At-A-Glance

Environment

- Elite Canadian Medical Center
- Over 80,000 patient visits
- 319 beds
- 2,000 devices running 400 software applications
- 500 access points

Challenge

Deliver exceptional healthcare to patients by collecting and analyzing Big Data, supporting patient and staff mobility, and securely sharing the Electronic Health Record (EHR) and diagnostic images

Extreme Solution Components

- Extreme MLX Series
- Extreme NetIron CER 2000 Series
- Extreme VDX switches

Results

- Reduced EHR backup time from 28 hours to 4 hours—a seven-fold improvement
- Enhanced the new cancer center's data integrity and accuracy rating from 14th to 10th in the province
- Improved overall patient satisfaction ratings and decreased wait times from the previous year

Canadian Heath Centre Advances Patient Care with Reliable Network Solution

This Canadian Health Centre recently completed the first phase of a four-year $450 million expansion project that doubled the medical center's area to nearly one million square feet and added a state-of-the-art cancer center.

First opened in May 2012, the new complex comprises a technically elite medical center with 319 beds plus 12 bassinets in the Neonatal Intensive Care Unit (NICU). The new regional care centre provides advanced diagnostics, radiation treatment, and follow-up cancer care to the nearly half-million people living in Eastern Canada.

Extreme Networks Delivers Performance, Service, and Support

At the heart of the health centre's expansion is an Extreme Networks' network solution that keeps critical information flowing smoothly 24×7. When designing the new health center, they outlined demanding network specifications for the speed, capacity, and flexibility to handle 2,000 end-user computing devices running approximately 400 software applications. The network is responsible for supporting a gamut of clinical, operational, and financial functions, including core Electronic Health Record (EHR) from Meditech, drug libraries to support patient safety, and the integrated medical and radiation oncology records deployed by the cancer center.

The network also supports the health center's wireless infrastructure with more than 500 access points as well as smart infusion pumps, cardiac monitors, a telephone system, video surveillance, bedside multimedia—and even the heating, ventilation, and air-conditioning systems.

The health centre IT team selected Extreme Networks solutions based on their high performance, scalability, and redundancy. Compared to other networking providers, Extreme also delivered the competitive pricing and unwavering service and support that they demanded.

"So many things depend on that network, but most importantly, the patient depends on that network," says the Director of IT. "When we decided we were going to put in a network, we chose Extreme."

IT deployed Extreme MLX Series routers at the core, gaining industry-leading 100 Gigabit Ethernet (GbE), 10 GbE, and 1 GbE wire-speed density; and rich IPv4, IPv6, Multi-VRF, MPLS, and Carrier Ethernet capabilities. In addition, the health center's IT team deployed third-party switches at the network edge to deliver 1 GbE connectivity.

Health Center Manages Big Data Requirements

The Extreme Network infrastructure is easily handling the many forms and sources of Big Data that impact the healthcare IT network daily. A new cardiac monitoring system, a mission-critical data source, produces a continuous stream of ECG data. The monitoring system also relies on Clinical Decision Support (CDS) in its EHR—all of which require rich new data sets and storage.

The health center's other data requirements are driven by a mushrooming population of mobile devices and an organization-wide Unified Communications (UC) strategy. All together, the data storage demand, like the medical center's physical footprint, doubled.

With so much data, the health centre's business continuity strategy supports two data centers, one in active state and one in standby. Extreme technology has enabled the medical center to reduce the time required to back up its EHR from 28 hours to as few as four hours. "This is a huge productivity gain for us, up to a seven-fold improvement from our previous backup system"

At the cancer centre, the network transmits diagnostic images for multiple care givers. The center recorded 72,000 patient visits in 2012, its first year of operation, and it expects that number to climb to 80,000 in the second year and rise 2,000 to 3,000 more each year. The patient visits add to the volume of data, which has already grown to 7 TB.

"We take pride in knowing that we support the entire patient experience—from data in the electronic medical records system, to when they receive radiation treatment in the cancer center, and right to the bedside where they have an entertainment system that supports the television, Internet, and telephone," says the Network Administrator.

Health-Centered Performance Stats

The health center tracks multiple performance measurements to understand the quality of patient care it is providing. Many of these data points have already shown improvement since the new centers opened. For example, the cancer center's data integrity and accuracy rating has jumped to 10th from 14th. Overall patient-satisfaction ratings have improved, and wait times are expected to drop compared to last year. These improvements were possible due to the new facility, a committed care team, new state-of-the-art digital equipment, and the Extreme network infrastructure.

"Our requirements are high for patient care, especially when it comes to the network. Extreme, once we came into production, delivered," says the Director of IT. "We want to give clinicians—physicians, nursing staff, and other caregivers—what they require to provide patient-centered care, when and where they need it."

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