

January 27th, 2011

An Open letter to Hurricane Electric Customers, Partners and Managers of Interconnected Networks

World IPv6 Day and Hurricane Electric

IPv6 must be a top priority in 2011 for two very important reasons:

- 1) **Exhaustion** (“run out”) **of the IPv4 address space is imminent**. IANA run out is projected to occur in the next few weeks, and run out at the RIR level will inevitably follow – quite soon in some regions.
- 2) June 8th, 2011 is designated as **World IPv6 Day**. As described in the ISOC press release and covered by the popular press, World IPv6 Day is a global 24-hour “test drive” of IPv6. It provides a logical target date for 100% IPv6 adoption within your enterprise and an ideal real-world environment for testing end-to-end IPv6 connectivity and performance.

In short, the time to adopt IPv6 is now!

Hurricane Electric has operated an IPv4/IPv6 backbone for nearly ten years. As we approach World IPv6 Day, let Hurricane Electric unequivocally state that **Hurricane Electric’s backbone is ready for IPv6**. We are ready!

Please take a moment to review the information below about the Hurricane Electric backbone, its interconnections with other backbones, and transition technologies such as tunnelbroker.net, 6to4 and Teredo.

The Backbone

The Hurricane Electric backbone is a native network with all links operating with native IPv4 and IPv6 links. Our solid infrastructure routes and transports IPv6 by leveraging modern ASIC-based networking hardware and firmware written to ensure both protocols are supported in lockstep. In other words, IPv4 and IPv6 packets flow with equal agility.

Today, we have enormous IPv4 traffic levels and quickly increasing IPv6 traffic levels. If the tables were turned and IPv6 traffic levels spiked, packets would continue to flow across the backbone unhindered. At Hurricane Electric, our attitude toward increased IPv6 traffic can be summed up thusly: **Bring it on!**

The Interconnects

All interconnects between our backbone and other key backbones are now native IPv6. This means that **we can move IPv6 traffic at line-rate in-and-out of the network** because every connection is capable of running IPv6 at full speed. Of course,

interconnections are reciprocal arrangements, and we thank our interconnected partners for their skillful implementation of IPv6.

The Transition Technologies

Hurricane Electric deployed a variety of transition technologies around the globe - Each plays a role in today's Internet.

Tunnelbroker

Ten years ago, Hurricane Electric deployed **tunnelbroker.net** to provide IPv6 connectivity to distant end-users who lack a real IPv6 connection. Around the world, nearly 150,000 users have used this service – collectively spanning 178 countries. As a result, Hurricane Electric is proud to have enabled more IPv6 connectivity than any other global provider.

Our tunnelbroker.net service is a transitional edge-access technology. Once broadband and mobile networks fully enable IPv6, demand for the service will diminish.

6to4 and Teredo

Even though the vast majority of IPv6 traffic on Hurricane Electric's backbone is native, Hurricane Electric sees over 10Gbps of 6to4 and Teredo traffic. 6to4 and Teredo exist and are needed in the real world. Many end users - especially on World IPv6 Day - will have IPv6 connectivity provided by one of these relay protocols.

Ignoring 6to4 and Teredo would be tantamount to throwing valid traffic into a black hole, and no amount of saying "these are evil protocols" will make them go away. In fact, what will make them go away (and hence diminish the relayed traffic levels) is the widespread implementation of IPv6 within broadband and end-user networks.

We expect relay traffic will continue to grow as we approach IPv6 day and spike on the day itself. To be ready, Hurricane Electric is increasing its 6to4 and Teredo deployment well before World IPv6 Day.

Summary

We encourage all our customers (and our competitors, too) to participate in World IPv6 Day (see ISOC's webpage at <http://isoc.org/wp/worldipv6day> for details).

Hurricane Electric's services have been well tested - we are 100% ready. **At Hurricane Electric, every day is an IPv6 day.**

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