

## **‘Achieving Virtual Success’ University Hospital of Hartlepool**

### **Background**

The North Tees and Hartlepool NHS Foundation Trust provides district general hospital services from the University Hospital of North Tees and the University Hospital of Hartlepool with outpatient clinics from its Peterlee Community Hospital. Together the University Hospital of North Tees and University Hospital of Hartlepool are recognised cancer units. Additionally, the Trust provides a wide range of services, for example accident and emergency, cardiology, gynecology and maternity, care for the elderly, day case patients and outpatients as well as many other types of care services.

In November 2007 the University Hospital of Hartlepool took the decision to virtualise its hardware environment as it had over 247 servers contained within its server room. This was causing power, cooling and heat issues and there was also a need to drive down overall IT and maintenance costs. However, this needed to be done with absolute care and minimal disruption. As you can imagine the server room powers many critical systems run by the hospital, such as operating theatres, all of which are needed 24/7/365 days of the year.

The NHS Trust Foundation has a Microsoft Enterprise Agreement in place which covers practically the whole of the Northern Region (extending to the Scottish Borders, the borders of Wales and ends near Hull). This effectively ensures that all Windows-based PCs across the NHS Trust are purchased and licensed in a standard, uniformed way from approved suppliers.

### **Working with licensing experts**

Once the decision was taken to virtualise its hardware infrastructure, the hospital contacted software licensing experts, Trustmarque Solutions. Trustmarque is the UK’s leading Microsoft Large Account Reseller (LAR). Trustmarque has Microsoft Gold Certified Partner status, and in-depth knowledge of Microsoft Licensing, Software Asset Management, Infrastructure Optimisation, Virtualisation and Security. This meant that Trustmarque was able to confidently advise the University Hospital of Hartlepool on how best to achieve its virtualisation goals.

The project was initiated with Trustmarque undertaking an in-depth analysis of Hartlepool’s IT infrastructure requirements. The analysis identified that a number of issues be taken into consideration and as a result Trustmarque recommended a three-phased approach owing to the complexity of the hospital’s mission critical systems.

This consisted of the following:

- Phase 1 - consolidation/virtualisation of existing hardware
- Phase 2 - implementing a high availability programme
- Phase 3 - delivering effective disaster recovery

## A successful project

Phase 1 was started immediately and Trustmarque was assigned as the virtualisation specialist responsible for delivering the proof of concept for this programme of work. Virtualisation is a broad term that refers to the abstraction of computer resources. A technique for hiding the physical characteristics of computing resources from the way in which other systems, applications, or end users interact with these resources. This includes making a single physical resource (such as a server) appear to function as multiple logical resources; or it can include making multiple physical resources appear as a single logical resource.

Server virtualisation makes compelling sense for many organisations as it prevents the sprawl that occurs in most companies caused by the pattern of one physical server per application. When Trustmarque started the project it knew that the guidelines for virtualisation from Microsoft were 10:1 but owing to the fact that these were critical systems, the decision was taken jointly with the hospital to consolidate 3:1, effectively reducing the servers by around 30 percent.

While Trustmarque provided the specialist knowledge and analysis, it called in partner, Esteem Systems to undertake the capacity planning and executables within the network. Esteem Systems designs, installs, manages and supports IT infrastructure, IT storage and IT security solutions - effectively Esteem delivered the implementation and knowledge transfer for the virtualisation project.

This hardware virtualisation part of the project has now been successfully implemented and it has delivered many collateral benefits, chief among them was the cost-efficiency of being able to more effectively use server resources. Savings so far include space, power, and heat. The IT RoI has been quite phenomenal. In the past it would take a technician 24 hours to build a server now in a virtualised environment, servers can be rebuilt in a matter of minutes.

## Future Plans

With phase 1 now complete, the University Hospital of Hartlepool is currently looking at phases 2 and 3.

Phase 2 will involve replication of the existing virtual solution elsewhere on the hospital site, thereby ensuring that if one solution goes down, the other system can be picked up immediately. This ensures the hospital not only meets its SLA's but that it provides a constant service to its patients. And finally, phase 3 will involve implementing a comprehensive disaster recovery programme, by replicating the virtualised solution to a completely different site.

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