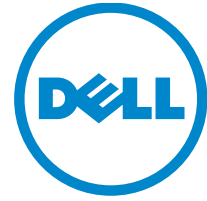


# Sixth-form college reinforces excellence with reliable, efficient IT infrastructure, cutting datacentre energy consumption by around 70 per cent



- Backup, recovery and archiving
- Data consolidation and management
- Green efficiency
- Virtualization



"The lunch-and-learn session was incredibly helpful. The combined input of Dell and Jcom was great in terms of guidance."

*Daniel Loughlin,  
Network Manager, Esher College*

## Customer profile

Company:	<a href="#">Esher College</a>
Industry:	Higher Education
Country:	United Kingdom
Employees:	190 staff, 2,650 students
Website:	<a href="http://www.eshel.co.uk">www.eshel.co.uk</a>

## Business need

[Esher College](#) wanted to meet the developing needs of staff and students with a flexible, high capacity, efficient IT infrastructure.

## Solution

The college worked with Dell Enterprise Architecture Certified Partner [Jcom](#), deploying virtualized servers and storage, supported by [Dell ProSupport](#). It also replaced desktops with greener, faster [Dell OptiPlex™](#) desktops.



## Benefits

- Esher College reduces power and cooling costs by around 70 per cent with virtualized servers
- Lunch-and-learn session helps the college fine tune its plans
- Helpdesk calls fall by around 30 per cent as uptime rises
- Simplified management helps the IT team drive new projects
- Future plans set to enhance efficiency further

**Esher College** is one of a small number of sixth-form colleges in the UK to be rated as outstanding in all areas, in two successive Ofsted inspections. With 1,650 full-time and 1,000 part-time students, the college's non-selective intake covers more than 100 schools in London and Surrey. In 2005, Esher College achieved Beacon status, an award that reflects its lively, nurturing environment and the strong academic performance of students.

"Innovation and constant development in teaching and learning is central to all that we do at Esher College. Technology is undoubtedly one area that helps develop the interactivity and variety of learning."

*Emma Young,  
Deputy Principal, Esher College*

As well as courses for full-time students aged 16 to 19 years, the college campus runs evening classes for adults, businesses and the local community. IT has played an important role in campus life for a number of years, and is now integral to the way students learn and interact. Emma Young, Deputy Principal at Esher College, says: "Innovation and constant development in teaching and learning is central to all that we do at Esher College. Technology is undoubtedly one area that helps develop the interactivity and variety of learning – not just within, but also beyond the classroom. Our e-learning strategy aims to develop these resources further."

Each classroom has one or more desktop computers and a projector – used to show internet videos and Microsoft® Office PowerPoint® presentations. The Learning Resource Centre has 118 computers that any student can use for research, and 11 IT suites house another 253 computers. The college runs a well-established virtual learning environment, through which students working at school or home can access course materials and use Web 2.0 technologies such as blogs.

#### **Lunch-and-learn session helps college fine tune its plans**

Esher College has worked with Dell Enterprise Architecture Certified Partner **Jcom** for two years. Based on a positive experience with a small number of **Dell™ OptiPlex™ desktops**, the college IT team began to look at a datacentre refresh based on Dell technology. Daniel Loughlin, Network Manager at Esher College, says: "As our staff and students explore new ways of using technology, our capacity and performance needs grow. We wanted to make sure we

#### **Technology in practice**

##### **Services**

###### **Dell ProSupport**

- Mission Critical option
- Next Business Day Onsite Service

##### **Hardware**

**Dell™ PowerEdge™ R610 servers** with Intel® Xeon® processors 5560

**Dell EqualLogic PS6000XV storage area network**

**Dell OptiPlex™ 780 desktops** with Intel Core™ 2 Duo processors

##### **Software**

**Windows Server® 2008 R2**  
- Hyper-V™

**Windows® 7**

were meeting those needs in the most efficient, flexible way possible."

Loughlin and his team attended a lunch-and-learn session at the college hosted by Jcom and Dell. The meeting focused on **Dell EqualLogic** – a technology that aligned well with Loughlin's interest in **virtualization**. By upgrading its existing servers and virtualizing them, the college could replace ageing hardware, save space and cut energy consumption. And, by deploying virtualized iSCSI storage, the college would maximise these benefits with rapid, simple virtual machine recovery.



"The lunch-and-learn session was incredibly helpful. The combined input of Dell and Jcom was great in terms of guidance," says Loughlin. The IT team developed its knowledge further in conversations with Dell and Jcom engineers. Through a mixture of face-to-face meetings and telephone conversations, the team gained the insight it needed to make an informed decision and secure the support of college managers.

With data expected to grow by 10 terabytes over the next two years, had to be the new platform was reliable, centralised and simple to manage. "We liked what we saw of Dell EqualLogic – the ease of maintenance appealed to us, as did the potential for simple disaster recovery using built-in auto-replication capabilities," says Loughlin. "We asked Jcom to run a Virtualization Readiness Assessment for us, and used the results to determine the best roadmap for a full virtualized environment."

Loughlin and his colleagues worked with Jcom and Dell to develop a solution design. A gradual migration to the virtualized environment ensured that there was no disruption to students and staff. "Due to the simplicity of the technology – especially Dell EqualLogic – we deployed most of the infrastructure ourselves," says Loughlin. "Jcom was very efficient in terms of making sure everything arrived on time, and both Dell and Jcom were on hand to answer our technical queries throughout the rollout. It all ran smoothly."

### **College reduces power and cooling by around 70 per cent with virtualized servers**

Esher College has reduced 25 physical servers to just four. These are Dell PowerEdge™ R610 servers with Intel® Xeon® processors 5560, running Hyper-V™ as part of the Windows Server® 2008 R2 operating system. In total, they host 20 virtual machines.

The processors automatically regulate energy consumption, which gives Esher College a high level of efficiency combined with strong performance. "Intel Intelligent Power Technology is great for maintaining stability at the lowest possible cost – environmentally and financially," says Loughlin.

"We've cut our physical server count by around 84 per cent, and in doing so reduced power and cooling for our servers by around 70 per cent. Our costs are lower, and so is our carbon footprint," Loughlin says. "The investment we've made in virtualization is certainly paying off. This route is much more cost-effective than the alternative, which was to upgrade all 25 physical servers."

### **Helpdesk calls fall by around 30 per cent as uptime rises**

The IT team has seen a drop in calls to the helpdesk, and minor issues associated with the performance of the virtual learning environment have been eliminated. Loughlin says "In our most recent staff and student surveys, there were no reports of problems – it's clear by comparing this with the previous survey that students are happier with the services we're providing."

This is partly due to the replacement of ageing servers, meaning fewer outages, but also to the absence of scheduled downtime. In the past, the IT team had to warn end users before taking servers offline for updates. Now, live virtual machines are simply moved to an alternative physical server, and returned when repairs are completed. "We can work on almost any element of the infrastructure – servers, storage area networks (SANs), switches on the iSCSI network – without downtime," Loughlin says. "Moving to Dell EqualLogic storage and virtualized Dell PowerEdge servers with Intel processors has had a huge impact – it's saving us time on maintenance and giving students better access to learning resources."

### **Simplified management helps the IT team drive new projects**

"Our Dell EqualLogic SANs are the simplest devices we have on the network," says Loughlin. "When we added a second PS6000XV SAN, it was up and running in a couple of minutes." The team uses the all-inclusive software within the SAN to automate tasks such as creating snapshots. This gives the college a higher level of data than the previous system – which was based on server-attached storage – as well as reduced manual input.

The time saved on maintenance, and the drop in support calls means that the IT team can concentrate on strategic projects that give staff and students better access to IT and more freedom to use technology creatively. Loughlin says: "With less of our energy taken up with routine tasks, we've migrated from Microsoft Office SharePoint Server 2007 to Microsoft SharePoint Server 2010, and installed Microsoft Forefront

Identity Manager 2010." In the past, the college would have hired expensive external consultants for projects like this. The result is lower costs and a more rewarding role for Loughlin and his team. "Not only do we avoid expensive consultancy costs, but we get to engage with new technology and develop our in-house skills," he says.

### Improved flexibility ensures long-term viability

If a teacher requests server resources for a specific project, the IT team can deploy a new virtual machine in a matter of hours. And, if an application needs more storage, thin provisioning is a fast, cost-effective solution. The team can allocate a virtual pool of storage within minutes, without buying physical disks.

"If we want to extend the SAN, we can add another Dell EqualLogic array and instantly have another three terabytes of storage, without any configuration. The performance of the SAN will grow in line with its expansion," says Loughlin.

And, with Dell PowerEdge R610 servers, the college gains the benefits of Intel VT FlexMigration, which simplifies the integration of future server generations based on Intel Xeon processors.

By virtualizing its servers and storage, the college has a flexible platform that will meet its needs for the next five years. Space is no longer a concern, because while the footprint is similar, it won't increase much over the next few years. "Through the project with Jcom, the footprint of our servers has reduced from two 48U racks to one, which is currently only half full," says Loughlin.

### Green desktops reduce carbon footprint

On completion of the datacentre project, the college started replacing its desktops. The main objective was to increase [green efficiency](#). It compared desktops from a number of manufacturers. "We ran tests and found that although some devices were ostensibly 'greener', they were quick to fail. The Intel-powered Dell OptiPlex 780 was the most efficient overall because it was the most robust," Loughlin says.

Wary of having to replace damage-prone desktops, the college chose the OptiPlex 780 with Intel Core™ 2 Duo processors, favouring its energy efficiency and sturdy design. The machines have a small footprint with a shrunken chassis, an integrated power supply, and Energy Star 5.0 and EPEAT Gold ratings. "When you have hundreds of students using the machines every week, a strong build is important. Our Dell OptiPlex 780s fit the bill, and with 10,000-rpm disks, they're fast. The students love them." To give students maximum stability and security, the IT team installed Windows® 7 on the desktops. This allows them to log on more quickly, and provides better performance and reliability. It also helps them become familiar with the system they're most likely to use at university or in the workplace.

### Future projects to drive efficiency

"We frequently talk to the people at Jcom. They keep us up-to-date with emerging technologies and have a good understanding of the way we work. Their experience in the education arena is valuable too," says Loughlin. "It's really good to have someone you can call and get an answer from quickly.

Their Dell knowledge is excellent and their problem-solving skills are strong."

If the college needs technical assistance, it uses Dell ProSupport with Mission Critical option for servers and storage, and Next Business Day Onsite Service for client devices. Loughlin says: "Dell ProSupport has served us well. When we had needed help with a firmware upgrade for our SAN, the Dell engineers knew the devices thoroughly and came up with a solution quickly."

The college is now focusing on a possible virtual desktop infrastructure project. Potential benefits for the college include improved desktop management, and greater flexibility and mobility for staff and students. Loughlin says: "Our aim is to deliver the best services we can, so students and teachers can continue to use technology creatively and efficiently. IT plays a crucial role in the outstanding achievements of our students year after year."

### About Jcom

Founded in 1999, Jcom delivers data storage, virtualization and disaster recovery solutions for customers throughout the UK. It also provides professional services such as health checks, helpdesk support and remote monitoring. Jcom has been a Dell Certified Partner since 2009, gaining

For more information go to:  
[dell.co.uk/partner](http://dell.co.uk/partner)

Enterprise Architecture status in the same year.



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