VertitechIT

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# Baystate Health System

Hyper-Converged Architecture & Software-defined Data Center Methodology

Client Success Story

"Our clinicians and employees need a technology platform architected to ensure high availability and optimal performance of the most critical applications across our enterprise."

## The Organization

With nearly 12,000 employees and more than a million patients a year, Baystate Health is one of the largest health systems in New England. Encompassing an academic medical center, three community hospitals, numerous outpatient and primary care facilities, a visiting nurse association and hospice, a regional reference laboratory, and a health insurance company, Baystate is also the only level one trauma center in western Massachusetts.

The organization's IT infrastructure included 2 main data centers (connected via high-speed dark fiber), and a number of secondary data centers, or IT "machine rooms," supporting over 350 additional applications. IT also houses and administers the Pioneer Valley Information Exchange (PVIX), a consortium of sharing partners from across the state, as well as a state of the art Data Analytics and Innovation Center.

## The Challenge

"Baystate Health is a $2.1B model health system," says Vice President and Chief Information Officer Joel Vengco. "And to maintain that leadership position, our clinicians and employees need a technology platform architected to ensure high availability and optimal performance of the most critical applications across our enterprises." With cost, efficiency, flexibility, and dependability in mind, Baystate turned to VertitechIT to design a hyper-converged architecture utilizing Software-defined Data Center (SDDC) methodology.

"Baystate is among the most respected institutions of its kind in the nation and has always valued technology as a means of maintaining its leadership status," commented Mike Feld. Feld is CEO of VertitechIT and also served as interim Chief Technology Officer at Baystate Health. Feld spearheaded the effort to design, build and migrate to a new data center and standardize compute, network and storage infrastructure on commodity hardware, using SDDC.

## The Solution

A three-year construction and redesign effort began in the fall of 2014, transforming the organization's entire IT infrastructure, minimizing interruption to daily operations, while maintaining current budget assumptions. Baystate seamlessly converged two physical data centers into a single, logical three site "active/active/active" data center using hyper-converged hardware. "Rather than build a data center with a lot of aged hardware, we decided to take control at the software layer," says Feld. "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.

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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."

"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 data 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 Result

Baystate had originally budgeted $8 million to upgrade its old data center. Instead, by virtualizing and seamlessly converging its two data centers into one logical software-defined data center based on hyper-converged infrastructure, Baystate saved about $6 million. The entire three-year effort was funded within the IT department's existing operating budget, with essentially no new money expended by the institution.

Baystate will realize significant performance results and bottom line impact.

- A $6M reduction in initial data center construction costs
- The ability to monetize costs for re-design of an existing data center by allowing for excess capacity to be securely rented to others
- Thanks to SDDC, data will always be available in real-time, across two or more data centers allowing Baystate to:
    - Remove the need for fork-lift equipment upgrades every 3-5 years while end of life projections are expected to be moved out to 7-10 years.
    - Increase failure prevention, predictable growth, and experience far fewer scheduled service/down-time windows
    - Significantly increase 24/7 availability with reduced complexity and expense ("natural" high availability)
- Use advanced virtualization (NSX, vSAN, VDI…) to stabilize and enhance end user experience while controlling costs and streamlining administration of end-user devices.
- Gain more effective use of "people" capital resulting in the reduction of time required for service provisioning and delivery from days and weeks to in some cases, just hours.

"Software-defined data center methodology represents a paradigm shift in the way we deal with networking, capacity, compute, and security," says Vengco. "SDDC is new but so was the concept of cloud computing just a few years ago. We have no doubt that the cost savings, efficiencies, and personnel flexibility will be evident at Baystate for years to come."

Watch the video at
https://vimeo.com/240027284