

Server Cloud Canada: for infrastructure, press here

New IT service provider uses HP CloudSystem Matrix to help customers cut deployment time from days to minutes



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—Kevin Moniz, Chief Technology Officer, Server Cloud Canada

HP customer case study
HP CloudSystem Matrix helps reduce power needs, enhance reliability

Industry Technology

Objective

Deliver servers and infrastructure as services faster and more cost-efficiently than competitors, increasing service levels

Approach

Evaluate cloud services infrastructure solutions from IBM, Dell, Cisco, and HP to compare price, reliability, performance, and ease of management

IT improvements

- 80 percent reduction in network switches, cards, and cables, reducing costs
- 60 percent reduction in power requirements
- 98 percent reduction in time to move, add, or change server blades (2 hours to 2 minutes)

Business benefits

- 99 percent reduction in client time to value deploying new infrastructure (minutes vs. days)
- \$200,000 Canadian (CAD) cost avoidance by not needing additional power source
- Enhanced ability to uphold 100 percent uptime service-level agreements
- Projected \$1 million CAD annual savings possible by eventually re-allocating staff

What's IT all coming to?

“Customers want everything right now.”

That's Kevin Moniz, chief technology officer of Server Cloud Canada, speaking about the businesses that purchase infrastructure from IT hosting providers. They're not used to waiting anymore, he observes. And neither are the customers they serve, nor customers in any industry. There's a growing expectation that needs should be met in an instant.

What's in the way?

Infrastructure is complicated. Design, procurement, deployment, and testing take time. There are many potential points of failure. These are standard assumptions in IT—until recently.

As technology evolves, many, including Moniz and the Server Cloud Canada team, are seeing a major opportunity: the limits and complexity of physical hardware can be largely surpassed by virtualization and automation.

As a result, the hosting business is being transformed, Moniz reports. It has offered dedicated servers off-site for decades. “But dedicated servers come with one major problem,” Moniz notes. “Customers have to rely on a server with a motherboard and hard drives and the most unreliable part of a computer is the hard drive.”

Server Cloud Canada is freeing customers from these limitations. “The next evolution of the data center is no more physical servers, and not a standard co-lo—everybody lives on the cloud,” Moniz explains. “That started us shopping for hardware for the proper way to put the cloud together.”



About Server Cloud Canada

Server Cloud Canada, based in Kingston, Ontario, offers virtualized servers-as-a-service and infrastructure-as-a-service to small and mid-sized businesses.

How to get there

“We did a lot of evaluation,” recalls Moniz. “We shopped all the big guys. We kicked a lot of different tires. Dell was pushing single, double, quad-core servers. Cisco was pushing UCS. IBM was pushing blades tied to an EMC SAN.”

The team quickly realized that while many companies could offer virtualized environments, “what’s going to really bring the feature set and reliability to the table is the hardware.” Moniz adds that, “It came down to looking at some sort of blade environment. And quite frankly, only HP really had a complete product top-to-bottom where we could say it’s tried, tested, and true.”

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Kevin Moniz, Chief Technology Officer,
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The closest competitor was Cisco UCS. “But with only two years of deployments under their belt, we really couldn’t put our dollars behind UCS strictly for the fact that if anything hit the fan, we weren’t comfortable that we were going to be able to resolve it,” Moniz explains. “That’s unlike HP, who had been deploying Matrix for a while, and is the leader in the blade market.”

Another key factor was a difference in SAN system design. “We took a look at Dell EqualLogic and saw it is more of a system on a chip versus the HP P4000 SANs, which have an x86 processor running an OS on it.”

Familiarity was important. “I know what an x86 looks like,” Moniz says. “I know what a PC looks like, I can work with that and I can repair that if worse comes to worst. But a system on a chip—it’s a little bit more behind the curtain. We weren’t going to be able to necessarily just pop a new processor in there if there’s a problem.”

The HP P4000 SAN solution was also easier to manage. “We can add new HP P4000 nodes non-disruptively, basically until the end of time and manage them as one cluster through a single console,” Moniz points out. “That’s not true of the competition, which lets you grow a cluster to a given size, and then you need to start another cluster.”

Remote management is crucial

HP was the choice, and another key factor helped make that choice easy, Moniz says. “It was all the features that Matrix brought in to allow us to really cater to our hardware from remote locations and give us extra levels of control. To make changes in our other data facilities, we have to walk into the data facility, pull the rack open, and rip it apart. Whereas with Matrix, I log into a website and can do everything I would naturally do walking into a data facility.”

In a short time, the infrastructure went from concept to reality. Server Cloud Canada opened its doors running services on the HP CloudSystem Matrix, built on HP ProLiant BL685c G7 Server Blades with AMD Opteron™ processors and BL460c G6 Server Blades in HP BladeSystem c7000 Enclosures. They’re joined to the network by Virtual Connect Flex-10 10Gb Ethernet Modules and HP Networking switches. All servers boot from and all data is stored on HP P4000 SAN solutions. “The whole install experience exceeded our expectations,” Moniz explains. “The whole project came together in three months, from start to finish.”

There are no disks in the servers, Moniz explains, to eliminate that potential point of failure. And HP ProLiant BL685c G7 and BL460c G6 Server Blades were chosen because “at the time they offered the highest number of cores and largest amount of RAM that we could fit in a single blade,” he notes.

Guaranteeing physical resources

Density is important because Server Cloud Canada doesn’t offer a standard utility model like an Amazon EC2 or other cloud providers. “We call ourselves a hybrid public-private cloud,” Moniz says. “It’s a term that’s used to define physical servers and virtual servers. You’re running on a public cloud with us, but we cut you out a private section.” At Amazon EC2, in contrast, if all customers scaled up at the same time, there could be concern that there are enough resources to give them all they paid for. But at Server Cloud Canada, “we sell you cores, RAM, and gigabytes of hard drive space on a monthly basis,” Moniz says. “We don’t sell those resources to anyone else. You’re guaranteed to get it.” As a result, the company seeks to put the maximum amount of cores possible in the HP BladeSystem c7000 Enclosures.

Reducing networking gear by 80 percent

Joining the enclosures to the network are HP Virtual Connect Flex-10 10Gb Ethernet Modules. “HP Virtual Connect reduces the switches, cards, and cables we need by 80 percent compared to what we’d have to put into place without it,” Moniz says. “Where it really shines is when we need to add or change a server blade. It’s instantaneous for Matrix to use Virtual Connect to re-map LAN and SAN settings, and the blade just boots up. In the previous environment, we’d be remapping addresses manually. Two hours of setup time have been reduced to two minutes.”

Rounding out the deployment, the company implemented HP Networking solutions from edge to core, including HP 6600 series switches. “Six months since deployment, they’re working flawlessly,” Moniz relates.

Cutting power by 60 percent

Another gain for the company is that HP CloudSystem Matrix has reduced power needs. “We are seeing about a 60 percent power savings for the same type of workload compared to our other data facilities,” Moniz reports.

“Because of HP CloudSystem Matrix, we’re able to set-up customers’ infrastructure threefold faster, in one day in our Kingston facility compared to three to five days in our other facilities.”

Kevin Moniz, Chief Technology Officer, Server Cloud Canada

If the team had deployed a more traditional IT architecture, the data center would have needed another power source. “We estimated the cost of a new power source, including the portion the utility subsidizes, would be in the range of \$200,000 [CAD],” Moniz says. “Once we saw that figure, we knew we’d rather spend it on getting hardware that will work inside our power requirements.”

Providing turnkey options

Using HP Operations Orchestration software to manage its infrastructure-as-a-service (IaaS) customers and tools from VMware and Citrix for its servers-as-a-service (SaaS) customers, Server Cloud Canada gives its users the flexibility to create and manage environments remotely.

Says Moniz: “The real strength in building a service catalog of templates is that we can provide an end user with a turnkey option to deploy massive infrastructure. It could be a whole new office that includes a domain controller, terminal server, and mail server. The customer can deploy all this right out of our catalog by pushing a button and waiting about 20 minutes—instead of days or weeks. And we’re distributing best practice scenarios as a value-add to our customers.”

New clients get started more quickly. “Because of HP CloudSystem Matrix, we’re able to set up customers’ infrastructure threefold faster, in one day in our Kingston facility compared to three to five days in our other facilities,” Moniz reports.

The funny part is, customers don’t treat this improvement as anything unusual, Moniz says. “They’re just happy at the fact that they can have it right now,” he observes. “We don’t hear the hemming and hawing anymore about a 3- to 5-day wait.”

Customer solution at a glance

Primary solution

HP CloudSystem Matrix consisting of:

- HP BladeSystem c7000 Enclosures
- HP ProLiant BL685c G7 Server Blades powered by AMD Opteron processors
- HP ProLiant BL460c G6 Server Blades
- HP Virtual Connect Flex-10 10Gb Ethernet Modules
- HP P4000 SAN solutions
- HP 6600 Switch Series
- HP Matrix Operating Environment
- HP CloudSystem Matrix Installation Services

Other software

- VMware vSphere 4.1
- Citrix XenServer 5.6
- Microsoft® Windows® Small Business Server 2011
- Microsoft Windows Server 2003, 2008 R2
- Microsoft Exchange Server 2007, 2010
- Microsoft SQL Server 2005, 2008 R2
- MySQL 5.5
- BlackBerry Enterprise Server for Microsoft Exchange

Operating system

- CentOS Community Enterprise Operating System
- SUSE Linux Enterprise
- Red Hat Enterprise Linux
- Microsoft Windows Server 2003, 2008

Network protocol

- 10-Gigabit Ethernet

HP Services

- HP Care Pack Services

Reliability is enhanced. “The environments we offer have 100 percent uptime service-level agreements, and because of HP CloudSystem Matrix, we expect to meet that service level and have zero paybacks as a result,” Moniz notes.

Another feature supporting reliability is that the HP P4000 SAN solutions use Network RAID, Moniz adds. This means multiple copies of data are striped and protected across the cluster of storage nodes, eliminating any single point of failure. “Applications have continuous data availability in the event of a disk, controller, storage node, power, network, or site failure,” Moniz says.

Cutting costs with remote management

Customers gain yet another way. “The biggest advantage to the actual Matrix is unparalleled control of the hardware,” Moniz explains. “We’re trying to move towards an unmanned data facility at some point, and I think Matrix is going to really let us get there.”

Server Cloud Canada will still have a 24x7 network operations center (NOC) even with HP CloudSystem Matrix, Moniz adds. But it will eventually have just one NOC that covers all six facilities, instead of needing a technician at each facility in three 8-hour shifts. The change could save the company over \$1 million CAD a year. “It could result in up to a 10 percent reduction in our turnout cost to the customer,” Moniz points out.

The improvement in remote management is quite clear to him. “I do a lot of the provisioning using the CloudSystem Matrix,” Moniz says. “I haven’t bumped into one thing where I had to call up the NOC and ask them to walk out there and do something for me. Not once. Whereas at our other data facilities, it’s constant.”

Look at your new options

Server Cloud Canada is busy adding customers to its new Kingston facility. “We’re catering to a market of customers that want the reliability of virtualization but don’t know how to get there,” Moniz sums up. “They could be a 5-person real estate office that had a server in the closet and everything went down. They spent days without email and lost files. Or our customer might be a 500-person organization so dispersed that they don’t have the infrastructure for putting virtualization in any of their facilities. But they want the flexibility of virtualization, and they can get it from us.”

For these customers, Server Cloud Canada lowers the price and technical barriers to entry. “There’s a \$50,000 [CAD] barrier to entry right now to buy the cheapest SAN on the market, and for any size company, it’s difficult to forklift \$50,000 [CAD] out of the budget,” Moniz says.

Customers no longer need to find that kind of capital, he adds. They can get the server and SAN storage resources they need from Server Cloud Canada. “A customer at the right scale can turnkey a deployment now where it wasn’t possible before,” Moniz observes. “It wasn’t possible for us to give them a Matrix client-facing portal, have them log in and decide they’re starting a new standing facility today. There once had to be meetings about all of that—wasting hours. Now a customer logs in, says ‘OK, we’re starting a new data facility,’ and clicks a button.”



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4AA3-4922ENW, Created June 2011; Updated July 2012, Rev. 4

