CUSTOMER PROFILE

Center for Diagnostic Imaging

One of the nation's premier outpatient imaging providers relies on an EMC open systems archive infrastructure for a PACS network that spans more than 50 centers and eight states

Founded as a single imaging facility in 1981, Center for Diagnostic Imaging (CDI) today owns and operates 50 imaging centers across eight states. Connected via a common management infrastructure, these linked centers represent one of the most geographically dispersed Picture Archiving Communications Systems (PACS) in the country.

In 2002, CDI consolidated four disparate radiology information systems (RIS), each with a different type of database, into a single RIS environment to simplify management and improve overall uptime for the quickly growing enterprise. By 2003 the company had expanded to 24 centers and deployed an innovative DICOM Services Grid from EMC® Partner Acuo Technologies, LLC, to support CDI's comprehensive range of imaging services.

Offering a high-performance, easily scaled, and open-architected environment, CDI's integrated DICOM Services Grid allows for improved records sharing among specialists and referring physicians and facilitates streamlined workflow management for escalating volumes of medical images across the enterprise. This enables CDI to leverage best-in-class reading workstations, CAD solutions, and other innovative visualization and processing tools as they become available.

In 2005, this infrastructure was further strengthened by replacing tape-based archives with two mirrored EMC Centera® content-addressed storage systems. These active archiving systems provide an open and easily managed online archive solution with petabyte scalability to accommodate the millions of DICOM images in CDI's rapidly growing repositories.

"We believe that an open systems archive approach provides transparency, flexibility, and choice," says Steve Fischer, CIO. "Using an open systems archive enables CDI to separate application and infrastructure."

High-performance image access from EMC Centera

The EMC Centera platform seamlessly operates with AcuoMed Image Manager, which facilitates content and policy-based management of CDI's DICOM data. The AcuoStore Digital Asset Manager supports multi-threaded integration to the EMC Centera platform. Together, the components of this collaborative solution make it possible to automatically and safely migrate PACS images from centers across CDI's widespread enterprise to EMC Centera-based archives every evening.

The EMC Centera platforms currently houses 70 terabytes of images, providing both a backup solution for current studies residing on CDI's tier-one SAN storage, as well as a deep archive for older studies which can be retrieved within seconds from CDI's medical professionals' web portal.

"Before the Acuo and Centera solution, we were telling our doctors that we could get requested images to them in less than 15 minutes from our tape archives," says Andrew Pipp, director of IT operations. "Now they can get their images in a matter of seconds."

Because EMC Centera does not use typical file systems for content storage there are no RAID types to contend with, no LUNs to bind, and content partitioning can be done without the use of standard file systems. In addition, because each file is assigned its own unique address, only one protected copy of any given image is stored. All of these features help simplify system planning and management and drive down costs for archiving CDI's PACS images, which are growing in volume by 10 to 15 percent annually.

"What we like about the EMC Centera is that it acts as a virtual pool of disks," explains James Keller, infrastructure architect for CDI. "We can simply put information into it knowing that it's a secure and redundant storage repository, and it doesn't require the overhead management that a SAN does."

Another feature that helps reduce administration for CDI's IT team is the EMC Centera system's self-healing functionality, which is designed to automatically monitor, detect, repair, or reconfigure the system in the event of a problem or potential issue. It also automatically alerts EMC remote monitoring centers and initiates onsite servicing if a more extensive repair is required.

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To support HIPAA and Joint Commission compliance and allow for consistently dependable disaster recovery capabilities, CDI has set up its EMC Centera systems in a dual configuration where images are replicated nightly between two data centers.

"With this setup we don't have to worry about making a changeover or running off of cold spares," says Keller. "It enables us to run in an active-type environment so we can access any of our disaster recovery images at any time."

Advantages of an open systems archive environment

Since the deployment of the combined solution, CDI has realized greater reliability as well as significant time and cost efficiencies over its previous tape-based PACS archives.

"Centera has proven itself to be a superior solution over tape, especially as we grow," says Pipp. "We have experienced its self-healing capabilities and we know the images are safe, secure, and always accessible. Its low total cost of ownership is also a big advantage. It's simple to manage and provides a platform that is easy and cost-efficient to scale."

Of added benefit is the flexibility inherent to the Acuo and EMC Centera infrastructure, which enables CDI to benefit from new technologies and better accommodate evolving business needs—both valuable assets to a healthcare organization that continues to expand into new product lines and acquire and build new imaging centers across the United States.

"We can incorporate whatever applications or reading stations our doctors want on the front-end," says Keller. "This solution has also enabled us to centralize many of the imaging systems, which means we can easily move a vast amount of studies between one market site and another if needed. Overall, it has given us the edge on how fast we can deploy products and how fast we can change, both highly beneficial in terms of patient satisfaction and business agility."

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