



ChristianaCare Improves Efficiency in Hospital Operations with VCF

[ChristianaCare](#) is a non-profit healthcare organization in Delaware centered on improving health outcomes and making high-quality care accessible.

Industry

Healthcare

VMware footprint

• VMware® Cloud Foundation®

Based in Wilmington, Delaware, nonprofit healthcare provider ChristianaCare is innovating to make high-quality care more accessible and affordable while also serving as a teaching hospital with groundbreaking programs that focus on value-based care. Ensuring system availability for patient care, quickly providing resources for new applications, and improving efficiency in hospital operations are all reasons that ChristianaCare implemented the Broadcom private cloud platform, VMware Cloud Foundation (VCF).

Overcoming technology challenges

In 2019, ChristianaCare faced challenges in supporting its mission in part because of aging hardware, a legacy vSphere environment, and resource limitations in moving to a public cloud. In-house experts were proficient in VMware solutions, but they lacked the DevOps experience needed to operate a cloud environment.

ChristianaCare embarked on a journey to provide a private cloud with the goals of supporting specialized capabilities ranging from Level 1 trauma to neonatal intensive care, a comprehensive stroke center and regional centers of excellence in heart and vascular care, cancer care and women's health. All this in a setting spread across three hospitals and including an extensive network of primary care and outpatient services, alongside home health care and urgent care centers and a standalone emergency department.

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Mahamed “Allim” Allimulla, Information Services Senior Manager, ChristianaCare



“We make sure that when the patient is in a bed, the information systems are available all the time,” says Mahamed “Allim” Allimulla, information services senior manager, ChristianaCare.

Leveraging existing expertise

Technology underpins the ChristianaCare team’s ability to support their commitment to delivering improved health outcomes. The organization also needed to enable developer innovation to provide the applications and technology services healthcare providers need to deliver improved health outcomes. To meet the technology needs of ChristianaCare, nearly everything, including all production, test, development, Citrix and DMZ workloads run on VCF. Other workloads running on VCF include SQL Server, domain infrastructure (DNS, DHCP), network authentication servers, and firewall management.

With VCF, the ChristianaCare team has matched the growth of the organization without needing to increase staff size. “Our in-house staff are all VMware subject matter experts with years of experience,” said Allim.

Leveraging this existing expertise, combined with the added capabilities in VCF has yielded other advantages, according to Greg Frye, team leader, Infrastructure, ChristianaCare. “I can’t put enough focus on how much time and energy I’ve saved in people resources. Allowing my teams to grow in other areas because they don’t spend as much time provisioning is a huge benefit of adopting VCF.”

Much of this efficiency is attributable to shortened deployment times and meeting application requirements with

“right the first time” infrastructure provisioning for a wide variety of workloads. And the team relies on VMware monitoring and management, storage, and security capabilities to provide the on-prem, private cloud infrastructure that makes these productivity advances possible.

Consistent patching and faster provisioning

“Our operations became very efficient especially with regards to automating patching. Before, we had to create a special project to do our patching and it would sometimes take months to complete the job,” says Allim. Streamlining the patching processes also lessened the time needed to mitigate zero-day vulnerabilities, which has been shortened from months to less than 30 days, often within two weeks. “I don’t have to dedicate an FTE to do that. We free up our staff for other work. Automation has enabled us to be 100% compliant with our security posture requirements,” says Allim.

Using VCF Automation capabilities, the ChristianaCare team has also shortened virtual machines provisioning time from as long as three weeks to less than one, and in some cases, within a day. VCF Automation has also greatly improved consistency in server builds, which previously varied due to scripts and other factors. Two engineers on the team now provision, deploy, and finalize server builds, simplifying their work significantly compared to older, less automated methodologies. “This change has enabled our small team to deliver consistent builds, leading to a much more efficient process for handing off servers for QA,” says Allim. “We moved almost 98% of our workloads to VCF. We also migrated 50% of our storage to VMware vSAN VCF features. We saw a much lower TCO as a result of these operational efficiencies.”

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Monitoring and reliability for quick recovery

VCF Operations capabilities are used for 24x7 monitoring, providing dashboards to show impacted VMs during host outages, and enabling quick recovery. Unplanned and planned outages are reported monthly, to keep everyone on the same page with regard to system availability.

ChristianaCare utilizes VMware features like High Availability (HA) to reduce downtime. The company recovers quickly from host issues such as hardware and driver-based issues, with VMs up and running within minutes, requiring only application functionality validation to return to production. “We are a VCF Operations shop,” says Allim.

Expanding storage capacity for new requests

ChristianaCare uses both VMware vSAN OSA and now Express Storage Architecture (ESA) versions within VCF. The benefits of using vSAN include efficient storage provisioning with policies that align with application requirements. The organization is currently expanding storage capacity to accommodate new requests, adding over 400 TB, a process that was much slower in the past. “I’m a very happy camper in today’s environment with the flexibility that we have,” says Frye.

Looking ahead with its private cloud environment

VCF enables a modern private cloud for faster resource provisioning at ChristianaCare than previously possible—while still ensuring consistency and reducing waste—which keeps costs down and reduces risk. “VCF puts us in charge of our environment and lets us provision clinical and business solutions to the organization,” says Allim.