



“One of our clients, a Canadian government agency, is doing important work in pretty extreme field locations. Here at CGI, we are excited about designing and validating this level of IT solution. Hitachi Data Systems makes it possible.”

*Christian Jean
 Technological Architect
 CGI, Canada*

CGI

INDUSTRY

Information Technology, Government

SOLUTIONS

Modular Platform

Hardware — Hitachi Adaptable Modular Storage 2300 (2)

Software — Hitachi TrueCopy® Synchronous



CGI Canada Pushes Hitachi Adaptable Modular Storage to Extremes for Remote SAN Deployment

When a government agency of Canada approached CGI in a quandary, seeking to find SAN equipment that could withstand extreme temperatures, power and cooling challenges, and long term reliability and security in the field, the Hitachi Adaptable Modular Storage 2300 answered the call. Built to perform robustly in ideal or harsh conditions, Hitachi SANs based on Adaptable Modular Storage deliver exceptional availability, manageability and reliability.

Every once in awhile, a customer challenge comes along that defies conventional IT solutions. For the CGI team in Quebec, Canada, engineering a resolutely secure, reliable and manageable storage area network (SAN) that holds up to harsh temperatures and failover requirements for up to five years definitely transcends the traditional.

“One of our clients, a Canadian government agency, is doing important work in pretty extreme field locations. Here at CGI, we are excited about designing and validating this level of IT solution. Hitachi Data Systems makes it possible,” says CGI Technological Architect Christian Jean.

CGI is known for delivering end-to-end business services through cutting edge IT solutions and working as a true partner to leading organizations around the globe.

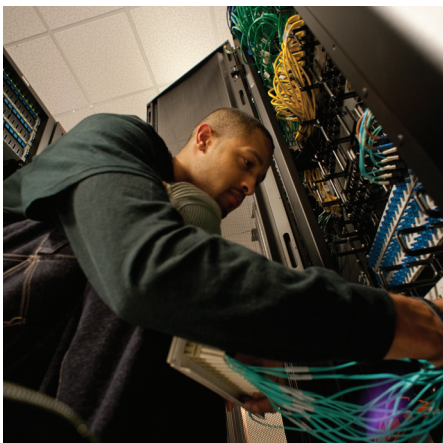
Headquartered in Montreal, Quebec, CGI has a presence across North America, Europe and Asia Pacific, with a strong network of onshore, near shore and offshore delivery centers to provide local support with a global reach.

Unplugging Conventional Thinking to Find the Right Fit

When a Canadian government agency contacted CGI offices in Quebec, the mandate was clear: to design and implement SANs that could sustain production operations no matter what or where. While some of the details are classified, the CGI team has revealed that the SAN equipment would be deployed into remote field locations outside the country and would need to remain operational and mobile for at least five years.

The CGI client had very specific criteria for selecting its SAN solution. Space constraint and durability were significant considerations. Because the equipment could be placed into locations with possible extreme temperature variances and could be subject to planned or unplanned outages, power and cooling concerns also played a role in narrowing down the list of potential SAN solutions. The field operated under a shutdown protocol that necessitates the equipment to be unplugged nightly and rebooted daily, so meeting data replication and failover specifications was critical. And with a long-term tour of duty in the field, these SANs had to be relentlessly reliable and easy to maintain, with minimal human intervention required.

“We had a great deal of prerequisites, so the league of potential SAN contenders quickly dwindled. Only Hitachi Data Systems was able to meet these specifications, plus come to the table ready to help us devise and validate a proof of concept design that could be ready in a very short time frame — another stipulation from our client,” says Jean.



“We conducted extensive testing and validation of every component, every drive. In more than 200 failure tests, where we unplugged and restarted the [Hitachi] SANs, there has not been one failure.”

*Sebastien Durand
Technological Architect
CGI, Canada*

Selecting Hitachi Adaptable Modular Storage for Unsurpassed Reliability

The SAN solution is based on the Hitachi Adaptable Modular Storage 2300, a highly reliable, flexible midrange storage platform with SAS architecture, advanced security capabilities and active-active controllers for outstanding cost-effective system performance, availability and hands-off manageability. The active-active controllers in the Hitachi Dynamic Load Balancing Controller automate failover and back-end load balancing across multiple loads, virtualizing the relationship between a LUN and a controller. This unique combination helps to eliminate bottlenecks, simplify microcode updates, minimize administrative time, and provide nondisruptive data movement and resiliency during planned and unplanned outages.

Each Adaptable Modular Storage 2300 in the CGI client project is configured with synchronous remote mirroring using Hitachi TrueCopy® Synchronous software. Data volumes and business critical applications are then replicated between the two the two AMS 2300 systems attached 2300 systems attached to separate SAN domains for a sound disaster recovery strategy.

“Being able to depend on Hitachi quality and technology has been a relief. This is a big project with significant outcome potential. We are already working with the client on deploying additional projects based on this one,” states Jean.

Testing the SANs to Meet Stringent Field Requirements

The CGI team set up a laboratory to test the proof of concept for its government client project. The lab testing environment built two identical SANs, each including one Adaptable Modular Storage 2300 system with Fibre Channel, a Hitachi disk shelf, four Dell PowerEdge 1950 servers, two Brocade 300e 24 port switches, two Cisco Catalyst 3750G-24TS switches and fiber optic cable. The servers are virtualized into clusters using VMware ESX Server.

The lab objectives included testing for all failover cases, measuring availability in each scenario, identifying the circumstances that might require administrative intervention, analyzing different modules once brought back online after outage and validating performance for each connection type. The goals of the solution included interruption time of less than five minutes, protection against data corruption and, particularly, limited human intervention even during failover and return to normal conditions.

“We conducted extensive testing and validation of every component, every drive. In more than 200 failure tests, where we unplugged and restarted the SANs, there has not been one failure,” says CGI Technological Architect Sebastien Durand.

Finding Security and Success in the Field

The results of the test environment were successful, and production operations are fully underway in the CGI client field locations. “This is the first time our government customer has had a SAN deployment deep in the field. There are a myriad of threats at the remote sites that can impact operations,” explains Durand. “So for security reasons, we had to ensure that the SANs can continue operating without interruption. So far, in the field, we have had no failures of any drive. All the processes are automated and things are stable. And the client even has one button manageability in the field with this solution,” he concludes.

 **Hitachi Data Systems Corporation**

Corporate Headquarters

750 Central Expressway
Santa Clara, California 95050-2627 USA
www.hds.com

Regional Contact Information

Americas: +1 408 970 1000 or info@hds.com
Europe, Middle East and Africa: +44 (0) 1753 618000 or info.emea@hds.com
Asia Pacific: +852 3189 7900 or hds.marketing.apac@hds.com

Hitachi is a registered trademark of Hitachi, Ltd., in the United States and other countries. Hitachi Data Systems is a registered trademark and service mark of Hitachi, Ltd., in the United States and other countries.

All other trademarks, service marks and company names in this document or website are properties of their respective owners.

Notice: This document is for informational purposes only, and does not set forth any warranty, expressed or implied, concerning any equipment or service offered or to be offered by Hitachi Data Systems Corporation.

© Hitachi Data Systems Corporation 2010. All Rights Reserved. SS-226-A DG September 2010