NHS South London Commissioning Support Unit

NHS South London Commissioning Support Unit (CSU) provides an extensive range of business and contracting support services to a wide range of NHS organisations across London and Surrey. The CSU works closely with clinical commissioning groups and clinical networks, as well as providing patient engagement and business support to NHS England. The services it offers range from finance and information governance, through to contract management and health informatics.

The Challenge

NHS South London CSU engaged SystemsUp initially to help with strategic planning for a SAN migration. The CSU wanted to migrate its existing VMware environment from an HP P2000 MSA Array System to a new SAN solution because a number of the applications hosted on its legacy SAN were suffering from performance issues, most notability IOPS. It was essential that the migration was properly planned to ensure it did not impact the day-to-day work of the CSU.

After reviewing solutions from different SAN vendors, HP 3PAR StoreServe was selected due to its ability to provide Storage Auto-tiering through Adaptive Optimisation (AO). It was important for the solution to be optimised for SQL 2012 workload and 3PAR met this requirement. AO automatically manages various database hot spots (and cold spots) and tunes the environment to provide and maintain an optimal cost to performance balance.

The Approach

A requirements workshop was carried out to capture the specific business, technical, performance and security requirements. This enabled SystemsUp to conduct a discovery of the environment to gain a better understanding of the setup and uncover any potential issues that might occur during the migration.

A number of issues were identified. Several of the user applications using the existing SAN solution were affected by slow performance especially those relying on SQL backend. There were also a number of traditional Windows Cluster for SQL which had a requirement for using Physical mode raw device mappings (pRDMs). Use of pRDMs in a cluster environment restricted them from making use of a virtualisation feature like VMware vMotion and VMware Distributed Resource Scheduler.

Capacity planning was also carried out to ensure that the new HP 3PAR StoreServe solution would be able to support NHS South London CSU's ever-growing workload.

The Solution

A roadmap was created and the designs ensured the end solution was optimised, with vendor best practice used and referenced (where available) to prepare the High Level Design document. A Low Level Design was then prepared with details of specific configuration and implementations to be done on the hardware and software.

Martin Ferguson, the project manager and solution architect, says of the SystemsUp team, *"Their level of technical knowledge and hands-on experience is astounding."*

The Result

Due to the critical nature of NHS South London CSU's business, the solution was designed to ensure its users would not be affected in any way during the migration. VMware storage migration workloads were migrated with minimal downtime. Implementation was planned in a phased approach, starting with a test and development server and then moving on to the more business-critical system.

After the migration of test and development servers was complete the Citrix environment including the provisioning services infrastructure was updated. A significant improvement in performance was noticed after the migration, with reduced boot time for the PVS images and better user experience.

SystemsUp was given the task of designing and implementing the new SQL 2012 environment to address the specific SQL issues. SQL 2012 AlwaysOn availability group solved the issues with pRDMs, allowing each of the SQL nodes to have locally attached disk (Non-cluster) on Virtual disks (VMDK). HP 3PAR is optimised specifically for SQL workloads and is recommended for use with virtual disks instead of raw device mappings.

In addition to this piece of work, SystemsUp has also successfully completed a number of other projects for NHS South London CSU, including the replacement of end-of-life SAN switches; connectivity of existing ESX environment running on HP Blade enclosure to the 3PAR SAN using Flex-10 modules; and deployment of a new Active Directory Password Management solution. Some of these projects have already been delivered.

Project manager Martin Ferguson concludes,

"On behalf NHS South London CSU it has been a pleasure to work with SystemsUp on this project. They integrated well into the organisation, understanding our constraints and being extremely patient when we had to delay activities at short notice. It was a great experience to work with them."

Since this work was carried out NHS South London CSU has become part of South East CSU **www.southeastcsu.nhs.uk**