

Case Study – Education K12

Colchester Royal Grammar School

Essex, England

Product:	PaperCut NG	Grayscale Printers:	25
Installed:	2005	Color Printers:	30
Users:	805 Students, 168 Staff & Faculty	Workstations:	435

Primary Server: Win2003S, Dell PowerEdge 1400 -2x Pentium III 1.2Ghz CPUs, 2 GB RAM, 18.6GB HDD, 37.25GB HDD Additional server load: DHCP, RIS, WSUS, McAfee ePolicy Orchestrator with SQL Server Express 2005.

Secondary Server: Win2003S, Dell PowerEdge 2500 -2x P3 933Mhz CPUs, 1.5GB RAM, 6 pairs RAID-1 mirrored HDD 34GB, 33GB, 16GB Additional server load: Active Directory, file server for staff home directories and shared resources directory, SIMS - schools information database with SQL Server 2005.

Workstation Operating System(s): Windows XP SP3

Monitor/Quota/Charge Method: Students are limited to a monthly quota and must request additional quota if they run out. Staff are monitored.

[Colchester Royal Grammar School](#) is a venerable institution that was founded in 1206 AD and granted a Royal Charter by King Henry VIII. The curriculum at Colchester is focused on core subjects for nearly one thousand academically inclined students. In 2005 Chris Hill evaluated several options for controlling the rising costs of uncontrolled student printing. After nearly 5 years of continuous operation Chris is still finding new ways to use PaperCut to manage his print environment.

The initial deployment of PaperCut took Chris about 4 hours. Chris configured PaperCut to run with no clients on the workstations. User notifications such as low balance warnings were delivered to the student workstations via [WinPopup](#). Later Chris deployed the [PaperCut client](#) to the workstations with a startup script. The project took approximately 3 days to complete. After student printing was up and running with [automatic monthly quotas](#), Chris decided to implement monitoring of staff and faculty desktop printing. He wrote a script to deploy a customized [secondary server](#) installation in order to track printing on the printers that were directly attached to workstations. The secondary

“Routine updates require less than an hour to complete and have proceeded flawlessly over the past 4 years with the exception of one or two printer driver problems that were easily corrected”.

server deployment took approximately two days to install and test PaperCut on the 57 staff and faculty workstations. The system is administered by Chris and 2 assistants.

[Differential Charging](#) is used to set a rate of 5p for grayscale pages and 25p for color pages. Five of the grayscale printers are high volume MFPs that are charged at a lower rate per page than grayscale pages because the cost of consumables is significantly less than the other grayscale

printers. Students are given an automatic quota of £3 to £5 per month depending on the school year of the student. Students are not charged for printing in excess of their quota; however they are required to request additional credit from the ICT Support Team when they run out of credit. Select students have limited [administrative rights](#) to grant additional credit. Automatic quotas are set not to not exceed an amount equal to the quota to prevent quota build up if the entire quota is not used before the next quota is issued. In addition to monthly quotas instructors are given [Top Up](#) voucher cards to distribute to students when an assignment will require extra printing. This has significantly reduced the number of student requests to the ICT Support Team for additional credit.

Chris implemented [Shared Accounts](#) with pin codes to provide a mechanism for allocating printing to departments and groups because some staff members allocate printing to several budgets, so departmental reports would not suffice. Department heads now receive [Reports](#) at the end of each term that summarizes the printing that will be charged back to the department. Transaction reports of the individual staff and faculty workstation attached printers are retained to support the departmental charges.

Reports are also used to monitor usage trends for bottlenecks. A recent increase in color laser printing has prompted an evaluation to replace some of the color laser printers with MFPs that are less expensive to operate. The Busiest Printers report will be used to select the printers that will be replaced first.

[Advanced filters](#) were set up to restrict students from printing jobs that were greater than 10 pages. Some students were confused by the notification message and thought that they were out of printing credit. Chris modified the Notification message in a way that made it clear to students that they had hit the job page count limit as opposed to the monthly quota. Another filter was used to limit page sizes to A3 and A4. This has eliminated a systemic problem known as the “PC load letter problem” where some applications set the default page size to the US standard 8.5 x 11 inch paper. Prior to implementation, this error was a significant service call generator for the ICT Support Team. A select set of printers were also configured with a Document Name Filter that blocks specific documents containing graphs by filename because they cause errors on some printers.

Chris has seen several of his feature requests implemented in PaperCut including a filter for paper size, the ability to add credit balance by group, multi-domain support, a ‘disable printer’ time latch, and the ability to add variables such as the user name and account balance to custom notifications.

When Chris was asked to list his favorite features his response was “Too many to list”; but when pressed to pick one he settled on [Page Level Color Detection](#). He said “It’s great to know that people are being charged for exactly what they are using, whether they have remembered to switch the printer into ‘grayscale’ mode or not.

Staff and faculty were not monitored initially, but when the number of wasted sheets of paper on the student side dropped from 1000 - 1500 per week to 100 - 150 per week after implementing quotas, Chris worked out a plan to monitor the 30 staff and faculty desktop inkjet printers.

Future plans include:

- Considering an upgrade to PaperCut MF to facilitate tracking of off the glass copies.
- Planning to move the print server & PaperCut servers onto a Hyper-V based virtualized server.