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A Sharper Solution

Automating study distribution and routing

The General and Diagnostic Imaging Center and Mary Birch Women's Outpatient Imaging Center at the Sharp Memorial Outpatient Pavilion in San Diego provide an array of powerful medical imaging technologies that allow for more effective, less invasive testing. These and advanced diagnostic capabilities provide accurate and earlier detection of illnesses for patients – leading to better patient outcomes and a more comfortable experience.

The imaging centers offer a no-film environment – complete with a PACS and computerized radiology. Services offered at the centers include CT, fluoroscopy, ultrasound and women's imaging services (mammography, stereotactic biopsy and bone densitometry). The imaging centers serve both Sharp Medical Group and Children's Hospital.

The Challenge

The staff at the Sharp centers provide images to both Sharp Medical Group and Children's Memorial Hospital from modalities that include Stamford, Conn.-based Fujifilm's Synapse; Waukesha, Wash.-based GE Healthcare's scanner; and Andover, Mass.-based Philips Medical Systems' Tesla. Both centers are connected to the two hospitals with high speed fiber (dark fiber) connection.

However, Sharp needed an automated way to send and receive images among the three locations – quickly, and without delay. Since more storage was also needed, Sharp initially looked to a traditional client-server implementation based on its current Windows PACS server.

Sharp soon learned that this approach would require additional license fees for increased storage capacity (due to the vendor's capacity-based licensing model) and for replication software to transfer images to remote sites. Moreover, testing revealed that the Windows-based PACS server lacked the performance needed to transfer images effectively among the centers and affiliated hospitals.

The Solution

Sharp Imaging deployed an early test version of Irvine, Calif.-based Candelis's ImageGrid in February 2004 and found the solution exceeded their expectations after minor software tuning by Candelis engineers. Soon after, Sharp was able to use the rule-based routing capabilities of ImageGrid to send the images to partner hospital sites, as well as route the images automatically to reading physicians based on type and radiologist specialty. Sharp also experienced a threefold performance boost over its Windows-based PACS system using ImageGrid's embedded PACS capability.

Candelis Inc.

The General and Diagnostic Imaging Center and Mary Birch Women's Outpatient Imaging Center at the Sharp Memorial Outpatient Pavilion in San Diego

Location: San Diego, California

Center Services: General radiology & fluoroscopy, mammography, CT, ultrasound. The centers serve Sharp Hospital and Children's Memorial Hospital, part of a seven-hospital organization with over 11,000 employees.

Key Business Challenges:

- Automate routing and distribution of studies to reading physicians and affiliate hospitals
- Provide cost-effective storage expansion for current PACS system

Key Benefits:

- Three times performance improvement over Windows-based PACS server
- Automated, rule-based routing and study distribution within centers and to adjoining hospitals
- Eliminated need for costly replication software throughout the centers and affiliated hospitals

"At first, we installed ImageGrid as a backup to our Windows server. However, the rich feature set, high performance and reliability of ImageGrid soon gave us the confidence to use it as our primary DICOM image server," says Russell Low, MD, director of Sharp Imaging Centers.

Sharp Imaging found ImageGrid offered superior performance and features when compared with more expensive hardware and software-based PACS solutions. "ImageGrid has a complete feature set, and it is very easy to use," says Low.

The Result

The ImageGrid server appliance successfully enabled automated replication and transfer of images among the centers and hospital sites, and it tripled the transfer rate of images between sites. ImageGrid proved to be extremely easy to use, installing easily into existing network infrastructure, delivering immediate DICOM image services to attached workstations. ImageGrid deployment saved Sharp money by eliminating the need for additional servers, added software and capacity-based licensing fees.

Sharp Imaging plans to add another ImageGrid appliance at a new imaging center in the near future.

▸ *Candelis Inc.*