

CASE STUDY

Data Centre Site Move for the NHS.

Keeping the North West's Hospitals Running:
A High-Stakes Data Centre Migration for the Northern Care Alliance NHS trust.



Customer:

Northern Care Alliance NHS Foundation Trust (NCA) combines staff and services from Salford Royal NHS Foundation Trust and The Pennine Acute Hospitals NHS Trust.

The NCA is one of the largest NHS providers in the United Kingdom.

Industry:

Healthcare.

Operations:

15 petabytes. 4 large networks sites and extensive community settings, based in the Manchester area.

Covenco Solutions:

- > Fibre channel Networks
- > Data Centre Migration
- > Backup and DR Solutions
- > Server and Storage Allocation
- > Data Centre Commissioning

Lives on the line. The stakes were very high.

The bustling medical centres of the Northern Care Alliance (NCA) in North West England serve over a million people. Every tick of the clock, every whirring machine, and every diagnostic image plays a crucial role in patient care.

Yet, beneath the surface, a silent but vital battle was brewing within the NCA's IT infrastructure. Their existing data centre, while reliable, was reaching its capacity and needed more scalability to support the growing demands of the healthcare system. In 2022, the NCA embarked on a critical mission: migrating its entire data centre operation to a brand-new facility at the Royal Oldham Hospital, while the old data centre (NMGH) was restructured for another NHS trust.

This seemingly routine procedure, however, was far from ordinary. The NCA's data centre housed a complex set of IT systems, forming the lifeblood of its operations. These systems, from Electronic Patient Records (EPR) to pathology and radiology applications, were all mission-critical. Any downtime, even a minor hiccup, could disrupt patient care with life-altering consequences.

Enter Covenco: A trusted partner for a daunting task

Recognising the gravity of the situation, the NCA looked to their trusted IT partner, Covenco, for a solution. Covenco has a proven track record of site-move success, having previously implemented a high-availability storage solution for the NCA's vital SQL clusters at North Manchester General Hospital based upon IBM's latest generation of FlashSystems. This experience instilled immense confidence in the NCA, making Covenco the natural choice for the upcoming data centre migration.

The roadblocks: Technical hurdles and budgetary constraints

The migration presented several formidable obstacles: Firstly, the new data centre at Oldham needed more infrastructure to seamlessly integrate with the NCA's existing Fiber Channel technology, a crucial component for high-speed data transfer between storage devices and servers.

Secondly, budgetary constraints ruled out the option of building a completely new environment from scratch at the new location.

These restrictions meant Covenco had to develop a creative solution that minimised downtime, maximised efficiency, and stayed within budget.

"The services delivered by the IBM Storage and Compute layer are critical to the patient care in the Hospital.

It is no exaggeration to say that lives are dependent on their availability."

Imran Bashir
Lead Technical Architect
NHS Northern Care Alliance



Covenco engineers worked closely with the NCA team to map the Manchester data centre's Fiber Channel switch design, and configure the project.



Beyond standard procedures: Crafting a flexible solution

In a typical data centre migration, the usual approach involves setting up a new environment at the target location and migrating data over a dedicated high-speed network. However, this traditional method wasn't feasible for the NCA due to the budget limitations and the scale of data involved. Covenco, therefore, had to think outside the box.

The first step involved a thorough assessment of the existing infrastructure. Covenco engineers worked closely with Alex Yusuf, the Datacentre Team Lead to map the Manchester data centre's Fiber Channel switch design.

Alex was instrumental to the project, and kept all of the NHS Manchester data centre side of the project working smoothly. Together with the Covenco team, Alex was able to coordinate and manage the entire project in a way that guaranteed success.

This phase involved identifying and consolidating all of the older, slower devices into newer, higher-speed switches to streamline the network infrastructure, minimising potential bottlenecks during the migration.

Building a test bed: Simulating the move prior to takeoff

The next crucial step was creating a test environment at the new data centre in Oldham. Since this location lacked the Fiber Channel infrastructure, Covenco leveraged its extensive rental equipment loan pool.

The Covenco team deployed rental storage arrays and servers, allowing the NCA and Covenco teams to meticulously test data replication capabilities over the high-speed internet connection (WAN) between the sites.

This testing phase proved invaluable, highlighting the need for additional high-bandwidth fibre optic cabling within the Oldham data centre itself, a crucial detail that may have been overlooked without proper simulation.

The Big Bang: Time crunch and unwavering focus

As the project progressed, the NCA faced additional pressure from tightening deadlines. Initially, plans called for a staged migration over several weeks, minimising service disruption. However, circumstances necessitated a more condensed approach.

By December 2023, after much deliberation, the NCA embraced a "Big Bang" strategy, aiming to migrate both the live and disaster recovery (DR) systems within one week. This ambitious approach meant minimal downtime but significantly increased the pressure on both teams.

"It is a testament to the Covenco team that they were able to help keep the project on-track despite the complexity of the data centre and the mammoth tasks involved in the move."

Alex Yusuf

Datacentre Team Lead
NHS Northern Care Alliance

A two-part master-class: de-risking the move

To mitigate the risks associated with the new approach, Covenco proposed a two-part migration strategy. The first phase focused on relocating the DR systems. This ensured a safe and established environment at the Oldham data centre and provided a valuable trial run for the subsequent live system migration.

Phase 1: Moving the disaster recovery systems

The first leg of the migration, targeting the DR systems, was relatively straightforward.

The process involved physically transferring the hardware components and establishing the necessary network connections at the Oldham data centre.

While this move didn't directly impact live patient care, it served as a crucial confidence booster for both teams.

Phase 2: Migrating live systems with minimal downtime

The real test arrived with the second phase – migrating the live systems. Here, every second counted. The NCA and Covenco teams had a mere 48 hours to complete the entire operation, a time-frame that demanded meticulous planning and nerves of steel.

Friday, midnight: The clock starts ticking

The migration commenced promptly at 10 minutes past midnight on a Friday. With a deep breath and a shared sense of purpose, the teams initiated the critical shut-down of all live hospital services, including Electronic Patient Records (EPR), radiology applications, and other vital systems. The race against time had officially begun.

The physical move: A marathon in a few hours

The ensuing hours were a blur of activity. Technicians diligently worked through the night, meticulously transferring servers, storage arrays, and network equipment from the Manchester data centre to the new facility in Oldham. Working in a well-rehearsed choreography, both teams ensured the safe physical relocation of all vital components.

"I have been involved in dozens of critical projects as the Hospital has moved these sites. This was the seventh move of its type.

Credit to the Covenco and NCA teams for delivering this project under the greatest of pressures."

Imran Bashir,
Lead Technical Architect at the NCA

Beyond the hardware: Rebuilding the digital ecosystem

The physical move was just the first hurdle. The real challenge lay in establishing the digital ecosystem at the new data centre, involving a complex series of tasks:

Configuring SAN Networks:

The newly migrated SAN (Storage Area Network) switches required configuration to establish connectivity between servers and storage devices.

Zoning and Mapping:

Defining access paths for each server to the relevant storage resources needed to be meticulously mapped.

Data Resynchronisation:

Replicating data from the Manchester data centre to Oldham's newly migrated storage systems was a critical step to ensure data integrity.

System Testing and Troubleshooting:

Following the reconfiguration, a comprehensive round of testing was conducted to identify and resolve any issues that might have arisen during the migration process.

The human factor: Collaboration triumphs under pressure

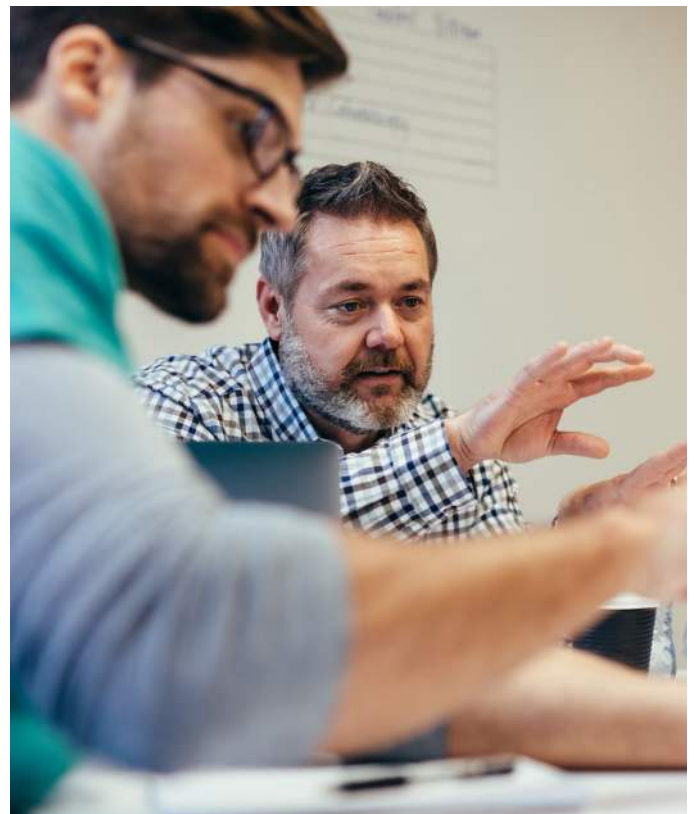
This migration phase was a true testament to the combined expertise and unwavering dedication of the NCA and Covenco teams. Every member, from seasoned engineers to on-site support personnel, played a crucial role.

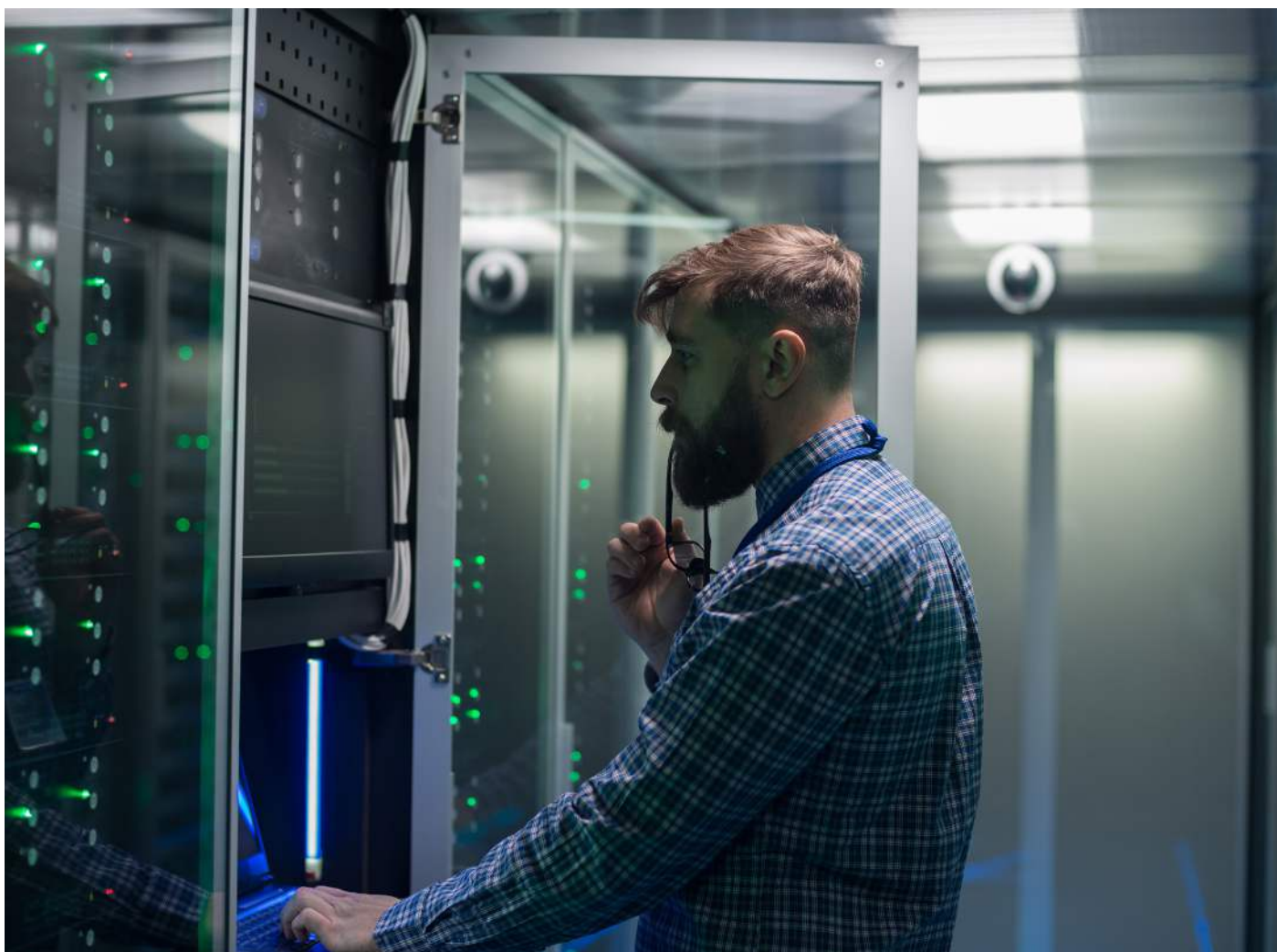
The atmosphere was charged with focus and a shared determination to see the project through successfully.

"Despite meticulous planning, unforeseen challenges inevitably emerged. Minor configuration issues and connectivity hiccups arose during the network and storage infrastructure re-establishment.

However, the collaborative spirit between the teams shone through. The engineers worked side-by-side, troubleshooting problems efficiently and implementing solutions with resolute calmness."

Alex Yusuf
Datacentre Team Lead
NHS Northern Care Alliance





Sunday night relief: Back online before dawn

After a gruelling 48 hours that stretched into the early hours of Sunday morning, the light at the end of the tunnel finally appeared. The migrated systems hummed to life, successfully replicating data and establishing network connectivity at the new data centre. Extensive testing confirmed the smooth operation of all critical hospital services. Exhausted but immensely proud, the teams had achieved the seemingly impossible.

Monday morning miracle: Business as usual for patients

As the first rays of dawn painted the sky, a sense of relief and accomplishment washed over everyone involved. By Sunday evening, well ahead of the Monday morning deadline, the NCA's crucial hospital systems were back online and fully operational at the new data centre.

This meant seamless access to patient records, diagnostic tools, and other critical applications, ensuring a smooth and uninterrupted workflow for healthcare professionals.

The aftermath: Lessons learned and a renewed partnership

The successful migration of the NCA's data centre was a landmark achievement. It showcased the power of collaboration, meticulous planning, and innovative problem-solving under immense pressure. Covenco's expertise in data centre migration and the NCA's deep understanding of its infrastructure proved to be a winning combination.

The project also highlighted the importance of adaptability. Originally envisioned as a staged migration, the NCA's willingness to embrace the "Big Bang" approach within tight deadlines ultimately proved successful. This adaptability, however, was only possible with a strong foundation of trust and open communication between the two teams.

Looking ahead: A future-proofed foundation

Beyond the immediate success, the NCA's migration to the new data centre has laid the groundwork for a more efficient and scalable IT infrastructure.

The upgraded facility offers increased capacity, improved security, and a platform for future growth, paving the way for the NCA to continue delivering cutting-edge healthcare services to the communities it serves.

A partnership for progress: Covenco and the NCA

The successful migration further solidified the strong partnership between Covenco and the NCA. Both teams displayed a spirit of collaboration and mutual respect throughout the project. Covenco's technical expertise and proven track record were instrumental in navigating the complexities of the migration process.

The NCA, on the other hand, provided invaluable insights into their infrastructure and a clear understanding of their specific needs. This successful collaboration has positioned Covenco as a trusted advisor for the NCA's future IT endeavours.

Beyond the migration: A ripple effect of positive change

The successful migration of the NCA's data centre wasn't just a technical feat; it had a ripple effect that extended far beyond the walls of the IT department.

Here's a glimpse into the broader impact of this project:

Enhanced Patient Care:

Reduced downtime and improved data accessibility translated into smoother patient care workflows. Medical professionals had uninterrupted access to vital patient records and diagnostic tools, enabling them to deliver timely and efficient care.

Improved Staff Morale:

The successful migration boosted the morale of the NCA's IT staff. Overcoming the challenges associated with the project instilled a sense of accomplishment and pride in their technical capabilities. This enhanced confidence has the potential to translate into improved efficiency and innovation within the IT department.

Increased Confidence in IT Infrastructure:

The migration process was a comprehensive NCA IT infrastructure audit. The project has laid the groundwork for a more reliable and secure IT environment by identifying and addressing potential bottlenecks, fostering greater confidence in the overall system.

A Model for Future Projects:

The lessons learned from the NCA's data centre migration can serve as a valuable blueprint for future IT projects within the organisation. The collaborative approach, the emphasis on meticulous planning, and the ability to adapt to changing circumstances are all essential elements that can be applied to future site move projects.

A look inside Covenco: A commitment to innovation

For Covenco, the NCA data centre migration project showcased its capabilities. Covenco's extensive experience in data centre migrations, coupled with its access to cutting-edge technology resources, allowed it to deliver a solution that met the NCA's unique requirements. Furthermore, Covenco's commitment to building strong partnerships with its clients was evident throughout the project.

The successful completion of the NCA migration strengthens Covenco's reputation as a reliable and innovative IT partner for healthcare organisations.

This project adds to Covenco's growing portfolio of successful data centre migrations, further establishing their expertise in this critical area.

Get in touch

Are you considering a data centre relocation, or a restructuring of your existing site? Contact the team at Covenco to discuss your options for a seamless experience.

We can guide you on the latest best practice procedures and project plans to ensure a smooth transition.

Call: 01753 732000

Email: enquiries@covenco.com

Visit: covenco.com

About Covenco

Covenco connects data management services with IT hardware supply and support. With over 35 years of experience in the IT industry, our team offers a reliable source of expertise for data centre administrators.

Covenco supports businesses with world-class data protection, backup, and disaster recovery services.

Our UK data centres have over two Petabytes of customer data under management at any time, and we are fully ISO27001 accredited for data security.

Contact Covenco

Covenco UK Ltd Head Office
Unit 3, MXL Centre, Lombard Way,
Banbury, Oxfordshire. OX16 4TJ
United Kingdom

Telephone: 01753 732000

Email: sales@covenco.com

<https://covenco.com>

covenco
DATA MANAGEMENT & INFRASTRUCTURE 365

