CASE STUDY

NHS
Western Sussex Hospitals
NHS Foundation Trust

Western Sussex Hospitals NHS Foundation Trust uses Nutanix platform to enhance Acute and Outpatient Care Services

Nutanix Enterprise Cloud delivers a secure and frictionless environment throughout the continuum of care

BUSINESS BENEFITS

Faced with the prospect of spiralling support costs on its legacy equipment and growing performance, reliability and availability needs for new data intense workloads such as clinical digital imaging and video the Western Sussex Hospitals NHS Foundation Trust began planning to end of life an integrated hardware platform which was becoming increasingly difficult to maintain. It looked to replace it with a flexible, hyperconverged platform to execute secure, rolling migration of critical data and workloads onto high performance, resilient and scalable infrastructure.

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>
> – Jon Beverton technical lead for infrastructure for Western Sussex Hospitals NHS Foundation Trust

INDUSTRY

Healthcare

BENEFITS

- Fast implementation through bare metal install
- Easy to execute migration and incremental upgrades through the addition of extra Nutanix Nodes
- Simplified management on hyperconverged 'commoditised IT server and compute'
- Flexibility for expansion options and capacity growth including an end to being locked into a five-year refresh cycle
- Reduced expenditure because of higher density compute reduced our VMware licensing requirements

SOLUTION

Clinical Systems running on Nutanix:

- SemaHelix (Patient Administration System)
- Patientrack (Near patient observations)
- JAC (Pharmacy and Electronic Prescribing)
- Kainos Evolve (Clinical Documentation)

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CHALLENGE

Few things could be considered more mission critical than providing the IT to run healthcare environments and in Western Sussex Hospitals NHS Foundation Trust this is no exception.

Western Sussex Hospitals NHS Foundation Trust serves a population of around 450,000 people across a catchment area covering most of West Sussex. Its three hospitals provide a full range of district general hospital services on the two acute sites at Worthing and Chichester. Southlands hospital provides outpatient services, day surgery and a comprehensive ophthalmology service. In 2017/18 the average number of patients treated included 585,037 outpatient appointments, 132,992 inpatient and day cases and saw 139,430 patients in Accident & Emergency.

The Trust employs an average of 6,607 people. This includes medical and dental: 728; Nursing midwifery and health visiting: 1,674; Health care assistants and support: 1,597; Scientific, therapeutic and technical: 635; Administration and estates: 1,279

The Trust's three hospitals are St. Richard's Hospital in Chichester, Southlands Hospital in Shoreham-by-Sea, Worthing Hospital in the centre of Worthing.

These areas have a higher proportion of over 65's (between 21.8% and 25.8%) compared to the England average (17.3%). The area covered varies hugely in terms of deprivation and least deprived areas of the country.

Every person working across the three Trust hospitals relies on access to its on-prem primary and back-up data centres. Vital data, from patient administration information to digital images, must be available on demand to clinicians, administrators and support staff.

"The changing nature of clinical care is seeing it become much more PACS imaging based. Images and video mean data capacity needs are growing all the time. Consultants are able to see more X-ray and scanning data on screens which means large packets travelling around the network. IT must provide as seamless an experience as possible and everything must work as expected," says Grant Harris, head of IT at Western Sussex Healthcare Trust. This formed part of the reason for choosing Nutanix. "In terms of Nutanix infrastructure IOPS capacity this video and imaging doesn't even begin to touch the sides."

At the beginning of 2019, the Trust found its five-year-old integrated hardware solution was becoming prone to problems. Issues such as component failures, planned and unplanned maintenance, and support difficulties were taking up more and more time. Hardware issues during software upgrades where 16 or more different components required intervention simply to execute key software changes were adding complexity. When it found it was faced with the threat of spiralling support costs, the technology and business case for end of life planning of its legacy platform became clear.

Choosing the correct replacement hardware and software stack became a vitally important decision. After an evaluation process to meet requirements including fast, easy implementation, and ease of maintenance and upgrades, the Trust chose Nutanix hyperconverged solution.

From the start of its go to market process, the team knew it wanted technical and business flexibility. The Trust wanted an end to being locked into a five-year refresh cycle, where an entire system would need to be replaced at once. The solution had to offer capacity and processing upgrades through the addition of new nodes on an as needed basis.

"A hyperconverged solution that could be incrementally upgraded meant we could effectively commoditise IT server and compute. We were after flexibility and simplification to avoid a repeat of the five-year buying cycle. We wanted the flexibility of buying another node or two and putting them into production as needed," says Jon Beverton technical lead for infrastructure for Western Sussex Hospitals NHS Foundation Trust.

Included in the requirement was the need to meet the team's desire to be hypervisor agnostic in the future: "Nutanix allowed us to do that and it was something some other suppliers couldn't offer," he says.

Part of the evaluation process involved a trip to a neighbouring hospital trust.

Brighton & Sussex University Hospitals had already procured a Nutanix solution. A site visit revealed that an entire data centre had been condensed into half a rack. "It was just amazing. It's just phenomenal how components are so much smaller and yet give the same or better output. What was also impressive and interesting to see was when the IT team showed us how to upgrade Nutanix. It was non-disruptive and so easy to do," says Beverton.

Nutanix partner Softcat helped facilitate the transaction by providing technical insight and connections to the right people inside Nutanix.

SOLUTION

Beverton effectively installed the hardware himself. "We set up a dual data centre solution with primary and a backup. The hardware set up was self-explanatory to rack and install. All the installation information needed was on Nutanix's website. "We got a bare metal install done so there was literally nothing on the servers. To put an image on them using Nutanix software and templates was a bit more challenging, but it helped myself and my team learn as it was laid out as step by step instructions. Where we had any technical issues we emailed the technical support people and they are very good at explaining what was needed. We went through that process and managed to get everything installed and connected."

The existing hardware stack consisted of a pair of first-generation converged systems. While being sold as converged, it consisted of a traditional architecture of separate SAN network switch, storage and blade server technology for hosting VMs. The migration to a modern truly hyperconverged Nutanix solution was carefully planned.

The continuous day to day operation of the hospital meant a lift and shift approach was not viable. With about 400 servers running a mixture of high capacity workloads, Windows and SQL servers, and many smaller systems - including many of the administrative systems - any outage could literally shut down entire hospitals.

The Trust operates dual on prem data centres using synchronous replication. Any failure of the primary data centre means all critical workloads are instantly available to the secondary site. "Time to recover will be minimal and we should be right up to the minute if we did ever lose anything," Beverton says.

CUSTOMER OUTCOMES

Today the team has migrated 70% of its server workloads onto Nutanix. The platform currently hosts around 15 terabytes of data and this will expand to 40 terabytes soon. The team has spun up around 250 servers on Nutanix and decommissioned around 200 from the legacy platform.

Resource planning and provisioning has become easy through the greater visibility afforded by Nutanix. It is clear where each VM is over or under provisioned and when planning additional VMs it provides clear information for available capacity.

Since going into production in August last year, the Nutanix hyperconverged support experience has been very good Beverton says. "Whenever we put a support ticket on the Nutanix portal it is answered in 15 minutes. The engineers know what they are doing and where the answer isn't obvious, they go and find out, even if it means looking at the roadmap and telling us what is coming."

NEXT STEPS

A team from the Western Sussex Hospitals NHS Foundation Trust attended a Nutanix conference and came away with real insight into future technology solutions for consideration including Nutanix Flow, which delivers advanced networking and security services, providing visibility into the virtual network, application-centric protection from network threats and automation of common networking operations. “The conference was unlike those of other vendors that we’ve experienced and gave real insight into the technologies available. Nutanix Flow is something we are considering,” says Beverton.

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