



Baystate Health

Baystate Health Transforms into Modern Healthcare Center of Tomorrow with VMware NSX Network Virtualization

INDUSTRY

Healthcare

LOCATION

Springfield, Massachusetts

KEY CHALLENGES

- Redesign IT architecture to control rising costs, meet increasing demand, and improve security and services.
- Converge three data centers into one and reduce the traditional expenses of capital, real estate, and power.
- Enable doctors and personnel to access the network from any device, anytime, anywhere.

SOLUTION

Baystate chose the VMware NSX platform to virtualize its network and enable the convergence of three physical data centers into a single logical data center. The VMware Horizon solution helped deliver the deployment of 10,000 virtual desktops.

BUSINESS BENEFITS

- Saved about USD \$3.5 million upfront and unloaded the expenses of maintaining 12,000 PCs in the field
- Improved data security thanks to easy micro-segmentation
- Easily integrated third-party solutions into the network

Baystate Health needed a new secure IT infrastructure that would ensure optimal application performance for doctors and staff, contain costs, and accommodate ever-increasing healthcare demand. With the VMware NSX™ network virtualization platform and a Software-Defined Data Center (SDDC), plus guidance from VMware Professional Services, Baystate seamlessly converged three physical data centers into a single, logical three site “active/active/active” data center. This strategy saved Baystate an estimated \$3.5 million and laid a stable, yet flexible, foundation for future growth.

Employing 12,000 people and serving more than one million patients a year, Baystate Health is among the largest healthcare systems in New England. Its facilities include an academic medical center, four community hospitals, a children’s hospital, numerous outpatient and primary-care facilities, a hospice, a health insurance company, and the only level-one trauma center in Western Massachusetts. Overall system revenue is USD \$2.2 billion.

The Challenge

To maintain its leadership position and stay ahead of the rapidly changing healthcare business, Baystate Health must provide its clinicians and employees with a technology platform that ensures optimal performance and availability. To achieve this, Baystate partnered with VertitechIT, a specialized healthcare and business IT advisor located in Holyoke, Massachusetts. Together, in 2014, they launched a rebuild of Baystate’s entire IT infrastructure, in part to help alleviate the pressure of rising costs.

“Rather than build a data center with a lot of aged hardware, we decided to take control at the software layer,” says Joel Vengco, Chief Information Officer of Baystate Health. “The challenge was to standardize compute, network, and storage infrastructure on commodity hardware using the SDDC architecture. We needed to ensure 24/7 availability, reduce operating costs, and enable redirection of IT personnel and financial capital to other areas.”

The team at Baystate wanted the new secure IT architecture to be simple and scalable because complexity makes things unmanageable. They also wanted the new architecture to address both CapEx and OpEx savings. Centralization, to reduce overhead and converge staff, was also key.

Additionally, they required a seamless mobility solution so that Baystate doctors could log in to their desktops from any device, anytime, anywhere. To achieve this, Baystate’s new IT architecture called for deployment of 10,000 virtual desktops. “Our docs are moving around constantly. We don’t want them carrying around big laptops,” says Vengco. “We want them to be able to tap a badge and have their session pop up wherever they happen to be.”

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Joel Vengco
CIO,
Baystate Health

“In addition to the CapEx and OpEx cost savings, secure business mobility was critical to align with our federal mandates for electronic medical records, ensure regulatory compliance with HIPAA, and strengthen our digital perimeter,” says Patrick Streck, Director of IT. “From my perspective, the fact that I don’t have to worry about lost or stolen that was resident on a disk in somebody’s laptop or other device is a huge benefit. Ironically, my users see a higher level of functionality in tandem with, rather than in trade for, greater data protection.”

The Solution

Baystate selected VMware solutions and VMware Professional Services to create a streamlined hyperconverged infrastructure that could accommodate growth and fully support staff and patients. For networking, Baystate chose the VMware NSX platform over the Cisco ACI. VMware NSX solution brings the operational model of a virtual machine to the entire data center network, so organizations can transform the economics of network and security operations.

Specifically, the VMware NSX platform enables the pooling of compute resources that are in different geographical locations but in close proximity, such as the local area and the metro area. Disparate resources can then be treated as a unified set of compute resources, and applications can be deployed in any location, yet seamlessly connect to the resources located at different sites.

It was through this approach that Baystate was able to re-engineer its existing data center. With the VMware NSX platform, the Baystate team converged three physical data centers into a single, three-site active/active/active logical data center with always-on, borderless capabilities. VMware NSX sits strategically between applications and the infrastructure layer, offering better integration with the remainder of Baystate’s VMware cloud stack. The new data center now provides a strong foundation for much of the data and services necessary for Baystate’s population health management.

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For deployment of the new virtual desktops, Baystate chose the VMware Horizon® solution, over Citrix. “A core element of ours is the advancement of virtualization throughout our environment,” Vengco says. “Now that we’ve put Horizon in place, we’re seeing a lot of adoption and excitement among all our users at being able to work whenever and wherever they want.”

Business Results & Benefits

Baystate budgeted USD \$8 million to upgrade its IT infrastructure. By virtualizing and seamlessly converging its three data centers into one logical software-defined data center based on VMware hyperconverged infrastructure and VMware NSX, Baystate saved about USD \$3.5 million. “NSX is the exact solution we needed to pull this off, to bind three data centers into a single data center,” Vengco says. “Now there’s no difference between data centers in different physical locations. It’s as if they’re in a single rack.”

Enhanced security is also a significant benefit, aligning with compliance requirements in the healthcare industry. The VMware NSX platform enables Baystate to deliver micro-segmentation and multi-tenancy, which means it can control the flow of data at each virtual machine rather than at the perimeter, and security controls are built into the data center fabric. This allows Baystate to securely run multiple logical environments on the same physical infrastructure. Without VMware NSX, multi-tenant operations are much more complex. Plus, if there’s a security concern within one virtual machine, administrators can lock down the machine and contain the threat.

“IT security threats are more numerous than ever, and a micro-segmentation approach

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is going to be our next line of defense,” says Vengco. “Every administrator needs to have control over what goes in and out of the virtual machine, not just at a primitive firewall. VMware NSX provides everything you need to manage that micro-segmentation approach, as well as third-party plug-ins.”

Another big benefit is seamless integration with third-party solutions. “We’ve had a lot of à la carte products floating around our system. In the past, integrating those into network operations has been a complex, catch-as-catch-can process,” explains Vengco. “Now, with NSX, the amount of configuration is more straightforward and the reports are more meaningful.”

VMware technology has reduced Baystate’s service provisioning from days or weeks to mere hours, which allows skilled workers to become more productive. VMware Professional Services experts assisted in configuring the automation and orchestration functionality to Baystate’s hyperconvergence use cases. This resulted in workers devoting far less time to mundane tasks like resetting user IDs and more time on strategic initiatives.

Additionally, Baystate’s virtual-desktop environment will enable it to shed the cost of maintaining 12,000 computers in the field. Now, instead of spending millions on PC installations, upgrades, and repairs, it can put that money into its data center, an investment with a higher return. And it can purchase fewer PCs going forward because virtualization allows more people to share them.

“Many of our residents work in common spaces and lay claim to a computer for a day,” says Vengco. “Now I can give them the opportunity to log in and have their session just as they left it an hour ago. And I can stop buying \$1,500 computers and start buying endpoints that are \$200 to \$300 a piece.”

Looking Ahead

Baystate is leading the healthcare industry with modern solutions like the VMware NSX platform, Horizon desktop and application virtualization, and the VMware Virtual SAN™ shared storage solution. The future of its infrastructure initiative continues as Baystate develops its hybrid cloud environment.

Baystate successfully met its project deadlines thanks to solution expertise from VertitechIT and design and deployment expertise of VMware Professional Services. Baystate also leveraged VMware Education Services, training its technical staff and getting them up to speed on the new VMware environment. “We’ve achieved our goals of higher availability and uptime, reduced maintenance costs, increased security and gained the flexibility to adapt,” says Streck.

