



The United States Marine Corps Global Command & Control System – Joint (GCCS-J) service offers vital connectivity to the systems used to plan, execute, and manage military operations for the Marines' joint and multinational operations. GCCS-J fuses select command and control (C2) capabilities into a comprehensive, interoperable system by exchanging imagery, intelligence, status of forces, and planning information. Kyle Graves is a civilian IT project manager for the GCCS-J service. He and his team of three IT professionals, based in Oahu, Hawaii, manage the C2 systems for the Marine Corps' Pacific region, covering the West Coast of the United States to Japan.

## The Challenge: Replacing Obsolete and Unreliable Storage Systems

GCCS-J had been relying on three physical Dell 2950 servers and an aging NetApp FAS270 system running Windows XP. "When I started this job three years ago, everything was still physical," explained Graves. "Our NetApp FAS system was reaching end of life. It was failing on a regular basis, and we couldn't buy replacement hard drives from NetApp any more. The Windows XP operating system was no longer supported, and the Department of Defense (DoD) had just issued a mandate that all divisions had to migrate to Windows 2008R2 servers. Since we knew we had to upgrade both our OS and storage environment, we decided it was the perfect time to virtualize all of our workloads and launch our new VDI project to support our ground troops."

## The Solution: Tintri VMstore T820 Hybrid Systems

Graves and his team looked at storage solutions from NetApp, EMC, and Tintri. "We started by evaluating the NetApp systems, since NetApp has always had a huge presence within the DoD," Graves explained. "But Tintri had a much better solution for our needs. Tintri's VMstore hybrid storage provided the higher performance we needed for VDI, and its dedupe and compression stats were beyond impressive. The logical to physical storage that VMstore offers for the price point is unmatched in the industry. That's why we decided to go with VMstore."

### Easy Deployment

The US Marine Corps purchased two Tintri VMstore T820 systems – one for all virtual workloads at headquarters, and a second system offsite for disaster recovery. Graves and his team deployed the VMstore systems at the GCCS-J headquarters in Oahu. "We saw a demo of VMstore at a tradeshow and were quite impressed," said Graves. "We also liked the fact that VMstore works natively with VMware, which is the basis of all of our virtual infrastructure. Since VMstore doesn't use iSCSI, the deployment was extremely simple. I had the first system up and running in under eight minutes. That was amazing since it used to take 5 to 7 days to deploy and STIG the Dell or NetApp systems. Our SQL databases, vCenter, connection broker, domain controllers, DNS, and IPAM management service are now virtualized, and everything resides on the same VMstore system."

### Launching VDI on VMstore

The VMstore T820 enabled the launch of the Marine Corps' new VDI deployment. "We were the first group within the Marine Corps to deploy VDI in a production level environment," noted Graves. "We have VDI users in Japan and California running off the storage here at headquarters. We now have 100 virtual desktops that are used by government civilians, contractors, and active duty Marines. We use them here at our headquarters, and I just put one in Yuma a few weeks ago for the Marines Aircraft Group (MAG). With VMstore running our VDI environment, our troops can pull their entire desktops up quickly from wherever they are. That's pretty impressive, since storage is generally the "bottleneck" with most VDI deployments."

## Challenges

- Storage systems at the United States Marine Corps (USMC) Global Command & Control System were reaching their end of life and could not deliver the performance and reliability to support the new VDI environment

## Solution

- Two Tintri VMstore T820 hybrid systems

## Results

- Reduced monthly storage management overhead from 10 hours to 30 minutes
- Slashed storage deployment time from several days to eight minutes
- Enabled the launch of critical VDI service for deployed troops and headquarters personnel
- Delivered the higher performance required for VDI

### Simpler Management

The Marine Corp noted the difference in user experience between standard infrastructure and intelligent infrastructure. "Management and patching on NetApp involved a very convoluted and time-intensive process, since we didn't purchase Web licenses for the FAS 270s," explained Graves. "NetApp offers that now with a centralized management console, but ours was only a command-line interface. It used to take hours to take down the hard drive and rebuild something on NetApp. The VMstore systems can easily be managed from the Web and vCenter. We now spend just half an hour a month managing VMstore, versus 10 hours a month on NetApp. To be honest, I never need to touch the VMstore unless there's an update or a patch I need to send."

### Better Performance and Great Compression Ratios

"With VMstore, storage is never the bottleneck for us," said Graves. "I don't have to worry about the storage anymore. We haven't had any downtime at all since moving to VMstore. The controllers fix themselves if anything happens. The fault tolerance resets itself, it's doing what it's supposed to do. Plus, VMstore's de-dupe and compression results are also great."

### Future Plans

The VMstore systems are working so well that the Marines just issued a purchase order for 16 additional units. "The VDI deployment wouldn't have happened without the VMstore systems," concluded Graves. "Tintri is a premier technology-based company that is offering an excellent product at a great price point. It was a great choice of platform for our virtual deployments."

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*Kyle Graves, IT project manager for the GCCS-J service*

Experience Different! For more information on how Tintri VMstore can turbo-charge your business success through a simple, Intelligent Infrastructure, visit [tintri.com/vmstore](http://tintri.com/vmstore).