PAWTUCKET SCHOOL DEPARTMENT

HP thin clients deliver affordable classroom computing

Pawtucket School Department

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HP customer case study: HP thin clients help Pawtucket schools stretch its budget, improve services

Industry: Education

Objective:

Reduce costs, improve reliability of classroom computing

Approach:

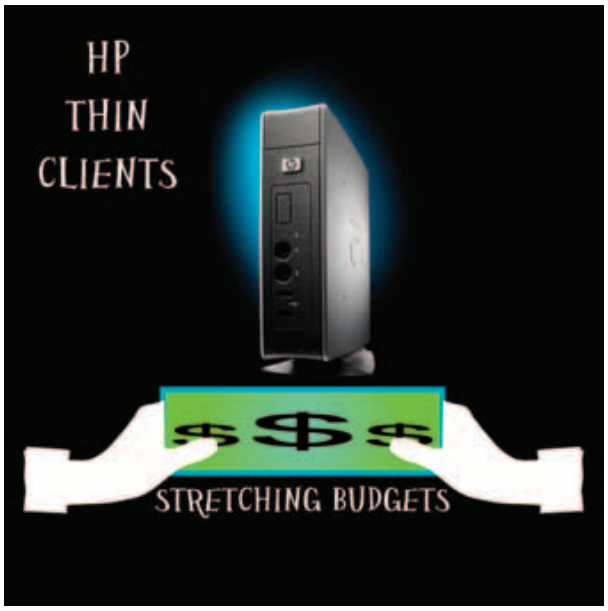
The Pawtucket School Department has deployed HP thin clients, supported by centralized HP servers and storage

IT improvements:

- Improved reliability
- Improved security
- Easier classroom IT management

Business benefits:

- Cost savings of hundreds of thousands compared to traditional technology replacement
- Lower power usage (and fewer blown circuits) in schools
- Continuing savings from lower licensing costs, power usage
- Less technology staff needed for technical support



The Pawtucket School Department faces the same challenges as schools nationwide: reduced funding, increasing state and local mandates, and growing class sizes. Together, they're forcing cutbacks in every department and program.

The technology department is no exception. And it was facing a crisis even without those other challenges.

"Until recently, our entire department was tied up in a vicious cycle of replacing desktop computers with replacements we couldn't afford, and in providing break/fix support in each school," recalls Michael St. Jean, Director of Technology for the Pawtucket School Department.

What sets Pawtucket apart is the solution that Pawtucket School's IT Team implemented — server-

Customer solution at a glance

Primary applications
K-12 classroom computing

Primary hardware
- HP t5145 Thin Clients
- HP ProLiant BL460c G5 Server Blades
- HP StorageWorks MSA2212 Modular Smart Array

Primary software
- Linux operating system
- Virtual Iron

client computing utilizing HP thin clients — and the dramatic turnaround that has resulted. "We're saving thousands of dollars in hardware and licensing costs each year, and providing better service to students, faculty and staff using HP systems," says St. Jean. "We're also freeing up our technology staff to concentrate on providing new services and opportunities in the future. It's a win-win all around."

Growing a thin client solution

The Pawtucket School Department operates 17 schools serving some 8,800 students throughout the city of Pawtucket, Rhode Island. St. Jean and his team (consisting of five professionals – Ernie Morgan, Network Administrator; Paul Abbott, Systems Engineer; Sule Omaye, Technician; Hersh Cristino and Lynn Cristino, Teacher Technology Coordinators – along with three clerical – Leslie Brett, Donna Simmons, and Isabelle Trembley) were struggling to keep up with the service demands of academic and administrative users alike.

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The district's technical staff seemed to be on the road constantly providing on-site support. The budget was stretched to the limit. Desktop systems were replaced less and less often. St. Jean cringed as technology in the district grew older, slower and less able to meet the school system's demands.

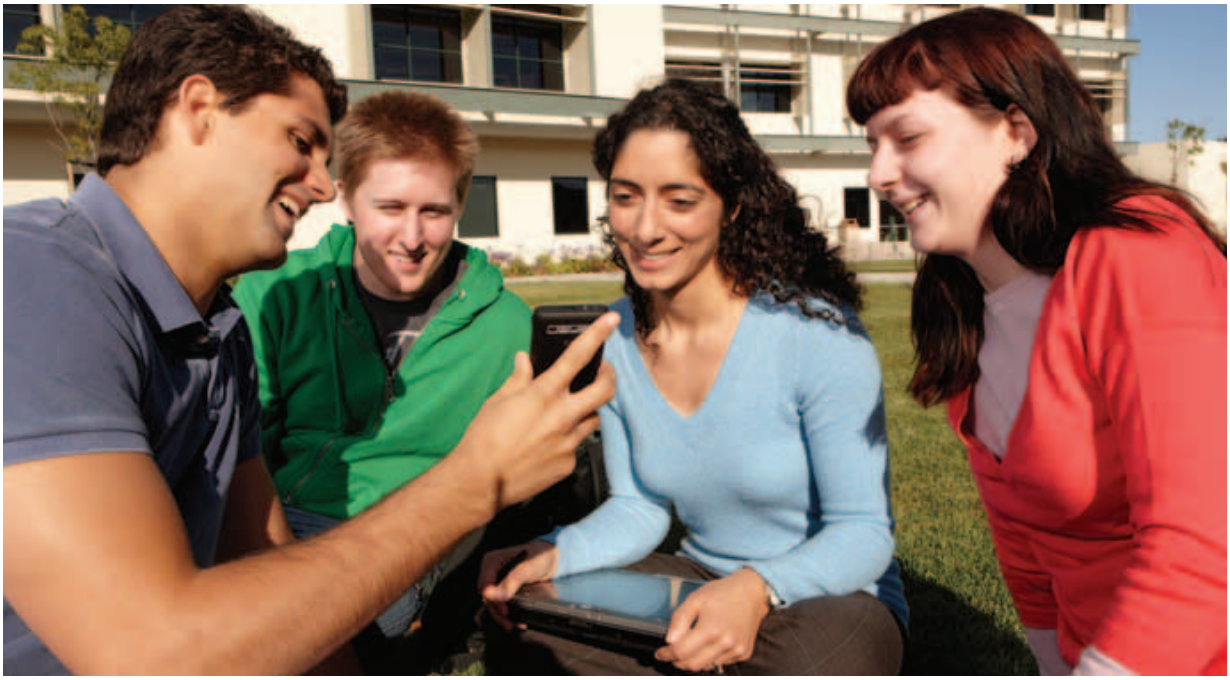
It was an administrative issue that led St. Jean to a solution. The Student Information System was distributed across all the school department's buildings, forcing employees to drive around performing routine maintenance and updates on office computers, and the data available to central administration was always a day out of synch as they waited for nightly backups. St. Jean arranged to centralize the Student Information application on a single terminal server, which users would log into as needed from their PCs.

"It was stable, secure, and easy to support," St. Jean notes. "It worked so well we decided to deploy more server-client solutions to begin addressing classroom needs." In classrooms, the server-client solution proved every bit as successful.

St. Jean's staff actually began by retrofitting older PCs to function as thin clients. But in time, the district moved to buying new thin clients. "We outfitted a lab with one brand of client that was very temperamental. Then we tried HP thin clients, which just ran rock solid," St. Jean recalls. "As we extended the thin client base — at that point, we had 1,000 aging computers we needed to replace — we bought our first batch of HP thin clients. They've been so reliable we haven't purchased any other brand since."

Saving the technology budget

The thin client solution was an easy sell to the school



board. St. Jean noted that spending $90,000 on terminal servers and licensing would save the school system hundreds of thousands of dollars as desktop technology was refreshed. With these servers in place, and thin clients running at approximately $200 each, thin clients cost between one-third and one-half the price of a full desktop system. Today, the schools have deployed a total of 1,800 HP thin clients.

St. Jean says thin clients are easy for his staff to set up, highly reliable (since they have no moving parts), and more virus-resistant since no system files are exposed to users.

In addition, server-client computing lowers the cost of technology management (the district has one technician per 2,000 workstations or roughly one-fourth the ratio required for traditional desktop services).

And it saves power. "Pawtucket is an older city, so we operate in older school buildings," St. Jean says. "With older, traditional desktop systems, we were drawing more power than the schools could deliver. Circuits were blowing left and right. If someone turned on a coffee pot, it would bring down the computers in the adjacent room. Since switching to thin clients and flat panel displays, we have not had any further power issues."

The Pawtucket School Department has purchased three generations of HP thin clients over the years, most recently the HP t5145 Thin Client. The schools opt for a minimal configuration — 128 MB of RAM and 128 MB of flash memory. But with servers doing the "heavy lifting" in terms of processing, most users don't need any more local resources, St. Jean notes. The district still deploys full desktops in areas that require them — the libraries that require high-end video streaming and multimedia capabilities, the CAD labs, etc.

The district opts for the embedded Linux operating system, which provides the stability of UNIX® but at a lower cost. "With the newer models, we're getting full USB capability, more multimedia features, and the pricing is fantastic." St. Jean says the HP thin clients allow the staff to upgrade to the latest image firmware on a previous generation thin client, and then use a current software image, providing backwards compatibility. As a result, he's estimating the useful life of a thin client at much more than traditional desktop technology.

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Thin clients are dramatically easier to set up and support, too. "It takes us literally five minutes to unbox a thin client, plug it in, and press an image on it before it's ready to use. We can set up an entire lab in under an hour, whereas previous processes with traditional technology would take days. That reduces

the cost of managing the devices," St. Jean says. His staff has developed a few standard images (one for each school, one for each lab), which can easily be deployed on a thin client from a USB drive.

With relatively new thin clients now deployed across the school system, St. Jean is currently focusing on streamlining the underlying server infrastructure. At present, each elementary school has two servers (one running Novell Open Enterprise, the second Windows Server® 2003 with Remote Desktop to provide the application environment). The junior high schools have four or five servers each, and the high schools have seven (also one Novell Open Enterprise Server with multiple Windows Server 2003 with Remote Desktop). St. Jean plans to bring that number under control through virtualization to consolidate the server infrastructure.

"We got out of the break-fix cycle for desktops; now we plan to get the servers under control," he notes. The plan is to replace all the existing physical servers with 16 HP ProLiant BL460c G5 Server Blades located in the central administration building, running Virtual Iron virtualization software. Beginning with the elementary schools, St. Jean expects to collapse 10 existing servers onto four server blades. Server consolidation will also reduce power costs by some $750 per server per year, he says.

Centralization will again ease the management burden. "In updating software, we can pretty much press 'new software' or run software updates in an hour's time. In the past, it used to take us a week or two to install a new package across the district."

Data storage is also being centralized. The district is running an HP StorageWorks MSA2212 Modular Smart Array, Fibre Channel-connected storage area network to support the entire thin client network.

To bring about the thin client revolution, St. Jean has worked closely with HUB Technical, an HP Gold Partner and reseller that works with schools and municipalities throughout New England. "We're starting to work with other schools to implement similar solutions and realize similar benefits: ease of use, cost savings, and lowered requirements for IT management," says Jared Jordan, Senior Account Manager with HUB Technical.

St. Jean notes that HUB Technical and HP have become valued partners in shaping the school district's technology future. "We needed someone to come in and be an extension of our own staff — looking out for our needs but also bringing in additional expertise. To be able to pick up a phone and know that they're going to find an answer to our needs, that's what we value."

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Pawtucket already supports remote access for staff, so they can log into the school's administrative servers to access the Student Information System and other administrative apps from home. Looking ahead, St. Jean wants to extend that capability to all faculty and students. "My vision would be that a student could log in from home or the public library and access their school desktop to continue their work in the evening or over the summer," St. Jean says. "Our city doesn't rank very high in terms of home ownership of computers, so whatever we can make available remotely will have a tremendous impact."

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