrated Lights-Out 2 (iLO 2) Advanced software," continues Reisdorff. "iLO 2 Advanced lets us control the system from out of the office. We have only three people, which made it tough on weekends, holidays and vacations if you had to go into the office to fix something. It's great to be able to make necessary changes remotely."

HP software also simplifies storage management. "With our previous storage solution, there were three different utilities you had to get in and out of just to control the disks," says Reisdorff. "HP EVA Command View software controls the whole storage environment from one screen, and it is very simple to use."

### **SPEEDING UP THE LEGAL PROCESS**

The combination of new HP servers and storage, along with new Cisco switches, a fiber optic network and Fibre Channel connection between SAN and servers has made the network much faster. "The network is very fast now," says Reisdorff. "For example, we see much improved response time from the SQL database. One report that used to take 20 minutes to generate now takes two minutes."

Backups are also faster. NELIB uses Veritas Backup Exec software to back up first to the EVA SAN and then to an HP MSL4048 tape library with LTO-4 Ultrium drives. "Before, it took three days to back up the whole network," says Reisdorff. "When the weekend backup ran into Monday, it slowed down production, so we had to cancel the backup, which had significant risks associated with it. And if someone needed a restore, we may not have been able to provide it. Now we complete the full backup in 14 hours. It starts on Friday night and finishes Saturday morning."

### **USER TESTIMONY SUPPORTS ADAPTIVE INFRASTRUCTURE**

The upgrade gives NELIB an adaptive infrastructure that lets them deliver new solutions quickly and with little additional cost. "For example," says Reisdorff, "we wanted to migrate our ERP system database from Microsoft SQL Server 2000 to SQL Server 2005. Before, we would have had to buy another server, load the application, test it, and then move the data to the new server. With the new HP datacenter environment, we just add a virtual server, carve out space on the EVA, test the application, and turn on the new virtual machine. It's already paid for. We have the disk space already, and creating another virtual server is easy—and free."

HP wins the technology judgment “Four years ago, our network died for five days,” says Reisdorff. “Direction from our deans was very simple: they told us to build a highly available network. But we did not start with HP. We started out using other competitive servers and storage products, and we were not successful. There were communications problems—the servers didn’t talk to the SAN very well, and network administrators needed costly specialized training.” Revisiting the issue, the NELIB technology team looked for vendors who could supply complete solutions—including SANs, blades and networks. “We compared technology and we concluded that HP would be the best fit for us.”

Just as important as technology, says Reisdorff, was HP’s end-to-end capability. “HP is a company that is always improving its products, rather than just commoditizing them. They have the whole infrastructure, all tested together, all under the same name, and it all works together and communicates together. And when we talked to other customers about service, the best recommendations we got were for HP.”

## CUSTOMER SOLUTION AT A GLANCE

Upgraded server and storage in the data center supporting new, critical email application and student/faculty services.

### Primary hardware:

- HP BladeSystem c7000 enclosure
- 3 HP ProLiant BL685c server blades
- 5 HP ProLiant BL480c server blades
- HP StorageWorks Enterprise Virtual Array (EVA) disk array
- HP StorageWorks MSL4048 tape library with LTO-4 drives
- HP LTO-4 Ultrium data cartridges

### Primary software:

- HP StorageWorks EVA Command View
- HP Integrated Lights-Out 2 (iLO 2) Advanced
- HP Systems Insight Manager
- HP StorageWorks Storage Mirroring
- Microsoft Exchange Server 2007 e-mail
- Microsoft Windows Server 2000/2003 operating systems
- Microsoft SQL Server 2005 database
- VMware Infrastructure 3
- Veritas Backup Exec

### HP Services:

- HP Support Plus 24 service

### Why HP?

- HP’s ability to provide an integrated, end-to-end infrastructure solution
- High availability of the HP BladeSystem c7000 enclosure
- High performance of HP ProLiant BL685c server blades with AMD Opteron 64-bit processors

## ABOUT WEI

**WEI is an innovative, full service, customer centric IT solutions provider.**

**Why WEI? Because we care. Because we go further.**


At WEI, we're passionate about solving your technology problems and helping you drive your desired business outcomes. We believe in challenging the status quo and thinking differently. There are a lot of companies that can take today's technology and create a great IT solution for you. But we do more. We go further. And we have the customer, vendor and industry awards to prove it. WEI is a premier technology partner, who always puts our customers first while providing the most innovative solutions for over 25 years.

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## WEI IS A STRONG PARTNER

After selecting HP, NELIB looked for a partner to help them implement a solution, and chose Worldcom Exchange, Inc. "First we met with WEI's designers and product experts," recalls Reisdorff, "and then WEI worked with HP and put it all put together in one package: a complete, integrated, industry standard solution that all works together, with one service contract from one source."

The WEI team also worked with NELIB to make sure the project went as planned. "WEI people were on site with us doing the configuring and the installation," says Reisdorff. "They also opened up their lab to us. We went into the lab and built the system exactly to our specifications. That saved installation time. Unlike a lot of companies, WEI didn't get it almost right and then come back and tweak it. **They got it right the first time.** They were also very cost conscious. Sometimes they were slowing us down, telling us to make sure it is right before we took the next step."

### About New England LawBoston

New England LawBoston ([www.nesl.edu](http://www.nesl.edu)) was founded in 1908 as Portia Law School, the only law school established exclusively for the education of women. In its first century, the school had grown from an institution with a handful of women students to a national law school with 1,200 students, 150 faculty and staff, and approximately 9,500 alumni. Coeducational since 1938, the school was renamed New England School of Law in 1969, and now enters its second century as New England LawBoston