



# The State Hospital protects systems against disaster

*Maximizing resilience with IBM technology*

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## Overview

### The need

As The State Hospital's existing infrastructure approached the limits of its warranty period and capacity, the organization recognized an opportunity to transform its disaster recovery strategy.

### The solution

Deployed a mirrored infrastructure based on IBM® BladeCenter® HS22 blade servers and an IBM System Storage® SAN Volume Controller stretched cluster connected to IBM System Storage DS5020 arrays.

### The benefit

Offers automatic failover in the event of a disaster, with no interruption to service, helping to ensure continuity of care to patients. Builds redundancy into every component of the infrastructure, maximizing reliability.

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Located in a 60-acre site in Lanarkshire, Scotland, The State Hospital is one of four high-security hospitals in the United Kingdom, and the only special-security psychiatric hospital to provide services to Scotland and Northern Ireland. It employs 700 people to deliver assessment, treatment and care in conditions of special security for approximately 140 patients with mental disorder who, because of their dangerous, violent or criminal propensities, cannot be cared for in any other setting.

## Identifying risks

Care givers within The State Hospital require access to IT systems 24 hours a day, seven days a week. Previously, the organization relied on a mirrored infrastructure based on IBM BladeCenter and IBM System Storage technology that required manual intervention in the event of a disaster. This presented a serious risk to business continuity for The State Hospital, especially as the IT team was only available during normal business hours. As the existing servers and storage systems approached the end of their warranty periods and the limits of their capacity, the organization saw this as the ideal time to transform its disaster recovery strategy.

David Brammer, Senior IM&T Analyst at The State Hospital, explains: "In the past, dealing with any major hardware failure would require one of our IT team to get involved and manually switch over to our secondary site. We estimated that it could take us up to two hours to recover, causing delays to the transmission of vital information where it was needed, and potentially putting people at risk. Outside of normal business hours, this risk was magnified further. Since our existing computing resources were over-provisioned and almost out-of-support, we realized that this was the perfect time to explore enterprise-level storage solutions that are now priced within our budget."



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## Solution Components

### Hardware

- IBM® BladeCenter® HS22
- IBM System Storage® DS5020
- IBM System Storage TS3100 Tape Library

### Software

- IBM System Storage SAN Volume Controller

### Services

- IBM Global Technology Services® – Hardware Maintenance

### IBM Business Partner

- Celerity
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## Working towards resilience

Following an open tender, The State Hospital selected a proposal based on IBM technology put forward by IBM Premier Business Partner Celerity.

“We have worked closely with Celerity for more than four years, so they know our systems inside out,” says Brammer. “They listened closely to our criteria and delivered a proposal that surpassed our expectations, promising truly exceptional resilience at a very reasonable price point.”

In a three-month project, Celerity designed and configured an active-active dual data center concept for the organization. The State Hospital chose to fully populate each of its existing two IBM BladeCenter H chassis with an additional seven IBM BladeCenter HS22 blade servers virtualized with VMware software. With service continuity a key priority for The State Hospital, Celerity ran the existing and new blades in parallel before migrating its production environment server-by-server, minimizing downtime.

“The migration was close to perfect, completed ahead of schedule and with just a few minutes’ downtime to our business-critical systems,” comments Brammer. “The new blade servers provide six times the processing power of the previous environment and significantly greater capacity. As a result, we could probably run our entire environment on just two of the blades if we wanted to, although we choose to spread the load to maximize redundancy and ensure there is no single point of failure.”

## Leading-edge technology at an affordable price

Celerity also deployed an IBM System Storage SAN Volume Controller stretched cluster connected to three IBM System Storage DS5020 devices, deploying 8 Gb/s Fibre Channel interfaces to achieve high I/O performance. One System Storage DS5020 disk system with 9.6 TB of capacity is located at each of The State Hospital’s primary and secondary data center rooms, approximately 150 meters apart. A third System Storage DS5020 disk system in an air-conditioned secure building hosts three quorum disks, providing an extra level of protection against disaster. An IBM System Storage TS3100 is used for tape backup, and IBM Global Technology Services® provide ongoing maintenance for the solution.

“IBM System Storage SAN Volume Controller is the real star of the solution, from our point of view,” says Brammer. “Previously, a solution of this sophistication would have been too expensive. The ingenious stretched-cluster design configured for us by Celerity enables us to automatically bounce back in the event of a disaster, meaning business can continue as usual 24/7. This gives us huge peace of mind, allowing our staff to be confident of access to vital information at any time of day or night.”

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*“Offering a single point of control for a storage landscape with no single point of failure, the IBM BladeCenter and System Storage solution has proved ideal for an organization like us, where protecting against downtime is the critical priority for a relatively small IT team.”*

— David Brammer, Senior IM&T Analyst, The State Hospital

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## **Easy manageability**

As a result of the project, The State Hospital has moved to a more sophisticated disaster recovery strategy, offering dramatically faster recommencement of operations in the event of a systems outage. The close integration between IBM technology and VMware software is a major asset to The State Hospital, enabling the organization’s IT team to use the same tools to manage its infrastructure as before, with no need to relearn a new technology. The State Hospital has also found virtually no increase in the amount of time spent on systems management.

“Offering a single point of control for a storage landscape with no single point of failure, the IBM BladeCenter and System Storage solution has proved ideal for an organization like us, where protecting against downtime is the critical priority for a relatively small IT team,” says Brammer. “Working closely with an SAN Volume Controller expert from Celerity to configure the stretched cluster helped us get to grips with the new solution, and our day-to-day administration is pretty much the same as before. This is an impressive advantage when you consider that we have moved to a disaster recovery strategy that enables us to have our entire production environment go down with no interruption to service, compared to a potential two-hour wait on our old systems.”

## **Looking to the future**

By migrating to higher-performing, higher-capacity IBM BladeCenter HS22 blade servers, The State Hospital can run a significantly higher number of virtual machines on each blade, providing much-needed headroom for future growth. Both the BladeCenter and System Storage machines offer modular growth options, ensuring the organization can scale up as needed with minimal disruption to operations.

“As a hospital, our top priority will always be protecting service continuity,” concludes Brammer. “Choosing IBM BladeCenter and System Storage technologies provides us with a range of non-disruptive growth options, giving us the freedom to consider new projects that call for greater capacity without worrying about the impact they may have on business-critical systems. As this project has proved, with the right technology and the right partners – which we had in IBM and Celerity – you can achieve ambitious things without your end-users even noticing.”

## For more information

To learn more about IBM servers, storage and solutions, contact your IBM sales representative or visit: [ibm.com/systems](http://ibm.com/systems)

To learn more about products, services and solutions from Celerity, visit: [www.celerity-uk.com](http://www.celerity-uk.com)

To learn more about The State Hospital, visit: [www.tsh.scot.nhs.uk](http://www.tsh.scot.nhs.uk)



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