



Storage migration project delivers greener IT infrastructure for one of London's largest local authorities



The London Borough of Hillingdon has implemented a new storage solution that has cut server hardware by 97%, significantly reducing power consumption and increasing energy efficiency.

Introduction

The London Borough of Hillingdon's IT team approached ICT integrator Fordway Solutions to find an effective and greener way to handle the Borough's rapidly growing data storage requirements. They needed a solution that would provide effective data prioritisation and management and drive down costs, while also providing increased resilience and reducing power consumption.

Fordway designed and implemented a migration to a new storage area network (SAN) solution combined with a virtual server environment. This has provided substantial cost savings, improved data prioritisation and an effective business continuity solution. As well as providing disaster recovery for the Borough, the solution has been extended to provide disaster recovery for the local health authority, Hillingdon Primary Care Trust, and will enable the Borough to recover its operating costs in the not-for-profit agreement with the trust.

The client

With a population of almost a quarter of a million, Hillingdon is one of London's largest local authorities. Located 14 miles from central London and with Heathrow Airport within its boundaries, the borough is literally the gateway to the UK. It incorporates 800 acres of woodland, country parks, fields and farms, rivers and the Grand Union Canal, which, combined with one of the top-ten shopping centres in London (Uxbridge) provides residents and visitors with a true 'town and country' experience.



The business need

The IT team at Hillingdon faced a daunting challenge: almost 100 per cent year on year data growth, driven primarily by increases in e-mail volume, expanding document retention requirements and the proliferation of digital images associated with planning applications and property and highway inspections. This had created many terabytes of stored data.

While only ten per cent of this data was mission-critical at any one time, the other ninety per cent had to be available at short notice as it could be required for government reports or to answer questions about legacy projects.

The Borough's existing five year old storage area network (SAN) could not handle this level of data, and the associated IT infrastructure was unable to support the IT team as it struggled to manage growth and prioritise data manually. The legacy environment was also a financial and power drain on the Borough's resources. It required an increasing amount of hardware, and the resulting high power consumption was a major issue as the local power company could not supply any more power to the building, leaving no scope to add additional servers.

The solution

"We were looking for a new storage solution that could automatically manage data and drive down the cost per terabyte of stored data over the life of the SAN," explained Roger Bearpark, assistant head of ICT for the London Borough of Hillingdon. "It had to provide us with affordable system resilience and also contribute to a greener IT infrastructure."

After reviewing all the alternatives available, Fordway recommended a solution comprising two 30 TB Compellent SANs, one to be located at the main site and one five miles away as part of a business continuity solution. This addressed all of Hillingdon's key needs: ease of management, low total cost of ownership, environmental benefits and disaster recovery capabilities. The previous SAN had been unable to distinguish between primary and secondary data. This meant Hillingdon's IT team either had to spend time manually moving data or leave secondary data on expensive, high speed disks. The new SANs included an automated tiered storage feature which solved this problem by automatically moving the least used blocks of data from high performance fibre channel disks to low cost, high density and energy efficient SATA storage. Just by dynamically migrating infrequently accessed data in this way, Hillingdon was able to save £6,500 in annual power costs.





The new SANs use Compellent's thin provisioning software, which delivers the highest storage usage rates in the industry by eliminating the allocated but unused capacity found in traditional storage arrays. This enabled Hillingdon to purchase less hardware up front and defer further storage upgrades in line with business use. It also reduced the floor space required and electricity costs associated with keeping unused disks spinning.



In addition, Compellent's Thin Import feature enabled Hillingdon to reduce its disk space requirements by 45 per cent from the capacity allocated on the previous SAN, and the space reclamation process took a third of the time that would have been required using traditional data migration methods. The new virtualisation of storage enabled Hillingdon to reduce the number of production servers required from 94 to three resulting in a significant saving in energy costs.

Disaster recovery is also provided using the SANs to asynchronously replicate space efficient, continuous snapshots between the two sites. This process is automated by enterprise-class storage resource management software, which allows Hillingdon to manage both environments from a single console.

Hillingdon had been faced with hiring extra personnel to handle the growing and complex data management activity. However, the ease of use and automated functionality of the solution implemented by Fordway removed the need for these extra staff, enabling the borough to avoid adding £50,000 to its salary bill.

The benefits

The changes that have been implemented are providing Hillingdon with a saving of £20,000 per annum through reducing its power consumption; this has decreased from 34kWh to just 1.1 kWh. An additional saving of £6,500 per annum has been achieved by using energy efficient storage for infrequently accessed data. Hillingdon now runs 94 'virtual' servers on just three physical machines – a 97 per cent reduction in server hardware. A further annual saving of £50,000 has resulted from removing the need to expand the IT team.

“As a public sector organisation, Hillingdon is committed to driving sustainable, more environmentally friendly practices, and our green IT initiative enabled us to reduce our carbon footprint by 20 per cent over 18 months”

Roger Bearpark
Assistant Head of ICT
London Borough of Hillingdon

“We have helped a large number of public sector organisations improve their IT infrastructure to meet specific business objectives,” explains Richard Blanford, managing director of Fordway. “This experience has enabled us to develop a ‘best of breed’ optimised infrastructure which we tailor to meet each organisation’s needs and is guaranteed to improve their business efficiency while reducing IT infrastructure costs, improving resilience and maximising the return on their investment. “In Hillingdon’s case, virtualising their storage has improved data access and made the system much easier to manage, while reducing costs and providing significantly improved resilience and business continuity.”

As well as providing effective disaster recovery for the Borough, the solution has been extended to provide disaster recovery for the local health authority, Hillingdon Primary Care Trust. The PCT’s data is stored on the secondary SAN, while the borough’s primary SAN provides back-up for the trust’s data. An automated point-and-click interface enables Hillingdon to automate failover and recovery between the two SANs, as well as test disaster recovery. The automated chargeback feature will enable the Borough to recover its operating costs in the not-for-profit agreement it has made with the trust.

This project has helped to raise the profile of the Borough Council as an organisation committed to sustainable, environmentally friendly practices through positive media coverage, and has won numerous awards for benefits it has delivered, including:



Next steps

In the future, the new system will enable the IT team to charge departments accurately for the storage they use. “We anticipate it will help to mitigate storage growth once people start paying for the storage they use, rather than it being paid for out of a central budget,” says Roger. “As a local government organisation, we are fairly prudent with the money we spend, and this solution represents great value for money.”