



iland sees power and space savings with the PowerEdge C6105

- Cloud Computing
- Virtualization
- Backup/Recovery/Archiving



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*Justin Giardina,
Chief Technology Officer, iland*

Customer profile

Company:	iland™ Cloud Infrastructure
Industry:	Cloud computing
Country:	United States
Employees:	26
Website:	www.iland.com

Business need

To stay competitive in the cloud infrastructure business, iland needs to gain as much value as possible from every watt of power and every square foot of data center floor space.

Solution

The company is evaluating the [Dell™ PowerEdge™ C6105 server](#), while continuing to rely on a wide range of Dell server and storage products.



Benefits

- The PowerEdge C6105 maximizes performance per watt of power.
- A dense design helps data centers make better use of floor space.
- The sharing of power supplies, fans, and chassis improves energy efficiency.
- Individually serviceable, hot-plug components simplify servicing.
- Dell reliability helps iland meet demanding service-level agreements.

iland is a provider of cloud computing infrastructure that operates high-availability data centers specifically designed for cloud computing. The company's six data centers support the computing and disaster recovery needs of hundreds of organizations, from small businesses to global enterprises. To compete as a cloud infrastructure provider, iland has specifically designed its facilities and infrastructure to maximize every watt of power and every square foot of data center floor space. That's why the company was eager to evaluate the new Dell PowerEdge C6105 server, designed to maximize performance per watt and per dollar in hyperscale environments.

"That was really what we were looking for—something easy to deploy, performs well, and gives us the best price and performance in terms of power and space."

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iland has deep roots in the co-location and application hosting business, and more recently evolved into a cloud infrastructure provider. The company offers managed colocation with more than 30,000 square feet under management in the U.S. and Europe, and a wide range cloud computing solutions. These cloud offerings span from basic servers to cross-country replication of data to one of the company's six data centers—in Boston, Washington D.C., Houston, Los Angeles, Dallas, and London.

"We offer our iland Resource Cloud®, where companies can buy a pool of resources and allocate it to production virtual machines as they wish. The iland Continuity Cloud® provides disaster recovery services via virtual disaster recovery (DR) sites where we are seen as a replication target," notes iland CTO Justin Giardina. "With 10-gigabit connections between our data centers, we can also replicate traffic between them, so a customer could have a production site in Dallas and a DR site in Boston."

Other offerings in the company's growing cloud portfolio include the iland Workforce Cloud®, which allows users to access desktops from the cloud. This solution provides a unified platform that integrates desktop PCs, laptops, netbooks, and other devices with hosted servers, data, and services. With iland Workforce Cloud, a company's employees can work from virtually anywhere with full access to their client systems.

Leveraging Dell Technology

Dell is one of iland's key technology partners. iland chose Dell to provide server and storage environments through virtualized cloud offerings or hybrid virtualized offerings, which are a mixture of virtual and dedicated physical servers. Dell has helped iland shrink its data center footprint with high availability cloud solutions on virtualized servers using VMware™ vSphere™ Enterprise Plus on Dell PowerEdge R905, R805 and R710 servers.

Each iland high-availability cloud computing data center is built with Dell EqualLogic™ SAN infrastructure. This allows companies with an EqualLogic SAN investment to gain

Technology at work

Hardware

Dell PowerEdge C6105 server
under evaluation

Dell EqualLogic™ PS6000, PS5000
and PS4000 series
iSCSI SAN arrays

Dell PowerEdge R905, R805 and
R710 servers

Software

Dell EqualLogic SAN HeadQuarters

Microsoft® Windows Server® 2008

VMware vSphere 4 Enterprise Plus

VMware vCenter Site Recovery
Manager

VMware View 4

Services

Dell Support Services



the benefits of offsite replication and backup without the substantial capital expenditures required to build their own secondary sites by leveraging iland as a replication target.

When you're a cloud infrastructure provider, reliability is extremely important—and spelled out in strict service-level agreements (SLAs). That's one of the reasons why iland uses Dell hardware.

"We provide our customers a 99.99 percent SLA, so we can't be down," Giardina says. "Availability and performance are the most important aspects in the cloud space and the vendors we choose have to match these SLAs and Dell has delivered."

Evaluating the PowerEdge C6105 Server

In 2010, iland deployed the new Dell PowerEdge C6105 server in a test environment. The PowerEdge C6105 is a 4-node, 2U, shared infrastructure, hyperscale server that uses AMD processors. It is designed specifically for the requirements of scale-out environments, where organizations need to get the most value out of every dollar, every watt, and every square foot of their data centers.

"We were introduced to the C6105 over lunch one day, and we liked the fact that we could get more density in less space," Giardina says. "Everybody knows that data centers are running out of space, they're running out of power, and they're running out of cooling."

The PowerEdge C6105 is designed with those issues in mind. It's based

on the [AMD Opteron™ 4100 series](#), the world's lowest power-per-core processor, designed from the ground up to handle demanding server workloads at lowest available energy draw, (per/core) beating the competition by as much 40%.

The PowerEdge C6105 server has four two-socket server nodes, for up to 48-cores, in a cost- and power-efficient shared infrastructure. By sharing power supplies, fans and chassis across four server nodes, the server effectively increases energy efficiency and lowers operating costs. In addition to the 92-percent efficient hot-plug redundant power supplies, the PowerEdge C6105 has fewer, larger, and more efficient fans.

"One thing we liked about that series was that it has just two power supplies," Giardina says. "Most servers have two power supplies, but they're for one server. The C6105 gives you four servers with two power supplies. The power draw is very low—when we booted the cabinet up, the power draw was just three amps. That was with everything powered on—12 drives and four servers. That was pretty impressive to us, and the more servers we can get per cabinet, the better off we are."

iland looks closely at the power draw for every server it buys. In simple terms, the fewer the amps, the lower the power bill.

"The idea that we could have a lot of those servers pulling less power is big for us," Giardina says. "We pay a significant amount for power. If you can take a cabinet and run it at 20 amps versus 30 amps, you can

"The power draw is very low—when we booted the cabinet up, the power draw was just three amps."

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save a significant amount of money, especially when you're talking about hundreds of cabinets."

Density and Flexibility

In addition to looking closely at power and cooling efficiency, iland also looks closely at server density and flexibility. In that regard, Giardina likes what he sees in the PowerEdge C6105.

"In comparison, we have 20 PowerEdge R805 servers in a cabinet today," he says. "With a solution like the C6105, we could have 80 servers per cabinet, versus 20. That's huge. The number of servers we can get per rack is important to us. And the flexibility is big for us. We're talking about cloud computing, but the C6105 also works for deploying private servers for customers."

Giardina explains that one of iland's offerings is a hybrid cloud that provides customers with a mix of virtual and dedicated physical machines that are tied together to talk to one another.

"Say a customer wanted a hybrid cloud with 10 virtual machines and one physical machine. We could easily break off that one sled [server node]," Giardina says. Each sled could be allocated to a customer very easily. We could pre-provision a cabinet and connect all of the networking cables remotely, and then easily deploy one, two, however many sleds per customer. Say a customer buys 10 virtual machines. We could choose a number of sleds to dedicate to that customer, spin them up, and the customer is online. So the ease of deployment with this kind of solution is very nice for us."

The PowerEdge C6105 is also a good fit with the iland's private

cloud offerings, he notes. When customers order up a private cloud, iland deploys a dedicated VMware virtualized infrastructure. "These types of servers help here because they can provide a four-node VMware ESX cluster in 2Us of space, and they only use three amps," he says. "Our traditional model might use 8Us and 8 to 12 amps. It's an excellent ratio."

Giardina was also attracted to the serviceability features of the PowerEdge C6105. The server's power supplies, fans, server nodes, and 2.5- or 3.5-inch hard disk drives are all hot-plug and individually serviceable.

"It's very easy for replacement of parts by somebody who is not a super technical person," he says. "We can tell a data center technician which sled or even drive is bad, have them pull it out, replace it, and it's done. That's really big for us."

Off to a Good Start

iland has the PowerEdge C6105 up and running in the company's test lab, and Giardina likes what he sees.

"We're running a VMware vCloud Director environment on it to see the performance. I don't have any numbers right now, but we are definitely impressed with the speed of the server. It was very easy to deploy. And we are definitely impressed with the low power draw. That was really what we were looking for—something easy to deploy, something that performs well, and gives us a lot of bang for the buck in terms of power and space."

The bottom line?

"The first time we heard about the C-series platform it sounded interesting, but we were a bit

skeptical," Giardina says. "We didn't even know that anything like this existed until we saw it that day over lunch. We were kind of excited about it then, and when we finally got it into the lab, we weren't let down."

Working with Dell

Giardina has a long history with Dell. Over the course of his 17 years in IT, he has worked primarily in Dell shops.

"I've always had a good relationship with Dell," he said. "I've never had a problem with their support. I've never had a problem with their warranty. And for the most part, I've never had any issues with the hardware on the server side."

Working with Dell makes life easier, he says. "It's very easy to get a quote, get things ordered, and know that it will be here on time. This is very important to us and one less thing I have to worry about as we scale."

"We have a lot of Dell equipment here, and since I've been here we've never had to call support for troubleshooting," Giardina says. "The only things that have broken are a couple of power supplies and a couple disks. We have a four-hour response time in our support agreement, so somebody comes and changes them right away. But we've had no critical hardware failures and no need for troubleshooting with the support desk, nothing like that."

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