

Steward Health Upgrades to Dell EMC VPLEX VS6 to Improve Patient Care and Handle Massive Growth



Healthcare

United States, Malta

Business challenges

- 30 percent year-over-year data growth required a long-term solution for continuous data availability and mobility
- Monthly maintenance window resulted in four-hour downtime of critical MEDITECH EHR system, negatively impacting patient care

Solutions at a glance

- Dell EMC VPLEX VS6
- Dell EMC storage
- Dell EMC software
- Dell EMC Professional Services

Business results

- Elimination of monthly MEDITECH downtime, improving patient care
- Seamless storage array migration and workload mobility
- Continuous data availability

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Michael Hale, Executive Director of Enterprise Architecture, Steward Health

An innovative, growing health care company

Steward Health Care is the nation's largest private, for-profit hospital operator with 36 community hospitals across nine states and in the country of Malta. With a passionate focus on high-quality care, innovative services, and community commitment, Steward is not only transforming health care in the cities and towns where it operates but is also building a new industry model for the rest of the country.

From 2017 to 2018, Steward Health experienced rapid, enormous growth—quadrupling in size through the acquisition of several hospitals. According to Michael Hale, Executive Director of Enterprise Architecture at Steward Health, there is more growth on the horizon. “It’s an exciting time,” he says. “We’re constantly coming up with technology-based and -enabled innovations, while keeping up with the needs for growth and integration.”

Upgrading for the future

In 2015, Steward Health implemented a Dell EMC VPLEX VS2 system in a local configuration to serve its ten hospitals, all located in Massachusetts. It immediately realized the benefits of high availability and migrations with minimal downtime. The company’s end plan was to move to a two-site colocation metro configuration—for true high availability, realtime replication, and the ability to run its most important Tier 1 systems “hot-hot” out of two sites. In late 2016 and early 2017, as the colo facility was coming online, the company realized that it needed to plan for future growth and decided to upgrade from VS2 to Dell EMC VPLEX VS6 Metro in order to be prepared for whatever happened next.

“At the time, staying with VS2 would have been fine,” explains Hale. “But with the direction the company had taken and what we were hearing about the future, we expected workloads to explode. Once VS6 was released and we learned that the performance was roughly four times the capacity of VS2, it was a no-brainer for us. We realized we needed to prepare for future growth—and made sure we got the technology and infrastructure pieces in place while we had the opportunity to do so.”

Steward Health implemented two VS6 systems—one at each location—in a metro configuration. VS6 provides

connectivity and data protection for all of Steward Health’s storage, which is exclusively Dell EMC. The company’s storage includes several Dell EMC VMAX All Flash arrays for its main enterprise electronic health record (EHR) application, MEDITECH 6.1; Dell EMC XtremIO and Dell EMC Unity for mid-tier storage; Dell EMC Isilon arrays for file-shares, home shares, and the PACS environment; and Dell EMC Atmos. VS6 currently manages seven arrays and three petabytes of block data as compared to the three arrays and 1.5 petabytes that VS2 managed at the beginning. Dell EMC CloudIQ enables the company to view the overall status and wellness of its Dell EMC storage platforms.

Steward Health also leverages Dell EMC Data Protection and Dell EMC Data Domain, Dell EMC Storage Resource Manager for management, and Dell EMC PowerPath for multipathing.

Dell EMC Professional Services assisted Steward Health with the upgrade through the Upgrade for VPLEX VS2 to VS6 Hardware Engine service—from the planning phase and making sure the environment was well positioned for the upgrade to getting the required pieces delivered on time and being on site for the upgrade.

“Dell EMC Professional Services was with us every step of the way and really helped with a smooth transition and execution of the upgrade. The upgrade only took a few hours. Everything went very smoothly and quicker than I thought. It was fantastic,” says Hale.

“That’s the real value to us—continuous availability of MEDITECH and no downtime for our caregivers. With VS6, we can maintain our environment in a way that is completely seamless and invisible to users.”

Michael Hale

Eliminating monthly MEDITECH downtime improves patient care

The greatest value of VPLEX to Steward Health is that it will enable caregivers to improve patient care by eliminating its maintenance downtime window. Once a month, the company's EHR, MEDITECH, is unavailable for four hours during this maintenance window. During this time, medical providers must utilize downtime procedures. This means that instead of working from their in-room or on-wheels computer kiosks to check medical histories, enter vitals, or place pharmacy orders while face-to-face with patients, doctors and nurses instead must go to dedicated computers at the nurse's station, log into a third-party application, and perform these tasks away from the patient. The information is then resynced after maintenance is complete. The procedure has a negative impact on caregivers' workflow and ability to care for patients.



"Anything with that kind of impact, aside from the frustration and inefficiencies that come along with it, takes away from the caregivers' ability to care for patients," says Hale. "We want to do everything possible to minimize the impact IT has—we want IT to be an enabler, not a hindrance to patient care."

Once VS6 is clustered across the two data centers, and MEDITECH is replicated between two arrays, the monthly downtime window will be eliminated or virtually eliminated. The goal is to make it so caregivers will no longer have to go to downtime procedures.

Hale states, "That's the real value to us—continuous availability of MEDITECH and no downtime for our caregivers. With VS6, we can maintain our environment in a way that is completely seamless and invisible to users."

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Enabling continuous availability, storage array migration, and workload mobility

Eliminating MEDITECH downtime isn't the only reason Steward Health is a fan of VS6. First and foremost, VS6 provides continuous availability, storage array migration, and workload mobility.

Hale and his team have not experienced outages since implementing VS6, but he is confident in the ability of VS6 to handle any outages that may happen in the future.

“That’s what VS6 is there for,” he says. “We have our live data protected and being written and replicated between two arrays in two different sites. It’s realtime—sub five milliseconds across the two sites. Our EHR application integrity, fault tolerance, and consistency—all of that availability is enabled through VPLEX.”

Steward Health has leveraged VS6 storage array migration and workload mobility from the start, migrating between arrays and between data centers with little or no downtime.

“The migrations that we’ve done are in the petabyte range and have been done seamlessly,” explains Hale.

“That’s the biggest bang for our buck so far. We set up the storage, configure it to be replicated and available on different arrays at different sites, and can have it synced up and cut over without anyone noticing. If we had to migrate using other technologies, we’d probably have to take significant downtime.”

He continues, “The ability for us to dynamically reallocate workloads and move them across the data center floor or across different locations, and to finish up during the day before we go home, that’s priceless for us. We get more hours back in our day and we don’t negatively impact patients or caregivers. All of these incredibly technical activities that go on behind the scenes in infrastructure world are invisible to them and they are oblivious to what’s going on.”



Handling future growth with ease

Steward Health has experienced 30 percent data growth year over year and expects the company to continue to grow astronomically. Hale says the combination of VPLEX and VMAX will make that growth easy to handle.

“Growing the VMAX environment is easy thanks to the new architecture. I can just add more VPODs—another set of engines with sets of disks in a very predictable manner. The key to it is all VPLEX. With VPLEX, I don’t have to worry about any kind of work at the array level. Even if I need to take an entire array down to do another upgrade—I can swing that workload over to another array temporarily. VPLEX provides us with the amount of workload capacity and data protection we need for the future. I can’t imagine us exceeding the capabilities of VS6.”



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