

# Global IPv6 Deployment

Hurricane Electric

*IPv6 Native Backbone – Massive Peering!*

---

LACNIC XIII / FLIP6

Curaçao, Netherlands Antilles – 20<sup>th</sup> May 2010

Martin J. Levy, Director IPv6 Strategy  
Hurricane Electric

---

# Global IPv6 Deployment – Talk Outline

- ~~Why do we need IPv6?~~ *(Just kidding – this talk assumes that!)*
- Is there any global IPv6 deployment or traffic?
- Is there stability within the global IPv6 routing tables?
- What next?



# IPv6 and global deployment worldwide

- IPv6 deployment is everywhere
  - 90+ countries have a “live” IPv6 presence
  - IPv6 active at global Internet peering points





---

# IPv6 questions to check on global deployment

- Is IPv6 supported? (the basic questions)
  - Is IPv6 native on all backbones?
  - Is IPv6 interconnections/peering prevalent?
  - Is IPv6 part of the standard product mix?



# Is IPv6 native on all backbones? (the “AN” test)

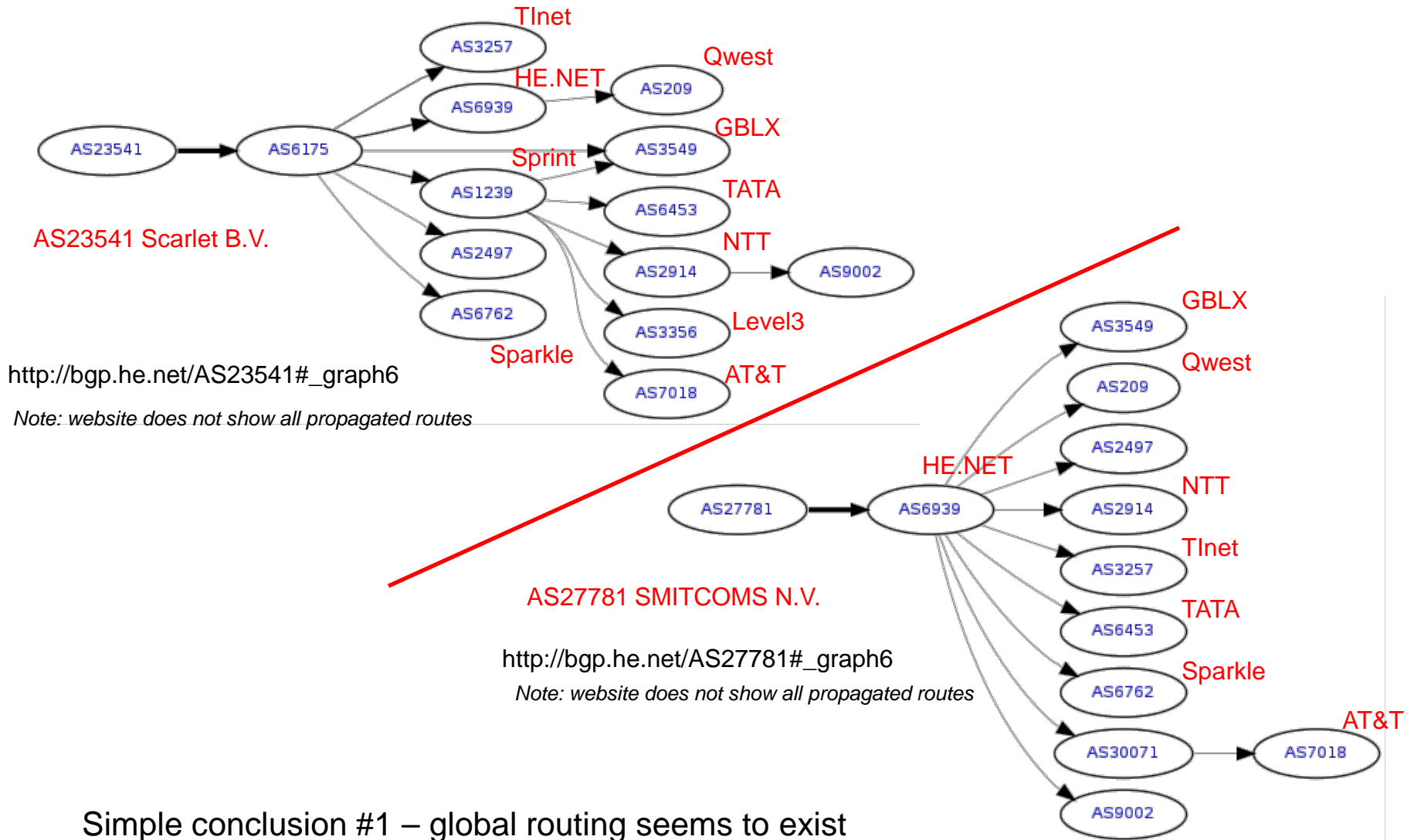
- How does Netherland Antilles look globally?
  - Do ISP's here get routes out globally?
  - Checking the LACNIC allocations for “AN”:

```
$ fgrep '|AN|ipv6' < delegated-lacnic-latest
lacnic|AN|ipv6|2001:13c7:6002::|48|20080603|assigned
lacnic|AN|ipv6|2001:13c7:6004::|47|20081113|assigned
lacnic|AN|ipv6|2800:80::|32|20060915|allocated
lacnic|AN|ipv6|2800:280::|32|20080808|allocated
lacnic|AN|ipv6|2800:2e0::|32|20081203|allocated
lacnic|AN|ipv6|2800:470::|32|20100210|allocated
$
```

- Two blocks are announced globally
  - We can check using those blocks



# Is IPv6 native on all backbones? (the “AN” test)

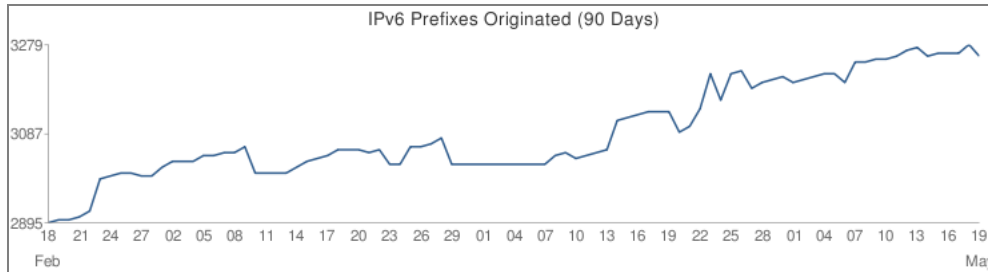


Simple conclusion #1 – global routing seems to exist



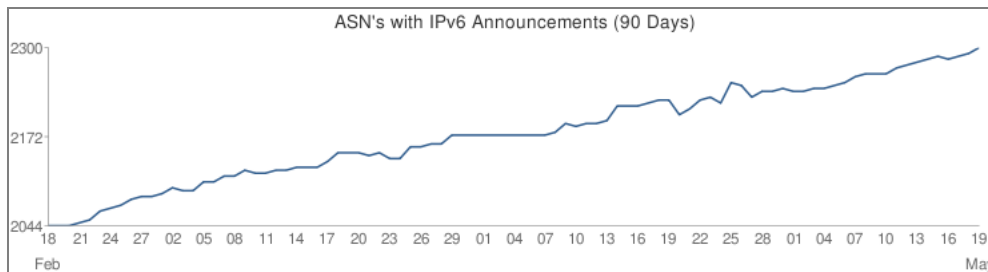
# Is IPv6 routing/interconnections/peering prevalent?

13.3% increase in 90 days!

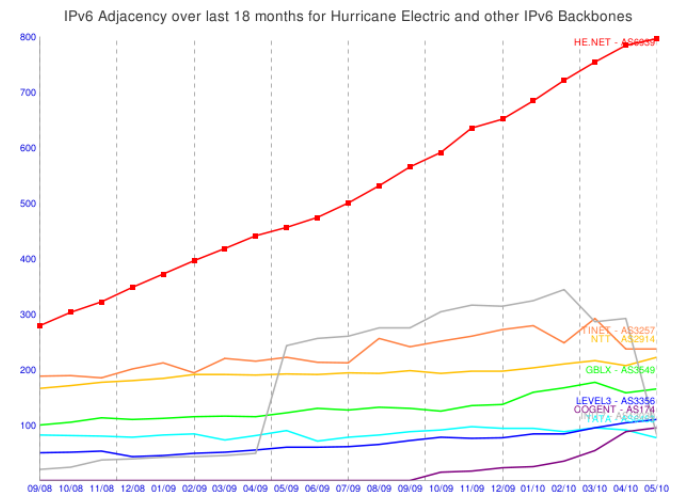
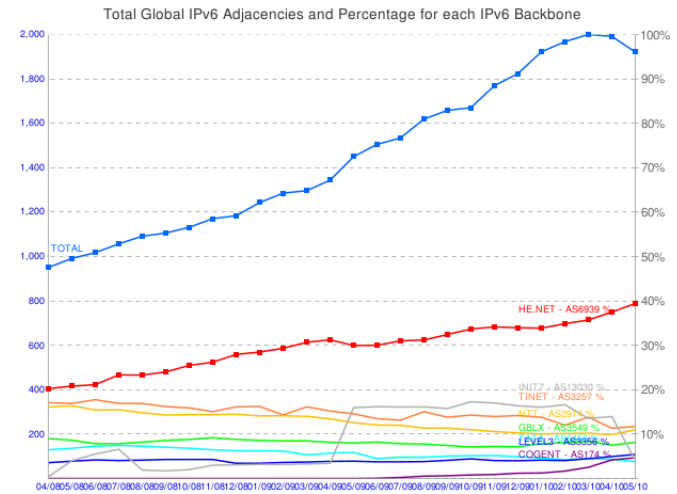


[http://bgp.he.net/report/prefixes#\\_prefixes](http://bgp.he.net/report/prefixes#_prefixes)

12.5% increase in 90 days!



[http://bgp.he.net/report/prefixes#\\_networks](http://bgp.he.net/report/prefixes#_networks)



# Is IPv6 part of the standard product mix?

## ■ Services:

- IP backbones? ✓ (nearly all)
- Consumer broadband? ✓ (trials, trials, trials)
- Mobile operators? ✓ (in the lab?)
- Web/Cloud services? ✓ (patchy)

## ■ Product:

- Routers, Switches ✓ (nearly all)
- xDSL & Cable routing ✓ (more daily)
- Home/Small office routers ✗ (sadly lacking)
- Enterprise Firewalls ✓ (perception)
- Website load balancers ✓ (newer firmware)
- Testing hardware ✓ (good awareness)
- Back office software ✗ (not even close!)



---

# Hurricane Electric - Exhaustion Counters

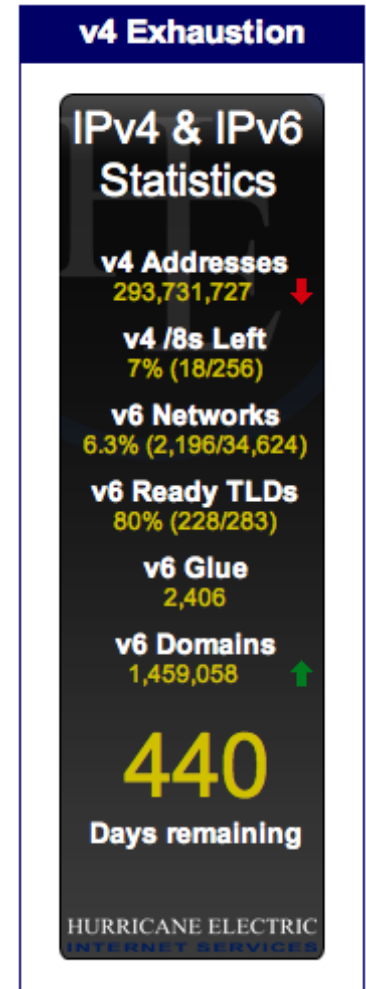
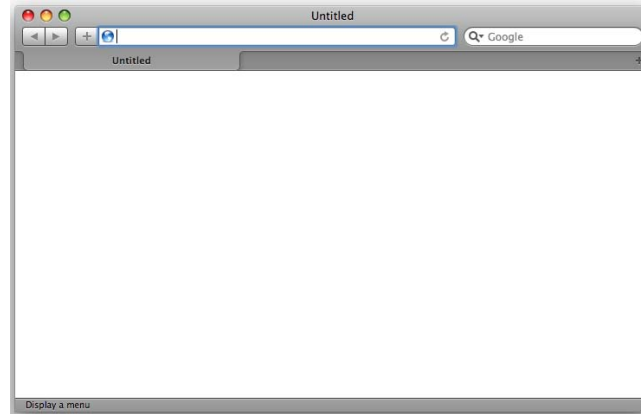
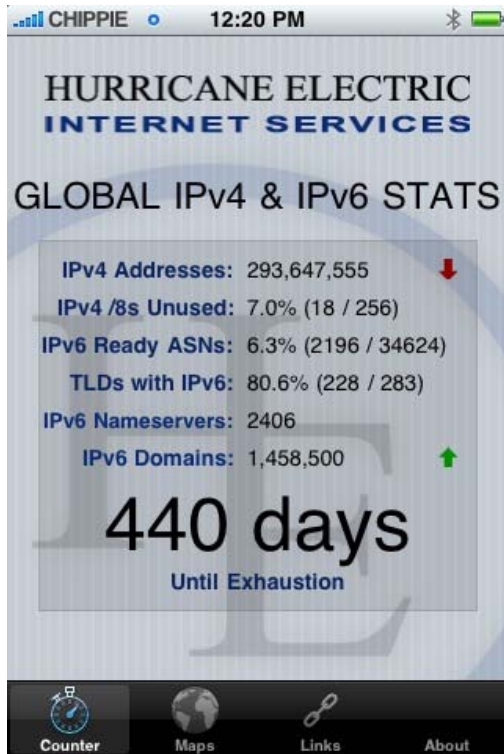
*Maybe this will help convince your boss ...*

## Exhaustion Counters

*<http://ipv6.he.net/statistics/>*



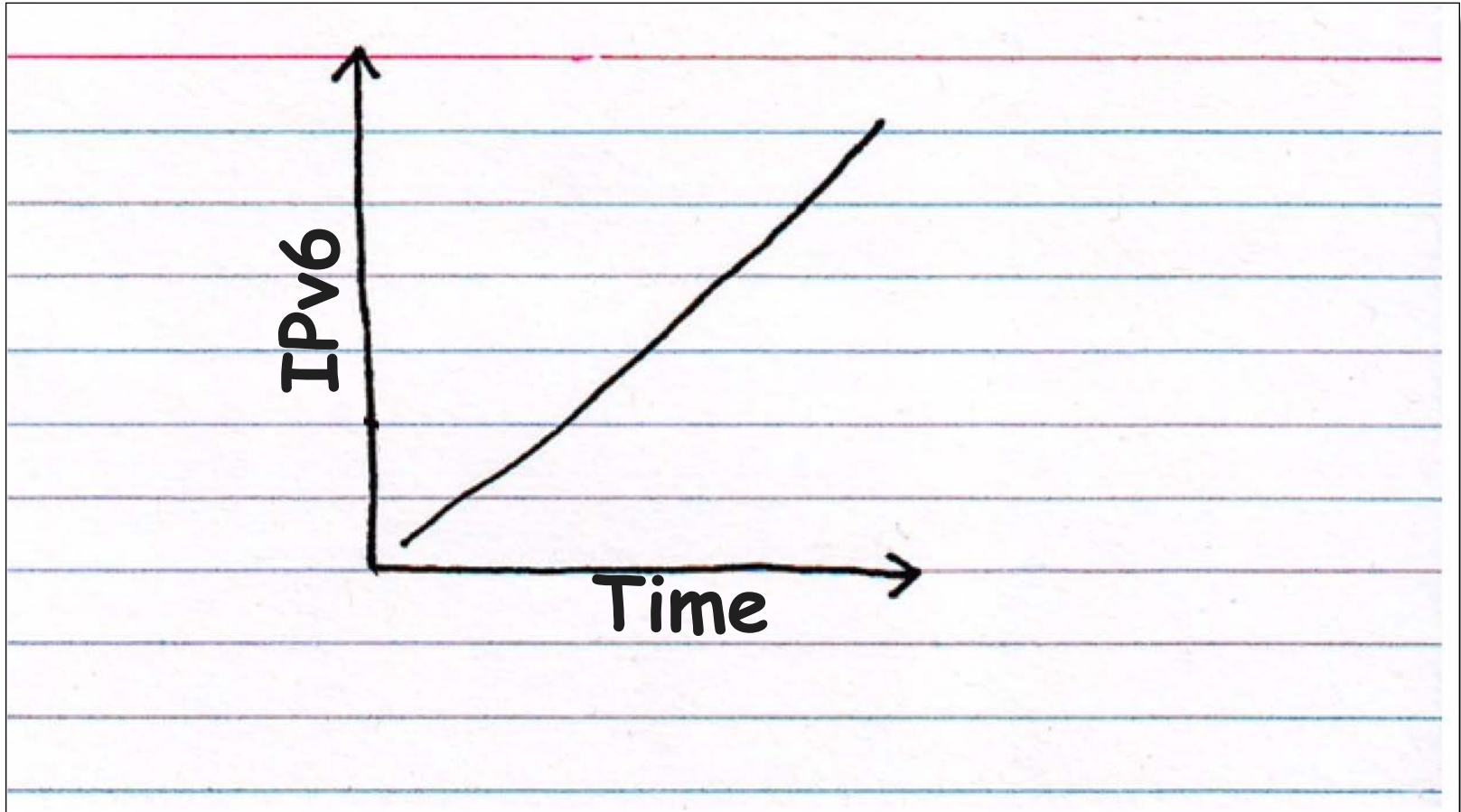
# Hurricane Electric IPv4 Exhaustion Counters



<http://ipv6.he.net/statistics/>

<http://bgp.he.net/ipv6-progress-report.cgi>

# Summary ...





---

## Contact:

Martin J. Levy  
Director, IPv6 Strategy  
Hurricane Electric  
760 Mission Court  
Fremont, CA 94539, USA  
<http://he.net/>

martin at he dot net  
+1 (510) 580 4167

