

CASE STUDY



Birkbeck
UNIVERSITY OF LONDON

ORGANIZATION:

University

INDUSTRY:

Education;
Research

HOST:

Linux and Microsoft®
client/server infrastructure
with different types of
database applications

CHALLENGES:

Consolidation of database
storage and an extended direct
attached storage infrastructure.
Facilitation of storage manage-
ment and optimization of
capacity usage.

SOLUTION:

Deployment of an open,
scalable unified IP SAN/NAS
storage system using Reldata
9200 bundled with Dot Hill®
SANnet® II FC RAID arrays as
well as software iSCSI initiators
for the host systems.

"We would not have been able to afford a storage infrastructure that meets all our requirements; however RELDATA has enabled us to build a very comprehensive cost-effective, and high performance solution that matches our specific needs and budget, and can be easily built on as our demands increase."

Richard Westlake
Birkbeck College, IT Manager



Birkbeck College Realized High-Performing Unified IP SAN/NAS Storage Solution

The performance demands placed on IT storage at Birkbeck College's School of Crystallography are relatively extreme. Modelling molecular dynamics and processing data from electron microscopes are far from the norms of data processing in most organizations. But the College's need to achieve high-end computing performance, data security and high availability on a very limited IT budget, is a challenge which rings true with any IT manager.

The Need for a SAN

For the School's IT manager, Richard Westlake, this challenge has presented itself most recently in the need for networked storage. With a large number of machines to cater for, from a 67 node IBM® Blade Centre, through to individual servers predominantly running Linux and older Xnix distributions, the use of direct attached storage in each individual machine was becoming unworkable. "Some of our applications require several TB of storage. Cable lengths and a lack of ports were making it physically impossible to attach enough storage arrays to a machine," explains Westlake. "But more than this, without a centralized storage pool, when a server went down, all the attached storage was unavailable." With applications requiring a mixture of both block and file storage, it was also clear that the College needed a Storage Area network (SAN) with additional Network Attached Storage (NAS) functionality, rather than a lower cost NAS option.

The Cost of a SAN

Working with around half the budget of a larger SAN project within Birkbeck's main IT department, the options were severely limited.

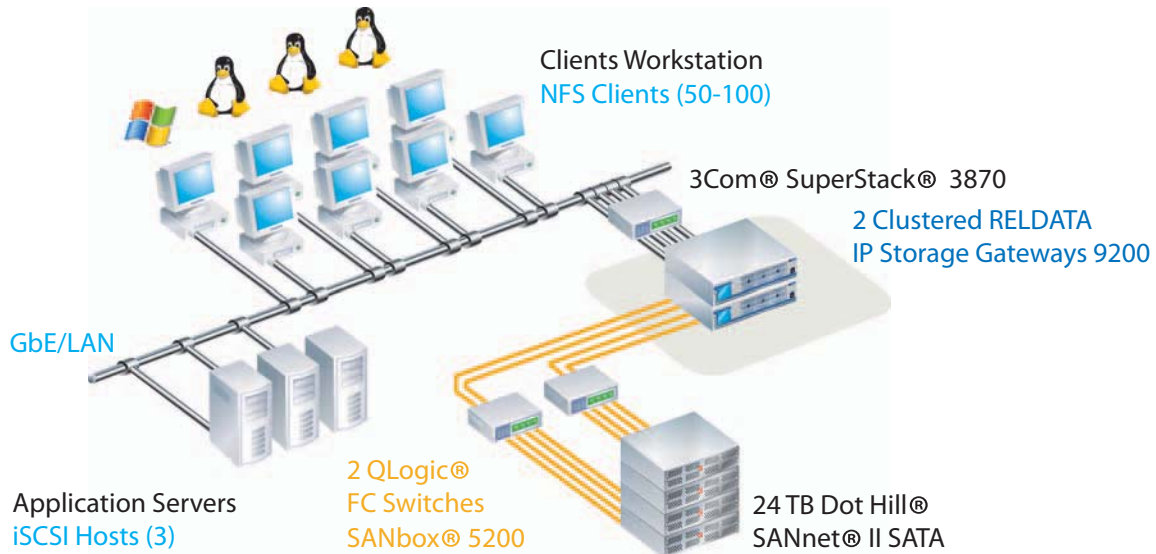
"Within our budget we could just about have afforded an entry level FC SAN. Some resellers offered us impressive discounts," recalls Westlake, "but in all cases any of the additional functionality we needed for resilience, mirroring, replication and even the costs of cabling and interface cards would have pushed the price way out of reach."

Even with lower cost IP SAN options, the School's need for both block and file storage would have required the purchase of separate dedicated NAS devices. Moreover, with both FC and IP SAN options, Westlake was rightly wary of artificially lowered costs for entry level options, which then tied the School into purchasing future functionality and capacity from a single vendor: "We simply have bad experiences of monopoly suppliers", he explains. With such high demands and such a tight budget, the cause seemed lost, until Birkbeck found RELDATA.

RELDATA

The Open IP Storage Solution

The RELDATA 9200 IP Storage Gateway delivers parallel, enterprise-class iSCSI SAN and CIFS or NFS NAS file storage from a single appliance. For Birkbeck College, this eliminated the need for separate NAS and SAN storage infrastructures, dramatically reducing cost and essentially making the whole project viable. In addition, the ability of the RELDATA 9200 Gateway to consolidate disparate FC, SCSI and iSCSI storage resources from different vendors, gives Birkbeck's a completely free choice of storage suppliers for future capacity upgrades. Birkbeck implemented a unified IP SAN/NAS storage solution with two clustered RELDATA 9200 Gateways plus storage arrays providing full redundancy. The RELDATA Gateways were connected via 2 clustered QLogic® Fibre Channel switches SANbox® 5200 to four new Fibre Channel connected Dot Hill® SANnet® II SATA dual-controller RAID arrays with a total of 24TB of storage. Another 2.5 TB of older SCSI storage arrays were consolidated with the RELDATA 9200 Gateways as well. The School uses the RELDATA 9200 powered unified IP SAN/NAS storage solution to run a total of 13 NFS file systems (serving 50-100 active clients) and 3 iSCSI targets for database storage. This currently takes up less than 7TB of a potential 17.8 TB of usable space. The RELDATA 9200 Gateways are connected via 4 teamed GbE ports to Birkbeck's Ethernet infrastructure with a 3Com® Ethernet switch SuperStack® 3870.



Converged NAS/SAN

For Birkbeck, the provision of NAS and SAN storage from a single device not only slashed the initial budget, it also formed a vital part of their migration strategy to the new system. Applications running on older servers, can now be run from an NFS NAS share until these servers have been made ready for iSCSI connectivity. "In hindsight, if we had bought a pure SAN (IP or FC), it would have been the wrong product," admits Westlake.

Full Functionality at a Single Price

"In contrast to the other offerings we looked at, RELDATA offered almost all the functionality we were looking for, without the need for upgrades. Snapshots, mirroring, virtualisation and FC connectivity were all included in the basic price," comments Westlake. "Without this, the lack of additional budget would have left us with an expensive point solution that would have withered away."

Virtualization : The Single Storage Pool

The RELDATA 9200's powerful inbuilt virtualization technology has dramatically increased up-time and availability of applications. "With all storage in a single virtualized pool, in the event of a server outage, reallocating storage to a new machine is now a matter of simple software configuration," explains Westlake. In addition, the flexibility offered by virtualized storage has been vital for the School's increasing use of server virtualization.

Open Storage Connectivity

RELDATA's vendor agnostic storage connectivity at the back-end, has not only given Birkbeck complete freedom to shop around for new disk capacity free from vendor lock-in, it has also allowed them to reuse existing arrays. With the gateway offering superb connectivity, the College has been able to reuse over 2.5 TB of older SCSI arrays as a part of the new system. Importantly for the College, the open gateway approach, has also enabled them to take out vendor support contracts on the gateway without needing to do this on all connected storage.

RELDATA
NETWORK STORAGE FOR EVERYONE

RELDATA Inc.
e-Mail: sales@reldata.com
Phone: +1 (973) 644 2770

RELDATA Europe GmbH
e-Mail: sales.emea@reldata.com
Phone: +49 (711) 2272020

www.reldata.com

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