

Greenville Hospital System University Medical Center Implements Tools to Enhance Patient Care

Greenville Hospital System University Medical Center

industry:

Healthcare and Pharmaceuticals

country:

United States

business challenge:

To replace an ageing messaging infrastructure to ensure scalability, as well as security of more than 8,000 email users

solution:

An updated messaging platform with matching client security software on 6,500 machines

services:

- Planning and deployment services for the messaging platform
- Integration and deployment services of the security application

results:

- Scalable messaging platform that allows for future growth in email user base, as well as increased uptime to ensure the productivity of staff
- Improved desktop security for e-mail users and fewer helpdesk calls relating to malware, as well as better performance for desktop applications
- Increased mailbox sizes allow users to search and maintain more email in their inboxes, reducing the need to spend productivity hours managing their messaging

Executive Summary

Greenville Hospital System University Medical Center (GHS) approached its long-standing 'hands-on' implementation partner of over ten years, Dimension Data, **to architect and implement a messaging platform.** The platform is based on Microsoft® Exchange Server 2007 to ensure **almost 100 percent uptime of their messaging infrastructure for 8,000 users.** Dimension Data was also tasked to assist with the implementation of a security tool, Microsoft® Forefront Client Security, to **ensure the security and availability of patient data.**

Client Overview

GHS consists of a multi-faceted group of physicians, nurses, teachers, researchers and other highly-skilled, highly-specialized medical professionals committed to providing the best possible health care for a healthy lifestyle. From preventive medicine and routine procedures to ongoing treatment and complex surgeries, GHS is equipped with the expertise and the facilities to help patients achieve total health.

GHS has an employee count of 8,500 full-time employees servicing five primary hospitals and 200 connected locations consisting of physician practices, emergency centers and specialized facilities.

Business Challenge

GHS utilized Microsoft Exchange Server 2003 as its primary enterprise messaging platform, which ran on a Windows Active Directory platform. It also utilized a Symantec and Trend Micro desktop anti-virus and antimalware protection security tool on their desktops, as well as a blend of security tools in their data centers.

According to Marc Bailey, director of networking at GHS, the hospital had been developing its Exchange infrastructure since the initial version of the platform was released in 1996. GHS wanted to migrate to Exchange 2007 to stay current with the Microsoft environment and to address growth issues around performance. The hospital grew from about 300 to over 8,000 email users since the initial implementation of Exchange 2003.

Bailey says, "Over time, our email needs matured. We grew out of our existing infrastructure and wanted more redundancy, better performance and larger mailboxes for our users. Although we do not use email for moving protected health information, it is the de facto tool for management and departmental communications. The groupware functions of Exchange are vital to the daily running of our business, specifically calendaring, public folders and distribution lists."

In addition, GHS also had performance issues with the security tool it was using on its desktops. The hospital's virus solution burdened the end-user to clean infections. GHS wanted tools to would detect and remove viruses without impacting user performance to allow their healthcare professionals to focus on enhancing patient healthcare.

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Marc Bailey, director of networking at GHS

Solution Delivered

Bailey comments on GHS's relationship with Dimension Data and says,

“We have been working with Dimension Data for the last ten years in developing our Microsoft architecture. Projects include, among others, creating our Active Directory domain, as well as System Center, Exchange and SQL Server integration. Dimension Data also assisted with the network infrastructure of our Cisco environment. We have a very strong relationship with Dimension Data which is getting stronger every day.”

According to Mark Levesque, Microsoft solutions architect at Dimension Data Americas, a specific requirement from GHS for a messaging platform was that it needed to ensure high availability.

“GHS wanted Dimension Data to provide a high availability messaging platform, because it uses the messaging platform as a means to notify healthcare workers in case of emergencies and code alerts. Three forms of delivery mechanisms are utilized which originate from the messaging platform: a pager alert, an email and a notification on the healthcare worker's cell phone,” he says.

To meet GHS's messaging requirements, Dimension Data architected and implemented a highly available clustered Exchange 2007 messaging platform running on Windows 2008. In turn, to ensure desktop security, GHS's IT team performed a trial with Forefront on ten machines. The software had a low impact on the applications on the desktop, and GHS therefore tasked Dimension Data to assist in deploying the software on 6,500 machines.

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How We Delivered

Levesque comments on the Exchange migration and says that it is vital to ensure minimal end user impact with proper planning during the transition phase of the project.

“Proper attention should be given to measure the level of impact before the migration of users' mailboxes takes place from Exchange 2003 to Exchange 2007.”

Dimension Data therefore conducted the migration of Exchange 2007 in a phased approach, which kicked off with a half-day workshop to gather the necessary environmental information. At the workshop, the project team agreed on the future state architecture with additional configuration details, as well as on the planning and deployment schedules.

Bailey comments, “We purposefully designed the environment to be scalable and to expand to multiple locations as we bring the locations online for high availability.”

The planning phase was followed by the deployment of the new Exchange 2007 environment which consisted of one Microsoft Exchange 2007 cluster of two connected to shared storage via fiber channel at GHS's data center. Dimension Data also migrated end users' mailboxes from the Exchange 2003 platform to the highly available Microsoft Exchange 2007 Cluster platform running on Windows 2008 Enterprise x64 bit servers.

“We learned from the implementation of Exchange 2007 that there are very specific architectural design components that you need to follow,” noted Bailey.

“By working with Dimension Data, we were able to address all these components.”

Dimension Data also assisted with the deployment of Forefront to over 6,500 workstations over a period of four nights, using a centralized Forefront Management console and Microsoft® System Center Configuration Manager.

The solutions provider worked with GHS to develop custom scripts to detect and forcibly remove existing AV software while deploying Forefront. Only one percent of the machines required upgraded memory or human intervention to make the product work in what Bailey describes as a ‘flawless’ implementation.

Bailey also comments, “Forefront is by far one of the best anti-virus applications that we have ever used. It is superior to those we have used in the past for both protection and ease of deployment. In short, it just works.”

Value Derived

Levesque comments that GHS is a 24/7 healthcare facility, which means that there is no room for downtime.

“Dimension Data is familiar with the healthcare industry and was able to assist in meeting GHS's requirements from a delivery perspective to ensure zero impact to end users,” he says.

GHS cites that the migration to Exchange 2007 solved issues they had around reliability, performance and disaster recovery. According to Bailey, GHS's email cluster is designed to provide ‘as close as it gets’ to 100 percent uptime. The new Exchange environment also ensures increased productivity for end users and the IT team.

End users now have larger 2 Gigabit mailboxes, which is up to five times more than they had previously. Increased mailbox sizes allow users to search and maintain more email in their inboxes, reducing the need to spend productivity hours managing their messaging. The IT team also experiences better performance of the file server and email environments as it deals with fewer I/O transactions on file servers.

In turn, GHS achieves automatic node failover in less than one minute in the event of hardware failure for maximum uptime.

“They are able to automatically switch to another node failover over 20 Exchange databases in less than 40 seconds,” comments Levesque.

The benefits experienced as a result of the implementation of Forefront include fewer helpdesk calls related to malware and better performance for desktop applications. In addition, GHS now has a seamless update process for desktops so that signatures pushed out daily generate no helpdesk tickets and users barely even know that Forefront exists on their desktops.

Bailey comment, “We have been hit by all three variants of the Conficker worm, and in all three cases, Forefront client security quietly cleaned and removed every instance of the worm that it found without the need for users to be hampered. How can anyone ask for better protection than that?”