VDI Customer Case Study

U.S. Army improves patient record access with VDI and Xangati

Summary: To give its doctors more time to treat patients, the U.S. Army converted its desktop health care patient record application system to a virtual desktop infrastructure (VDI) with Xangati VDI Performance Management Solution to assure high performance of the entire VDI environment allowing their doctors consistently fast access to patient record.

Using VDI storage with solid-state and the Xangati VDI Performance Management Solution has reduced login times from 3-to-5 minutes to less than 30 seconds in early implementations.

The Problem:

Army doctors typically have about 15 minutes for each patient. Delays spent logging on to the patient record system means doctors end up spending less time with each patient. The VDI project is part of a pilot program run by eight U.S. Army hospitals.

"*This project was conceived because the patient record system has gotten very slow,*" Lloyd Havekost, virtualization architect for the Army's Medical Information Technology Center (USAMITC), said. "*And it had become very inefficient for the doctors to see patients.*"

The Solution:

"*By bringing VDI into the equation,*" Lloyd Havekost, virtualization architect for the USAMITC, added, "*you give [a doctor] that roaming profile capability … and the patient record system is available to him no matter where he travels within that hospital.*"

Lloyd Havekost said the Army is converting the Armed Forces Health Longitudinal Application patient record system from a standard desktop application to a XenDesktop 5.6-based virtualized desktop. It is part of the Army's Clinical Application Virtualization (ACAV) project. The USAMITC is also working with St. Louis-based systems integrator World Wide Technology Inc. on the ACAV project.

The project takes advantage of tiered storage with RAM, solid-state drives (SSDs) and hard drives. It includes NetApp storage arrays, Atlantis Computing's ILIO Diskless virtual desktop infrastructure (VDI) storage optimization software, Hewlett-Packard (HP) blade servers with SSDs, and Citrix Systems' XenDesktop and XenApp software to virtualize desktops and applications.

The Army deploys ILIO Diskless VDI software on HP BL460c G7 Servers with 100 GB SSDs within each physical host. The servers are connected to racks with NetApp arrays, ranging from 18.8 TB to 72 TB per rack.

ILIO Diskless VDI uses RAM instead of disk drives to boot images in non-persistent Citrix or VMware Inc. VDI deployments. Using RAM speeds performance and reduces the amount of dedicated storage needed for VDI.

Performance Management of the VDI Environment:

Without proactive performance management VDI environments can suffer from indeterminate performance issues negating the benefits of VDI. Each racked system includes Xangati Inc.'s virtual machine performance monitoring software.

The ILIO Diskless software and non-persistent virtual desktops run on the physical host's RAM, while VMware's vSphere server virtualization software and the other applications use the SSDs. That prevents virtual desktops and hypervisors from competing for storage resources. The Xangati software monitors server RAM so it can be reallocated when needed.

> Havekost said he is happy with early results, especially with logon times. *"[It means] less time involved on the desktop and more time for [health care] providers to do their work,"* he said.

To improve connections to remote clinics, Havekost uses Riverbed Technology Inc.'s Steelhead WAN optimization appliances.

Havekost said the addition of SSDs allowed him to use 30% less spinning disk. Using ILIO software with server RAM resulted in another 20% bump in performance, he said. He puts the desktops of typical knowledge workers on the SSDs and uses system RAM for doctors who need to view large and detailed images.

The Fort Carson Army hospital near Colorado Springs was the first hospital to install the VDI racks in late 2012. Fort Carson has approximately 100 health care providers on the VDI system. Overall, the project currently has approximately 600 users. The remaining seven hospitals participating in the project are in the continental United States, Europe and Hawaii (for the Army's Pacific Rim installations). The plan calls for the project to eventually include more than 11,500 users.

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About the Xangati VDI Performance Management Solution:

The Xangati VDI Dashboard is the only live and continuous VDI performance monitoring solution that monitors the VDI environment end-to-end allowing the entire IT organization be proactive in tracking down performance issues impacting end-user experience.

Xangati VDI performance management offers these unique differentiators:

- Live and continuous UI with second by second visualization of all VDI infrastructure components with a "DVR" scroll-bar
- In-memory performance management engine that has an object-handling time at the microsecond level in contrast to database-driven solutions that can only provide post-mortem insights
- End-to-end dashboard tracking clients, desktops, end-users, network, storage, hypervisor activity as well connection brokers, application streaming servers
- Proactive VDI performance health index with alerts that come with DVR recordings showing the source of contention storms in high-resolution detail
- Alert recordings can be shared across the various IT disciplines to immediately remediate issues
- Ability to see guest processes and VDI end-users' activity without the need for guest-level software agents
- Deep storage insights that help you track and plan your IOPS requirements based upon actual activity not just an assessment model
- End-user issues can be tracked through an end-user recording portal that can be integrated with your service desk software

To learn more and sign up for a free 14-day trial visit http://xangati.com/solutions/vdi