



HURRICANE ELECTRIC



SERVICE PROVIDER

ISP Builds World's Largest IPv6 Internet Backbone

EXECUTIVE SUMMARY

Challenge

Establish Hurricane Electric as a market leader in Internet services with the world's largest IPv6 Internet backbone

Solution

- Brocade NetIron XMR Series routers for the network backbone

Results

- Provided the foundation for a smooth extension of IPv4 and IPv6 transit business
- Expanded market opportunity by enabling global delivery of IP and MPLS services
- Improved business agility with fast, cost-effective provisioning of new Ethernet ports
- Increased capacity for expansion of the worldwide network

Founded in 1994, in a small garage in the Silicon Valley, Hurricane Electric has become a leading Internet backbone and colocation provider. The company operates an international network and owns multiple data centers, including its 200,000-square-foot colocation facility in Fremont, California. Specializing in colocation, dedicated servers, direct Internet connections, and Web hosting, Hurricane Electric's network supports 1 Gigabit Ethernet (GbE) and 10 GbE, as well as multiple OC192s and OC48s.

A big challenge for Hurricane Electric was managing the transition from IPv4 to IPv6. Hurricane Electric needed to move to IPv6 to support a vastly larger address space and to allow for the sustainable growth of its worldwide network and business.

FUTURE-READY WITH IPv6

To stay ahead of its competition, Hurricane Electric decided to rapidly expand its global network and add IPv6 capabilities. "IPv6 should be the single most important thing on network operators' minds today. If they are relying on the global Internet,

they need to understand IPv6," says Martin Levy, Director of IPv6 Strategy at Hurricane Electric.

With a focus on the future, Hurricane Electric chose to expand its infrastructure with Brocade® NetIron® XMR Series core routers, which support massive bandwidth capacity and a mature, full-featured IPv6 protocol stack.

Hurricane Electric now offers IPv4 or IPv6 transit and Multi-Protocol Label Switching (MPLS) Ethernet services across its global IP backbone. The IPv4, IPv6, and MPLS routing features in NetIron XMR routers enable a flexible, dual-stack global backbone that Hurricane Electric can readily scale as its customer bandwidth requirements and Internet routing tables increase.

"Hurricane Electric is the largest IPv6 backbone globally, and we have more connections for our IPv6 backbone than anyone else," says Levy. "We have an energetic and aggressive mindset toward IPv6. When we move customers from a competitor, we win hands down due to our quality Internet connection that is second to none."

BROCADE

DUAL STACKING FOR EXPANSION

Hurricane Electric chose Brocade solutions because of their dual-protocol capabilities, performance, and reliability. “The performance of our network core, the interface out to the user, and our peering are all key to our success. All have to be best in class and best in the industry,” says Levy. “We have that on the Brocade platform, plus it is manageable and enables us to continue to increase our business with IPv6.”

Hurricane Electric is positioned to expand its network, both geographically and in bandwidth, wherever customers demand capacity. The Brocade routers offer the management and security capabilities that give Hurricane Electric the ability to handle the continuing complexities of Internet routing as the company opens more locations and adds customers.

MEASURE AND MANAGE

According to Hurricane Electric, network measurement and traffic accounting were also key factors in choosing the right infrastructure expansion solution. “Measurement is critical,” says Levy. “We rely on sFlow, which is embedded in NetIron XMR Internet routers, to understand in real time where our traffic is flowing. This allows us to optimize our infrastructure and save money. More importantly, we know our massive network is operating in a reliable and efficient manner.”

Even though the Hurricane Electric infrastructure extends around the world, the company strives to meet the bandwidth needs of each individual client. “The Brocade NetIron XMR routing platform allows us to monitor each customer. We can save and analyze five to six months of data. Seeing what the traffic actually does enables us to give information back to the customer, and that is key to understanding what our customers are doing.”

Hurricane Electric’s reliance on Brocade also gives the company the capacity to deploy and provision 1 GbE and 10 GbE ports quickly.

“With an infrastructure of our magnitude, we required an uncomplicated yet powerful and scalable routing infrastructure to support IPv6, SONET, and 10 Gigabit Ethernet,” adds Levy. “We rely on Brocade to provide the right balance of performance, scalability, and total cost of ownership.”

LOOKING AHEAD

By offering IPv4 and IPv6 transit capabilities, Hurricane Electric knows its infrastructure is fast, reliable, and future-ready. The company can accommodate rapid growth and help its customers adapt to more data-intensive applications and new technologies that stress the infrastructure.

“If the Internet routing table more than doubles in size, we are still in good shape. We can hold an enormous amount of routes without degrading performance,” says Levy.

WHY BROCADE

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— Martin Levy, Director of IPv6 Strategy at Hurricane Electric

Even though Hurricane Electric supports the world’s largest IPv6 backbone, it plans to do more. “We intend to extend our reach into places where we had been limited,” explains Levy. “The Brocade platform is extremely effective for us, and it’s helping us expand around the globe.”

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