

ESSENTIALS

Industry

Healthcare

Company Size

- Leading provider of dialysis care to 180,000 patients in the US
- 2,200 dialysis centers nationwide; makes half of all kidney dialysis machines and related products

Business Challenges

- Improve the performance of its platform to deliver ready access to needed data for patient care
- Reduce OpEx costs and decrease data center space

Solution

- Three Dell EMC VMAX All Flash 450FX storage arrays

Results

- Provide 2x increase in IOPS performance
- Decrease latencies by more than one-third
- 23% lower projected TCO
- 75% decrease in data center floor space
- 76% - 78% reduction in power and cooling costs
- 15x faster provisioning for more effective responsiveness to service requests

FRESENIUS MEDICAL CARE

Relying on Dell EMC VMAX All Flash to help provide lifesaving dialysis and other services to chronically ill patients

Fresenius Medical Care North America is the premier provider of the highest quality healthcare to people with renal and other chronic conditions. In the US, 640,000 people live their lives with end-stage renal disease. Worldwide, more than three million people suffer from chronic kidney failure. Through its industry-leading network of 2,200 dialysis centers in the U.S., outpatient cardiac and vascular labs, and urgent care centers—as well as North America’s largest practice of hospital and post-acute care providers—Fresenius Medical Care North America provides coordinated care for over 180,000 U.S. patients.

The company also manufactures approximately half of all kidney dialysis machines, disposable products, and renal pharmaceuticals—and offers specialty pharmacy and laboratory services to chronically ill renal patients.

THE CHALLENGE: KEEPING PACE WITH GROWING DATA NEEDS

Renal dialysis relies on a highly sophisticated treatment regimen that requires the real-time collection and analysis of critical data—ranging from measurement of blood volume and blood constituents to biochemical values and information on medication administered as part of the dialysis process.

As the leading provider of life-sustaining dialysis to renal patients nationwide, Fresenius Medical Care North America gathers hundreds of terabytes of data to help monitor and refine essential patient care—as well as to maintain fundamental research data used in working with chronically ill patients worldwide. Due to its growing practice and caseload, Fresenius had seen the performance of its storage resources decline and its operating expenses increase over time.

By May of 2016, storage used by its primary clinical application, eCube, had reached 200TB—and was projected to exceed the 300TB maximum capacity of the storage array it ran on by mid-2017. Peak response time exceeded 30 milliseconds. Power and cooling costs were rising, and Fresenius was running out of space in its data centers.

“Our goal is to provide patients with the most comfortable care possible, and that requires a robust, continuously available IT infrastructure that ensures applications run smoothly and data is collected and can be accessed seamlessly in real time,” said Joe Pesaturo, storage manager for Fresenius Medical Care North America. “With our rapid growth, that was becoming a significant challenge.”

THE SOLUTION: DELL EMC VMAX ALL FLASH

After thoroughly researching its options, Fresenius chose Dell EMC VMAX All Flash for its exceptional performance, efficient scalability, high availability, and the flexibility to

handle diverse workloads while consolidating data center space. The company purchased three VMAX 450FX arrays to replace its existing storage arrays in several Boston area data centers—including an HPE 3PAR StoreServ array that was the last of what had once been an all-HPE storage implementation.

By choosing Dell EMC, the #1 market leader for all-flash storage solutions, Fresenius was looking for:

- Major improvement in IOPS, with sub-millisecond response times
- Up to 20x the capacity in the same physical space
- Substantially reduced environmental costs
- Highest levels of availability
- Greatly reduced total cost of ownership (TCO)

The VMAX All Flash storage arrays are being used to support a variety of transactional databases, virtual workloads, and virtual desktop infrastructure (VDI) utilized by a number of its more than 60,000 U.S. employees. Fresenius' dialysis machines collect a variety of data as patients undergo treatment. This information is sent back to its homegrown eCube application running in a VMware environment, and then is stored in Microsoft SQL Server databases, where it can be efficiently shared with downstream systems.

“VMAX All Flash has definitely increased performance and decreased latency, while delivering our desired cost savings. We’ve seen IOPS double and latencies decrease by more than one-third. And high availability is built into every VMAX array.”

— Joe Pesaturo, Storage Manager, Fresenius Medical Care North America

In modernizing its data centers, Fresenius has also used Dell EMC VPLEX and Dell EMC Symmetrix Remote Data Facility (SRDF). These solutions allow the company to easily split the database transaction logs and replicate them onto multiple arrays to safeguard data that’s so vital to patient care against potential disasters.

THE RESULTS: PERFORMANCE IMPROVEMENTS AND SIGNIFICANTLY REDUCED OPERATING COSTS

When Fresenius was reviewing its data center modernization options, the company conducted a detailed analysis. Among the benefits of implementing VMAX All Flash were:

- 23% lower three-year TCO, compared with its existing storage resources
- 93% reduction in drives—from more than 5,500 to approximately 400 all-flash drives—resulting in much higher reliability and reduced complexity
- 75% decrease in costly data center floor tile space required for storage
- 76% to 78% reduction in power and cooling costs, respectively
- 15x faster provisioning—critical for a storage team that numbers only four, including two junior members, but needs to be able to respond quickly to service requests to maintain Fresenius' reputation for exemplary patient care

Since implementing the VMAX All Flash arrays in 2016, Fresenius has seen the real-world performance improvements it was expecting—enabling the company to efficiently handle its growing patient care needs.

“VMAX All Flash has definitely increased performance and decreased latency, while delivering our desired cost savings,” Pesaturo commented. “We’ve seen IOPS double and latencies decrease by more than one-third. And high availability is built into every VMAX array.”

“IT plays an essential role in improving patient care. We’ve always had a great partnership with Dell EMC. This has helped ensure that our applications perform as needed to maintain the highest levels of patient care.”

— Joe Pesaturo, Storage Manager, Fresenius Medical Care North America

Creating a modern and efficient DR platform

Future plans for Fresenius call for investing in at least one more VMAX All Flash array to provide a modern and efficient disaster recovery (DR) and quality assurance (QA) platform for eCube at its Lexington data center, 15 miles west of Boston. The VMAX All Flash array would enable quick and efficient recovery from any potential disasters, while also letting Fresenius leverage “free snapshots” for non-production testing of new applications and system enhancements.

“IT plays an essential role in improving patient care,” noted Pesaturo. “We’ve always had a great partnership with Dell EMC. This has helped ensure that our applications perform as needed to maintain the highest levels of patient care.”

CONTACT US

To learn more, contact your local representative or authorized reseller.



Copyright © 2017 Dell Inc. or its subsidiaries. All Rights Reserved. Dell, EMC, and other trademarks are trademarks of Dell Inc. or its subsidiaries. Other trademarks may be the property of their respective owners. Published in the USA. 01/17. Customer Profile H15776

Dell EMC believes the information in this document is accurate as of its publication date. The information is subject to change without notice.