



THE VIRTUAL COMPUTING
ENVIRONMENT COMPANY

HEALTH BENEFIT ADMINISTRATOR CURES GROWING PAINS WITH PRIVATE AND PUBLIC CLOUD

CareCore National Deploys Vblock™ 2 Infrastructure Platforms for Evidence-Based Medical Analysis and Service Delivery.

Executive Summary

CareCore National, LLC
Specialty Health Benefit Management
Bluffton, S.C.
1,200 Employees; 70 Million Patients Under Care

Challenge

- Business growth limited by IT infrastructure constraints
- Internal IT staff consumed by system administration and troubleshooting

Solution

- Vblock 2 Infrastructure Platforms
- VCE Professional Services

Results

- Reduced time to launch new lines of business from six months to two weeks
- Software engineers increased time devoted to development from 50 to 80 percent
- Enabled transition from zero virtualization to fully-enabled private cloud
- Call-center agents handle 20 percent additional calls daily

Challenge

CareCore National is a specialty benefit-management company that pioneered evidence-based medicine for healthcare treatments, such as outpatient diagnostic and cardiac imaging, cardiac implantable devices, oncology drugs, therapeutic agents, radiation therapy, as well as sleep, pain and lab services. With its expert medical staff, evidence-based criteria and sophisticated data analytics, CareCore National collaborates with healthcare providers and insurance firms to authorize medical procedures that optimize quality and efficiency of patient care.

As the number of patients under CareCore's care grew from 10 million to 70 million in the past five years, the prior infrastructure struggled to keep up with growing demands for performance and availability. The company's IT staff was increasingly consumed with troubleshooting and system administration.

William Moore, CareCore National's Executive Vice President and Chief Technology Officer, says, "We are a healthcare company, but IT is one of our most strategic assets and enablers. With our previous infrastructure, we had to govern our growth based on the speed at which we could scale our systems and software. This necessitated a radical shift in thinking and big changes in our infrastructure."

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William Moore
EVP, CTO
CareCore National



As an IT early adopter, CareCore National established a new vision that centered on virtualization and cloud computing. Much was at stake: analyzing medical evidence more quickly and comprehensively would mean fewer tests, better care and lower costs.

Solution

To take its business into the cloud, CareCore National implemented Vblock 2 Infrastructure Platforms, which can support a large number of virtual machines in a compact footprint. The company's Vblock 2 platform includes 168 Cisco Unified Computing System (UCS) blade servers, 90 terabytes of EMC Symmetrix VMAX storage, and 400 virtual machines virtualized with VMware vSphere 4, as well as 11 Cisco Nexus 7000, 5000 and 1000v switches, Ionix Unified Infrastructure Manager (UIM), and EMC PowerPath/VE. CareCore complemented the VCE Vblock 2 platform with 500 terabytes of EMC's Atmos cloud storage.

Jointly integrated, tested and supported by the Virtual Computing Environment (VCE), Vblock 2 platform provides CareCore National with a high-performance, large-scale, virtualized private cloud infrastructure across its two data centers located 1,000 miles apart.

Applications running on Vblock platforms include CareCore National's evidence-based decision analytics and support, Microsoft SQL Server, Microsoft Exchange email, file sharing and other environments. In addition, the healthcare benefits-management firm is working with an external service provider to extend the Vblock 2 infrastructure and create a public cloud.

CareCore National also engaged VCE Professional Services to assist in all aspects of infrastructure design, implementation and support.

Results

Private Cloud Enables New Business Delivery Models

With the implementation of Vblock platforms, CareCore National has virtualized 98 percent of its server infrastructure and now operates 100 percent in a private cloud. No longer is business growth constrained by a physical IT infrastructure. Instead, the company is growing rapidly and with more business agility and efficiency across multiple dimensions.

"We now have a reservoir of storage, compute power and network capability that we simply dial up and provision at will, which is a vastly different paradigm for us," says Moore. "All the logistics around product procurement, installation, cabling and rack and stack have gone away. Vblock platforms have cut a huge amount of time out of our project timelines."

With Vblock platforms, the IT organization can now roll out entire production environments with multiple software components in minutes, rather than the 8-12 hours it once took. This allows CareCore National to continually refine its business services to apply the best possible medical science to each patient at the correct time in the diagnosis and treatment process.

"The Vblock Platform has literally transformed and accelerated our business. Now we can go from a boardroom discussion about a new initiative and have software developed, process flows in place, the requisite science assembled, and an entirely new line of business delivered into the marketplace in about two weeks. Before, this would have taken six months."

William Moore
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In addition, by reducing the time spent on deploying software releases, the company's software engineers can now focus 80 percent of their time developing new business services and capabilities, compared with less than 50 percent in the old environment.

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Increased Horsepower Supports Enormous Data Growth

The Vblock private cloud platform underpinning CareCore National's dynamic business enables the company's IT organization to handle enormous data requirements and deliver needed infrastructure resources virtually on demand.

"Prior to Vblock platforms, we could not even contemplate taking in such gigantic volumes of data," reports Moore. "With Vblock platform's intelligent software, data is moved around automatically and matched to the right virtual workload and storage tier. Performance and availability are constantly being optimized and refined as data flows in and out of our private cloud."

When it comes to raw performance, Vblock platforms have delivered a fourfold increase in maximum throughput potential for CareCore National's databases and compressed critical workloads such as claims processing and quarterly financial reporting from days to less than 24 hours.

Response times to retrieve data that once took up to 15 seconds have been reduced to sub-second levels, enabling the company to handle an average daily volume of 40,000 interactions with clinicians. Call-center agents retrieve medical records more quickly, processing on average 27,000 calls per day—20 percent more than before. Physicians and nurses also can handle more cases because they receive pre-certifications of medical tests or procedures faster.

"With Vblock platforms, we now have the horsepower to regress huge amounts of data in real time and drive analytic decisions right back into our business processes," says Moore. "That translates into our ability to handle more care and treatment inquiries and improve the quality of patients' care."

VCE Professional Services Accelerates Solution Deployment

VCE Professional Services helped accelerate deployment of CareCore National's private cloud through a Manufacture Design Validation engagement, which identified gaps and opportunities for design changes that would streamline implementation. The services organization provided a single point of contact for expertise across all aspects of the infrastructure—servers, storage and networking, and also delivered knowledge transfer and training.

Moore says, "VCE Professional Services was a critical partner in enabling us to go from zero virtualization to a fully-enabled private cloud infrastructure in only nine months. Without their help, our private cloud deployment probably would have failed and several initiatives would have been delayed or not even pursued."

"VCE Professional Services provided us with a front door to a house full of experts," says Moore, "VCE's ability to parachute in the most capable technology professionals across storage, networking and virtualization was absolutely breathtaking. Once we needed a specific piece of software so VCE found the right engineer, had the new software built, tested and loaded on our systems in 48 hours."

VCE support is also delivered to CareCore National in a centralized fashion regardless of the solution involved.

“Frankly, I was skeptical about VCE’s concept of seamless support,” Moore explains. “We were pleasantly surprised how well the onsite and back-end support teams worked together in the background and presented us with a resolution. With VCE’s single stop support model, we spend a lot less time chasing down the right people and get our support issues resolved more quickly.”

Infrastructure Design Leads to Cost Avoidance

Vblock platforms have allowed CareCore National to operate its IT infrastructure more efficiently. For example, CareCore National estimates its data center power and cooling efficiency has increased by 30 percent due to Vblock platform’s virtualized, efficient and compact design.

The company also credits Vblock platform’s automated management and major reliability and performance improvements with reducing the amount of time the IT organization spends on day-to-day administration and troubleshooting.

“Our IT organization has grown very little despite our exponential business expansion,” explains Moore. “With Vblock platforms and VCE’s excellent services and support, we get to focus more of the company’s resources on our core competencies of scholarly, academic-based data analysis for healthcare.”

Moore adds, “It’s also been impressive how well the Vblock platform components are integrated and optimized for each other and virtualized, cloud environments. Vblock platforms are truly a case of the whole being more valuable than the parts, which minimizes our time and cost involved with supporting and managing the solution day to day.”

Next Steps: Public Cloud

Next on the horizon for CareCore National is public cloud. Working with VCE Professional Services and an external service provider, the company is refactoring its applications and driving them into a rich set of cloud-based services that will enable more flexible sharing of its knowledge base, products and services as part of a healthcare ecosystem.

“With public cloud, we’ll be able to inject evidence-based medicine and benefit management functions to the healthcare edge and launch a tele-health initiative that will allow our medical science to touch more lives than ever before,” comments Moore.

This will give CareCore clients better access to clinical data that will assist providers in achieving greater operational efficiencies, reducing unnecessary costs and ensuring patients get the most appropriate test or treatment based on the individual patient’s medical needs and current clinical evidence.

“Because of our decision to work with VCE and implement Vblock platforms,” Moore continues, “we have the infrastructure to roll out the public cloud in the most efficient and expedient way possible. Our cloud capabilities allow us to return to the industry, the patients and the payers a level of healthcare data sharing and efficiency that I don’t believe has ever been seen before.”

Product and Services List

- Vblock 2 Infrastructure Manager
 - Cisco Unified Computing System blade servers
 - Cisco Nexus 7000, 5000 and 1000v software switches
 - EMC Symmetrix VMAX storage
 - VMware vSphere 4 virtualization solution
 - Ionix Unified Infrastructure Manager (UIM)
 - EMC PowerPath/VE multipathing solution
- EMC Atmos cloud storage
- VCE Professional Services

ABOUT VCE

VCE, the Virtual Computing Environment Company formed by Cisco and EMC with investments from VMware and Intel, accelerates the adoption of converged infrastructure and cloud-based computing models that dramatically reduce the cost of IT while improving time to market for our customers. VCE, through the Vblock platform, delivers the industry's first completely integrated IT offering with end-to-end vendor accountability. VCE's prepackaged solutions are available through an extensive partner network, and cover horizontal applications, vertical industry offerings, and application development environments, allowing customers to focus on business innovation instead of integrating, validating and managing IT infrastructure.

For more information, go to www.vce.com.



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