



HP solution future-proofs St Peter's classroom technology

Overview

St Peter's Anglican Primary School has 500 students attending classes in Years K-6, with a further 60 children attending Pre-Kindergarten classes. Located in Campbelltown, south west of Sydney, the school's Headmaster, Stephen Bomford, strongly believes that access to appropriate technology enhances children's learning. Budget constraints, however, have meant that St Peter's desktop PC based network was proving too costly to update regularly. The school's computer resources were proving to be insufficient in providing the technology support necessary for students, teachers and administrators, as well as linking to interactive white boards that were being rolled out across the school. Some desktop PCs were in fact so old that they did not work.

The school's part time IT Administrator, Seth Mayo, faced the challenge of finding an alternative solution to the traditional desktop PC environment that would provide an efficient technology platform, at a price the school could afford.

An introduction to HP's channel partner Somerville, and HP's Consolidated Client Infrastructure (CCI), led St Peter's to begin an overhaul of its IT infrastructure that would bring a new flexibility and efficiency to its entire computing platform. The CCI solution, to be rolled out over three years, has been designed to not only bring new efficiency to the computing platform at the school, but to allow that computing platform to be easily modified as the need arises – taking technology at St Peter's into the future.

Business Challenges

When Mr Mayo joined St Peter's Anglican Primary School as its part-time (four days a week) IT Administrator, he found an ageing technology network comprising 160 desktop PCs. Although there had been plans to refresh desktop PCs every four years, budget constraints meant that was being pushed out to five or even six years. Some of the oldest machines in the classroom network had developed motherboard faults and were no longer functioning properly which was putting even more strain on the school's computing lab.

The school needed a computing infrastructure that would provide reliable access to administrative systems; support classroom learning; allow access to the internet; and embrace wireless access to a network linking computers and new interactive white boards, which were to be implemented throughout the school. St Peter's also needed a flexible arrangement so that computer resources were used efficiently, rather than

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rolling out swarms of desktop PCs that might sit idle while children were painting, or reading, or practicing their handwriting.

Believing that virtualisation might offer a viable alternative, Mr Mayo attended a series of industry conferences, mapped out what he thought the school might need and requested a quote. The quote proved to be “dramatically more than I’d expected,” he said.

Mr Mayo had been in touch with Somerville along the way, and at this point they suggested that he consider HP’s CCI solution.

How HP helped

HP implemented a Consolidated Client Infrastructure based on a series of blade PCs for St Peter’s. This system meant that when a blade PC went down, another would pick up the active session, immediately minimising disruptions to users. In a Consolidated Client Infrastructure, desktop PCs are replaced by thin client terminals, which are then virtually connected to HP blade PCs stored on a blade rack enclosure in a remote and centralised location. Each blade PC has its own CPU, RAM and hard disk. A HP blade enclosure can contain up to 20 blade PCs in a 3U rack enclosure, allowing up to 280 blade PCs per 42U rack. Blade PCs are then accessed via the Microsoft RDP, Citrix ICA or HP RGS protocols and displayed on thin client devices. Only screen updates, keyboard strokes, mouse actions, audio and peripheral data travel over the network, all the processing happens on the blade PCs. Users are connected to blade PCs either statically or through a broker such as HP’s Session Allocation Manager, thus allowing the creation of a concurrent pool of resources and lowering the amount of IT administration required.

“The quote we received for the HP CCI solution was affordable,” Mr Mayo said. “Another advantage for us of CCI over virtualisation was that when a student or teacher logged onto the network they would get a machine dedicated to them”.

In a CCI solution, the blade servers exist as a pooled resource, but when the user – who is accessing the server through a thin client terminal – logs on, one of the blade servers is dedicated to that user. Virtualisation, on the other hand, involves the thin client carving out a slice of computer power rather than users having access to a dedicated blade server.

After placing an order for the first 30 HP BC2000 blade servers and 30 HP Compaq t5720 thin clients in December 2007, Mr Mayo took delivery in January, and over two days worked with an HP engineer to install the new system. At the same time the school upgraded its 100MB standard network to a 1GB standard.

The initial group of thin clients and blades was directed to the Year 1 and Year 6 classrooms where the oldest desktop PCs had been located.

The roll out was not without its challenges. While one server successfully managed thin client log on to blade servers, an ageing non-Windows directory service meant that users needed to log on a second time to access the computer system. This also restricted the roaming profile of the thin client user.

Eventually, this non-Windows server was replaced with a Windows server, enabling the full feature set of the Consolidated Client Infrastructure and eliminating these initial

problems. The school has since rolled out more blades and thin clients in accordance with their plan to completely replace the old desktop PC network with the CCI solution within three years. The school currently has 80 blades and 90 thin clients.

It has also established a refresh policy such that blade servers will be replaced every three to four years, with thin clients only having to be replaced when they fail, which could be many years after installation according to Mr Mayo.

Value delivered

Most importantly the system has been well received by teachers and students. "It has amazed me. I had expected them to notice a change and perhaps say that video wasn't running as well. But they haven't noticed any difference," said Mr Mayo, who has himself switched from his desktop PC to a thin client and blade solution. "I have about a million windows open and am pushing the computer and I haven't noticed much of a difference either."

Having upgraded the backbone network, the school is planning to double the capacity and extend the reach of its wireless network. A 108 Mbps wireless network upgrade is planned which will allow teachers and students to connect anywhere on campus, and communicate with interactive white boards. Such has been the success of the CCI rollout that Mr Mayo is anticipating using mobile thin clients rather than notebooks, which could connect wirelessly on campus, or remotely using a virtual private network connection from the student's home – all of which could be managed through the CCI.

Teachers and students have access to modern technology which promises an improved return on investment, reduced refresh cycle, and lower total cost of ownership thanks to lower power and cooling requirements and simplified maintenance and management.

Besides reducing the burden of the refresh cycle and improving the anticipated return on investment, the CCI solution has significantly reduced the computer power and cooling overheads, with 20 blades needing as much power and cooling as about three desktop PCs according to Mr Mayo. Having run the solution for a short time now, Mr Mayo has estimated that more than ten thousand dollars will be saved each year because of this reduction to power and cooling.

Summary

Industry: Education

Solution: St Peter's Anglican Primary School has adopted HP's Consolidated Client Infrastructure allowing it to roll out thin clients to classrooms, connected over a backbone network to dedicated blade servers which are all located together and easier to maintain and centrally manage.

Hardware: HP's Consolidated Client Infrastructure with an initial tranche of 30 BC2000 blade servers and 30 t5720 thin clients rolled out over two days. A further 10 BC2000 blade servers, 40 BC2500 blade servers and 60 t5730 thin clients have since been deployed. The solution will continue to be rolled out across the school

within three years.

Software: Windows XP, Inspiration, Kidpix, Tux Paint and Tux Typing Microsoft Office Word, Excel and PowerPoint.

Challenge: To provide more efficient and cost effective access to classroom computing resources in a highly economic manner.

A more reliable computer infrastructure has been established. Refresh cycles have been reduced, promising a better return on investment. Power and cooling requirements have also been cut, reducing the school's IT related environmental footprint.

About St Peter's Anglican Primary School: Providing a dynamic, supportive learning environment, St Peter's Anglican Primary School has a focus on a strong academic curriculum. A co-education primary school, 500 children are enrolled in the Years K-6 with a further 60 attending Pre-Kindergarten classes. Interactive whiteboard technologies are installed in every classroom as evidence of the school's desire to embrace technology in learning. www.stpeters.nsw.edu.au

About Somerville: The Somerville Group is an HP channel partner and specialises in delivering technology and communications solutions, offering enterprise level thinking with small business agility, efficiency and customer care. After many years dedicated to providing high quality IT infrastructure, structured cabling systems and electrical services, Somerville has established long-term customers in a range of industries, including banking; corporate services; distribution; education; financial services; local and state government; insurance and legal services; manufacturing; and retailing.

About HP: HP, the world's largest technology company, simplifies the technology experience for consumers and businesses with a portfolio that spans printing, personal computing, software, services and IT infrastructure. More information about HP is available at www.hp.com/au.

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