

Care Facility Provides 99.99% Uptime with Total HP Solution



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—Mick Majid, President and CEO, Cyglera Health Systems Inc.

HP Customer
Case Study:
Cyglera Health
Systems Inc.

Industry:
Healthcare

Deck:

Ontario clinic pioneers more efficient, integrated healthcare delivery model built on HP technology

Objective:

To improve the quality and efficiency of medical care by putting more information at clinicians' fingertips in real-time

Approach:

Provide HP thin clients, desktops, servers, notebooks, printers and tablet PCs, plus a complete application infrastructure

Business benefits:

- Faster, easier registration saves 15 minutes per patient
- Flexible, Web-based information access for caregivers streamlines patient exams, saving patients 20 minutes per visit
- Lower administrative costs
- Clinical and administrative staff have more time for high-priority tasks
- More effective tracking of patient prescriptions and treatments
- 60% lower power consumption

Technology improvements:

- 75% less routine system administration time
- 99.99% uptime
- Improved data security
- Faster access to medical records due to tablet PCs that include bar code scanners and medical image transmitters

Information equals health

Medical science has gained powers that were science fiction 10 or 20 years ago, including microsurgery, cloned antibodies, PET scans, and DNA analysis. But ironically, this growing array of diagnostic and healing tools is generating its own problem: data that may arrive in incompatible formats, or in such huge amounts as to make finding the relevant details difficult and time-consuming. In healthcare, time is more than just money—it can make the difference between life and death.

Making information-sharing faster, easier, safer, and more cost-effective for the healthcare industry is the mission of Cyglera Health Systems, Inc., based in Brampton, Ontario. Cyglera provides innovative IT systems, software, and medical practice support.

Until very recently, the company had acted strictly as a technology solution provider for small to mid-size medical practices. But in 2007, Cyglera embarked on a new venture: designing and developing IT solutions, and maintaining the technology for a 27,000-square-foot clinic in Ontario, the first of a new model of all-in-one primary care clinics. And wherever there was a choice of vendors—for servers, PCs, laptops, printers, and software—Cyglera chose HP and sales partner Ingram Micro.

Solution at a glance

Hardware

- HP Compaq tc4400 Tablet PCs
- HP Compaq dx2300 Microtower PCs
- HP Compaq t5135 thin client computers
- HP ProLiant DL380 G5 storage servers
- HP ProLiant DL120 storage servers
- HP Officejet Pro L7780 All-in-One colour printers
- HP Smart Buy 17-inch and 19-inch LCD monitors

Software

- Microsoft Office 2003
- Microsoft Active Directory
- MySQL 5 Database
- Cyglera DataSync middleware
 - Chartstar
 - EPrescribe
- HP iLO (Integrated Lights-Out) 2 remote administration tool
- Symantec Altiris remote management software

Operating System

- Microsoft Windows Server 2003 64-Bit Edition
- Windows Load Balancing Service (WLBS) clustering software

HP Services

- HP Care Pack support services for the ProLiant storage servers and thin clients

HP Partner

- Ingram Micro

Better performance with lower costs

The outpatient clinic located in Markham, Ontario, which opened in December 2007, houses primary care doctors and a 24/7 urgent care centre, as well as specialists including cardiologists, dermatologists, and gastroenterologists, even dentists. There are also complimentary services such as physical therapy, nutrition and wellness centre, and chiropractic.

"When we did the needs analysis for this clinic, we evaluated solutions from HP and Dell, as well as generic off-the-shelf hardware that could be customized. We found that HP hardware was the best fit all around," says Cyglera CEO Mick Majid. "With such a large, integrated, and diverse facility, we wanted to minimize the need for routine IT maintenance and keep expenses down. That meant standardizing on a single brand of technology, top to bottom. It also drove the decision to use networked, thin client computers as well as conventional PCs and laptops. Plus, the IT infrastructure would have to offer extremely high uptime."

"We've used HP for years," adds Neil Appalsamy, Executive Vice President for IT architecture at Cyglera. "We've found that the HP platform is more cost-effective, with better performance and more computing power."

"We're quite happy with the HP machines' overall performance. And we've still got lots of room to grow."

—Neil Appalsamy, Executive Vice President for IT Architecture, Cyglera

Providing 99.99 percent uptime

Cyglera based the clinic's infrastructure on three HP ProLiant DL380 G5 storage servers and a ProLiant DL120 data storage server, all running Microsoft Windows Server 2003 64-Bit Edition. They house the clinic's central MySQL database, which stores a massive 5 terabytes of data. They also support all the clinic's back-office programs, such as Microsoft Office, e-mail, physical and network security, music and video streaming, and specialized medical applications from Cyglera as well as third-party applications for patient self-service kiosks.

Connecting all these disparate programs is a custom Cyglera middleware application called DataSync. "It creates a common repository of patient and doctor information based on an HL7 XML Database and a common rules-based engine following health industry standards for formatting and sharing data, so that any platform differences are transparent to the end user," Majid explains.

For example, a doctor prescribing a medication can type it into the patient's medical record at the bedside using a tablet PC, then digitally sign it for transmission to the central pharmacy application and database via DataSync. The pharmacy can start filling the prescription in real-time, automatically notifying the nursing staff when it's ready for pickup.

"So we really rely on the ProLiant servers' ultra-high uptime, which is at least 99.99 percent," he adds. "A system failure would have a drastic impact. You'd lose a lot of the tools to help patients."

An active clustered pair of servers supports the remote access. The ProLiant's load-balancing flexibility helps ensure that even if one server loses a connection, the other picks up its burden automatically. "We were especially impressed with the servers' performance here, because so many thin-client users are drawing directly on their capacity. Administration through Altiris, which HP bundles with each client, helps pull together the small army of thin clients under one management console," Appalsamy comments.

Thin clients slim down administration

In fact, thin-client computers are among the technical innovations Cyglera is using to streamline the delivery of vital information. The clinic's two dozen employees can choose from several models of HP Compaq desktop, notebook, and tablet PCs, depending on how mobile they need to be. Clinicians mainly use HP Compaq t5135 thin clients, which access applications, data and operating system images by logging on to a terminal services session.

Administrators opt for more mobile computers, including HP Compaq 2710p and nx6325 Notebook PCs and the tc4400 Tablet PCs, all of which meet the clinic's requirements for ease of portability, ruggedness and sterility. HP Compaq dx2300 Microtower PCs and HP Officejet Pro L7700 All-in-One colour printers round out the clinic's equipment.

"We found the thin-client model was more cost-effective than ordinary PCs, both in terms of hardware and in terms of administration. We can deploy a desktop image just once and share it across a whole network of remote users, thanks to the Integrated Lights-Out remote administration feature," Majid says. "This is especially the case with clinical technicians who use a large number of specialized medical applications. When we update or deploy a new application to them, we don't have to visit 20 different workstations. The users just log out, and when they log back in, there's the new image."

"Compared to our previous facilities, the HP thin clients save us about 75 percent of the time we used to spend in routine administration," Majid states.

Also, patient data is more secure, since records are stored only on centrally protected servers, Majid says. "Security is of the utmost importance in a medical facility. The HP thin clients wouldn't let a rogue user replicate patient data outside the network, such as onto a USB drive. Our customers appreciate that peace of mind."

Blueprint for success

In the six months since the new clinic opened for business, the all-HP infrastructure has worked smoothly, with virtually no unplanned downtime. That's even though the number of users has doubled, from about 25 to 50, and will probably increase to over 100 within the year.

Cyglera's real-time, paperless information flows have lowered the administrative burden, cutting at least 15 minutes off registration time for each patient's visit and another 20 minutes of waiting in the exam room while doctors and nurses examine or update records. This means prompt service for patients, less wasted time, and lower overhead costs, Majid says. Real-time data sharing also lets staff more accurately track what medications patients receive, even which room of the clinic complex they're currently in.

On the utility front, the solid-state HP thin client terminals use about 60% less power than competing models.

"We're quite happy with the HP machines' overall performance," Appalsamy says. "And we've still got lots of room to grow." The high performance means Cyglera can easily meet its customers' SLA (service level agreement) expectations, responding to any concerns within one to four hours, he adds.

"The HP thin clients wouldn't let a rogue user replicate patient data somewhere else, like onto a USB drive. Our customers appreciate that peace of mind."

—Neil Appalsamy

And that's important, not just to patients and doctors at the clinic, but to its parent organization, which will build and run 20 more such clinics throughout Canada. They will all be standardized on the same HP platform, to streamline installation and maintenance.

"The success that we've had with this project has been just marvelous," Majid says. "With HP's help, we can use this as a blueprint to roll out cutting-edge medical care all across Canada. Plus working with Ingram Micro Inc. which is the world's largest technology distributor and a leading technology sales, marketing and logistics company provided us with technical support, financial services and product aggregation, a vital link in the technology value chain." Majid says.

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