DATACORE™

ABOUT THE CUSTOMER

Owned and operated by Deanco Healthcare, LLC, Mission Community Hospital is a 145-bed short-term acute facility providing high-quality, affordable healthcare in the San Fernando Valley community for more than 50 years.

CHALLENGES

No capacity management or storage provisioning strategy created complexity and inefficiencies at the hospital. There was always the need for more capacity, more disk space within the direct-attached storage environment. The data center was out of date, running on older servers. There were some virtualized VMware servers; however, even those virtualized servers were supported by direct-attached storage. There was a small IT staff and budget, so the solution needed to be cost-effective and one that enabled easier management.

SOLUTION

Two copies of DataCore SANsymphony™ storage virtualization software running on a Dell R720 server with 128Gbs of RAM and 2 six-core processors in each – along with 4 fiber Qlogic NICs in the servers, plus 2 1Gb NICs.

RESULTS

Mission Community Hospital now has the business continuity it needs by eliminating downtime with a high availability storage virtualization solution. In addition, all major applications experienced significantly better performance from virtualization. The DataCore solution also enabled the IT team to leverage legacy storage and be well-positioned for future growth. The software-defined infrastructure allowed for simplicity of management and ease-of-use combined with cost-effectiveness and overall application performance improvement that supports the hospital's future growth initiatives.

DataCore is managing all of Mission Community Hospital's fiber-based storage. All legacy storage will also be brought in to run under DataCore in the future.

Mission Community Hospital®
Compassionate Healthcare. Quality Healthcare.

Mission Community Hospital

One Software Platform Unifies All Storage Resources

MOVING TO THE FUTURE WITH A FLEXIBLE, SOFTWARE-DEFINED STORAGE SOLUTION

"Prior to DataCore, data storage was always a headache," explains Dustin Fennel, chief information officer at Mission Community Hospital. *"We always needed more disk space, we were always looking for more capacity, and the whole capacity management and storage provisioning process was very disjointed. Our environment was one with a lot of direct-attached storage."*

Mission Community Hospital had multiple older servers where the storage disks resided within the older servers. Before implementing DataCore software, the hospital used VMware's server virtualization, but even these virtualized servers were each supported by their own direct-attached physical storage.

"The harsh reality was that you could walk into our data center, look in the racks and say 'that is a project in need of undertaking – and there is a system from the eighties,'" noted Fennel.

THE CHALLENGE: LACK OF A STORAGE STRATEGY CREATED COMPLEXITY

Before Fennell came on board, the hospital's IT Department was never afforded an opportunity to pursue a more strategic way of storage management and provisioning to increase the productivity and efficiency of deploying and administrating their systems. Fennell underscores the point that there was not a storage strategy in place; storage was an afterthought, which made things more complex and unstable.

Fennell is also quick to point out that funds were very limited and the department had to be wary of spending. As a community hospital, Mission Community Hospital cannot afford a large IT staff. The top priority was health, not IT. As a result, the internal IT staff consists of only a director of IT and a network administrator. These two people have the responsibility to manage, deploy and keep all of the hospital's IT systems up to date, including the server backend, the associated storage, the network layer and many other IT administrative functions that are tied to all the different IT systems.

> *DataCore centralizes and consolidates storage management across Mission Community Hospital's various storage devices. These include Dell Compellent, X-IO ICE and other assorted equipment. We are able to buy the types of storage we need – ranging from basic to faster fibre-based arrays without having to learn a new management system for every model.*
>
> – Dustin Fennel, chief information officer at Mission Community Hospital

SOLUTION: AN OPEN, COST-EFFECTIVE SOFTWARE-BASED STORAGE ARCHITECTURE TO UNIFY STORAGE RESOURCES

With DataCore SANsymphony™ now in operation at Mission Community Hospital, storage management is less labor-intensive, systems are easily managed and data is simple to migrate when necessary. The overall cost effectiveness of the DataCore storage virtualization software platform and DataCore's ability to make the physical storage completely "agnostic" so that hardware is interchangeable are just two of the great benefits for the hospital's IT team.

"Now with DataCore, I do not have to buy tier-one storage everywhere to fulfill all of my storage needs," explained Fennell. *"I can buy tier-one storage for the mission-critical systems. For tier three, I can use older storage – for instance in a development environment – or to offload images or to do disk-to-disk backups."*

"Because we are not tied to a particular vendor," said Fennell. *"We can always just get the best storage for what we are trying to accomplish – whatever makes the most sense in terms of price point."*

DATACORE SOFTWARE DELIVERS HIGH AVAILABILITY AND BUSINESS CONTINUITY

DataCore Software provides high availability (HA), another big benefit for the IT team. Mission Community has two redundant DataCore storage virtualization platforms residing on servers that are synchronously mirrored and enable HA – particularly for the hospital's electronic health records (EHR) system and other key systems that reside on the DataCore-powered storage platform.

The most significant benefit of HA is business continuity. Particularly for a hospital, business continuity ensures that doctors and nurses who are providing patient care are uninterrupted in their daily tasks.

"Any downtime would negatively affect patient care. Eliminating downtime has been a big advantage, and downtime was a big issue before DataCore," added Fennell. The current amount of raw storage that the DataCore SANsymphony storage virtualization platform manages is nearly 80 terabytes (TBs) which is expected to continuously grow.

Fennell says, *"Our ultimate plan is to put all of our storage under the same umbrella and have it managed by the DataCore virtualized storage platform."*

MIGRATION TO A UNIFIED, HIGH-PERFORMANCE DATA STORAGE INFRASTRUCTURE

As far as migrating legacy systems onto to the DataCore virtualized storage platform, IT director Eric Rivers described the process as "straightforward."

The IT team at Mission Community Hospital brought in DataCore reseller Thin Client Computing (TCC) as a trusted IT advisor to set up DataCore with X-IO storage running on the backend. TCC set up a VM farm in order to remove the legacy systems and migrate these onto DataCore.

"The act of simply installing and configuring DataCore at Mission Community Hospital instantly transformed the entire storage and virtualization environment into one unified, higher performing, redundant and easy to manage system," said **Steve Greenberg,**

IT ENVIRONMENT DESCRIPTION "AT-A-GLANCE":

- **Number of Users:**
  > 1,400
- **Managed Capacity**
  80 TBs
- **Number of Virtual Servers/Hosts**
  200 virtual servers; 20 hosts
- **Primary Server Vendor**
  Dell
- **Storage Vendor**
  X-IO and many various others depending on "tier" of storage
  Server Virtualization Platform / VMware
- **Software-Defined Storage/ Storage Virtualization Platform**
  Two copies of DataCore SANsymphony software each running on a Dell R720 server with 128 Gbs of RAM & two six-core processors in each – along with four fibre Qlogic NICs in the servers, plus two 1 Gb NICs. DataCore is managing all of Mission Community Hospital's fiber-based storage. All legacy storage will also be brought in to run under DataCore in the future.

  "By having infrastructure that both scales out and scales up to meet the needs of our growing organization, we avoid having to rip out IT solutions, just to buy others. What's more, we don't have to learn other technologies and management systems all over again." - Dustin Fennel, CIO at Mission Community Hospital

principal architect at Thin Client Computing. As Rivers noted, *"Once we had the VM farm, we just used VMotion to move the VMs and their storage over to the new DataCore-powered infrastructure."*

With the physical servers available, as a result of creating virtual servers, the IT team repurposed those (if they were relatively new servers) in the VM farm running behind DataCore. *"It was a 'daisy chain' effect – take what was running on one physical server, migrate it to a VM, decommission the server, re-commission it and repurpose it,"* explained Fennell.

THE POWER OF INTELLIGENT SOFTWARE: BETTER PERFORMANCE FOR ALL MAJOR APPLICATIONS WITH VIRTUALIZATION

Shortly after the DataCore and X-IO implementation, Mission Community Hospital implemented & virtualized a new CareStream PACS (picture archiving communication system). In fact, all applications are now virtualized according to Fennell.

"We now have a primary and backup PACS that is totally virtualized," noted Fennel.

"And the fact of the matter is that our contacts at CareStream – who advised us initially against virtualizing it because of the perceived 'extra layer' that virtualization adds – cannot believe how well it runs and that performance has actually improved substantially through the combined use of DataCore and VMware virtualization."

Real storage with real speed has been welcomed at Mission Community Hospital. Even the physical PACS server received what end-users described as a significant increase in performance when it became part of the virtualized environment.

READY FOR THE FUTURE: A SOFTWARE-DEFINED DATA CENTER THAT SCALES OUT AND UP

Currently, the hospital is preparing to implement a fairly large document imaging system, which will serve as an archive of the hospital's EHR system. To accommodate this new initiative, the IT team had to physically move some devices around in the data center. Because of the software-based storage architecture, X-IO backend storage and the VMware virtual servers, the hospital's IT systems experienced no intermittent downtime. In fact, there was no downtime whatsoever during the four-hour window that it took to update and reconfigure the data center.

The mirrored storage virtualization servers are currently onsite at Mission Community Hospital. However, the hospital has a colocation facility that the IT team is in the process of increasing WAN connectivity to, since the longer-range plan is to use the colocation facility as a hub where common services that are used outside the hospital would reside.

"There is also a colocation facility that will become the 'live backup' site for production systems," notes Fennell.

The IT team at Mission Community Hospital has implemented technology that will be easily scalable. This goes a long way when one hospital becomes three hospitals, for example, through acquisition.

SUMMARY: THE IMPACT OF VIRTUALIZATION AT A MODERN AMERICAN HOSPITAL

- All of the databases that are a part of the McKesson-Paragon system are standard SQL databases – and all are virtualized with the combination of DataCore + X-IO and VMware.
- Another database application the hospital runs is called Midas+. Midas+ is a quality management solution designed to address strategic performance management. This also runs on SQL.
- The hospital is running everything from standard SQL – all the way up to SQL Enterprise with multiple CPUs.
- Another McKesson database-supported application McKesson Intelligent Coding runs on Sybase. The CareStream PACS runs on Oracle.
- 98 percent (98%) of the servers at Mission Community Hospital are now virtualized.
- There are now 20 physical hosts running VMware vSphere, which are supporting 200 virtual servers.
- Eight-hundred (800) employees and 600 physicians are now supported by the virtualized IT infrastructure at Mission Community Hospital.
- Because the IT team is adding systems at a fairly brisk pace, storage capacity needs are growing up to 20 percent per year.
- Significantly, the virtual servers are quite mixed – running the gamut from database servers to mail servers, and all sorts of different applications.
- External entities, like the managed services organization, as well as other Mission Community Hospital partners are accessing the hospital's IT systems through a Citrix XenApp environment.

"Because we are a small IT staff, we wear a lot of hats – and we get pulled in a lot of directions," summarized Rivers. *"As a result, DataCore's simplicity of management and ease-of-use is just as important to us as its cost-effectiveness and overall performance. When our team is called on to handle IT for multiple facilities, we can put whatever systems the newly acquired hospitals have under our existing infrastructure – because we have a software-defined infrastructure that will support this growth."*

ABOUT DATACORE SOFTWARE

DataCore is a leader in software-defined storage. The company's storage virtualization software empowers organizations to seamlessly manage and scale their data storage architectures, delivering massive performance gains at a fraction of the cost of solutions offered by legacy storage hardware vendors. Backed by 10,000 customer sites around the world, DataCore's adaptive and self-learning and healing technology takes the pain out of manual processes and helps deliver on the promise of the new software-defined data center through its hardware agnostic architecture.

ABOUT MISSION COMMUNITY HOSPITAL:

Owned and operated by Deanco Healthcare, LLC, Mission Community Hospital has been providing high-quality, affordable healthcare in the San Fernando Valley community for more than 50 years. Mission Community provides a full range of medical, surgical and mental health care, including 24-hour emergency services. Mission Community Hospital is a 145-bed short-term acute facility located in North San Fernando Valley that is fully accredited by The Joint Commissions, the most prestigious credentialing organization for healthcare providers.

www.mchonline.org

For additional information, please visit **datacore.com** or email **info@datacore.com**

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