

NHS Acute Hospital Trust Gets Hybrid-Ready With Nutanix

University Hospitals Plymouth NHS Trust migrates critical healthcare data centre to Nutanix Enterprise Cloud for immediate scalability gains plus long-term flexibility on journey to Hybrid Cloud

INDUSTRY

Health service

BENEFITS

- Immediate scalability with a 30% capacity uplift before the option for on-demand scalability through extra nodes
- Six-fold reduction in rack occupancy and lower operational costs
- Greater resilience and simplified management using Nutanix AHV hypervisor for virtualisation of remaining physical workloads
- Future-proofing to accommodate other planned enhancements
- Hybrid-ready on-premise infrastructure to accommodate future plans for migration of key workloads to public cloud

SOLUTION

Nutanix Enterprise Cloud
Prism management plane
VMware and AHV hypervisors

Applications

- Legacy healthcare apps hosted in VMware VMs
- Clinical desktop delivered as Citrix Virtual Apps
- Microsoft SQL Server farm
- Commvault backup
- DMZ (external connectivity apps)

BUSINESS NEED

With its legacy on-premise infrastructure reaching end of life, University Hospitals Plymouth Trust needed a replacement with the scalability and flexibility to support 12,000+ users and the hundreds of applications on which they depend to deliver life-saving acute healthcare services. As well as meeting strict cost constraints the replacement infrastructure needed also to provide for the immediate virtualisation of remaining physical workloads; facilitate an existing virtual desktop platform and, in the longer term, make it possible to modernise legacy applications and eventual hybrid cloud adoption.

“It’s amazing what we’ve managed to achieve using the Nutanix Enterprise Cloud, and in just a few weeks. From migrating a hugely complex legacy infrastructure to a much more scalable hyperconverged platform – in record time, on budget and with limited disruption to the acute NHS services we support – to successfully virtualise all of our remaining workloads. It’s also given us a platform on which to kickstart a range of other projects. Plus, we’re now in a much better position to support the Trust’s long-term hybrid cloud plans.”

– Rob Harder, Chief Technology Officer, University Hospitals Plymouth NHS Trust

CHALLENGES

After 6 years of productive work, the legacy 3-tier infrastructure powering the on-premise data centre at University Hospital Plymouth NHS Trust was coming to end of life. It was also reaching the limits of its scalability and, with rapidly escalating support overheads, a suitable replacement was urgently needed. Wholesale migration to the public cloud was considered, but ruled out on cost grounds with the Trust opting, instead, for a hyperconverged replacement of its on-premise hardware, as CTO Rob Harder explains:

“We looked at migrating completely to the public cloud, but that would have been 2.5 times the cost of on-premise replacement. However, with over 200 legacy applications running on VMware, plus large numbers of Citrix, physical SQL Server and other key systems, we needed an on-premise solution with the scalability to both handle existing VMs and virtualise all of our remaining workloads. With some 8,500+ desktops to support, we also needed capacity to move forward with plans to modernise our end user computing platform as well get ready for hybrid cloud adoption by the time of the next refresh cycle.”

Adding to the challenge, Harder and his team were set ambitious timescales to complete the migration, during which they needed to virtualise all remaining physical workloads and setup supporting disaster recovery facilities. And all while keeping the largest single site hospital in Europe working 24/7 in support of over 12,000 front line healthcare professionals spread across multiple locations.

SOLUTION

Several tenders were submitted, with the Trust eventually opting for the Nutanix Enterprise Cloud to be supplied by Cristie Data, a specialist IT infrastructure provider and approved Nutanix partner. Orders for two Enterprise Cloud clusters were placed, one destined for the data centre at the main Derriford Hospital site and the other to provide service continuity and disaster recovery services from an offsite location.

“There were several reasons why we chose the Nutanix Enterprise Cloud,” commented Harder, “not least the need for the Trust, as a publicly funded organisation, to deliver value for money when it comes to this kind of investment. Nutanix does that in spades, plus it has a justifiable reputation as a market leader and innovator when it comes to hyperconverged infrastructure and an impressive support team to go with it which, as a customer, is very reassuring.”

Another factor was the hypervisor-neutral nature of the Nutanix software, making for much easier migration while also saving on hypervisor costs as Harder, again, explains:

“Due to warranty limits we needed to migrate 550 existing VMware VMs as-is, but when it came to virtualising additional physical servers we were able to use the AHV hypervisor, for which no additional licensing is required. AHV will also keep costs down when it comes to our planned VDI development with further savings whenever legacy applications are upgraded or replaced to run on the Nutanix hypervisor.”

CUSTOMER OUTCOMES

The migration process was split into two phases, starting with migration of 550 VMware VMs plus core Citrix-hosted clinical desktop apps which, as part of the process, were virtualised to run under the Nutanix AHV hypervisor. The Trust's preferred Commvault backup system was, similarly, migrated to AHV in this pass along with external connectivity applications grouped within a secure de-militarised zone (DMZ).

“We gave the IT team just three weeks to get through all this work,” said Harder, “but with help from Nutanix and [Cristie Data](#) they managed it with relative ease. It was then that we knew we had made the right choice.”

The second phase - virtualising and migrating the business-critical SQL Server estate - took a little longer, but was still completed on time, with even Harder surprised how smoothly it went.

“We virtualised and moved twelve SQL Server clusters, hosting 60 database systems and almost 500 physical databases,” he said. “To do that in under 6 weeks and with limited disruption to users or their applications was simply outstanding.”

Benefits have yet to be fully quantified, but the new infrastructure has immediately boosted data centre capacity 30 percent, over and above the on-demand scalability made possible by adding additional nodes. At the same time, the hardware footprint has been reduced by a factor of six with the new data centre currently occupying under half an equipment rack, with associated reductions in power and cooling.

NEXT STEPS

With the replacement of the Trust’s on-premise legacy data centre complete, it’s ‘business as usual’ for Harder and his team but with an invigorated, scalable and flexible infrastructure empowering them to move forward with several key projects.

Midway through a Windows 10 migration, a switch to virtual desktops is high on that list with the Nutanix AHV hypervisor a key enabler. There are plans also to review backup and disaster recovery provision, added to which Harder would like to bring the Trust’s diagnostic imaging system, currently hosted on its own servers and storage, into the main data centre.

And finally, as Harder explains, the Trust is now in a much better position to move forward with its digital transformation plans.

“We already have a few workloads in Azure,” he said, “and are hoping to move others to the Cloud to build a more flexible hybrid infrastructure before the next planned upgrade. Switching our on-premise infrastructure to the Nutanix Enterprise Cloud now gives us a head start and a good position from which to achieve that aim.”



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