

## UCSF Medical Center, Radiology Laboratory for Radiological Informatics



Sun Enterprise™ Servers and DISC's NearLine Storage at the Core of UCSF Radiology's digital image system.

As part of University of California San Francisco, UCSF Radiology Center is a leading academic health science campus. Known for its innovative research, outstanding education, and clinical excellence, UCSF Radiology is consistently ranked among the top six institutions in the National Institutes of Health (NIH).

Located in Northern California, UCSF Radiology is both a medical school and working hospital. First opening its doors in 1906, UCSF Radiology performs more than 250,000 exams per year.

Recently, UCSF Radiology upgraded its Picture, Archive, and Communication System (PACS). The PACS at UCSF incorporates the radiology and hospital information systems to create an intelligent, integrated patient system. At the core of the PACS are Sun Enterprise™ servers running Agfa Impax software and DISC NearLine Storage Systems.

### The DISC & Sun solution

UCSF Radiology's goal is to always have timely access to digital imagery and patient information. In order to interconnect its database, digital voice dictation system, electronic mail, library information system, and various medical centers, UCSF Radiology needed an open architecture and standardized computer network.

DISC & Sun have been providing leading-edge technology to the medical imaging industry for more than a decade. So it's no wonder UCSF Radiology selected them for the core of its infrastructure.

"I've been working with DISC & Sun systems for more than 11 years. Together, DISC & Sun consistently have strong products that work well in clinically intensive environments. We do a lot of UNIX® tasks, and our core systems need to have multiprocessing and multithreading capabilities. At this point, Sun seems to be the leader in the market," says Todd Bazzill, Computing Resource Manager at UCSF Medical Center, Laboratory for Radiological Informatics.

UCSF Radiology is using four Sun Enterprise 450 servers for its central server, running with UltraSPARC® II processors and four gigabytes of memory per station. For its central Oracle database server, UCSF chose the Sun Enterprise 5500 server for its high performance and outstanding reliability. The current Solaris™ Operating Environment meets UCSF's multithreading and multitasking needs, although plans include an update to the Solaris 8 Operating Environment in the near future. For the storage portion of its PACS infrastructure, UCSF Radiology is using two DISC NearLine Storage Systems. The DISC libraries act as an archive system that stores digital images from multiple sources. Capable of storing up to 18 terabytes of information, the DISC system stores all the university's medical images from the past nine years.

"With the upgraded PACS, we can take all the digital images from every digital modality (CTs, MRIs, CRs, ultrasounds, nuclear medicine, mammographies) and send them to



our central servers (Sun Enterprise servers). Then, the studies are sent to our archive and Web servers as well as being available to retrieve from and displayed at any of our Diagnostic Review Stations,” explains Bazzill.

### How it works

The digital image is transferred from the diagnostic modality (CTs, CRs, MRIs, or ultrasounds) to a Sun Enterprise 450 server, which acts as a gateway. The gateway communicates with a device called a Broker. The information is then sent to the central cache (the Sun Enterprise 450 servers), which allows the display systems to retrieve and view the images on high-resolution monitors located throughout each medical facility. The information is also sent to UCSF’s Web servers so it is available worldwide through a secure intranet. In addition, the image is sent to an archive server (Sun Enterprise 250 server) and is stored to the DISC NearLine Storage System. The DISC libraries archive older files as new ones are created, ensuring that complete patient records are continuously available.

Working with leading medical-imaging equipment manufacturers, DISC and Sun provide the platform for next-generation diagnostic imaging to help deliver a higher level of patient care across the globe.