

Resilient File Store and Exchange Infrastructure for Leading University



Established in the 1830's and now with over 16,000 full time students, this leading university had a data management and availability problem.

Like many large and long lived organisations, the services that central IT provided and the data it managed were growing, while their resources were fixed. They needed to get their data onto a resilient system to improve data availability and reduce the management overhead.

A bad experience in the past coloured their views and greatly restricted the technology options they would consider. The conventional approach would have been to put a highly available "big box" storage system running RAID 5 in at the centre of a fibre channel storage area network (SAN) and perhaps cluster critical servers to help service availability. With the past experience this would not have been an acceptable solution.

The University defined a basic strategy that stipulated RAID 0 stripe sets on the disk subsystems, used multiple small disk systems with redundant controllers and required resilience that would tolerate the complete loss of one of the two data centres.

They decided to go to open tender in the European Journal and see what solutions were presented. We understand the bulk of the tenders were based on the "big box" approach. Solution Centre however, listened to what the University were saying about their experiences and history and designed a solution that took account of those views and still met the University's budget and capability requirements.

"Solution Centre were the only people that listened, heard what we said and did not try to impose their natural solution on to us. Our requirements are unusual and we needed a novel solution"

Bringing together senior technologists from HP and Veritas, Solution Centre was able to produce a distributed cluster solution that met all the University's criteria. "As a vendor independent integrator we don't tell customers this is the solution you need, we listen to what they want and then

Summary

Problem

- . Distributed systems
- . Minimal Management
- . Negligible resilience
- . Poor utilisation

Solution

- . Distributed stretch cluster
- . Centralised backup

Technology

- . HP Servers
- . HP Storage
- . HP SDLT Libraries
- . Veritas Cluster Server
- . Veritas Volume Manager
- . Veritas NetBackup

Benefits

- . High availability
- . High performance
- . Disaster tolerant
- . Reduced management

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About Solution Centre

Solution Centre provides vendor agnostic services, consultancy and solutions to public, charity and commercial organisations.

The technologies centre on data availability and security.

We map technology to the business need and as we are authorised by all major manufacturers in our field we can give independent and impartial advice from initial problem analysis, through solution definition, implementation to ongoing comprehensive support.

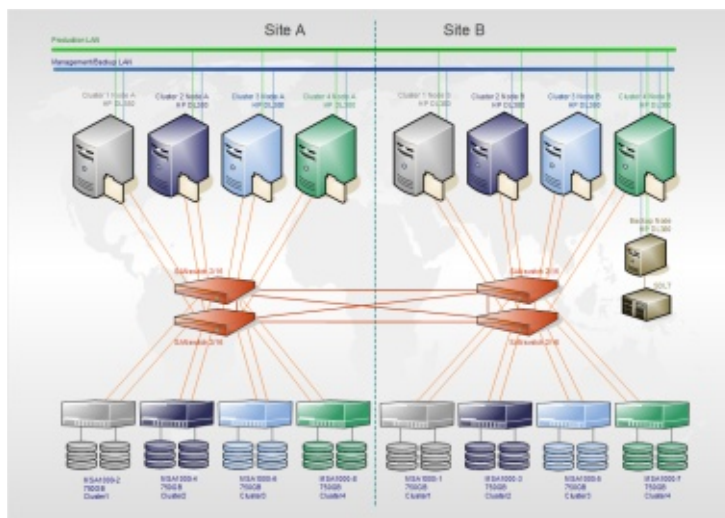
We understand that the technology we work with may not be mainstream to our customers and work with them to provide all the support they need.

select the products and manufacturers that best meet those requirements", said Peter Williams who led the project team.

The cluster was split between two data centres on different sides of the campus. The data centres were connected by multiple dark fibres. Each data centre was equipped with DL380 and ML370 servers, multiple MSA1000 storage subsystems with expansion cabinets and SDLT tape libraries. The whole system was connected via a fully redundant, dual pathed fibre channel fabric. Each storage subsystem was configured as a RAID 0 stripe set to maximise performance. The clustering service was provided by Veritas Cluster Server and storage management by Veritas Volume Manager. This enabled each RAID 0 set to be mirrored to a matched set in the other data centre, so running RAID 1 between the buildings. Some nodes of the cluster were configured as file servers, others as the Microsoft Exchange servers.

While the system design did not specifically aim to minimise the management overhead, as that was not a primary requisite; in fact there was a benefit that was simply accrued through the consolidation of the very disparate and diverse systems, this being the result of various schools and departments within the University having devolved budgets and "doing their own thing". By providing a highly available and high performance solution, the central IT service convinced the schools of the benefit they would get from buying in to clustered SAN and so much of the distributed infrastructure was removed.

About a year after installation a fire removed one of the data centres. The services continued without loss, proving the viability of the solution installed.



CASE STUDY