

# Hurricane Electric

What do around 12,000 IPv6 users actually do?

*IPv6 Native Backbone – Massive Peering!*

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APNIC-26 Christchurch, New Zealand

27<sup>th</sup> August 2008

Martin J. Levy, Director IPv6 Strategy

Hurricane Electric

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# Hurricane Electric – Roots and History

- Founded 14 years ago - ISP & datacenter operator
  - Roots within the Silicon Valley high-tech community
  - Nationwide network in 1999
  - Starts IPv6 native and tunnel connectivity in 2001
  - European expansion in 2005
  - Purchased 206,000 sq ft datacenter building in 2006
  - Native IPv6 backbone in Q1 2007
  - Ranked #1 IPv6 backbone for BGP adjacencies in Q1 2008
  - Expands IPv6 TunnelBroker to fourteen US & European cities (and soon in Hong Kong!)
  
- Supports and sponsors global open-software projects



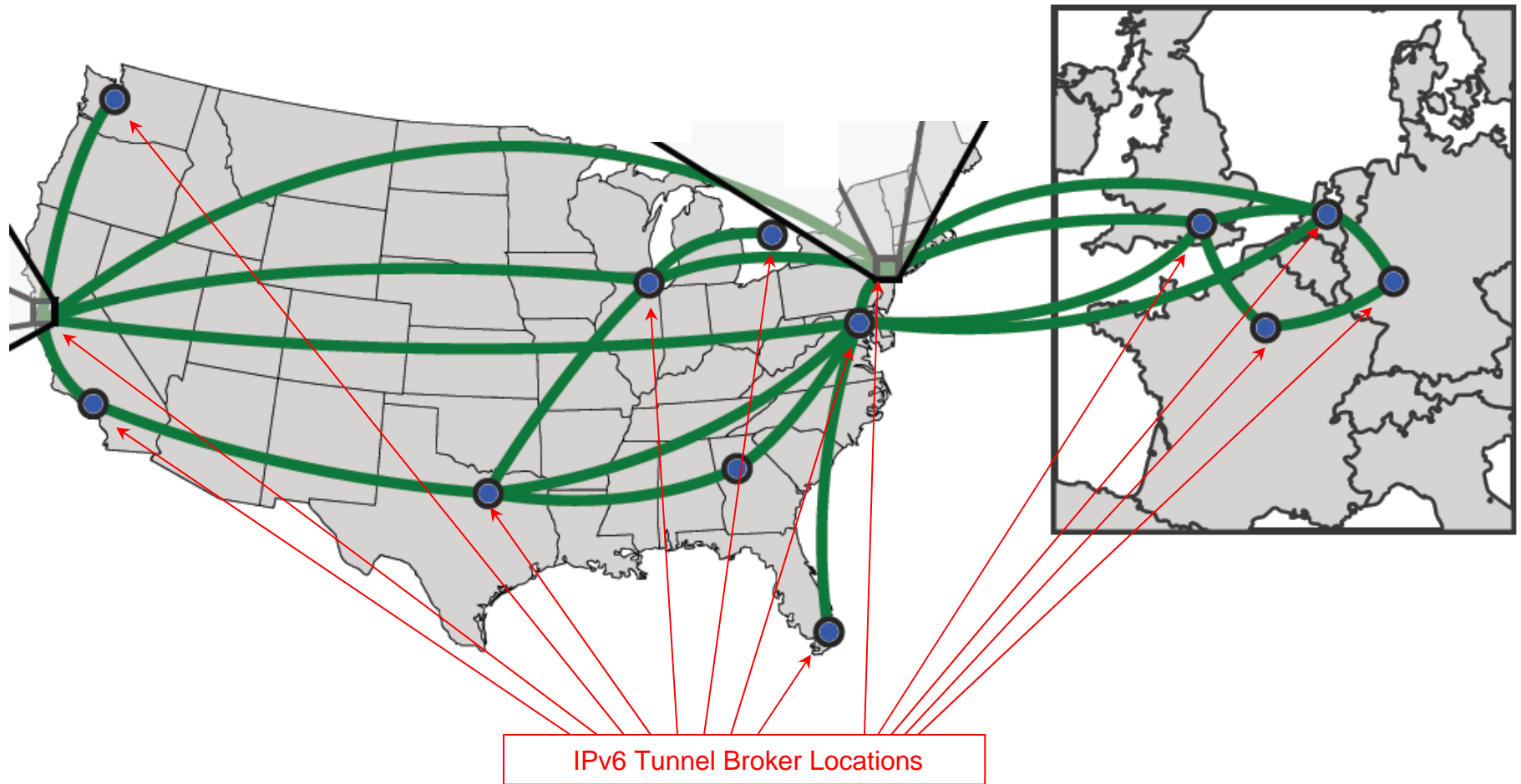
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# Hurricane Electric

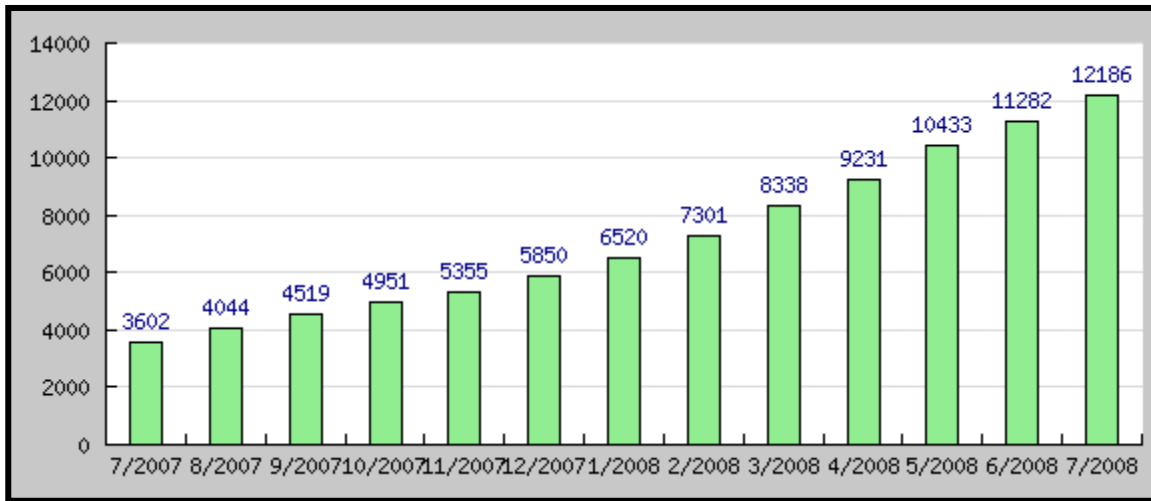
What do 12,000 users  
who are motivated to use IPv6  
actually do ?



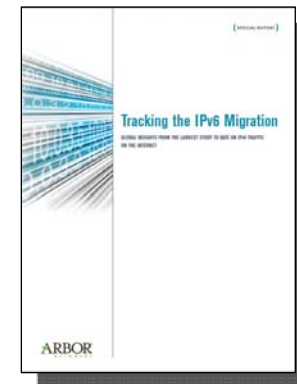
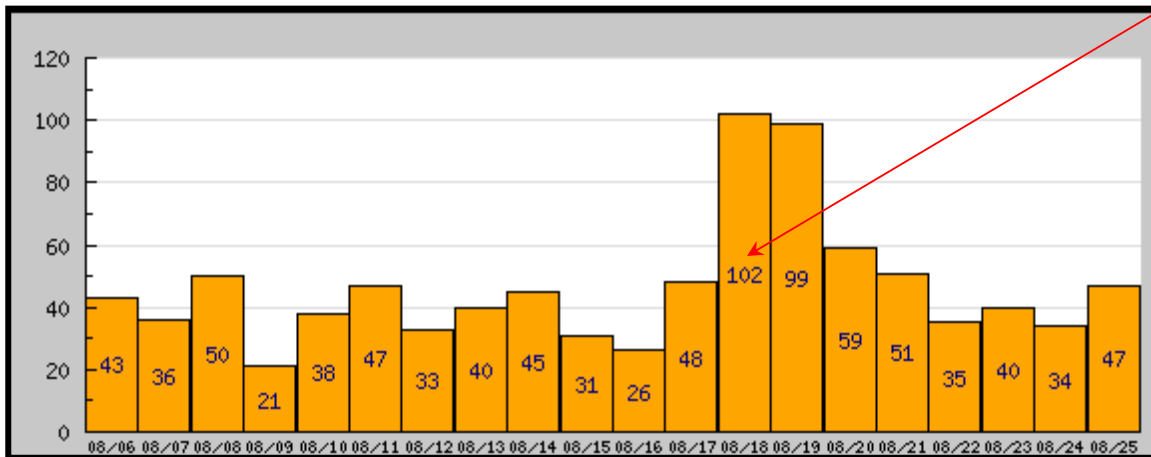
# Hurricane Electric – IPv6 Tunnel Broker



# Hurricane Electric – IPv6 Tunnel Broker

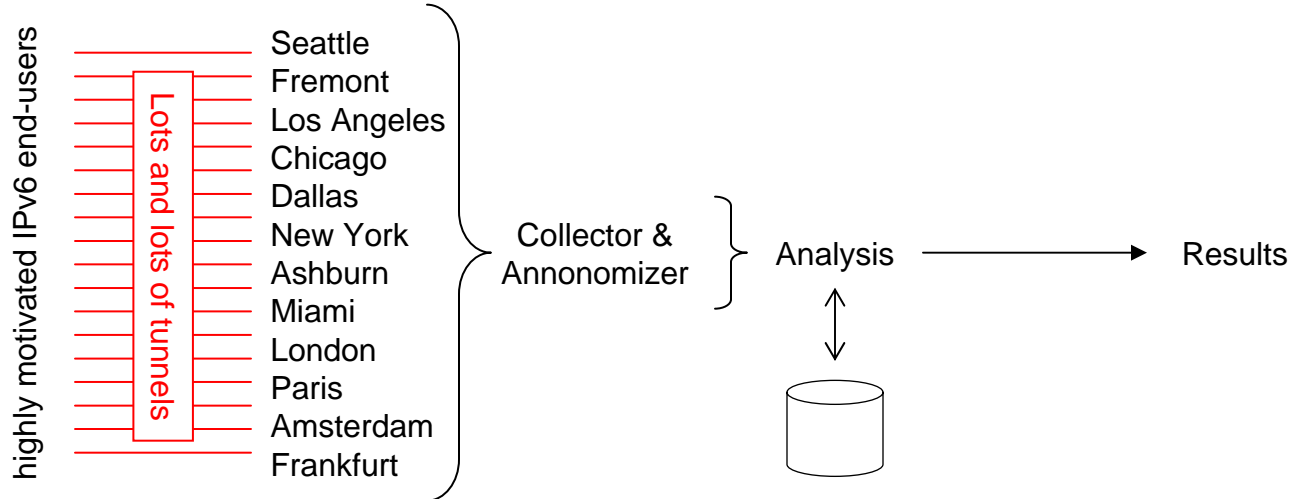


Arbor Networks "Tracking the IPv6 Migration" report released

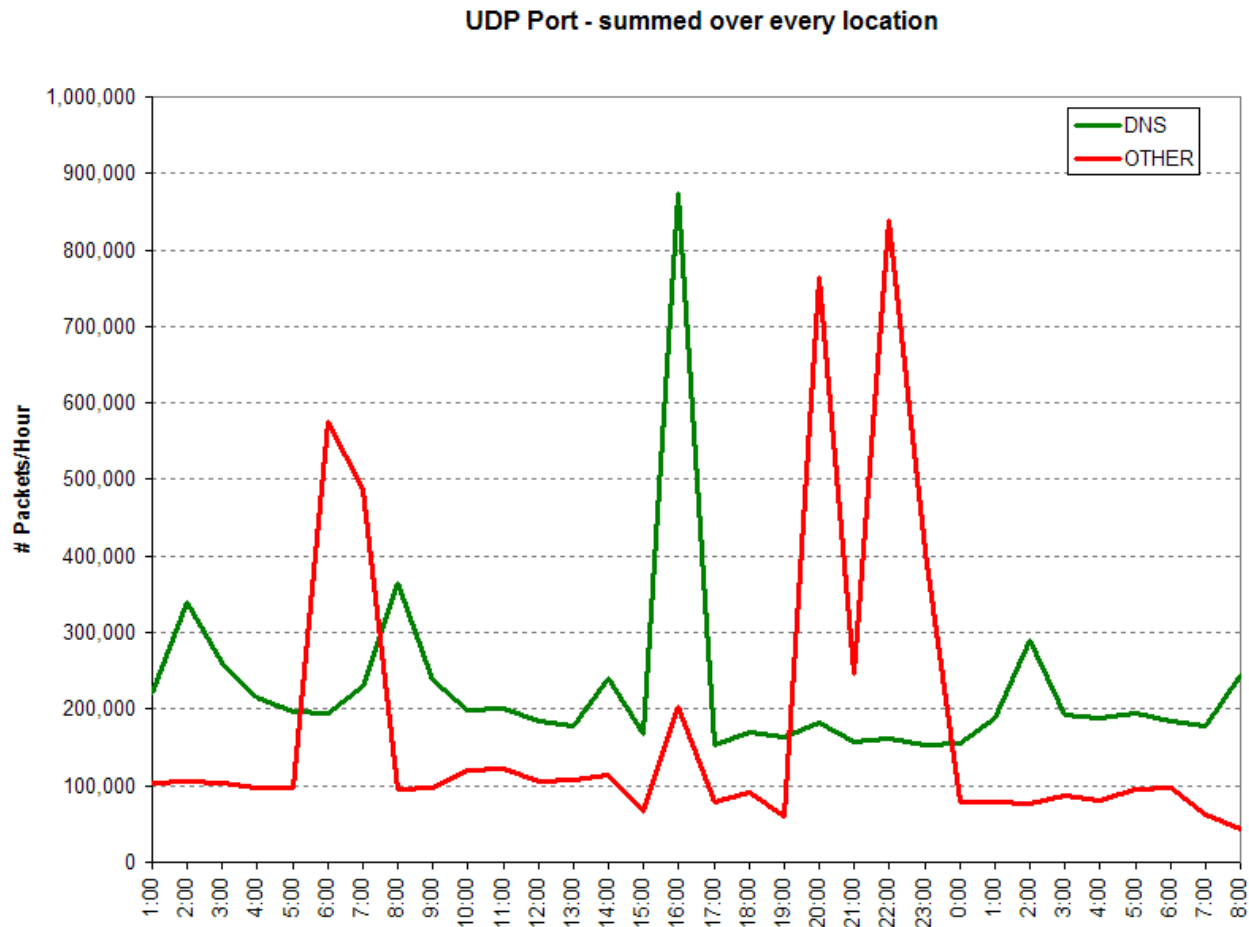


# Measuring IPv6 users

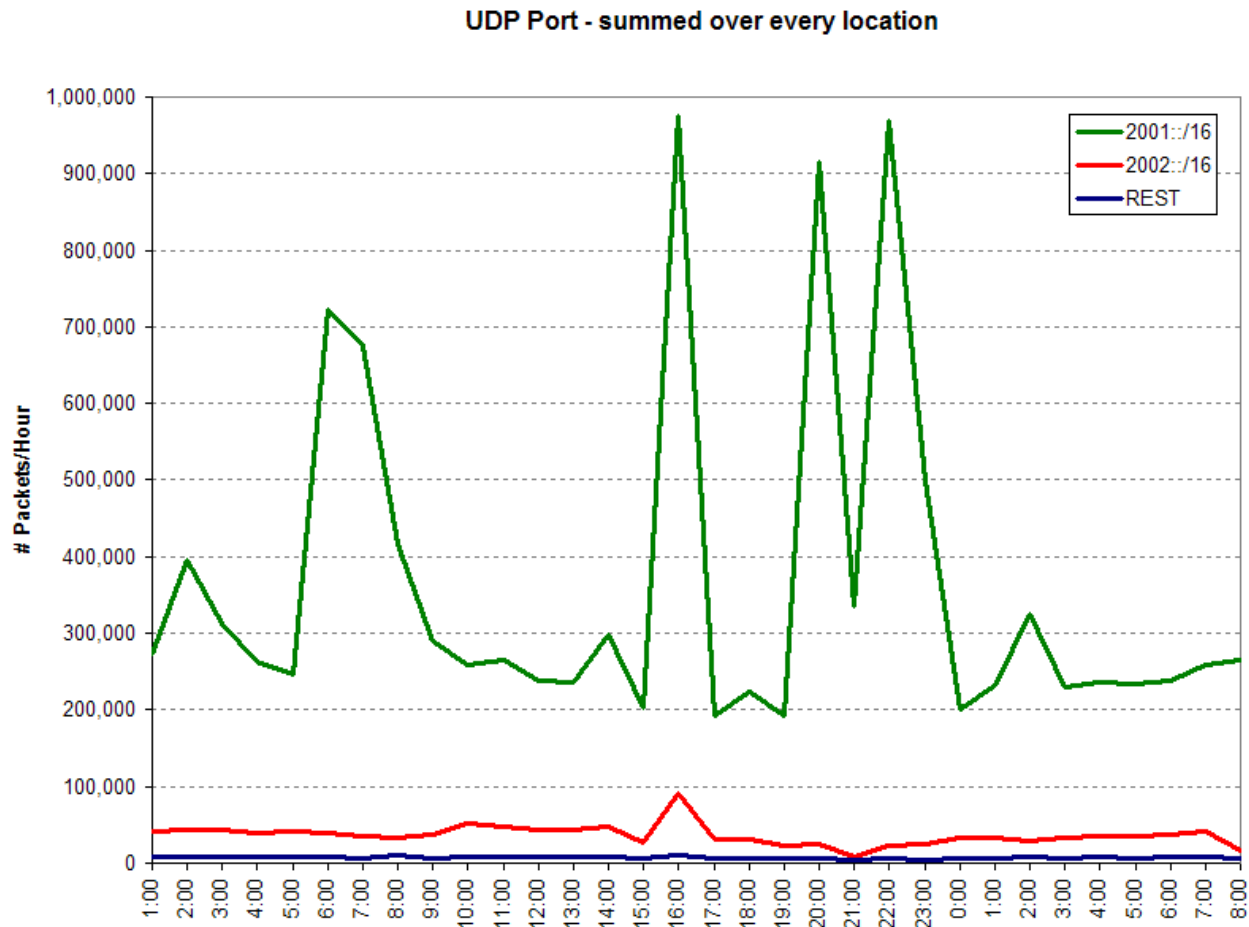
Percentage	Country
39.5 %	UNITED STATES
5.9 %	GERMANY
5.4 %	NETHERLANDS
5.0 %	ITALY
4.5 %	POLAND
4.4 %	UNITED KINGDOM
3.3 %	CANADA
2.6 %	FRANCE
2.5 %	BULGARIA
1.9 %	NORWAY
1.7 %	CZECH REPUBLIC
1.7 %	AUSTRALIA
1.6 %	SWEDEN
1.6 %	SLOVENIA
1.4 %	BRAZIL
1.3 %	CHINA
1.0 %	HUNGARY
1.0 %	INDONESIA
0.9 %	JAPAN
0.7 %	BELGIUM
0.6 %	LITHUANIA
0.6 %	SPAIN
0.6 %	FINLAND



# Are IPv6 users normal (what about DNS)?



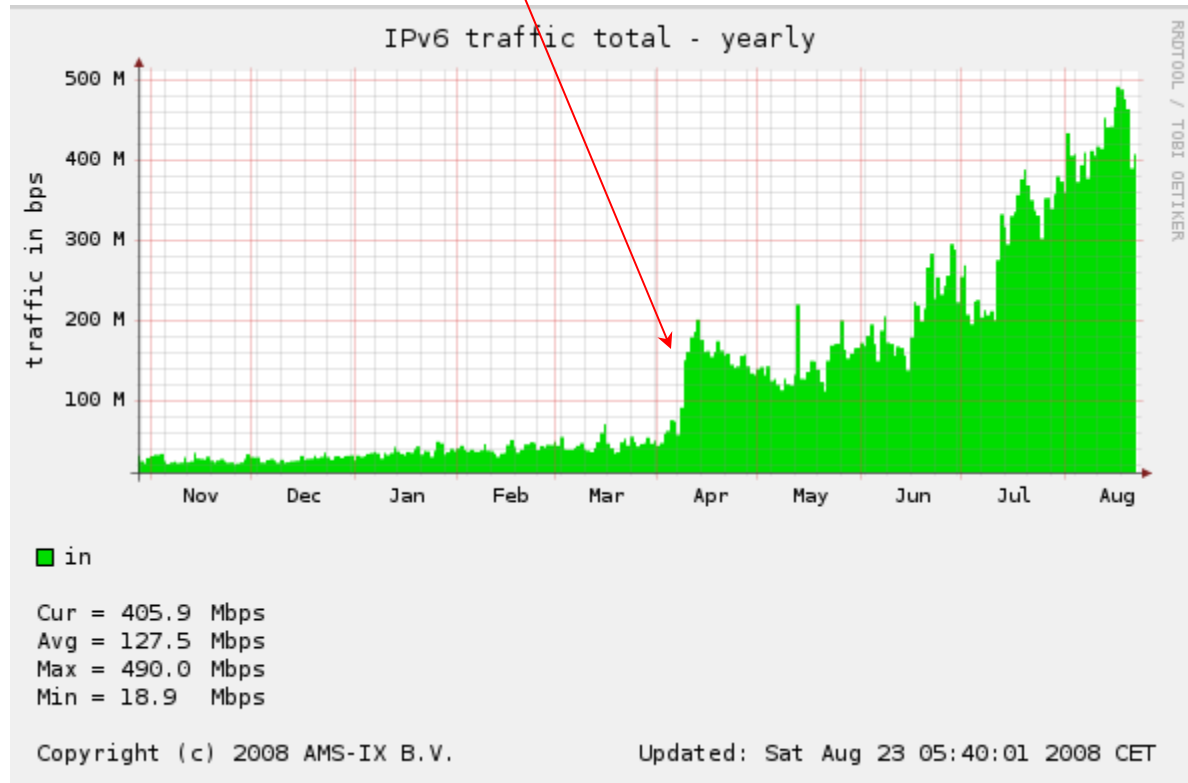
# Are IPv6 users normal (what about 6to4)?





# Something Extra – AMS-IX IPv6 stats

What happened around mid-April?



AMS-IX sflow stats <http://www.ams-ix.net/technical/stats/sflow/?type=ipv6>

AMS-IX total traffic is around  
100x this traffic level



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# Q&A



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## Contact:

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# Hurricane Electric

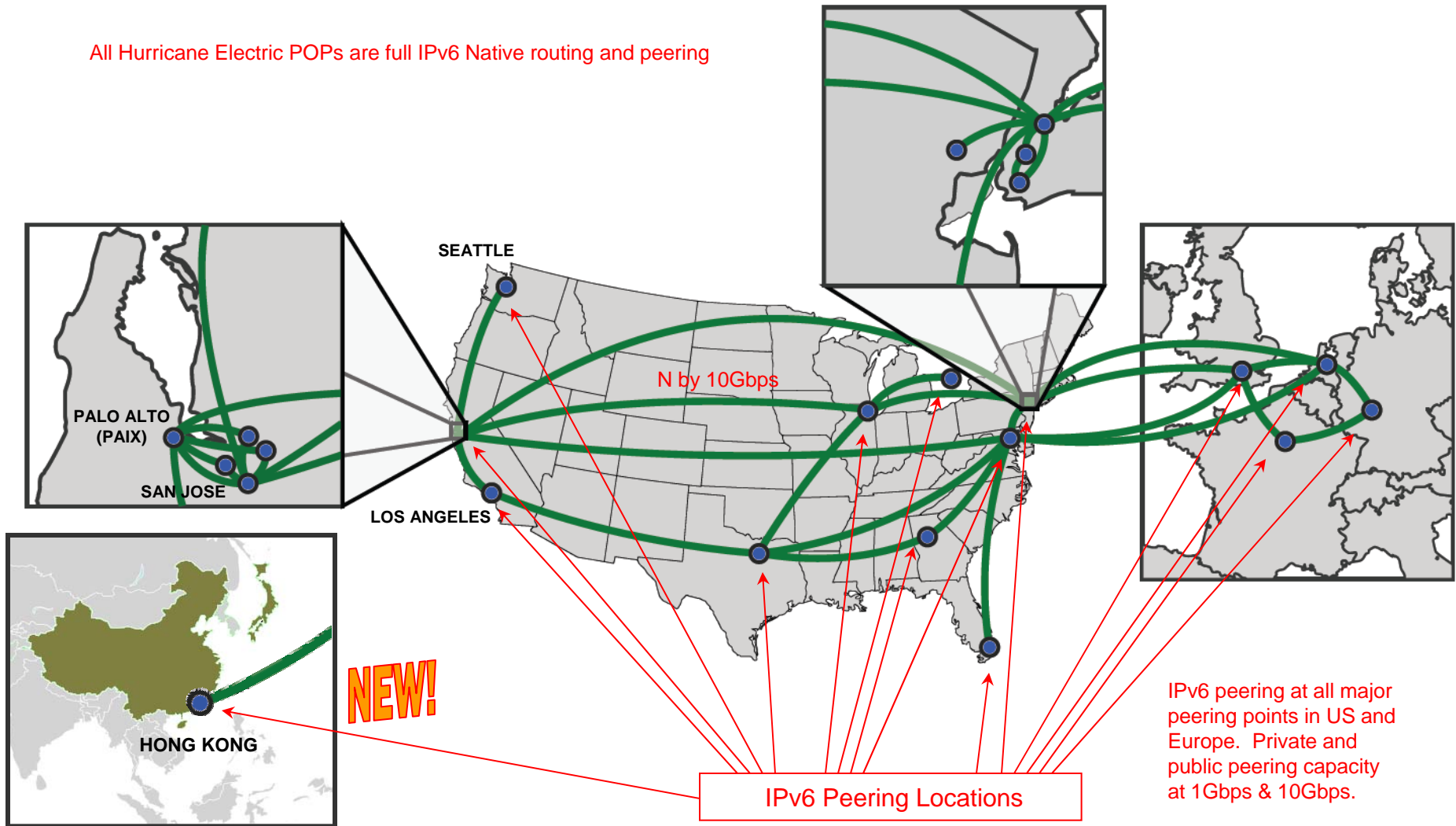
## Background slides

(about Hurricane Electric's IPv6 Backbone)



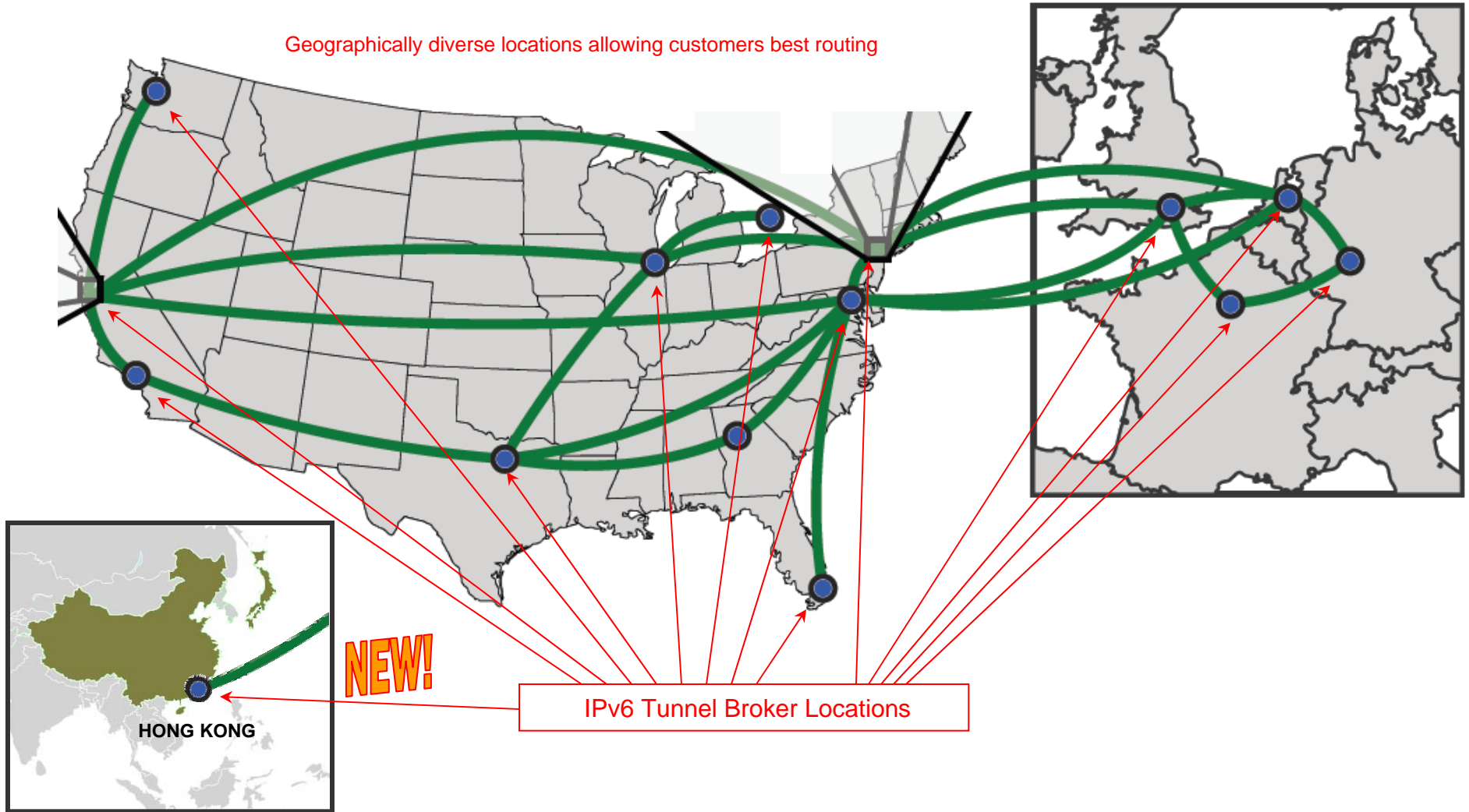
# Hurricane Electric – IPv6 Network Reach

All Hurricane Electric POPs are full IPv6 Native routing and peering

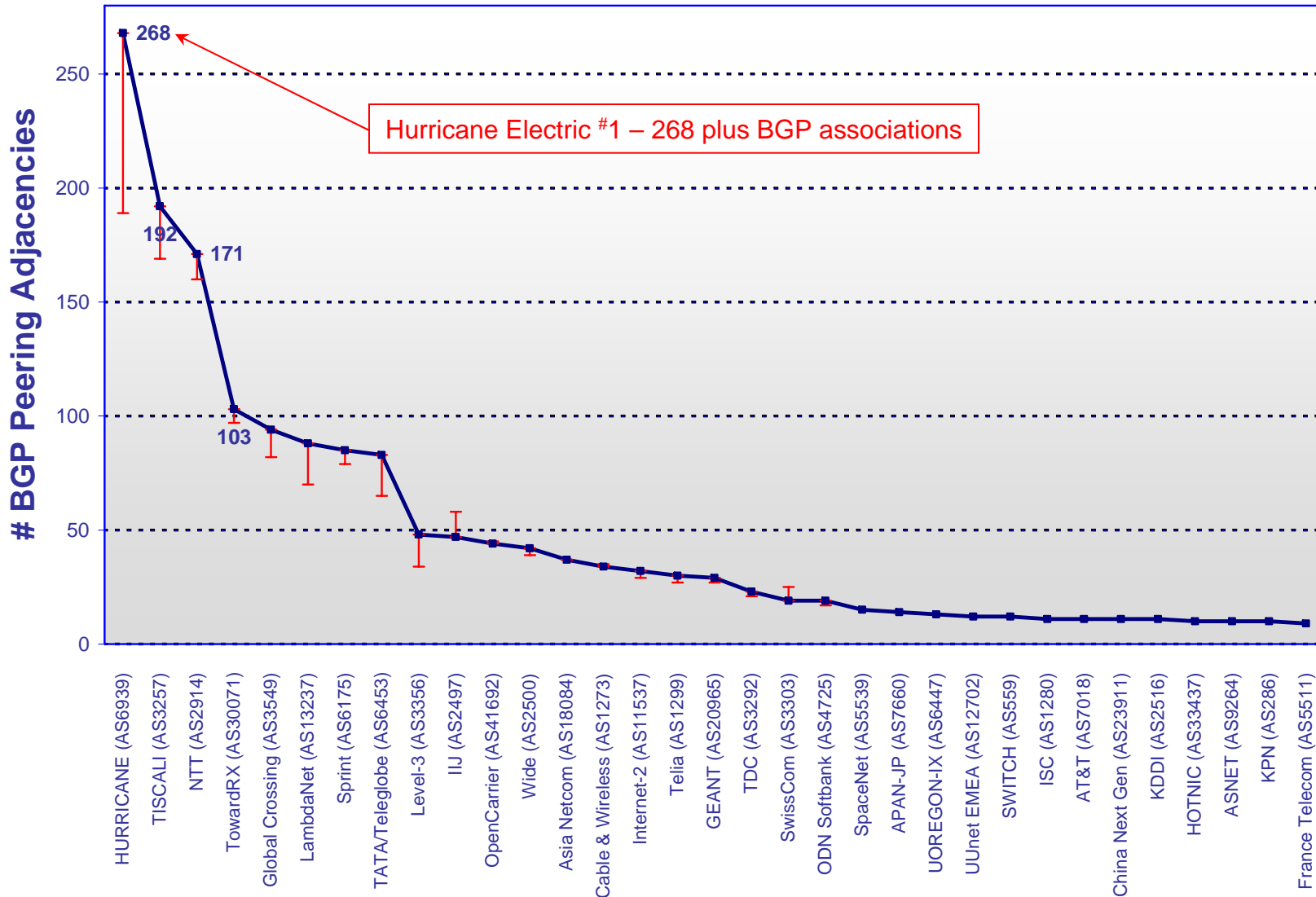


# Hurricane Electric – IPv6 Tunnel Broker

Geographically diverse locations allowing customers best routing



# Hurricane Electric – IPv6 Status (Oregon)

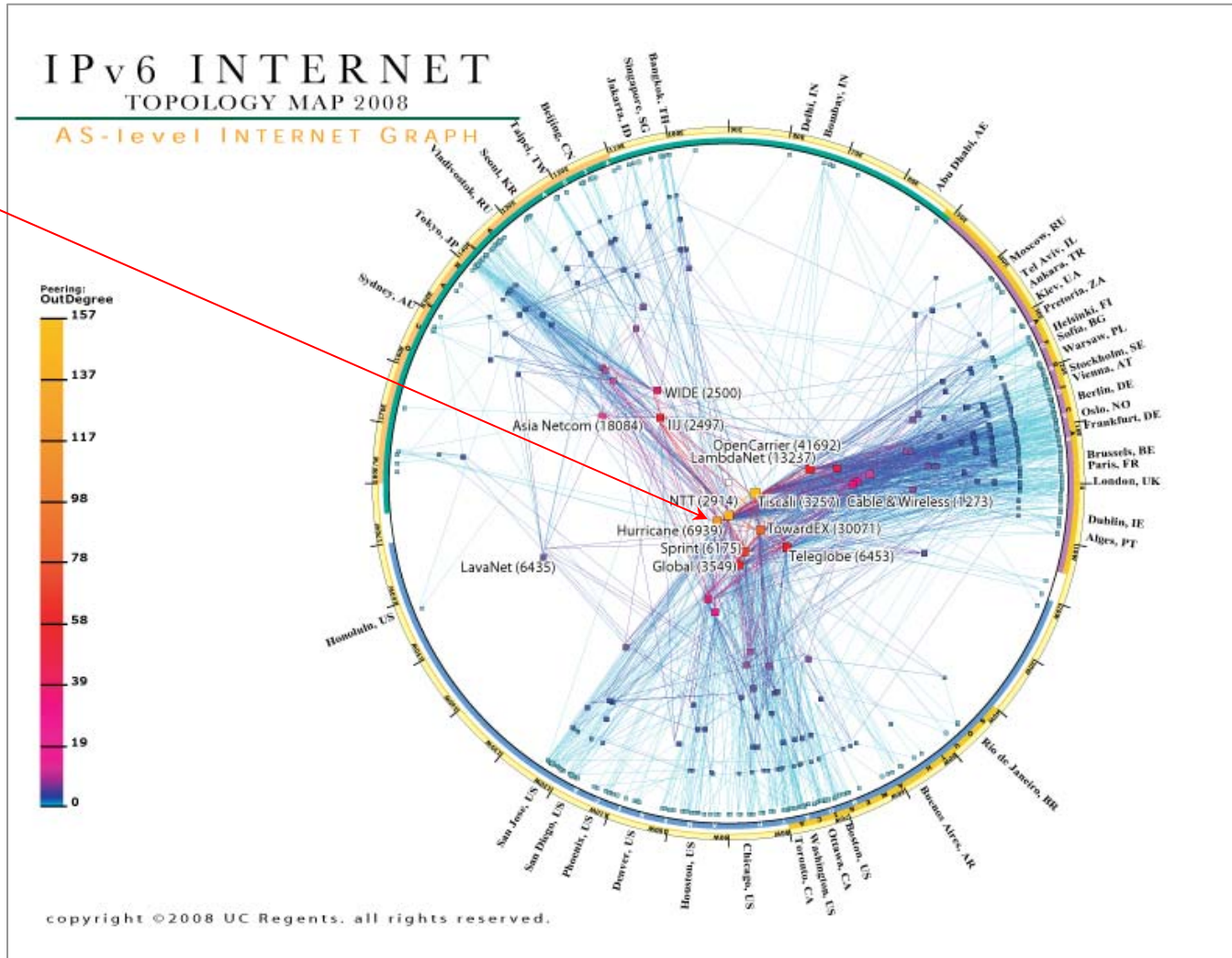


Data extracted from <http://bgp.potaroo.net/v6/as6447/bgp-as-adj.txt>.



# Hurricane Electric – IPv6 Status (CAIDA)

Hurricane Electric

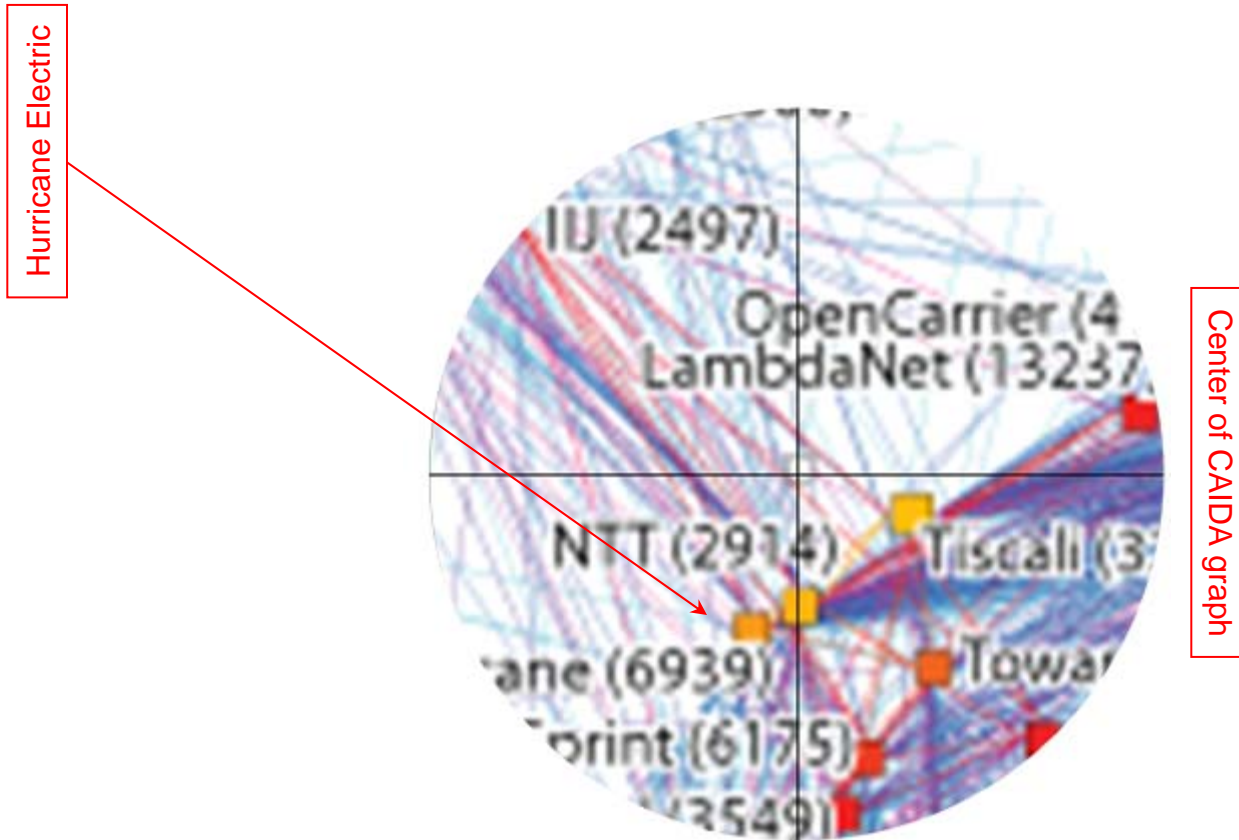


CAIDA status as of January 2008 – Further improved since

See: [http://www.caida.org/research/topology/as\\_core\\_network/ipv6.xml](http://www.caida.org/research/topology/as_core_network/ipv6.xml) for full description and explanation.



# Hurricane Electric – IPv6 Status (CAIDA)



Yes!





# Hurricane Electric – TunnelBroker stats

