


 UNIVERSITY OF
OXFORD

Case Study

Solution overview

Project requirements

Oxford University carried out a joint server consolidation project with 2 internal business unit and required fast, reliable and secure backup technology to augment it's new virtual infrastructure:

- Consolidate Windows, Linux and Netware server estates
- Improve infrastructure reliability and disaster recovery capabilities
- No disruption to business operations, production processes

Solution

Oxford University chose esXpress Professional for its virtual machine disaster recovery mechanism:

- 7 VMware ESX hosts at each site
- Over 150 Virtual Machines
- 2x 10gbit aggregated links between sites
- 10 LeftHand Networks VSA providing 27Tb cross-site replication, vmotion & HA
- 7.5Tb storage over 2x MD1000 devices for backup per site
- esXpress Professional installed to all ESX hosts

Benefits

- Standardised methodology
- Improved performance
- Increased resilience and reliability
- Flexible configurations
- Reduced systems management costs
- No disruption to business operations, production processes
- Increased service level to the business
- Reduced total cost of ownership



Looking to the future as Oxford University consolidates and protects

Oxford University needed to consolidate key administration systems, managed by 2 different departments. esXpress from PHD Technologies helped the education leader to achieve the secure, fast and reliable backup infrastructure it needed to protect its new virtual estate.

Customer profile

Oxford is the oldest university in the English-speaking world, and a leader in learning, teaching and research. With almost 20,000 students, 8,500 University staff, 3,000 College employees, and 180,000 alumni, people are what make Oxford an internationally-renowned university.

Throughout its history, Oxford has produced gifted men and women in every sphere of human endeavour who have studied or taught at the University. Among these are 25 British Prime Ministers; at least 30 international leaders including US ex-President Bill Clinton; 47 Nobel Prize winners; six current holders of the Order of Merit; at least 6 kings, 12 saints and 20 Archbishops of Canterbury; some 50 Olympic medal winners; 10 Chief Executive Officers and 9 Chairmen of UK FTSE 100 companies; and the editors of 2 UK national newspapers.

The challenge

Oxford University runs much of its key support infrastructure under management of 2 departments on separate sites in the University campus. Running a mixture Operating Systems, a crucial requirement was to provide a new environment which provided a simple standardised ecosystem which was highly resilient.

To meet the stringent requirements many networking challenges were met, not the least of which were presenting all IP networks to both sites so that each site could seamlessly failover to the other in the event of a disaster.

VMware virtualisation solutions were selected as the host platform, paired with LeftHand Networks Virtual Storage Appliances to consolidate the server estate and provide required site resilience. esXpress Professional from PHD Technologies was chosen as the perfect backup partner to reinforce this robust infrastructure.

The benefits

The University now has a completely up to date and supportable infrastructure which has all the benefits of virtualisation technologies. Significantly reduced the physical hardware and storage footprint whilst at the same time providing seamless fault tolerance and disaster recovery protection.

All of this underpinned by solid backup and recovery makes a great partnership. There endeth the lesson.



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The Solution

The design and planning phase began in February 2008. Oxford University Computing Services (OUCS) began a ground up joint project with Business Services & Provisioning (BSP) and Information & Communication Technology Support Team (ICTST) to consolidate physical servers and perform cross-replication between each campus site, approximately 1 mile apart.

Once a detailed plan was in place, the deployment began, with new servers, storage, networks and services being implemented. Next came the piecemeal migration of servers and services in logical blocks. The majority of changes were completely transparent to Oxford University staff and students, with business processes and day-to-day operations continuing as normal.

Key to this transformation was the introduction of a robust backup infrastructure for its virtual servers. To this end the design team applied the Universities long history of research and due diligence to evaluate all of the available VM backup products. The choice of PHD's esXpress backup software underlined Oxford's history of selecting best of breed products.

Why esXpress was chosen

Oxford University needed a partner who could deliver the best technological advances made in virtualisation.

Not bound to guest operating systems and with the flexibility to backup to almost any storage type, the esXpress backup solution perfectly complimented the high end virtualisation architecture, and more than satisfied Oxford's requirements for secure, reliable, fast and flexible VM backup and restoration.

Adrian Parks, Senior Systems Administrator at Oxford University, said:

"We see speeds of over 50MB/s on VM level backups, even when running several backups simultaneously. Combined with Delta technology, we are able to back up terabytes of data in a fraction of previous times and storage consumption. The granular backup scheduling within the product allows maximum flexibility in our backup rota based on the priority of our servers and the availability of our backup storage. These factors combined have allowed us to maintain daily VM-level backups to supplement our file level backup software, and retain far more backup copies of each VM that was ever previously possible with a given budget for backup storage."

Testimonial

“ This solution has delivered savings in both time and storage, cutting our backup window massively. Prior to our esXpress implementation, storage and time constraints restricted us to a single VM-level backup per week. The high throughput of esXpress and its capability to take differential backups have significantly cut the time required to back up our entire environment, allowing us to grow our virtual environment without the fear of our backup solution being unable to cope or being required to buy additional hardware to scale the solution with the environment. ”

Adrian Parks, Senior Systems Administrator, Oxford University Computing Services

About PHD Technologies

PHD Technologies has pioneered the VMware backup market. PHD was first with Delta technology, encryption, and portable archives. Now introducing the Virtual Backup Appliance (VBA). The only scalable and completely fault tolerant backup, restoration and disaster recovery solution for VMware Virtual Infrastructures.



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