QUADRO K6000 GIVES VISAGE NEAR REAL-TIME ACCESS TO DIAGNOSTIC IMAGES

Visage Imaging ("Visage") is a provider of diagnostic imaging and advanced visualization software solutions for healthcare institutions worldwide. Leveraging server-side processing, Visage's solutions deliver ultrafast access to multi-dimensional (2D, 3D, 4D) imagery across a range of devices, enabling physicians to access and interpret medical images with greater speed and ease. Visage's leading solution, the Visage® 7 Enterprise Imaging Platform, allows organizations to consolidate what has traditionally required multiple viewers into a single customizable viewing platform—delivering faster, more robust images complete with an incredibly deep set of clinical tools, all from a single viewer. This enables radiologists to deliver higher quality radiology reports, to provide referring physicians premier access to the same set of customizable tools (directly and via the EMR), and lets IT leaders streamline imaging infrastructure and reduce costs. Visage 7 is app-based, rendering images on the server-side using NVIDIA Quadro GPUs and then streaming them via thin-client to Windows and Mac desktops, as well as mobile devices, offering flexibility, security, and scalability.

CHALLENGE

As healthcare continues to experience an increasing frequency of facility acquisitions and consolidation, it is common for a single health system to have acquired multiple hospitals over time, each running a different picture archiving and communication systems (PACS), frequently from different vendors. On the surface, it seems logical for health systems to consolidate to a single vendor solution. However, the cost of change is organizationally disruptive and expensive, particularly in PACS where in recent years the benefits of swapping 'one PACS for another PACS' has not exceeded the opportunity cost of sticking with the status quo.

Visage aimed to develop a platform that would be well worth the change. They were not interested in developing a
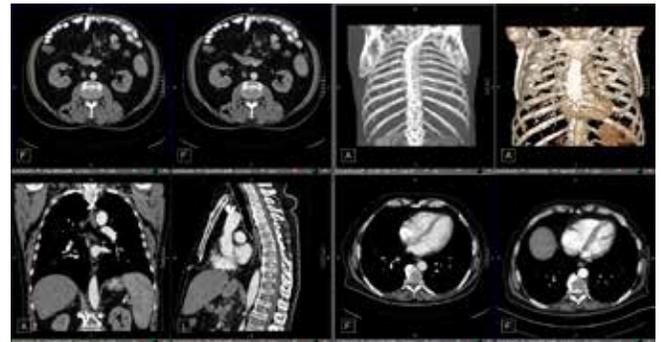

Image courtesy of Visage Imaging

Dual-panel, multi-view workup automatically presented via intelligent display protocal by Visage 7

marginally better platform, but one that offered a tangible, generational improvement over legacy PACS—delivering a single, customizable viewer for users to immediately display any imaging study or studies, regardless of the type or size of the stud(ies), from nearly any location. The Visage engineers believed the key to this flexibility would be to develop a server-side architecture that could be easily integrated into existing infrastructure, and place the heavy lifting of image processing onto NVIDIA Quadro GPUs, removing the processing burden from client devices.

SOLUTION

With NVIDIA Quadro GPUs, Visage is able to make its imaging platform excel in nearly all areas of performance, including raw speed and native multi-dimensional image visualization. Visage 7 leverages NVIDIA's powerful flagship Quadro K6000 GPU to quickly render images server-side and then rapidly streams images to a variety of supported client and mobile devices. A single viewer—an open platform that works with all common diagnostic imaging modalities, as well as non-DICOM images—provides enormous flexibility for radiologists and other physicians across numerous disciplines, and eliminates legacy PACS restrictions such OS, device and browser-specific access

Images courtesy of Visage Imaging

Mobile access via Visage Ease℠, powered by Visage 7 (left) and The Visage 7 Enterprise Imaging Platform (right)

limitations. For instance, users can use the full power of Visage 7 on a MacBook Air, even though the device lacks a dedicated graphics card.

"Visage's server-side processing leverages NVIDIA GPUs to collapse and displace the numerous viewers that institutions use into one incredibly fast viewer, for all physicians, from the most advanced radiologists to general practitioners," said Brad Levin, General Manager, North America, Visage Imaging. "The combination of Visage and NVIDIA make the problems and restrictions of the PACS world a distant memory. It's liberating for users—we eliminate the restrictions they've been dealing with since the birth of PACS two decades ago."

One of the biggest benefits for Visage's customers is speed. Faster rendering and access allows radiologists and physicians to achieve greater productivity—which, in healthcare, is critical. NVIDIA Quadro K6000 GPUs provide an unparalleled 12 GB of memory to render and stream massive imaging studies faster than any other GPU on the market—for example, a 6 GB file for a 3D mammography exam (e.g., Digital Breast Tomosynthesis) can be losslessly displayed and fully interrogated by any supported device in merely 2-3 seconds, even over broadband speeds (6 Mbps or greater). And Visage 7's server-side processing frees up users from the limitations of slow bandwidth connections, leveraging adaptive, intelligent streaming.

"Even if you have a robust Internet connection, say 50 Mbps, and it was working at 100% capacity, it's still going to take at least 17 minutes to load that 6 GB of data," explained Bobby Roe, Director, Solutions Architecture and Customer Experience at Visage Imaging. "That is a tremendously long time for any healthcare provider to sit and wait. That's unacceptable, and the reason why we chose to go server-side with NVIDIA—users don't see functionality or performance differences based on their role, their computing device, their location or their bandwidth. They get the images and all the clinical tools they need, almost instantaneously, whether onsite or remote."

IMPACT

Visage 7's speed and harmonious approach to IT benefits its customers every day. Using Visage 7, institutions can save on overhead for the maintenance, training and support of various viewers and professional-tier thick-client workstations, consolidating numerous viewers, with a single viewer. Individual radiologists read rapidly, from a single desktop—providing faster, more informed diagnoses to referring physicians, with no clinical limitations even when offsite. IT administrators applaud the ability to centralize and scale image viewing with the simplicity of one viewer, removing the complexities, redundancies and restrictions of a hub and spoke multi-PACS network. And for those healthcare institutions that have spread a common EMR across their enterprise, the ability to have the same viewer accessible by referring physicians from the EMR, as well as by radiologists for interpretation, is the optimal state of image delivery.

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Ultimately, the longstanding partnership between Visage and NVIDIA allows them to keep pioneering new enhancements and anticipate graphics demands as new industry trends emerge. For instance, when legacy PACS vendors faced and continue to face staggering challenges to handle the recent boom in 3D mammography, Visage 7 users were rendering and streaming the massive, complex breast imaging studies with ease. As the standards for women's healthcare rapidly change, Visage already has the tools for success in place, supporting the simultaneous display of multi-modality breast imaging presentations.

"There's a reason why we've stuck with NVIDIA for ten years," concluded Roe. "Working closely with NVIDIA engineers, we've been able to optimize our software to work in tandem with the GPU to really deliver this magical experience to our customers. NVIDIA continues to innovate and as the needs of the industry get more demanding, requiring more and more massive imaging studies, NVIDIA has allowed us to stay ahead of the curve in terms of performance. The Quadro K6000 is unbeatable. Our competitors are faced with these enormous hurdles, but we simply continue to add new features and functionality."

To learn more about NVIDIA Quadro, go to **www.nvidia.com/quadro**

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