

Boosting Classroom Computer Use by 50 Percent After Standardizing on HP for Reliability



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—Steve Pinter,

Technical Support Specialist, Classroom,
Waterloo Catholic District School Board

HP Customer
Case Study:
Desktops
and Laptops
Networking
and Switches

Industry:
Education

Standardizing on HP equipment means 10 technicians can keep 4,500 computers at 60 sites running smoothly.

Objective:

Provide dependable classroom computers and connectivity to foster learning in a 21st-century environment.

Approach:

Standardize all classroom and staff computers, servers and switches on HP; monitor servers with HP Systems Insight Manager; monitor and configure switches with HP ProCurve Manager.

IT improvements:

- 95-98 percent computer uptime, compared with 70 percent at other school boards' schools
- Eightfold faster computer provisioning (12-18 minutes vs. two hours)
- More than 75 percent reduction in PC problem resolution (2-4 hours vs. 2 days/2 weeks)
- 99 percent network uptime with HP ProCurve switches, up from 80 percent

Business benefits:

- 50 percent increase in classrooms using computers in the past few years
- 20 percent TCO reduction for network

About Waterloo Catholic District School Board

Located in Canada's Technology Triangle, the Waterloo Catholic District School Board is comprised of 52 schools, five adult education campuses and two administrative centres—employing 3,000 full and part-time staff and serving 30,000 students. The emphasis is on quality, inclusive, faith-based education. Standardization and imaging lets the school district provide excellent IT support with a very small IT staff.

10 techies for 4,500 desktops

About an hour west of Toronto, the cities of Waterloo, Kitchener and Cambridge make up the Waterloo region, known as Canada's Technology Triangle. It's home to many high tech, automotive, advanced manufacturing and business services companies. Innovation, entrepreneurship and education are considered essential in this region, making technology in the school systems especially vital.

But keeping classroom technology up to date can be a challenge for schools, which typically have only one-fifth as many IT staff as corporations have. “We support 4,500 machines with a staff of ten technicians, which is a huge ratio,” says Steve Pinter, classroom technical support specialist at Waterloo Catholic District School Board (WCDSB).

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That comes out to just over one technician per 450 computers, Pinter notes—and represents an even higher number of users, since machines are used by multiple students and teachers over the course of a school day.

To make this work, WCDSB has standardized on HP equipment for its classroom computers, servers and network switches. “Standardization allow us to maintain this support ratio in that we have spare parts, so our hardware technician can quickly fix a machine at any given time,” Pinter says. “Between 95 and 98 percent of our machines are up and operational at any given time, compared to other school boards' schools, where it may be 70 percent.”

Because of this standardization and available spare parts, when PCs do go down, they're never down for long, adds Sandra Quehl, CIO of WCDSB. “While we don't have internal service level agreements with our users, we strive for a two to four hour turnaround,” she says. Without standardization, down times would typically be from two days to two weeks, Pinter adds.

Solution at a glance

Hardware:

- 4,100 HP desktop computers, models include HP Compaq dc7700dc7800
- 400 HP notebook computers, models include 6710b
- 90 HP ProLiant servers, models include HP ML 330, ML 350 and DL 380
- HP ProCurve 3500 and 2600 Network Switches

Software:

- HP Systems Insight Manager
- HP ProCurve Manager
- Novell ZENworks Desktop and Server Configuration Management

Operating Systems:

- Microsoft Windows Server 2003
- Microsoft Windows XP
- Novell Netware 6.5 OES

Network Protocol:

- 100MB Ethernet with Gigabit Backbones

HP Services:

- HP Hardware Self Maintainer Program

Image-conscious

It helps that the WCDSB IT department uses imaging extensively both for provisioning and remote tech support. "Because we use a standard chipset for PCs, we're able to leverage imaging to a very high degree," Pinter says. "We have one image for our elementary school classroom computers, and one base image for secondary school classroom computers." These computers provide access to 75 separate applications, he adds, so imaging offers huge time savings over traditional means of provisioning or troubleshooting computers. "It takes us 12 to 18 minutes to image a computer with an image that's four gigabytes in size, compared to maybe two hours to provision it manually," he says.

The IT staff uses Novell ZENworks for imaging, he adds, and in the past month, the software has allowed School Board's tech staff to remotely image all its classroom computers. "The technician logs in, wakes up the next machine via Wake on LAN, image it and shut it back down. This is the first time we've done it this way. Usually, we would have to go to the site to do it." ZENworks also allows IT staff to push out registry changes, program updates and new programs on an ongoing basis, so that computers only need to be reimaged once every four or five months.

Solving problems before users know they're there

HP equipment is not only the standard in classrooms, but in the data center as well. "Most of our servers are HP and all of our switching gear," Pinter says. "We use HP Systems Insight Manager to monitor our servers. We use HP ProCurve Manager to monitor and configure our switches remotely. If a hard drive dies in one of our servers or computers, we usually know it's dead before the customer does." IT staff can act proactively replace the server and remedy the problem. This not only helps shorten down times, but also makes them less frequent. "It's rare to have computers down now, where in years gone by it was a weekly occurrence," notes Rod Eckert, principal of instruction and assessment.

Last year, WCDSB replaced switches on its fiber-optic network with HP ProCurve 3500 Network Switches. The switches, installed in 2001, were at their limits because of increased traffic, explains Ted Dyjach, manager of technical support services at WCDSB. "We were experiencing failures, and the throughput was no longer sufficient," he says. "Uptime was mid-90s before we started using HP ProCurve switches. Now it is 99 percent. Throughput has tripled." The new switches have reduced TCO (total cost of ownership) for the network by 20 percent. "The improvement and stability of the network has been fantastic," Dyjach says.

Software that locks computer cases

In a classroom setting, the biggest threat to computers is often their youthful users, and WCDSB is no exception. One thing that helps protect classroom computers is a command in BIOS that causes a pin to slide into place to make the computer case impossible to open. "Before, we used a security screw to keep the cases closed," Pinter says. "But then the students found the manufacturer of the security screw, and bought their own screwdriver bit. That's when we switched to HP." Quehl estimates the ability on HP computers to lock cases via BIOS is another factor that makes for less downtime, and has helped cut IT administrative staff time by 25 to 30 percent.

WCDSB's relationship with HP partners such as, User Friendly Systems and Telecom Computers has also helped lower its TCO. "They've been able to augment HP support," Quehl says.

Helping at-risk students succeed, and top students excel

What does less down time mean to WCDSB students? With computers now more dependable, both students and teachers are more apt to use them, Eckert notes. As a result, he says, it's easier for teachers to share lesson plans and teachers and students can draw from more sources. "The number of classrooms that access curriculum through the Internet has increased easily 50 percent in the past several years."

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This means at-risk students can get the help they need. "Software can help at-risk students when they struggle with curriculum because they have difficulty reading, either by scanning the textbook and having the software speak to the student or using voice recognition software that writes for them," he says. "Instead of struggling with reading or writing, they can get to the thinking part of the assignment. They are now able to keep up with their classmates. In the past, they wouldn't have."

And for students who are already doing well, computers help both them and their peers learn even more, Eckert adds. "It's quite impressive when you see a Grade 2 student use PowerPoint to create a presentation for the rest of the class. It becomes a lot more engaging for the other kids than just talking. Some can gain a lot more information when they can see as well as hear it. Because of that, because it honours the way kids learn best and provides a visual tool, I think computers have helped kids' success rate in school increase."

To learn more, visit www.hp.ca/education

To learn more about Waterloo Catholic District School Board, visit www.wcdsb.ca