



## VMware Software Gives Sheffield Hallam University a Future-Proof Infrastructure

### VMware ESX Server and VirtualCenter Deliver New Applications in Days Rather Than Weeks

#### Results

- Cost saving of £1,500 for every new server deployed
- Resolved power over-consumption issue
- Contained server sprawl to avoid additional data center space requirement
- Improved server utilization by 60 percent
- Reduced provisioning time from four to six weeks to less than seven days
- Enabled IT team to deliver more services within existing budget

#### Sheffield Hallam Approaches Capacity

Sheffield Hallam is one of the UK's most innovative and progressive universities with more than 28,000 students, over 3,000 staff and a turnover above £150 million. The university has an ambitious growth strategy, which includes capital investment of over £140 million over the next decade. Sheffield Hallam counts multi-national companies, government agencies and local businesses as partners or clients for its research.

Dave Thornley, service support manager at Sheffield Hallam, is responsible for the support and management of IT services. The IT services delivered by Thornley and his team are used by every student and member of staff.

With a user community of approximately 31,000 people and a rapidly expanding service portfolio, Sheffield Hallam's infrastructure grew dramatically. Numerous new projects had caused the server count to double in just two years with resources, such as space and power, becoming scarcer as the numbers grew. A major review of IT service delivery was initiated as a result, with the aim of addressing the following issues:

- Availability of power and space in server rooms
- Unsustainable server estate expansion
- Servers being used inefficiently, with average utilization rates between 5 and 15 percent
- Pressure to deliver more services without increasing existing budgets

#### Putting VMware Software Through Its Paces

Having identified that the rate of server expansion was unsustainable, Sheffield Hallam initiated a formal analysis of virtualization software, which it saw as the best way to resolve its issues.

After assessing virtualization software from Microsoft® and VMware®, Sheffield Hallam initiated a 12-month pilot with VMware ESX Server. This involved extensive production server testing, with 30 virtual machines on two HP DL580 servers running multiple operating systems including Windows, Netware and Linux.

"With the server farm growing towards capacity, we knew a completely new strategy was required and that moving to virtual infrastructure would be the most effective solution," explains Thornley. "During the testing process, the VMware technology proved itself time and time again and is revolutionizing the way we deliver services."

Since implementing VMware virtual infrastructure, Sheffield Hallam has achieved impressive results, including:

- **Better system utilization.** Prior to implementing VMware software, the average utilization of servers was between 5 and 15 percent. By migrating underutilized servers to virtual machines and putting every new service onto VMware ESX Server, the university expects to achieve 75 percent server utilization.

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*Dave Thornley  
Service Support Manager, Sheffield Hallam University*



## VMWARE VIRTUAL INFRASTRUCTURE AT WORK

- 250 physical servers across two data centers
- Four 4-CPU HP DL 580s with 18Gb RAM
- Four 4-CPU HP DL 585s with 32GB RAM
- EMC CX700 SAN
- Guest operating systems: Microsoft® Windows® 2000, Windows 2003, Netware 6.5, Suse Linux, iChain
- Applications running in virtual machines include: Apache Server, Novell Networks, Altiris, Novell Clusters, Microsoft Terminal Server

- **Delivering more services for less cost.** All computing services are funded by the university faculties that donate a fixed percentage of their income. Now that the IT department can support multiple virtual machines on a single physical server, a £1,500 saving is made on hardware alone each time a new virtual machine is deployed.
- **Power and space issues resolved.** Sheffield Hallam has an uninterruptible power supply (UPS) that ensures power is continuously provided in the event of an outage. Its data center had grown to such an extent that the power load was approaching that of the UPS, risking a system shut down. "With VMware virtual infrastructure in place, our demand for power, air conditioning and space is falling sharply, which resolves the major issues that were preventing further IT expansion and innovation," says Thornley.
- **Faster provisioning and happier users.** The innovative nature of universities means that academics will often purchase software that the IT department is then required to support. In the past they struggled to find resources for new applications and it could take up to six weeks to set them up. With VMware virtual infrastructure, new servers and applications can be up and running in less than a week.

## Moving to Standardized Infrastructure

Sheffield Hallam has already developed a highly customized, standard desktop build that makes ongoing maintenance and support a simpler task. In a bid to extend these services, the IT team is aiming to roll out Microsoft Terminal Services, which has proved popular with end users but has been difficult to configure.

"The university desktop takes a long time to install and configure on Terminal Server and if we had to do it on every physical machine it would take a huge amount of time," says Thornley. "With VMware ESX Server, we can create our standard build once in a virtual machine, clone it and then roll it out as many times as required. It's a huge time saver and is also much easier to upgrade."

Looking to the future, Thornley and his team are significantly expanding their ESX Server capacity, investing in four HP DL585s to cope with the constantly increasing demand for IT services. Thornley adds that they are planning to expand the use of virtualization technology throughout the university due to its multiple benefits.

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