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West Jefferson Medical Center turns to Sigma for engineering expertise in configuring its NetApp FlexPod data center platform.

West Jefferson Medical Center (WJMC) is a nonprofit community hospital located in Marrero, La., just minutes from downtown New Orleans. WJMC offers comprehensive healthcare services on its 20-acre campus and operates several neighborhood primary care clinics.

WJMC has been undertaking an overhaul of its IT infrastructure, beginning with the implementation of a 10GB network backbone built upon Cisco Nexus switches. Shortly thereafter, WJMC replaced its aging SAN with NetApp Fabric-Attached Storage (FAS). Next, WJMC began migrating its rack-mount servers to the Cisco Unified Computing System (UCS) platform, which has a smaller footprint, centralized management and a fabric interconnect that takes advantage of the speed of the network core.

The hospital had all the elements of a NetApp FlexPod.

The FlexPod data center solution combines NetApp unified storage systems, Cisco UCS servers and Cisco Nexus switches in a flexible architecture that can readily scale up or out. The FlexPod reference architecture is designed to ease the transformation from virtualization to cloud computing with maximum efficiency and minimal risk.

"Once we had those pieces of the puzzle we decided to base our data center design on the FlexPod reference architecture, which could support our server virtualization, unified communications implementation, virtual desktop infrastructure and data center migration," said Nick Burlison, Senior Systems Engineer, WJMC. "It became an obvious choice to go down this path."

It wasn't as simple as proclaiming those discrete components a FlexPod, however. A lot of work needed to be done to assemble those pieces and parts into a FlexPod data center solution. WJMC called upon Sigma Solutions to assist with upgrading the hospital's NetApp storage and configuring the environment so that it could be validated against the FlexPod reference architecture.

"Sigma took the time to understand our environment and our business goals, and brought a great deal of expertise around our NetApp environment," said Brandon Sarradet, Senior Systems Engineer, WJMC. "They are helping us finalize the solution so we can obtain the official FlexPod certification from NetApp."

Streamlined Deployment

WJMC had been running a VMware View virtual desktop infrastructure (VDI) pilot for about a year when the FlexPod pilot began. Setting up VMware View on the hospital's

existing SAN had proven somewhat challenging and the aging network share infrastructure was not sufficient to support roaming profiles. The FlexPod reference architecture provided the right framework for WJMC's VDI environment.

"We were able to stand up VMware View with the NetApp CIFS shares in a relatively short amount of time," said Guy Woodruff, Computing Engineer, WJMC. "We leveraged NetApp's home directories feature along with LiquidWare Labs ProfileUnity. This was one of the first systems to be hosted on the FlexPod and it's just been rocking along."

The decision to utilize the FlexPod reference architecture proved its merit during Hurricane Isaac in August 2012. By that time, WJMC had validated much of its network and had begun running a pilot VMware View limited deployment in three exam rooms of the clinic located on the hospital campus. When Hurricane Isaac hit New Orleans, the hospital's five outlying clinics were closed due to damage from the storm.

"One of the damaged clinics was normally open on Saturday, and the doctors were going to see those patients at our onsite clinic," Burlison said. "But the doctors from the outlying clinic had never used the virtual desktops. Our challenge was to make sure the doctors could rapidly see patients because they were dealing with triple their normal capacity."

Thanks to the FlexPod reference architecture, the WJMC IT team was able to rapidly extend the VDI pilot throughout the clinic.

"We were faced with the choice of pulling out the VDI pilot or accelerating the pilot to encompass the whole clinic — which was the route we ended up taking," said Jason Welsh, Project Manager, WJMC. "It took less than two hours to deploy zero clients to the other exam rooms and get the doctors enrolled and trained. There was not a single delay in any patient being seen."

Proven Performance

The VDI deployment was an instant success, and doctors and hospital staff were clamoring to use the solution. WJMC quickly expanded the VDI rollout, with no concern about performance problems thanks to the FlexPod reference architecture.

"Performance is as critical as availability," Woodruff said. "In this environment, users are constantly moving from device to device. A nurse might use five or six different endpoints over the course of a few hours. If the system is slow to log in, that adds up to an immense amount of time over the course of a year. Incremental performance gains save the hospital a lot of money and enable doctors and nurses to see more patients."

"That's one of the major benefits of the NetApp storage array over our previous SAN. NetApp's Flash Cache technology enables us to prioritize some of VMware View's tools for a high I/O performance. The NetApp solution also cut in half the time required for full recomposes and has transparent failover features for zero downtime."

WJMC now has about 75 users on the VDI platform. Doctors and nurses scan their ID badges to log in and out of zero clients using a single sign-on solution. The VMware View and LiquidWare environment delivers a fresh virtual desktop on each login for security, compliance and performance.

WJMC is continuing to expand the VDI rollout and ultimately plans to support mobile devices in a Bring Your Own Device (BYOD) initiative. Meanwhile, the FlexPod architecture has reduced operational overhead and the risk of hardware failure.

"The FlexPod reference architecture has high availability at the core of its design — it's a very redundant configuration. There are also layers of redundancy built into the NetApp storage, Cisco UCS platform and Nexus fabric," Sarradet said. "It's easier to manage the condensed environment versus 300 different discrete servers. We are able to eliminate a lot of single points of failure."

The Right Answers

The hospital sought out Sigma based upon the expertise of its NetApp engineers, who provided onsite and remote support to help WJMC's IT team work through configuration issues and prepare the environment for validation.

"It all boils down to the strength of their engineering staff and their ability to answer questions succinctly and accurately," Sarradet said. "We got very good answers, very good advice."

WJMC is now well-positioned to generate revenue from its FlexPod infrastructure by providing hosting services. The FlexPod architecture provides the flexibility to expand the environment to deliver such services in a cost-effective, manageable way.

"There are a number of clinics and doctors' offices that might benefit from Infrastructure-as-a-Service provided by the community hospital," Burlison said. "With our previous environment, it would have been too expensive with too much administrative overhead to try to provide that. It is far easier to extend our infrastructure with the FlexPod. Storage expansion is almost as simple as plugging in some hard disks. Same thing with compute capacity — it really is almost plug and play."

The hospital also plans to implement an additional FlexPod for failover in the event of a disaster. The inherent flexibility of the reference architecture makes it easy to set up a second FlexPod at another facility. Sigma continues to work very closely with WJMC as the hospital explores these options.

"Sigma is a partner to us and, as we move forward, we discuss a lot of our goals with them," said Sarradet. "They have been a great resource, providing sound advice and input into what we are trying to achieve. And we continue to identify other things that Sigma can assist us with in our adventure."