INDUSTRY
US Federal Government

LOCATION
MacDill AFB, Florida

KEY CHALLENGES

- Performance of existing virtualized desktop environment was sluggish
- Deployment of new desktop images was time-consuming and labor-intensive
- Desktop and server hardware was reaching end-of-life

SOLUTION
CENTCOM engaged VMware channel partner SAIC, who teamed up with the VMware PSO, to architect and implement a VMware view virtualized desktop environment, including the underlying server and storage infrastructure.

BUSINESS BENEFITS

- Avoided $160 million in extra storage costs
- Improved security through centralized image management
- Reduced user login times from 3-5 minutes to 30-45 seconds
- Cut provisioning times for new images from one week to eight hours

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VMware View on Front Line of CENTCOM's High Availability IT Infrastructure

When CENTCOM replaced an aging and cumbersome virtualized desktop environment with VMware View, it achieved improved manageability, more efficient allocation of storage hardware, and greater efficiency and usability—including a reduction in user login times from 3-5 minutes to 35 seconds.

U.S. Central Command (CENTCOM) is one of 10 combatant commands in the United States military. With facilities in Tampa, Florida and Qatar, CENTCOM's areas of responsibility include many countries in the Middle East, North Africa, and Central Asia, including Afghanistan and Iraq. Two of the U.S. Department of Defense networks that CENTCOM personnel rely on are as follows: the Secret Internet Protocol Router Network (SIPRNet) for transmitting classified information; and the Unclassified but Sensitive Internet Protocol (IP) Router Network (NIPRNet), used for Internet access and to exchange sensitive but unclassified information between internal users.

The Challenge

A few years ago, CENTCOM implemented Quest vWorkspace as a thin client Connection Broker solution.

Although the implementation was considered an overall success, it had manageability and usability issues.

Implementing new desktop images was time-consuming and tedious: rolling out new desktop images to CENTCOM's SIPRNet and NIPRNet networks took about a week per network.

The Storage Area Network (SAN) that supported the solution was not configured to maximize desktop performance. The environment also relied on Microsoft® Roaming Profiles to generate user desktops upon log-in. As a result of these factors, it took users as long as 3-5 minutes to access their desktops. CENTCOM was understandably concerned that the thin clients' sluggish performance could impact users' ability to respond swiftly to military situations.

So when CENTCOM began building a new headquarters facility in Tampa, it allocated budget to upgrade its desktop IT infrastructure, and engaged systems integrator and VMware channel partner SAIC to help.

The Solution

SAIC's first step was to decide whether CENTCOM should stay with Quest or migrate to either VMware View or Citrix as its desktop virtualization platform.

One factor in the decision was that CENTCOM was already using VMware vSphere for its server environment. "About 99 percent of our servers are virtualized," notes Tony Emery, Senior Systems Engineer, Contract Lead, CCJ6-EL CENTCOM Integration Lab (CIL). "And we already had VMware expertise in-house." The team also compared the three desktop platforms' functionality and solicited input from its engineering team.

Upon completing the evaluation, SAIC recommended that CENTCOM move to VMware View. It validated the recommendation with a 100-user pilot, then worked with VMware's Professional Services Organization (PSO) to build a new desktop infrastructure.

The build was a significant undertaking: in addition to migrating from Quest to VMware View, the team upgraded its hardware, including the desktop clients and the underlying server and storage infrastructure, as well as the desktop operating system (from Windows XP to Windows 7). The deployment

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> *"Our desktop systems are as critical to CENTCOM's mission as our F-18 fighters. We have to have 100 percent uptime, and with our VMware View environment, we do."*

Tony Emery
Senior Systems Engineer, Contract Lead
CCJ6-EL CENTCOM Integration Lab (CIL)

VMWARE FOOTPRINT
• VMware View 5
• VMware vSphere 5
• VMware Professional Services Organization
• VMware Technical Account Manager

APPLICATIONS VIRTUALIZED
• Commercial off-the-shelf software applications
• Government off-the-shelf software applications

PLATFORM
• EVGA PCoIP Zero Clients
• HP Thin Client T5730s, T5740s, and GT7720s
• Dell PowerEdge M610 blades
• EMC Symmetrix DMX-4 storage
• Cisco networking technology
• Microsoft® Windows 7
• Microsoft® Application Virtualization 4.6
• Symantec Altiris
• Microsoft® Windows 2008

is also a large one: when complete, CENTCOM's VMware View environment will support as many as 10,000 virtual desktops across its two networks in Tampa and Qatar.

For desktop hardware, the team selected EVGA PCoIP Zero Clients. For servers, it deployed Dell PowerEdge M610 blades, and for storage, EMC Symmetrix DMX-4 systems.

VMware's PSO assisted the deployment in a number of areas. It developed custom scripts to automate user logins and support more effective load-balancing within the VMware View environment. It worked with consultants from EMC to optimize the deployment's SAN architecture.

The VMware PSO also worked with EVGA to enhance its zero client hardware: EVGA added functionality to enable the clients' small form-factor pluggable (SFP) port to automatically detect network speed. The new port, which is now commercially available on EVGA PD05 zero clients, makes it simpler for CENTCOM to procure and use its desktop hardware, because the same client works automatically on any of its networks.

Business Results & Benefits

CENTCOM's VMware View infrastructure benefits the organization in a number of ways.

The VMware View environment makes more efficient use of CENTCOM resources than its old Quest infrastructure, because it requires less SAN space. This minimized the environment's storage requirements, helping CENTCOM avoid as much as $160 million in hardware costs.

The VMware solution allowed CENTCOM to standardize its desktop deployments. About 60 percent of its users now receive a standard VMware View delivered desktop image. As a result, it's easier for IT to manage the environment. This, in turn, enhances the security of the desktops, because should a user accidentally move information to a lower-classified network, CENTCOM can correct the mistake remotely. "It's significantly faster than sending desktop maintenance personnel out to wipe or replace physical hard drives," Emery notes.

Another benefit related to security is that with the zero clients, no data is stored locally at the end point, (data-at-rest).

Provisioning new desktop images is easier. Instead of taking a week per network, CENTCOM can now deploy new VMware View desktops across its entire infrastructure in about eight hours.

The improved manageability has enabled CENTCOM to reallocate technicians from PC support to other tasks. It's also improved the user experience. Before thin client, if users needed new applications, it could take 3-5 weeks for their requests to be processed. Now they call CENTCOM's help desk, and new software can be added to their desktops within minutes. "User uptime is better because now they always have the applications they need to do their functions," says Emery.

Another significant improvement to the user experience is that, instead of taking 3-5 minutes to log in, users now get their desktops in 30-45 seconds. Another improvement for the end-user experience is superior application compatibility and performance due to the integrated virtual 3D graphics card. This is particularly important to CENTCOM's mission, because its personnel must be able to respond in real-time to military situations.

Also critical to CENTCOM's mission is that the VMware View environment is robust and delivers high availability. "We have to have 100 percent uptime, because the lives of our troops and our coalition troops may depend on it," Emery says. "Our VMware View desktop environment delivers the availability and fast response times that we need to support the CENTCOM mission."

Looking Ahead

CENTCOM continues to roll out VMware View desktops, with more than 10,000 desktops being deployed over time.

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