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#### KEY HIGHLIGHTS

##### Challenge

- Older versions of Active Directory and Exchange lacked new features, and would not be supported by Microsoft
- Need to upgrade outdated physical servers
- Need for improved security for remote users

##### Technology

- VMware VSphere 4
- Active Directory 2008
- Exchange 2010
- WinServer 2008
- Fortinet FortiGate-80C & FortiAP-220Bs

##### Results

- Migrate to a virtual environment
- Upgrade to Active Directory 2008 R2
- Upgrade to Exchange 2010
- Introduce a comprehensive firewall
- Set up redundancy using snapshots and failover technology

## Migration from Physical to Virtual Servers; Upgraded Network and Email Management Systems; Improved Security for Remote Users

### Massachusetts League of Community Health Centers

The Massachusetts League of Community Health Centers supports the state's 52 community health centers. Each year these centers serve more than 800,000 people, or 1 in 9 Massachusetts residents. With the League's help, 37 of the health centers have already implemented electronic medical records or are "in process." The League's computer network includes about 50 users: 30 are based in the main Boston office and the other 20 work remotely.

#### Customer Challenge

The League had been using older versions of Microsoft Active Directory and Exchange to help manage and secure its email system and network.

Russ Tyler, Information Systems Manager, explained why the League needed to update. "We wanted access to some new tools available with the new versions of Exchange and Active Directory. Plus, Microsoft was about to stop supporting our versions of the software. That gave us sort of a push."

The League's hardware was also getting older, but purchasing two new servers for just the two domain controllers would have been too expensive. The League also needed to update file and print servers and didn't want to buy new hardware that would be outdated in two years.

Some of the 30 workers in the Boston office are frequently on the road. While they're in the office they use laptops with docking stations. On the road, they needed a secure way to connect with the League's network.

#### Technology Solution

Tyler asked GreenPages to recommend some changes. "GreenPages has the specialists, the know-how, and the real-world experience," said Tyler. "They can tell you, 'These are the best practices. The industry standards are X, Y, and Z.'"

There was a significant cost benefit to virtualizing the servers at the same time the hardware and infrastructure were upgraded, so a whole new virtualized network was built around VMware. GreenPages recommended an upgrade to Active Directory 2008 R2 and created two virtual domain controllers, then migrated the existing 2000 Active Directory from the older physical servers to the new virtual servers. GreenPages also set up another virtual server for Exchange 2010 and a Client Access server, and migrated the Exchange databases from the old physical Exchange 2003 box.

As part of the process, GreenPages provided virtual templates for a Windows 2008 server. These allow the Mass League to spin up and create virtual servers in a matter of minutes.



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The virtual environment was configured to provide redundancy and virtual backup. Now the system automatically takes snapshots of the whole network at regular intervals. Failover technology allows the League’s environment to remain in operation even if several hardware components fail simultaneously.

GreenPages also implemented a Fortinet Firewall, complete with secured building-wide WiFi. The Firewall provides a webfilter, unified threat management, virus protection, application control, data leak protection, and VPN access.

### **Successful Result**

The new software has improved security. Only authenticated computers can access resources on the League’s network via secured VPN connections. Using Active Directory 2008 and WIN 7 machines, the League now has the ability to lock ports on host machines and control desktops.

Tyler appreciated the support provided by GreenPages. “While we were setting this up, we ran into a very rare technical issue, but GreenPages figured it out. I’m glad they had people onsite who really knew what they were doing.” Added Tyler, “GreenPages was always there for follow-through. They kept supporting us even after the sign-off.”

The virtual environment has made it much easier to administer the system, provide redundancy, reduce capital costs for hardware and reduce costs for electricity and cooling required by the server room.