DATACORE™

Oxford University
Storage Virtualization Software Case Study

Customer Snapshot

Institution: Oxford University Computing Services (OUCS)

Location: Oxford, United Kingdom

Line of Business: IT Services to Oxford University members, colleges and departments

Challenge: Allocating storage quickly and effectively; Management of data; support of applications for VMware's ESX servers

Solution: DataCore's Software on a Dell PowerEdge to support 2 x VMware ESX 3.5 servers

Results: Easier management and financial benefits utilizing available disks; no costly hardware over-specification; easy provisioning of storage; fault tolerance.

Oxford University Computing Services (OUCS) is using DataCore™ Software to consolidate and virtualize storage. OUCS, which provides high-quality and cost-effective IT services for all members of Oxford University, recommends DataCore's Software as the storage virtualization platform of choice for their automated virtual infrastructure.

OUCS encompasses the operation, development and support of the University's primary computing infrastructures, including facilities such as the network backbone, and its external connections, such as central email, web, news, and backup servers. Acting as a central supporting charge-back service provider, OUCS Network Systems Management Service (NSMS) currently supports 25 colleges and 15 departments across many campuses throughout Oxford.

Jon Hutchings is one of the 10 people within the NSMS group. As Senior Systems Engineer, Hutchings is responsible for Linux, VMware and for the day-to-day management of the storage infrastructure. His daily role is to provide services and solutions on a charge-back basis throughout the University, including hosting, websites, database servers, virtual infrastructures and individual project support. NSMS' time is typically spent supporting smaller departments with very limited IT resources.

Challenge: Centrally Supporting the University's Primary Computing Infrastructure and Services Cost-effectively

Previously, NSMS' data center would provide storage services out across Fibre Channel SANs served by IBM/EMC direct attached storage. Working with DataCore Gold-level partner NCE, NSMS started to investigate ways of provisioning storage to facilitate a virtualized infrastructure. NSMS had been closely involved with NCE for several years, and classify their expertise in storage as being that of a trusted advisor. The team at NCE recognized immediately the benefits that the thin-provisioning element of DataCore Software could bring to NSMS' virtualized infrastructure. A hands-on demonstration illustrated the ease with which the iSCSI SAN automatically could provide the just-in-time storage allocation from a central storage pool, making it imminently suitable for the virtualized infrastructure.

The single management interface also impressed the team – simplifying the environment and ensuring that NSMS would be in full management control. NSMS was also impressed that regardless of whatever type of direct-attached storage was currently running, DataCore Software would work.

Solution: An Automated, Virtual Infrastructure Backed by Virtualized Storage

NSMS began its adoption of a virtualized infrastructure by essentially renting Virtual Machines to its customers. The infrastructure behind this model includes two centralized VMware ESX 3.5 servers and virtualized storage through DataCore's Software. Central control of the virtualized infrastructure remains with NSMS. By working with individual colleges or departments, they now collectively specify the amount and length of time that the college or department will require virtualized support.

Longer-term, NSMS will encourage their customers to move towards a totally self-automated, self-provisioning, web-based model known internally as "VM4rent," where, through a simple click-ordering process, colleges will be able to rent and utilize a part of the core virtual infrastructure. VM4rent in effect acts as a virtualized computing, on-demand service, which is extremely useful for those departments which require a temporary service – such as those departments conducting a research project that has been granted funding for a year. Behind this self-service model lies DataCore, supporting VMware applications and seamlessly provisioning storage on-demand.

Results: Straightforward Storage Allocation, Disaster Recovery & Failover, and Easy Management

The installation at NSMS went smoothly and the results were immediate. Using DataCore Software, NSMS can now sensibly and dynamically enable storage "on demand" which is critical when working on a "pay-as-you-use" allocation service model.
Previously when supporting projects, at the start of the project NSMS had to speculate up front how much disk allocation would be attached. This was hard to scope, and extra disks (in order to err on the side of caution) were frequently purchased. Hutchings comments, "At the start of each project we used to require a lot of information in order for us to try and accurately plan, scope and service the project. Now with DataCore the process is much more straightforward – we simply attach extra chunks of storage, more or less immediately. It's much more cost-effective."

Provisioning new machines and storage under VM4rent is now a simple process. Storage and new VMs can be served within minutes as images of the server template are already stored within DataCore Software. The same goes for maintenance. DataCore Software "talks" to both VMware ESX 3.5 servers – controlling and routing the flow of data between the two, providing fault tolerance and resilience to server applications and ensuring that NSMS' Service Level Agreements (SLAs) for uptime are adhered to. And there has been another distinct benefit: different departments can now join forces and budgets to utilize joint active system failover protection offered through DataCore Software. No longer are smaller departments exposed to loss of data and downtime.

Working with so many different departments and projects, it is essential that management of the system remains easy to use and uniform. With DataCore, Hutchings notes that management is straightforward, "The GUI is Windows based and so immediately familiar and easy-to-use for the supporting team and the customers for whom NSMS have installed DataCore Software," he notes. "This is an important factor when you consider how many colleges and departments are served by NSMS."

Currently the VM4rent infrastructure uses 1TB in supporting the VMs. As the new service rolls-out and becomes fully available and fully automated, Hutchings can confidently serve the exponential growth rates, simply by adding more capacity as and when required.

More About Oxford University and NCE Group

www.oucs.ox.ac.uk
www.ncegroup.com

> *The DataCore and VMware solution allows us to plug in and support storage and virtual servers as and when we need; ultimately DataCore provides a cost-effective storage solution that we are happy to recommend.*
>
> – Jon Hutchings, Senior Systems Engineer at Oxford University Computing Services

For additional information, please visit **datacore.com** or email **info@datacore.com**

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