CLOUD SERVICES PROVIDER

Hosting Company Finds Success in the Cloud with Brocade

EXECUTIVE SUMMARY

Challenge

Increase network performance and capacity to support business expansion, customer growth, and differentiated services

Solution

- Brocade VDX 6720 Data Center Switches
- Brocade VCS® Fabric technology
- Brocade MLX Series routers
- Brocade 1860 Fabric Adapter
- Brocade Network Advisor

Results

- Reduced latency to the Internet backbone from nine to near-zero milliseconds, while decreasing rack-to-rack latency from milliseconds to nanoseconds
- Improved scalability in the virtualized data center by increasing capacity from 48 to 72 servers per row and from 30 to 540 Virtual Machines (VMs)
- Enhanced reliability by eliminating STP and active-active links
- Gained the ability to decrease power consumption by 60 percent by increasing server-rack density from eight to 12 servers per rack
- Reduced management time by improving VM visibility and streamlining host management

PayPerCloud™ was not always a hosting provider. At launch, it was an IT consulting services company. Executives, however, saw so much opportunity in cloud services that they realigned the business plan to specialize in creating a high-availability, cloud-hosting infrastructure and cloud-enabled applications. The new strategy has been hugely successful for the Folsom, California-based company, as the customer base increased 81 percent in 2011, and orders are up 160 percent.

This incredible growth was almost upended by the company's aging network. "When we moved to pure hosting services, we discovered our weak points," says Miles Feinberg, President of PayPerCloud. "The older infrastructure was not able to scale with our business."

PayPerCloud was running its business on a mix of Dell servers and storage connected with Cisco network switches operating at 1 Gigabit Ethernet (GbE). The network needed to be upgraded to 10 GbE; it was running out of physical ports and experiencing performance issues.

NETWORK KNOW-HOW IN THE CLOUD

After evaluating several solutions, PayPerCloud replaced its Cisco infrastructure with a Brocade® Ethernet fabric that includes Brocade VDX® 6720 Data Center Switches and Brocade MLX® Series routers. The comprehensive solution from Brocade delivered the performance, scalability, and reliability PayPerCloud needed, as well as the design, installation, service, and support.

"We had a difficult time getting any engineering help from Cisco," says Feinberg. "Brocade helped us architect a plan that fulfills our business goals, and service and support have been great."

PayPerCloud relies on Brocade VDX 6720 switches for 10 GbE top-of-rack server connectivity. The switches uplink to Brocade MLX-16 routers in a Multi-Chassis Trunking (MCT) configuration, enabling network-level virtualization and enhanced network reliability. Brocade MLXe-4 chassis sit at the edge of the network and support connections between servers and storage

as well as 10 GbE Internet connectivity. At the same time, SAN storage arrays connect to Brocade MLXe-16 chassis to provide storage connectivity to the environments.

Brocade 1860 Fabric Adapter cards installed in Dell servers enable 10 GbE connectivity to the Microsoft Hyper-V hosts and security systems, which provide 10 GbE backup performance. In addition, Brocade Network Advisor gives PayPerCloud end-to-end visibility through an integrated interface that manages the Brocade devices, the remaining Cisco devices, and third-party monitoring tools.

ETHERNET FABRICS PAY OFF

PayPerCloud has noticed significant performance and bandwidth improvements as a result of the upgrade. "We went from eight- to nine-millisecond latency to the Internet backbone to sub-millisecond latency. Our rack-to-rack latency is in the nanoseconds, whereas before it was three to four milliseconds," says Feinberg.

With these infrastructure improvements, virtualization became more streamlined. "Moving a VM and its services to a new node in a failover situation used to take 20 minutes," notes Feinberg. "Now we're in the three- to four-minute range."

The Brocade network infrastructure also has enabled increased capacity and scalability. "Our capacity originally was 48 servers per row and 30 VMs per machine, and we were maxed out. Today, the Brocade architecture has 72 servers per row and 540 possible VMs in a rack. If we need more 10 Gigabit Ethernet capacity, we can scale out easily," says Feinberg.

PayPerCloud increased its server-rack density from eight servers per rack to 12, a 50 percent increase. That density will save the company money down the road. Eventually, PayPerCloud expects to trim power consumption by about 60 percent.

The Brocade solution will also help reduce other operating expenses. "Now we have half as many cables to manage," says Feinberg. "And VM management takes a lot less time with Brocade Network Advisor."

ENHANCED SERVICES FOR A COMPETITIVE MARKET

PayPerCloud has since launched VaultScape, an online backup service, based on its new storage capabilities. The Brocade network infrastructure allows PayPerCloud to easily support new customers on the bandwidth-intensive backup service.

WHY BROCADE

"Customers want to know that the network is always on, available, and reliable. With Brocade, we have a lot of confidence in the network, and that's what we can sell to our customers to continue our growth path."

— Miles Feinberg, President at PayPerCloud

Additional services are also in the works. As more enterprises move toward high-speed fiber connections, they can take advantage of extremely fast FTP uploads and other tasks. "We can provide that speed now," says Tony Underwood, Executive Vice President of Business Development at PayPerCloud. "Speed differentiates us."

That speed, available as a result of the Brocade Ethernet fabric, is essential to PayPerCloud's ongoing success. "Customers want to know that we're number one, the network is always on, available, and reliable," says Feinberg. "With Brocade, we have a lot of confidence in the network, and that's what we can sell to our customers to continue our growth path."

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