Corona-Norco Unified School District eliminates storage silos with HPE Nimble Storage

HPE Nimble Storage solution scales to over 3,000 concurrent VDI users

“The single HPE Nimble Storage array outperformed over half of a rack of EqualLogic by a factor of two. We were absolutely floored at the difference in performance between the two platforms.”

– Brian Troudy, Director of Networking and Infrastructure, Corona-Norco Unified School District

**Objective**
Upgrade to a more powerful, scalable storage platform in order to significantly expand the VDI environment for 53,000 students, as well as the school district’s clerical and administrative staff.

**Approach**
Implement HPE Nimble Storage Adaptive Flash storage systems to ramp up the VDI environment from 500 seats to 3,000 concurrent users.

**IT Matters**
- Obtained twice the performance with one HPE Nimble Storage array than half a rack of EqualLogic systems
- Scaled VDI deployment to over 3,000 concurrent users (and growing)

**Business Matters**
- Achieved 6:1 reduction in storage management costs
- Obtained over a 50% reduction in infrastructure costs
The Corona-Norco Unified School District

The Corona-Norco Unified School District (CNUSD) consists of thirty-four elementary schools, eight intermediate/middle schools, five comprehensive high schools, a middle college high school, and two alternative high schools. CNUSD and has been providing quality education to the students of the Corona and Norco area for over 125 years. It is now the largest school district in Riverside County and the tenth largest in California, serving over 53,000 students.

IT Challenges

CNUSD’s IT team implemented a virtual desktop environment using VMware® Horizon™ and Dell EqualLogic storage systems four years ago. “Even though we had half a rack of Dell equipment, we were struggling to get past the 500 concurrent VDI desktop mark,” noted Brian Troudy, director of networking and infrastructure for the Corona-Norco Unified School District.

CNUSD virtualized its environment using VMware vSphere® and VMware Horizon with non-persistent virtual desktops for all users. “The majority of our VDI users are students,” Troudy explained. “Our younger students use a variety of flash-based web applications that teach them to spell and type. The majority of our high school students use our MS Office productivity suite. Many of the more advanced students are also coding, using CAD/CAM applications, and 3-D animation suites.” Since the Dell equipment was due for a refresh, Troudy and his team decided to look for a more powerful storage platform that would enable them to significantly expand the VDI implementation.

Choosing HPE Nimble Storage

“Several of our colleagues suggested that we look at the HPE Nimble Storage Adaptive Flash storage systems,” reported Troudy. “We decided to test an HPE Nimble Storage array so we could see how it performed in our VDI environment. The single HPE Nimble Storage array outperformed half a rack of EqualLogic by a factor of two. We were absolutely floored at the difference in performance between the two platforms.”

After the successful test in the VDI environment, CNUSD purchased an HPE Nimble Storage solution with three arrays for the production site, and an additional array for the District’s disaster recovery center.

Better Performance Enables VDI Expansion

With the great performance of the HPE Nimble Storage solution, CNUSD’s IT team was able to quickly ramp up the VDI environment from 500 seats to 3,000 concurrent users. The additional virtual machines will be used by the District’s clerical and administrative staff. “We moved all of our server workloads over to the HPE Nimble Storage arrays, including our virtualized file servers, application servers, and SQL servers,” said Troudy. “HPE Nimble Storage is now the only storage platform in our data centers.”
Customer at a glance

Solution
Virtual desktop environment solution using HPE Nimble Storage Adaptive Flash storage systems

Hardware
- HPE Nimble Storage Adaptive Flash Arrays

Software
- HPE InfoSight
- VMware Horizon
- VMware vSphere

Obtaining a 50% Reduction in CapEx
“This VDI deployment is a full desktop replacement solution for us,” said Troudy. “We deployed 5,500 zero clients — which means 5,500 physical desktops were displaced by this technology. As a result, we obtained over a 50% reduction in infrastructure costs alone with the VMware® and HPE Nimble Storage solution.”

Cutting OpEx by 6:1
The HPE Nimble Storage arrays are much easier to manage than the previous Dell EqualLogic devices, according to Troudy. “We were able to go from three dedicated IT staff that managed the Dell EqualLogic environment and physical desktops, to just one half-time admin with the HPE Nimble Storage solution. The new solution is so easy to use that we were able to reallocate those administrators to more strategic tasks in our IT department.”

The CNUSD IT team is now using HPE InfoSight to monitor and manage the infrastructure. “We use HPE InfoSight primarily to track usage so we will know when to add more performance or capacity,” Troudy noted. “We use it for VDI monitoring as well. We like the proactive alerts for monitoring system health, and all of the analytics help us identify any factors contributing to any performance or latency issues.”

Future Plans
CNUSD is now working on a project to expand the use of VDI to all 50 district campuses. “Our goal is to get every front-office desktop, whether it’s administrative or clerical, over to VDI. After that, we will replace any physical computers that are still being used by students in the classroom with virtual systems. All of this expansion has been made possible by using the HPE Nimble Storage solution,” concluded Troudy.

Learn more at hpe.com/storage