BROCADE

SUCCESS STORY

Provider of Cloud-Based Voice Services

EXECUTIVE SUMMARY

Challenge

Build a cloud services network backbone to deliver voice services for clients at the speed of sound.

Solution

- Brocade NetIron CER 2000 Series Routers for edge routing and MPLS
- Brocade ICX 6610 Switches for core routing
- Brocade VDX 6940 and 6740 Switches with Brocade VCS Fabric technology for aggregation

Results

- Simplified network management through Brocade VCS Fabric technology
- Increased agility with the ability to quickly add switches and allocate resources
- Gained programmability with support for OpenFlow and strong APIs
- Accelerated data center deployment with highly replicable network design
- Consolidated BGP and MPLS routing scale to deliver services across a dispersed customer base

In Cloud Services, Flexibility Means Agility

Businesses that want high-quality voice systems without having to deploy the associated infrastructure turn to this cloud services provider. The company delivers powerful contact center software, business phone systems, and connectivity services from the cloud. If a customer needs a call center, the provider can design, configure, and deploy a solution that meets the customer's specific needs. Its call center platform also provides a programming environment where customers can develop their own call centers or communications apps.

"Our goal in our data centers is to deliver fast connectivity, minimal latency, and high reliability with minimal maintenance required from our team," said the manager of networking and security. "To that end, we manage all of the network resources needed to deliver continuous, high-quality cloud communications to each customer."

The company minimizes latency by locating its data centers at established Network Access Points (NAPs) around the world. It also builds many of its own management tools based on open source solutions, such as Foreman, a lifecycle management tool for physical and virtual servers that provides provisioning, configuration, and monitoring. The company's development operations team focuses on automating as many of its systems and deployments as possible. Open solutions and automation enable exceptional flexibility and agility.

Looking to a Programmable Future

With the unpredictability of the future, the company knows that flexibility will be essential to its success. And as a service provider, it knows that high service quality and reliability are non-negotiable for customer satisfaction. The internal development team has adopted a computing approach that enables all links to forward traffic, eliminate loops, and enable traffic to take the shortest path between switches.

"We're huge proponents of a fabric approach," said the manager of networking and security. "The mesh enables very low latency with built-in redundancy and resiliency. We can plug into a variety of services and it's easy to use. In planning our network, we looked for solutions that are highly compatible with that approach to maximize our agility."

WHY BROCADE

"Brocade gives us tremendous agility. We've built everything with the idea that we don't know what we're going to need. With features ranging from the Brocade VCS Fabric to high reliability and support for OpenFlow programmability, we're ready for almost anything."

— Manager of Networking and Security

The company explored offerings from a number of network vendors, looking for solutions that deliver low-latency Layer 2 capabilities. With a deep technical bench in-house, the company didn't require extensive consulting or support from a huge vendor. Instead, they sought a solution with programmability and advanced features that would enable them to quickly innovate. They chose Brocade® solutions for their new data center networks.

"We value the new ideas that Brocade brings to the table," said the manager of networking and security. "Brocade certainly has the features we want, the switches provide a seamless fabric, and the solutions offer exceptional value from a solid company. And Brocade programmability fits very well with our plans."

Building a Better Backbone

The company chose Brocade CER 2000 Series Routers for edge routing and for Multiprotocol Label Switching (MPLS) connectivity. Brocade ICX® 6610 Switches perform core routing services, while Brocade VDX® 6940 and Brocade VDX 6740 Switches with Brocade VCS® Fabric technology create a seamless fabric and provide aggregation. The network design, as shown in Figure 1, is replicated across the company's data centers.

At the provider edge, Brocade CER systems perform Border Gateway Protocol (BGP) routing between the company's sites. A second set of Brocade CER systems handles MPLS routing and supports redundant Internet carrier connectivity. Customers connect to the service provider over the Internet, and Virtual Routing and Forwarding (VRF) protocols redistribute routes over a Virtual Private Network, keeping Internet customer traffic separate from internal traffic.

"The Brocade CER Routers support all of these capabilities in a compact form factor," said the manager of networking and security. "Other devices we considered either underperformed or were giant boxes that required a lot of valuable data center space."

Brocade ICX 6610 Switches provide very fast, economical Layer 3 routing for internal enterprise services. The switches provide eight ports with 10 GbE, which deliver line-rate, non-blocking performance across all ports.

"The Brocade ICX 6610 Switches give us the flexibility to pair well with uplinks and downlinks as needed," said the manager of networking and security. "Then we also have a ton of capacity if we want to plug in 1 Gbps connections."

Brocade VDX 6940 Switches are used as a distribution layer. Two switches reside at the network's head end, and then each supports one or two Brocade VDX 6740 Switches for access. Brocade VDX 6740T Switches connect to multiple dedicated iSCSI SANs, which might be traditional disk storage, flash, or flash hybrid storage. Brocade VCS Fabric technology creates a seamless fabric for all traffic, including storage. The Brocade VCS Logical Chassis function allows the company to manage the entire VCS Fabric as a single switch, eliminating the need to manually configure and manage each switch.

The company's VMware environment takes advantage of the Brocade VCS Fabric technology port profile feature. Because Brocade VCS Fabric technology is Virtual Machine (VM)-aware, it looks into the hypervisor, detects the presence of new VMs, extracts the network profile information, and automatically applies it to every switch in the fabric. When a VM is moved between servers, the fabric automatically migrates its profile information as well. The port profile

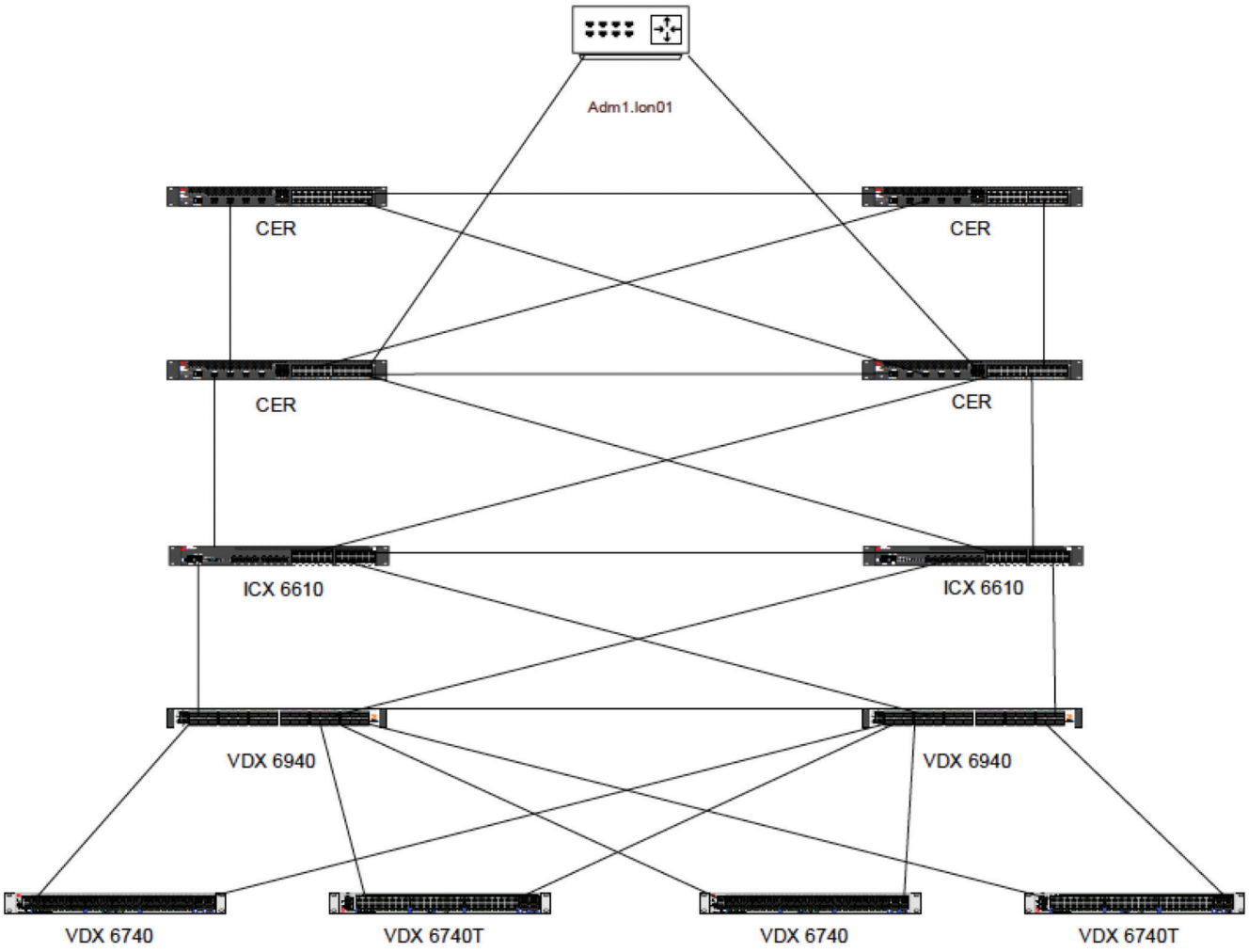

Figure 1: Backbone Network Design.

feature eliminates the need for manual port profile updates and maintaining visibility as traffic moves.

Three data center networks in the United States create an MPLS, 40 Gbps optical ring. In Europe there are optical connections between two additional data centers. One European data center also connects to a U.S. data center over a VPN link.

Built to Work, Built to Grow

According to the manager, the Brocade solutions just work. Customers receive fast, reliable communication services and systems, whether they are operating a large call center or developing code on the company's platform.

"Brocade gives us tremendous agility," he said. "We've built everything with the idea that we don't know what we're going to need. With features ranging from the Brocade VCS Fabric to high reliability and support for OpenFlow programmability, we're ready for almost anything."

Spin It Up on Demand

"The Brocade VCS Fabric Logical Chassis feature is just fantastic," said the manager. "We need to be able to quickly spin up additional hardware on demand without service disruption to our customers. If we need to add a switch, we just pop it in and it's provisioned and configured exactly the same way with almost no effort. It's a real time-saver."

Programmers Standing By

The Brocade solutions include support for OpenFlow, which will enable the company to achieve high programmability across its infrastructure.

"I'm fascinated by OpenFlow," said the manager. "I'm excited to get a lab going in-house because I think that OpenFlow fits very well with our efforts to continue improving flexibility and future-proofing our business."

Teams already are working on a range of automation capabilities to handle bare-metal service provisioning, server deployment, VLAN assignment, security policy application, and reconfiguration of Brocade VDX Switches to automatically bring new services online. With a strong technical foundation, a robust network backbone, and tremendous momentum, the company is able to accelerate execution and deliver high client satisfaction. And they're making it look easy.

For more information, visit www.brocade.com.

Corporate Headquarters
San Jose, CA USA
T: +1-408-333-8000
info@brocade.com

European Headquarters
Geneva, Switzerland
T: +41-22-799-56-40
emea-info@brocade.com

Asia Pacific Headquarters
Singapore
T: +65-6538-4700
apac-info@brocade.com

BROCADE