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Empowering front-line healthcare workers from the cloud

Sentara Healthcare scales to meet explosive demand for medical scans while accelerating innovation and reducing costs by $5 million.

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Business needs

Sentara Healthcare's deployment of multi-cloud arrived in the nick of time. The healthcare provider was under intense pressure to meet the extraordinary healthcare demands of COVID-19 while better managing explosive data growth. The healthcare network of 12 hospitals and 300 medical facilities also needed to improve the quality of clinical care, enhance data security and increase operational efficiency.

Business results

- Scaled to meet increased need for medical scans.
- Adoption of AI, analytics and machine learning across the cloud and edge.
- $5 million in cost savings.
- Advanced quality of patient care.
- 700% performance improvement.
- Reallocation of IT resources for innovation.
- Modernization of existing infrastructure.

Solutions at a glance

- Dell EMC PowerScale
- Multi-Cloud Data Services for Dell EMC PowerScale
- Dell EMC PowerEdge
- Dell EMC vSAN
- Dell Financial Services**
- Partners
  - Faction
  - VMware

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Healthcare providers have their hands full. With explosive data growth, COVID-19 and stringent data privacy regulations, their IT infrastructures need to step up to provide better scalability, performance, security and reliability. Fortunately for Sentara Healthcare, a provider with more than 850,000 members in Virginia and North Carolina, a three-year multi-cloud transformation helped the organization succeed and deliver extraordinary quality of care amid the unprecedented challenges.

Due to high operational costs and performance slowdowns with IBM Power Systems and scalability limitations of an on-premises private cloud, Sentara embraced Multi-Cloud Data Services for Dell EMC PowerScale, enabled by Faction.

Matt Douglas, chief enterprise architect at Sentara, recalls, "We looked across the industry and determined which vendors had the best-of-breed technologies and best performance, R&D and relationship with Epic. The obvious choice was the PowerScale for multi-cloud solution. We also liked that Dell Technologies is one place where we can get everything from desktop to storage to virtualization."

Sentara's applications, such as the Epic electronic health records (EHR), run on Dell Technologies hybrid multi-cloud solution, which includes Multi-Cloud Data Services for Dell EMC PowerScale, Dell EMC PowerEdge servers, Dell EMC vSAN hyperconverged infrastructure, Microsoft Azure and other technologies.

Multi-Cloud Data Services for PowerScale combines the massive scalability, performance and data services of PowerScale in the private cloud with the economics and simplicity of public cloud. The solution allows customers to use multiple clouds and alternate across clouds according to applications' requirements to maximize business outcomes.

Performance up, costs down

Sentara was pleased that technical gains were accompanied by substantial cost savings. "By modernizing our infrastructure with the Dell EMC PowerScale solution for multi-cloud, we reduced our costs by $5 million and raised the performance," states Douglas. "Imagine that? We spent less money and got more performance. We're getting amazing results with PowerScale for multi-cloud and Dell EMC PowerEdge servers. Our Epic EHR performance has jumped from 20–30,000 IOPS (input/output operations per second) to 160,000 IOPS — a 700% gain."

Scaling on demand to aid front-line workers

Prior to embracing the multi-cloud strategy, Sentara struggled with exponential growth of high-resolution files, such as picture archiving and communication system (PACS) images. Further exacerbating the stress of growth was that 70% of the data center infrastructure was underutilized.

Douglas explains, "We saw the growth of our data skyrocket as we received an influx of COVID-19 patients and demand for scans increased. With the PowerScale solution for multi-cloud, we were able to scale easily and on demand. The excellent elasticity of PowerScale supported front-line workers with the tools and data they need to care for patients."

Increased efficiency is another outcome. Douglas says, "The beauty of our multi-cloud solution is we pay for only what we consume. My team no longer has to manage storage and security and instead can focus more on innovation."

Innovation delivered to clinicians at the edge

Douglas credits Dell Technologies with accelerating adoption of advanced analytics and AI as well as enabling access to real-time data.

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> "The native technologies built into PowerScale help us perform artificial intelligence, machine learning and analytics across our storage in the cloud or at the edge in clinical settings," says Douglas. "Dell Technologies has helped empower and advance the speed and quality of treatments for patients."

Dell Technologies also aided Sentara's transformation from an on-premises cloud to a multi-cloud infrastructure. Douglas notes, "One of the most revolutionary things of our journey is adopting a hybrid multi-cloud framework to centralize our data and scale from the cloud to the data center to the edge. It's been a real game changer for us and the healthcare industry."

Employees and quality of care first

Sentara values the close partnership with Dell Technologies from a technology and business perspective.

Dell Financial Services gave Sentara the flexibility to restructure payments to manage cash flow when numerous medical procedures were postponed due to the need to reallocate resources for COVID-19 patients. Douglas says, "Dell Technologies APEX Flex on Demand helped put our employees' paychecks and retirement account contributions first while continuing our multi-cloud journey."

Douglas is also grateful for the steadfast commitment to Sentara by Dell Technologies and the PowerScale for multi-cloud solution. He says, "Multi-Cloud Data Services for PowerScale, enabled by Faction, helps us enhance security and make data services more reliable. It has also helped reduce the burden on essential IT workers who are stretched thin due to recent demands on healthcare. Dell Technologies has shown they take our healthcare business seriously and value it as much as we do. Our partnership with Dell Technologies has given us the opportunity to revolutionize IT and change lives for the better."

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