IPv6 at the Global Level

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ISOC

The Internet Society (ISOC)

- ISOC is a global cause-driven organization governed by a diverse Board of Trustees that is dedicated to ensuring that the Internet stays open, transparent and defined by you
- ISOC works to ensure the Internet continues to grow and evolve as a platform for innovation, economic development, and social progress for people around the world
- ISOC works to ensure that the Internet and the web that is built on it:
  - Continues to develop as an open platform that empowers people to share ideas and connect in new and innovative ways
  - Serves the economic, social, and educational needs of individuals throughout the world – today and in the future

The Internet Society (ISOC) cont'd

- We have over 55,000 members across the world, over 90 active chapters in different countries (including Kenya) and more than 130 Organization Members
- We work on fostering Internet growth and access by bringing essential information, training, and development partnerships to people and communities across the globe, with special focus on developing regions of the world
- We also believe in open standards for the Internet as the key to allow devices, services, and applications to work together across a wide and dispersed network of networks. We work through the Internet Engineering Task Force (IETF), Internet Research Task Force (IRTF) and the Internet Architecture Board (IAB)
- You and your organization can also be a member!
- More at http://internetsociety.org

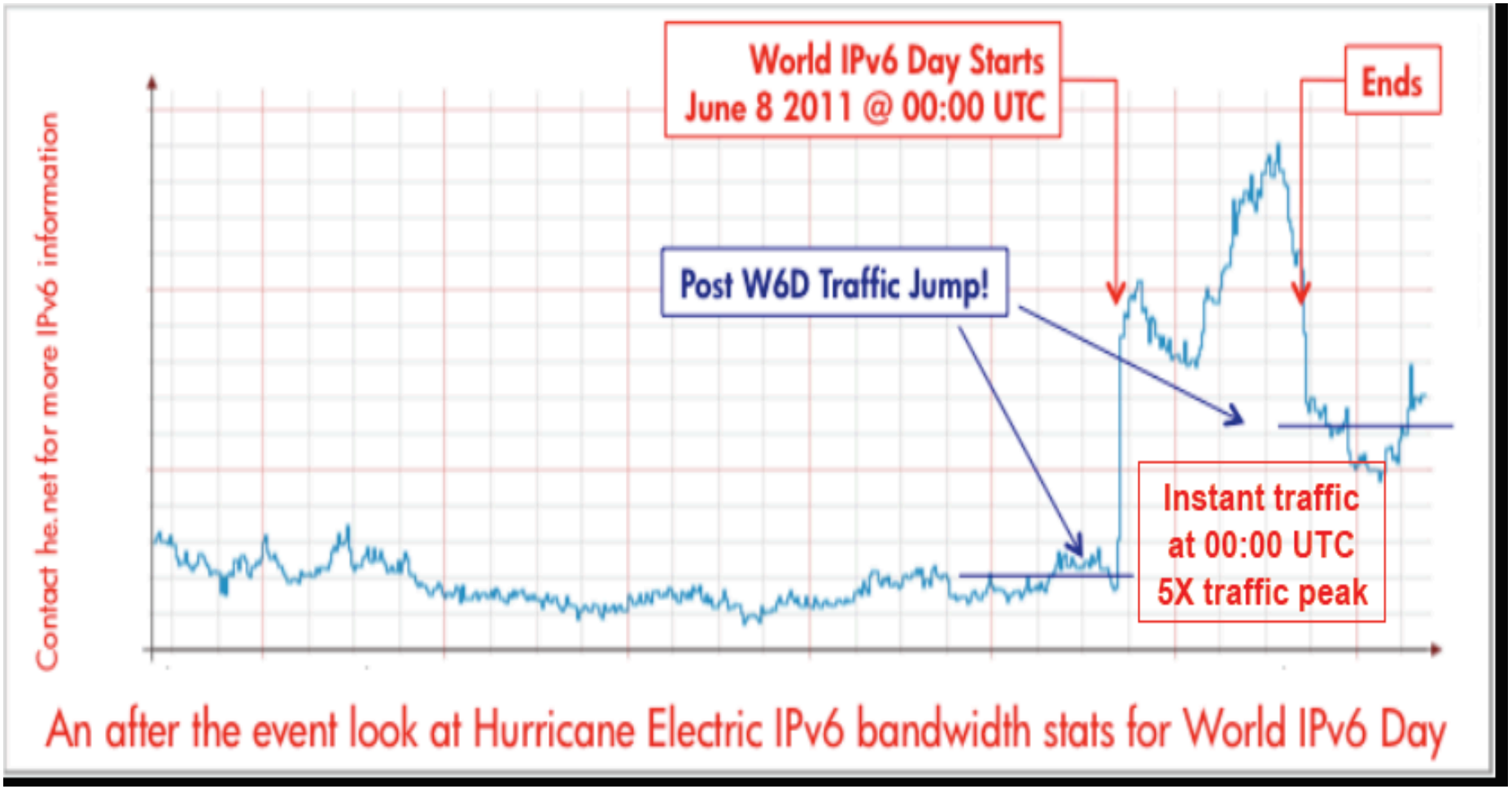
What is IPv6?

- Every machine/device participating on the Internet requires a unique number to identify it. This number is known as an IP (Internet Protocol) Address
- IPv6 is an IP Protocol designed and developed to deal with the shortage of IPv4 addresses
  - IPv4 has a maximum of about 4.2 billion address
  - IPv6 has a maximum of 3.4×10^{38} addresses
- IPv6 has been in use for more than 20 years but there has been no real motivation to use it until now:
  - IPv4 addresses have run out in many regions of the world
  - IPv6 has more features than IPv4 for mobility, automatic configuration of hosts, security and privacy

World IPv6 Day

- ISOC Organized the World IPv6 Day to prove that IPv6 does indeed work and is the future of the Internet
- The 6th of June 2011 was set as the World IPv6 Day to allow for live testing and use of IPv6 globally on the Internet
- Top websites and Internet service providers around the world, including Google, FaceBook, Yahoo plus 1000 other participating sites participated in a global scale trial for IPv6
- All the mentioned sites had IPv6 enabled on their front pages
- It was very successful and by providing a coordinated 24-hour “test flight”, the event helped demonstrate that major websites around the world are well-positioned for the move to a global IPv6 enabled Internet

IPv6 Day via Hurricane Electric



Courtesy of Martin Levy of Hurricane Electric: http://he.net

THE FUTURE IS FOREVER

6 JUNE 2012

www.WorldIPv6Launch.org

World IPv6 Launch

www.worldipv6launch.org

- ISOC then organized the World IPv6 Launch for beginning 6 June 2012
- This time IPv6 was to be left “ON” as part of regular business, on by default, no special configuration necessary for anyone anywhere
- Several access networks, home router vendors, websites from around the world participated, for more info: www.worldipv6launch.org

Why?

- Acceleration: those already planning to roll-out IPv6 should accelerate their plans
- Adoption: those who don’t have plans yet – it’s safe now, please start
- Definition: industry leaders have established IPv6 as the new normal (*Phil Roberts, ISOC)*

World IPv6 Launch: Access Networks

Who?

- ATT, Comcast, Free, Internode, KDDI, Time Warner Cable, and XS4ALL initially
- 69 networks achieved a measurable deployment with an average of at least 0.1%

IPv6 is part of Regular Business now

- New subscribers getting IPv6 on by default, no user config needed
- Goal: 1% of visits to big websites from participating networks use IPv6 by 6 June
- This was measured by Google, Facebook, and Yahoo! on 6 June, results: www.worldipv6launch.org/measurements
- Serious commitment from access networks, more soon
- Traffic depends on the end user equipment – note very high percentage usage from universities

World IPv6 Launch: Home Router Vendors

Who?

- Cisco and D-Link initially
- 3 other home router vendors joined

IPv6 becomes part of Regular Business now

- Majority of products shipping with IPv6 on by default
- No user configuration is required to use IPv6
- V6 interoperability verified by University of New Hampshire InterOperability Laboratory
- Great start - much work remains to be done for all sorts of consumer devices

World IPv6 Launch: Websites

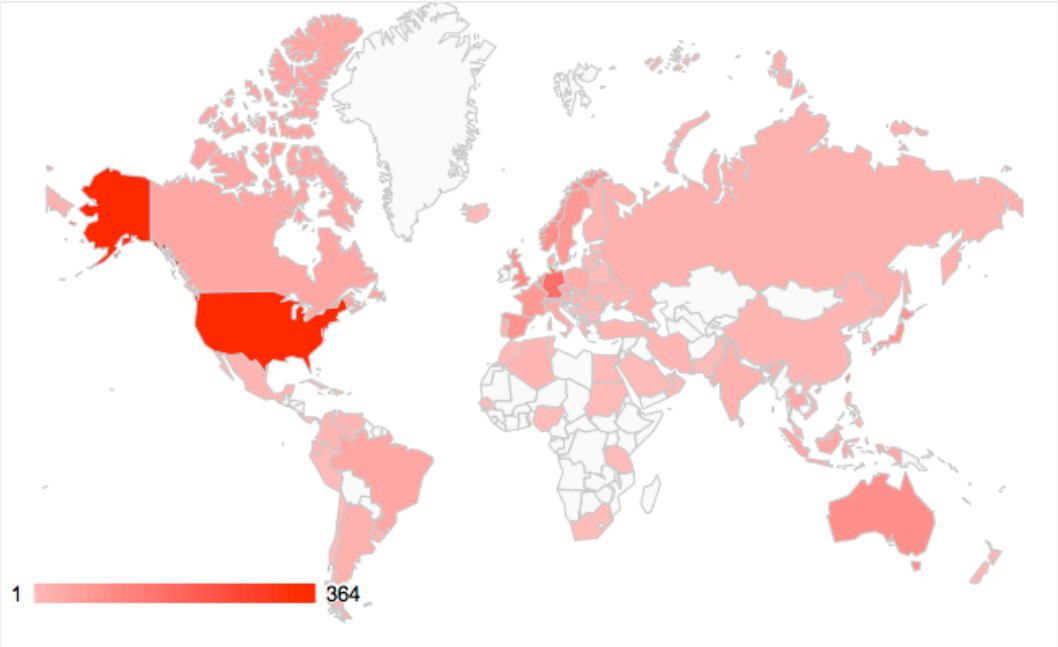
Who?

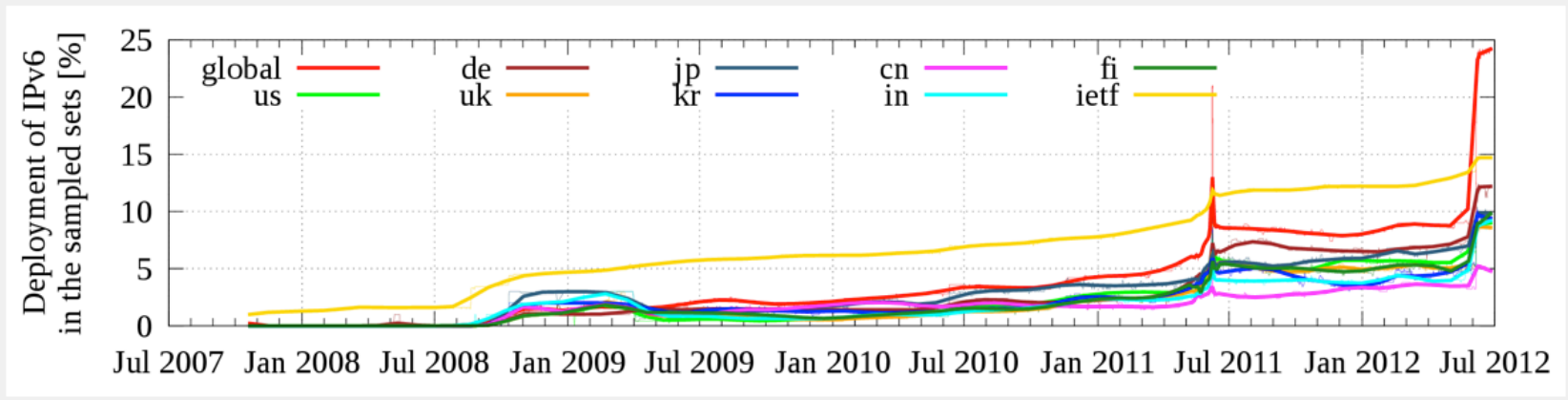
- Facebook, Google, Microsoft Bing, and Yahoo! initially
- 2300 websites turned up IPv6

IPv6 becomes part of Regular Business now

- IPv6 is enabled on the main website
- No IPv6 specific URLs (www.ipv6.example.com) or mirror sites
- IPv6 enabled users use IPv6 without doing anything
- Big content available over IPv6 now: Google, Facebook, YouTube, Yahoo!, Wikipedia, Netflix, etc.
- Over 10% of Alexa top 1,000 sites serve IPv6 now

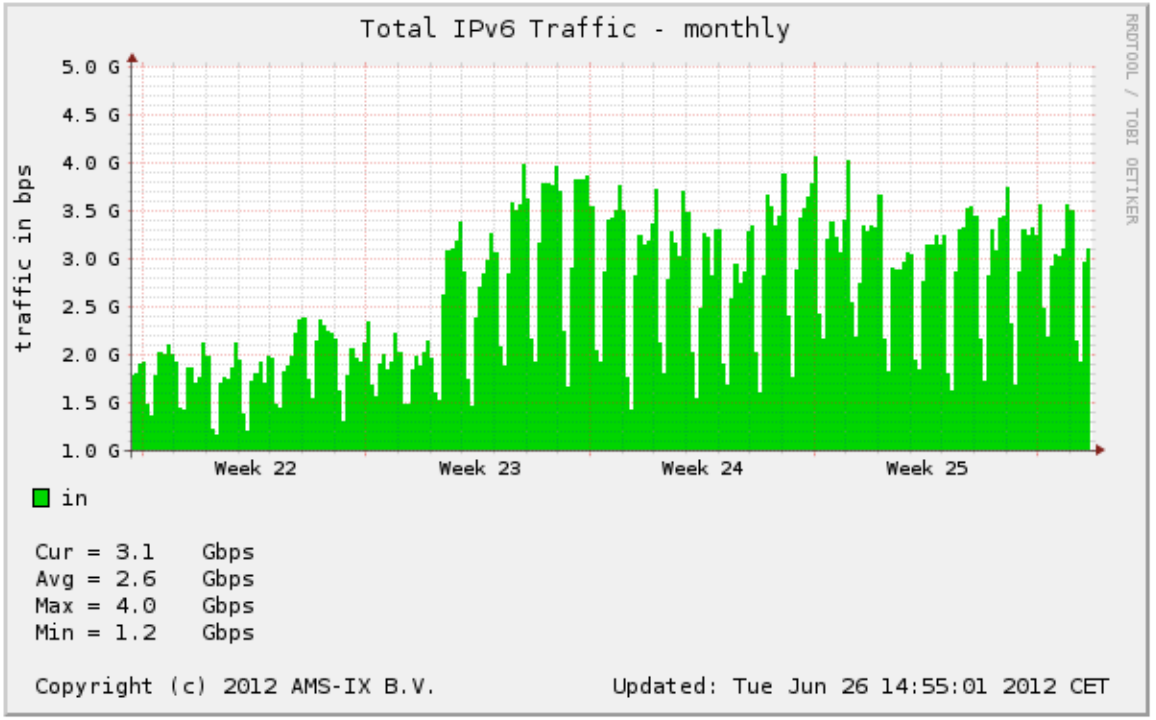
Websites – breadth and impact

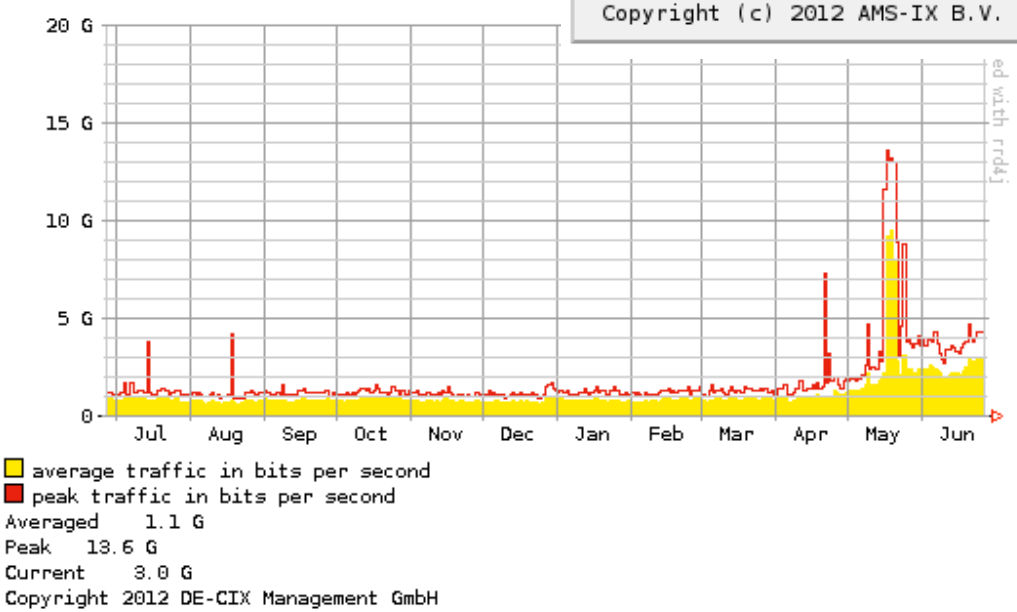




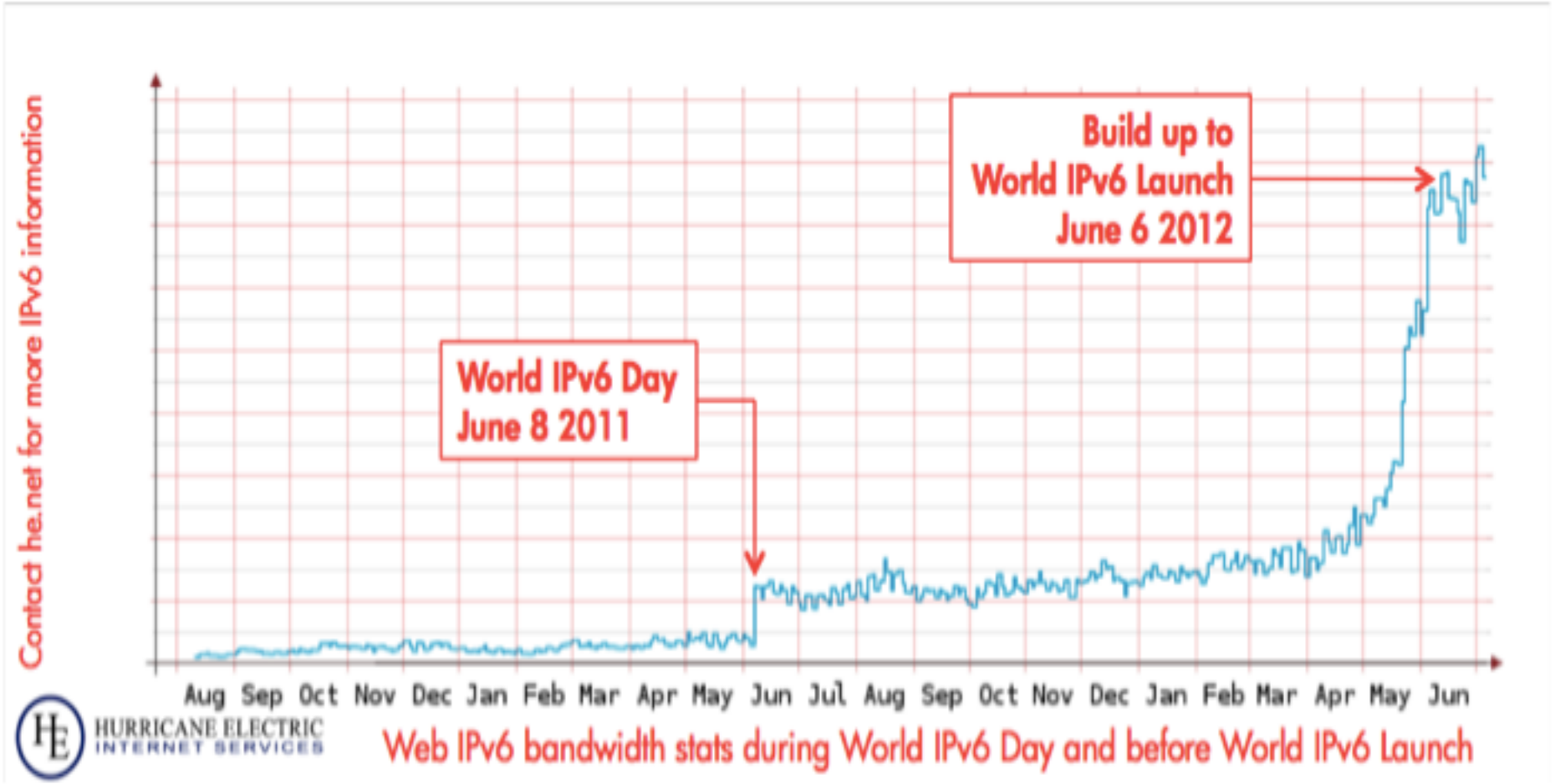
Source: Lars Eggert, http://eggert.org/meter/ipv6

Traffic





Sources: AMS-IX, DE-CIX



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Why should you move to IPv6? 6 reasons:

Prevent Increased Costs: Companies will need to spend more to cope with the scarcity of IPv4 addresses.

Prevent Disruption to Your Websites: Businesses that do not commit to IPv6 risk accessibility problems of their websites and other Internet-connected locations and services.

Growth of Your Global Business Depends on It: Some parts of the world are completely out of new IPv4 addresses, including emerging economies that are experiencing the most economic growth. The use of IPv6 will soon be a requirement for companies looking to tap into these growth opportunities.

Avoid Diminishing Experience for Your Customers: If the IPv6 transition happens as expected, users that are still operating on IPv4 will have a diminished experience sooner or later.

Ready to Deploy Today: IPv6 has been in development for 20 years!

Your Competitors are Doing It: Organizations that continue to rely solely on IPv4 with no plans to implement IPv6 in the near future risk running into a host of business challenges *(Leslie Daigle, ISOC CTO)*

Thank You!

http://internetsociety.org

#IPv6Webinar

www.worldipv6launch.org/measurements