



EQUINIX

Case Study
Healthcare

How Sentara Healthcare Is Delivering Telemedicine

Accelerating and scaling patient care in the cloud.

Healthcare provider modernizes its infrastructure by deploying SD-WAN and hybrid multicloud to deliver critical healthcare services during COVID-19 pandemic.



Overview

Sentara Healthcare and Optima Health launched a digital transformation strategy to connect patients to its healthcare providers in a more frictionless manner, whether the patient was in a hospital bed or at home. Sentara's investment in a modern digital infrastructure prepared them for the high volumes of patient connections to its online Sentara and Optima Patient Portal and telemedicine platforms during the pandemic.

Challenge

Sentara needed to create a digital infrastructure from its legacy architectures so it could respond more quickly and reliably to market forces. The successful digital transformation of its network backbone, electronic medical records (EMR) and telehealth platform enabled Sentara to handle the dramatic rise in the patient portal and telemedicine visits due to the COVID-19 pandemic.

“We are seeing 500% more demand for home interconnectivity over our network. Without the ability to quickly scale network and cloud connections on the Equinix platform, we would not have had the agility to adapt to the sudden changes brought on by the pandemic.”

Matt Douglas, Chief Enterprise Architect, Sentara Healthcare & Optima Health

About Sentara Healthcare and Optima Health

Sentara is one of the nation's top integrated healthcare systems. Its not-for-profit system includes advanced imaging centers, nursing and assisted-living centers, outpatient campuses, physical therapy and rehabilitation services, home health and hospice agency, a 3,800-provider medical staff and four medical groups. Sentara provides medical transport ambulances and Nightingale air ambulance, and it extends health insurance to 858,000 people through its award-winning health plans, Optima Health and Virginia Premier.

[Sentara.com](https://www.sentara.com)



EQUINIX

Solution

Sentara and Equinix Build a Robust SD-WAN and Hybrid Multicloud Infrastructure

Moving 100% of its business operations from on-premises to multiple clouds helped Sentara facilitate the fast and secure transfer of patient data to the cloud for data analytics and artificial intelligence. Sentara can now use cloud analytics services and compute instances in the public cloud to run applications that can analyze its data to figure out actionable insights.

Cloud integration and re-architecting IT infrastructure

Sentara leveraged Platform Equinix® and integrated its legacy, siloed infrastructure via a redundant VMware SD-WAN™ by VeloCloud®. It also built a hybrid multicloud infrastructure using a network peering model.

Consolidation of business operations

The new integrated infrastructure enabled Sentara to securely and reliably interconnect its 12 hospitals and 300 care centers and perform all of its business operations in the cloud.

Leveraging Equinix Fabric

The infrastructure also leveraged Equinix Fabric™ to connect Amazon Alexa personal assistants in its patient rooms to AWS, which has helped healthcare workers to achieve better patient care and patient metrics.

Collaboration with the most suitable partners

Sentara bought the Dell Technologies Cloud Storage for Multicloud, managed fully by Faction. Faction designs and delivers Sentara's cloud data service and manages the Cloud Control Volumes and multicloud connectivity over its fully managed FIX (Faction Internetwork Exchange). FIX runs on the software-defined interconnection provided by Equinix Fabric and Microsoft Azure ExpressRoute to deliver fully integrated data services via cloud-adjacent storage for Sentara's picture archiving and communication system (PACS) and EMR data sets. Faction also manages the high-speed backup and disaster recovery between PACS and EMR databases on Platform Equinix. Looking forward, Sentara wants to leverage its new hybrid multicloud infrastructure to provide direct and secure interconnection to Azure for Sentara's backup and recovery of its large imaging and patient information data sets.

Sentara and Equinix together deliver a cost-effective solution

Sentara's new digital infrastructure on Platform Equinix enabled the healthcare provider to scale its IT capabilities to meet the increasing needs of its healthcare staff and patients, while significantly lowering costs. Equinix, along with Faction and Dell EMC, helped Sentara overcome cost and maintenance issues with its healthcare systems, eliminate egress charges with its preferred cloud vendor, and establish a foundation for future hybrid multicloud capabilities. The healthcare provider was also able to handle the sudden flood of traffic and expand its ability to scale the number of providers and patients it could serve remotely.

Results

Greater network performance

From 20 ms latency down to 4 ms.

Accelerated cloud connection time

From months to minutes.

Scalable telehealth patient and provider access

From 75 providers on its telehealth platform to 2,000. From 90 patient appointments to 1,400.

Eliminated hospital downtime

Removed the risk of a hospital going offline.

Reduced CAPEX and OPEX

Lowered overall infrastructure costs by up to 60%.

"If the global players like Equinix were not in this world, healthcare organizations like ours would not have been able to withstand this pandemic."

Matt Douglas, Chief Enterprise Architect, Sentara Healthcare & Optima Health



EQUINIX

Sentara modernized its IT infrastructure on Platform Equinix

Network optimization for greater resiliency and faster response times

By centralizing its redundant VMware SD-WAN VeloCloud backbone on Platform Equinix, Sentara significantly improved its resiliency, with no network outages. Sentara significantly lowered its latency, seeing application response times go from 20 milliseconds (ms) down to four milliseconds, even with a 500% increase in greater home interconnectivity over its network to its patient portal.

Hybrid multicloud for faster patient insights and lower costs

Using Equinix Fabric, Sentara could connect to hybrid multicloud- and SaaS-based applications within days versus weeks or months. Working with AWS and Alexa, Sentara staff could access patient metrics via voice controls, which led to better patient care and outcomes. Moving to Equinix and accessing Microsoft Azure at the edge reduced Sentara's overall infrastructure costs by up to 60%.

Distributed data and security for greater access to patient records

By integrating and consolidating all of its patient EMRs on EPIC and backing them up onto Microsoft Azure, Sentara created a robust, responsive and secure, web-based patient data store that tens of thousands of patients and healthcare staff could easily access. This solution also helped Sentara comply with patient HIPAA regulations to maintain data protection and privacy.

Application exchange for better remote healthcare

In just two weeks, Sentara went from 75 providers on its telehealth platform to 2,000. Pre-COVID-19, it had approximately 90 total telehealth patient appointments, but when COVID-19 hit, that jumped to 1,400 appointments over two weeks. Most telehealth applications have wait times of up to four hours, but Sentara patients had no wait times at all.

About Faction

Faction is a leading multicloud data services provider that pioneered cloud-adjacent storage powered by patented technology that provides data access over low-latency, high-throughput connections to all the major clouds, including AWS, Azure and Google Cloud Platform. Faction is also a leading managed service provider for VMware Cloud on AWS, including disaster recovery and production deployments.

Factioninc.com

About Equinix

Equinix is the world's digital infrastructure company. Digital leaders harness our trusted platform to bring together and interconnect the foundational infrastructure that powers their success.

Equinix.com

Ready to get started?

Equinix.com/digital-edge/solutions/healthcare/



Power Your Digital Leadership at Equinix

On Platform Equinix®, digital leaders bring together all the right places, partners and possibilities to create the foundational infrastructure they need to succeed. On a single global platform, place infrastructure wherever you need it. Connect to everything you need to succeed. Seize opportunity with agility, speed and confidence.

Equinix.com

© 2021 Equinix, Inc.
CS_Sentara Healthcare_EN-LTR | 13862-13862 | v020321 | Q320

Questions? Equinix.com/Contact-Us