

World IPv6 Launch and RIPE Atlas traceroute6 Visualisation

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RIPE NCC Measurements - IPv6 Launch

- IPv6 Eyechart and 6to4 (not in this talk)
- Active measurements
 - Sources: 53 vantage points, destinations: 60 participants
 - From **2012-05-19 to 2012-06-18** we measured:
 - DNS: A and/or AAAA records
 - ping(6)/traceroute(6)
 - HTTP over IPv4 and IPv6
 - In total there were **18,049,214** measurements
- Measuring IPv6 connectivity with RIPE Atlas

Measurement Vantage Points

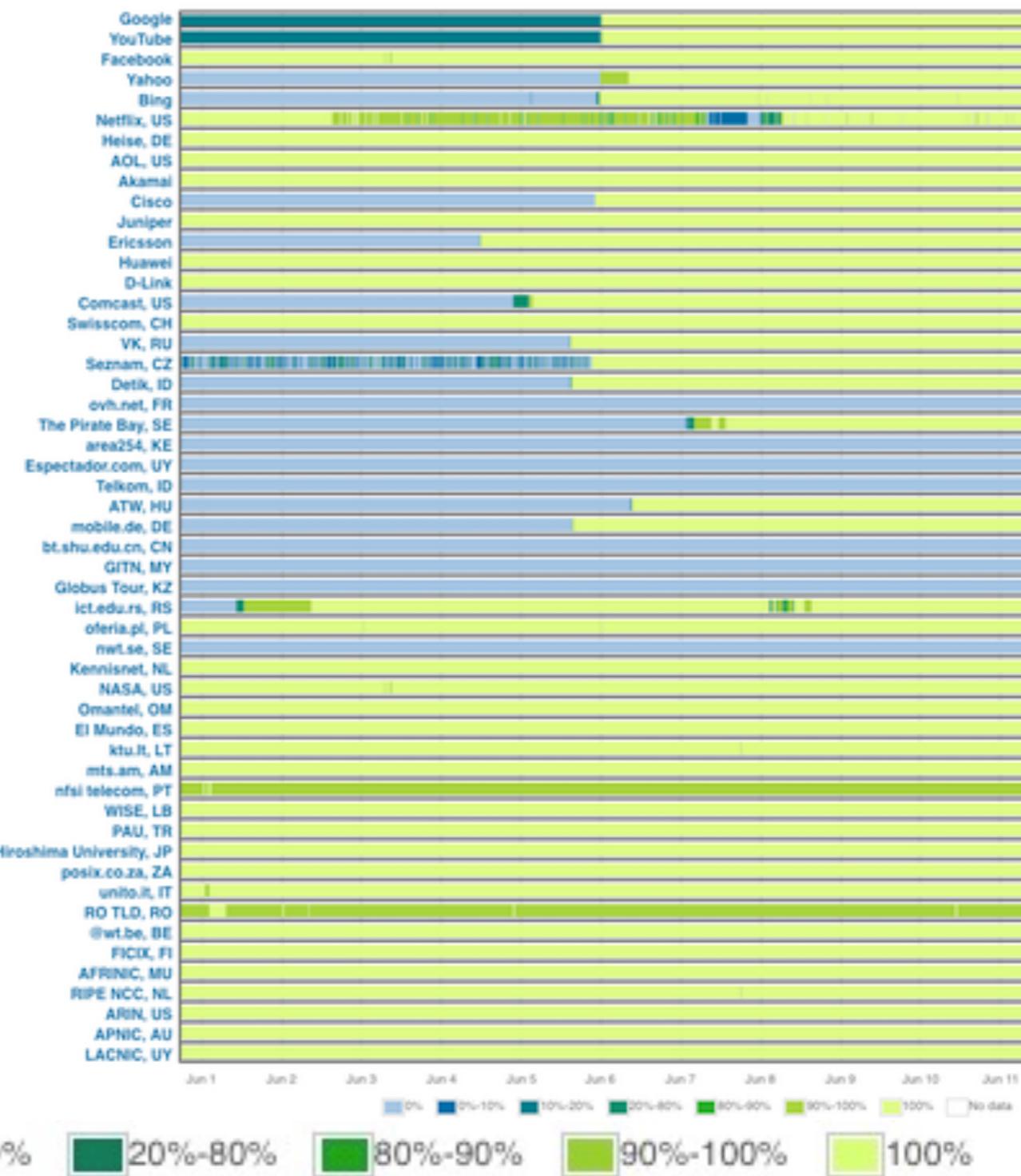
▼ CAIDA Ark ▼ RIPE NCC TTM ▼ Other



Percentage of Vantage Points Seeing AAAA

<http://v6launch.ripe.net/cgi-bin/index.cgi>

1-11 June 2012

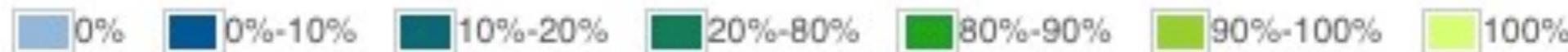
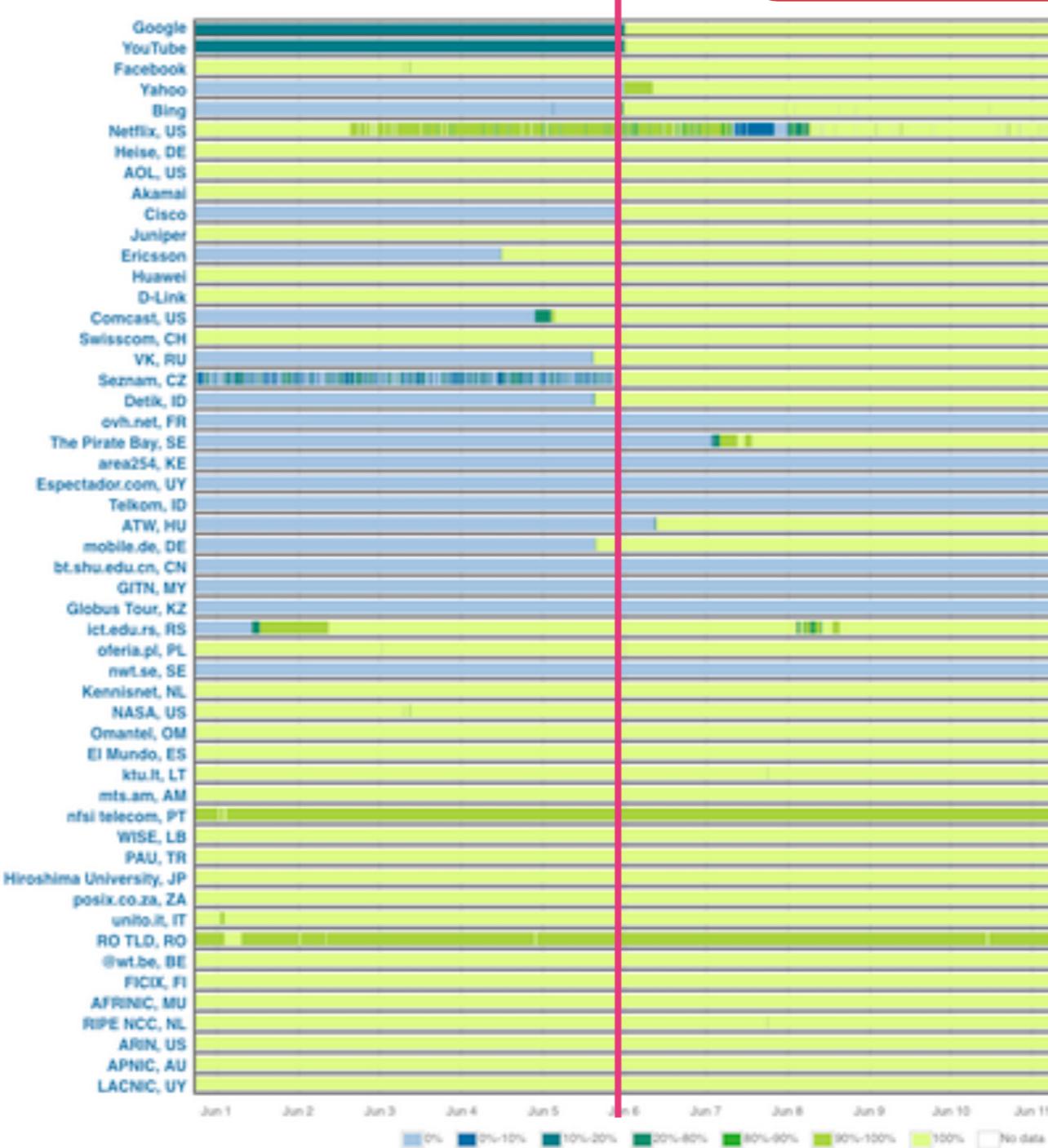
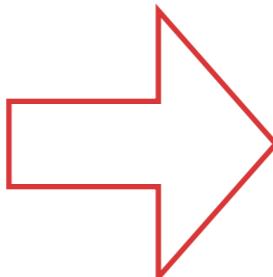


Percentage of Vantage Points Seeing AAAA

<http://v6launch.ripe.net/cgi-bin/index.cgi>

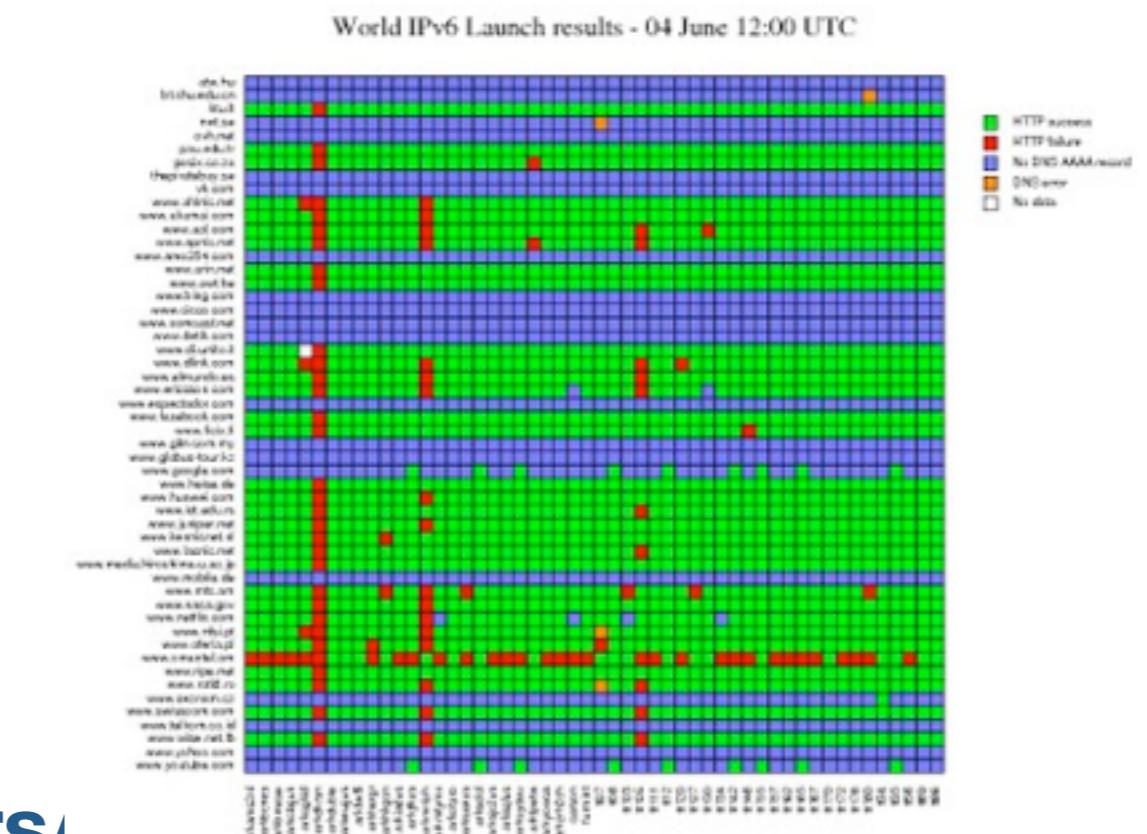
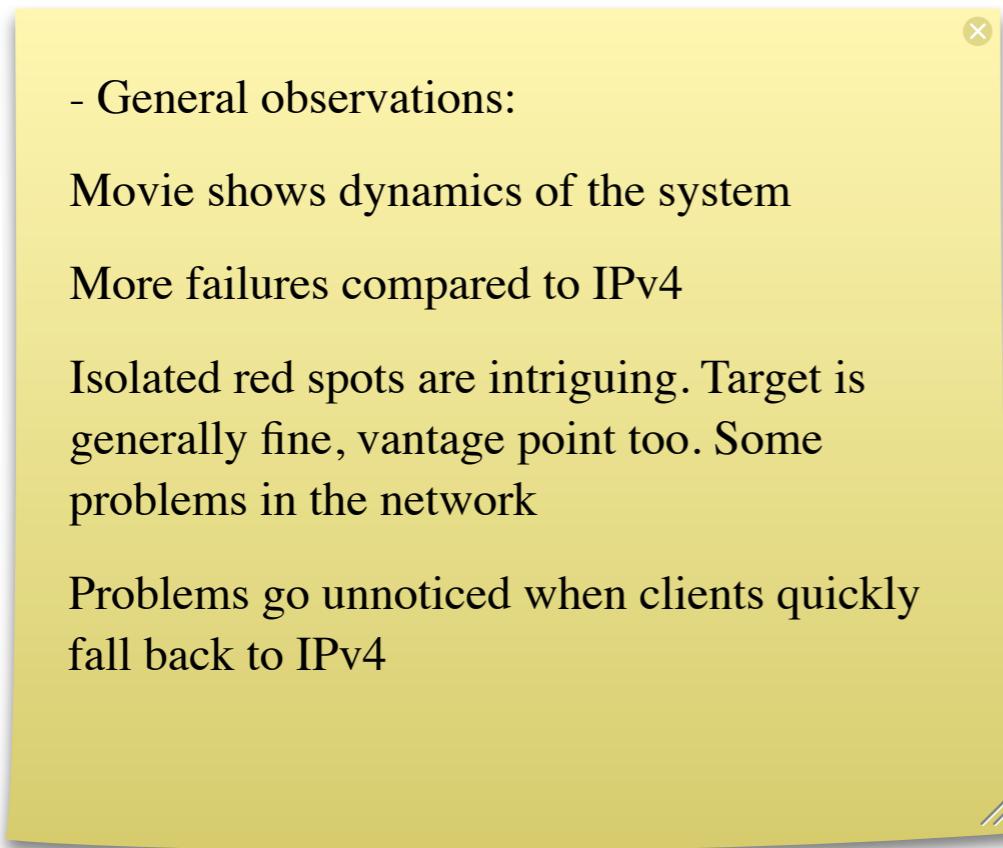
6 June 2012; 00:00

1-11 June 2012



World IPv6 Launch - Results From HTTP Measurements

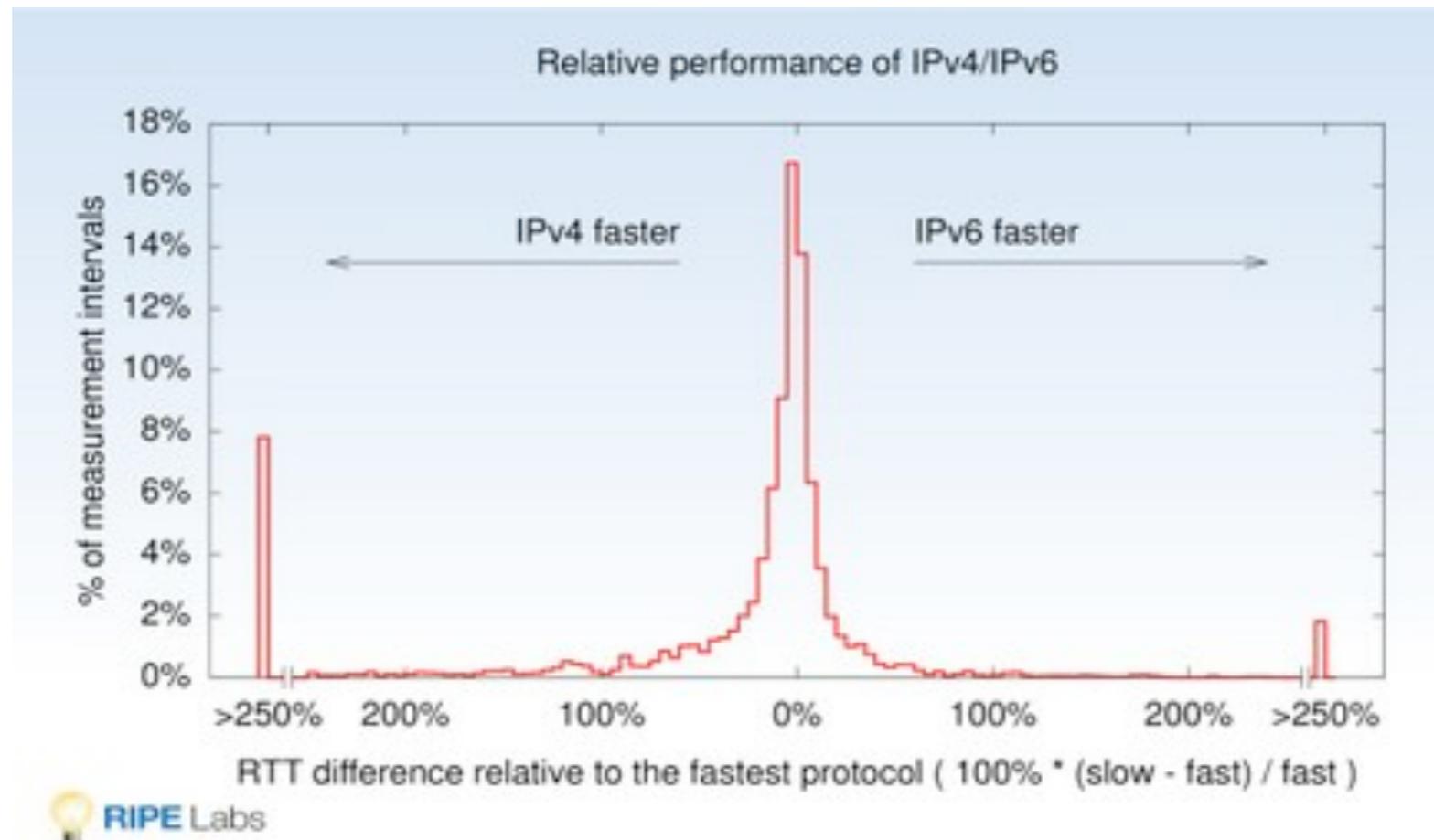
- Movie (2.5 minutes) on HTTP measurements (by Rene Wilhelm):
 - <http://www.youtube.com/watch?v=a-sv0JLLbCw>



- [https://labs.ripe.net/Members/
http-measurements](https://labs.ripe.net/Members/http-measurements)

Relative Performance IPv4 vs IPv6

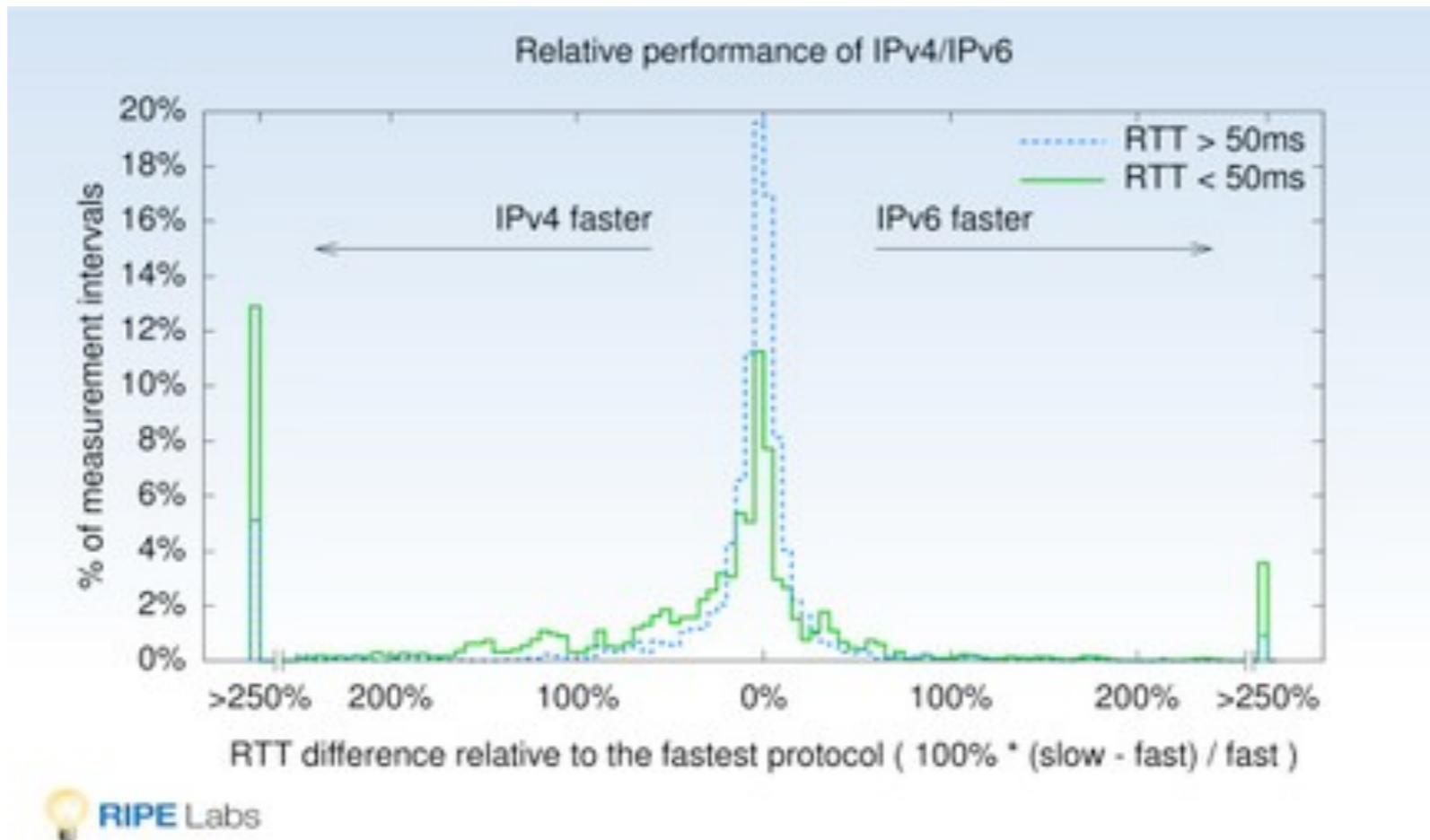
- Histogram of relative performance of IPv4 and IPv6 for 15 minute intervals per source-destination pair



- <https://labs.ripe.net/Members/emileaben/measuring-world-ipv6-launch-comparing-ipv4-and-ipv6-performance>

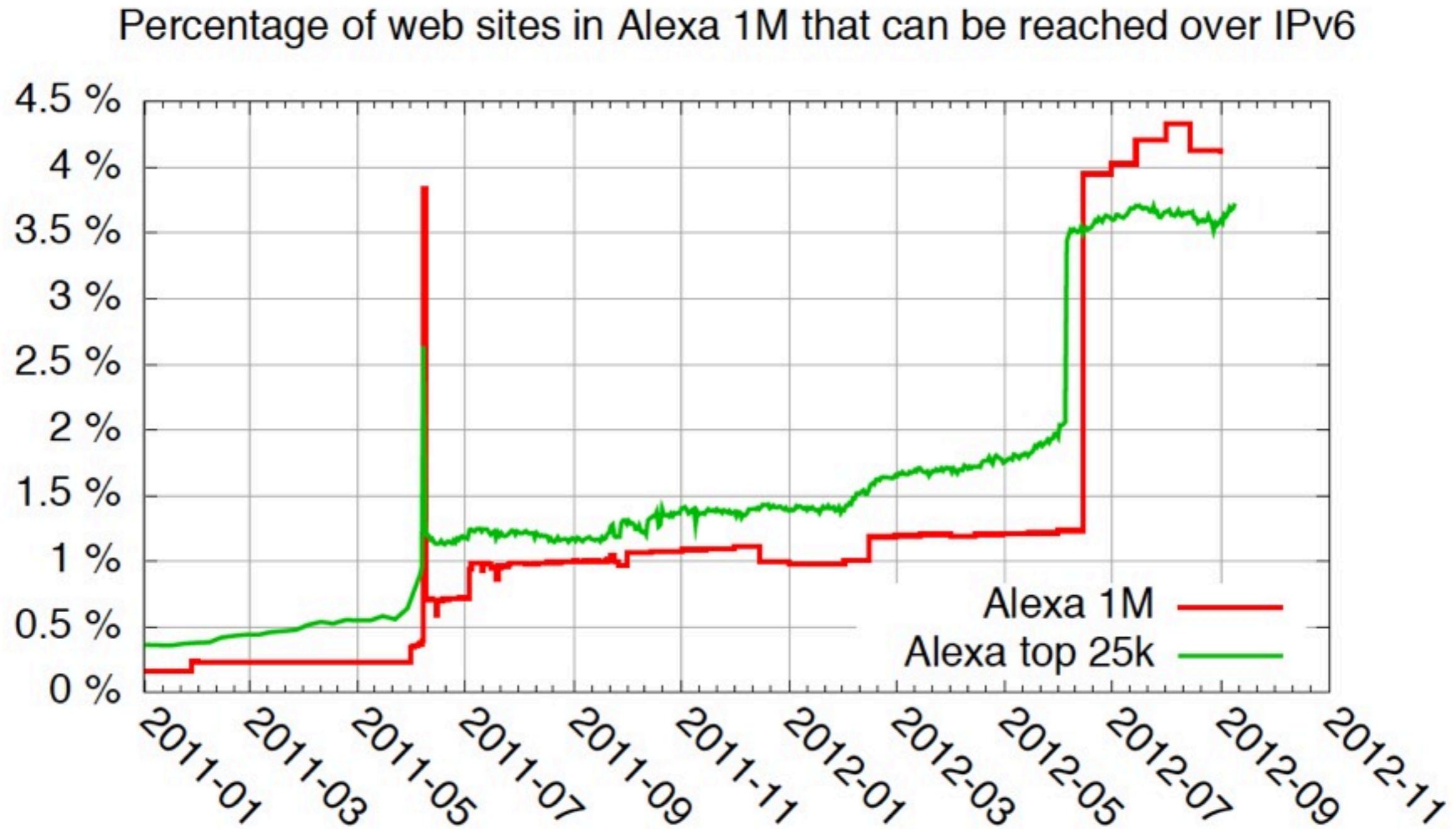
Relative Performance IPv4 vs IPv6

- Histogram of relative performance of IPv4/IPv6 for 15 minute intervals per source-destination pair, split in LONG and SHORT RTTs



- <https://labs.ripe.net/Members/emileaben/measuring-world-ipv6-launch-comparing-ipv4-and-ipv6-performance>

Alexa 1M/25K - After IPv6 Launch

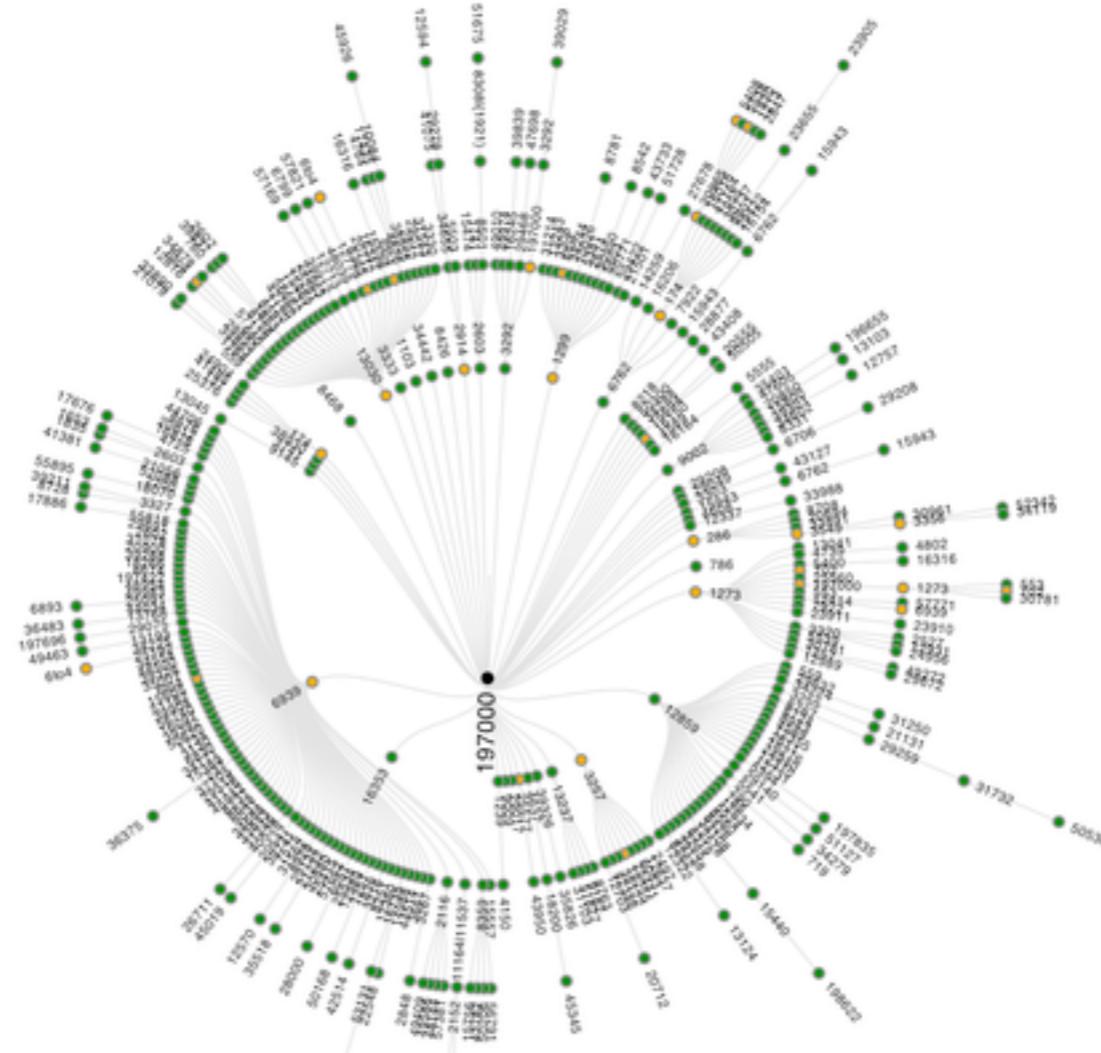


Atlas traceroute6 Visualisation

- Before World IPv6 Launch, we provided an ATLAS UDM (User Defined Measurement) tool to test IPv6 reachability of a network
- Uses RIPE Atlas probes around the world to send traceroute6 to your network
- Offered only to RIPE NCC members
- Possibly available for sponsors and others
- Will continue to offer this tool
- Prototype visualisation tool by Emile Aben

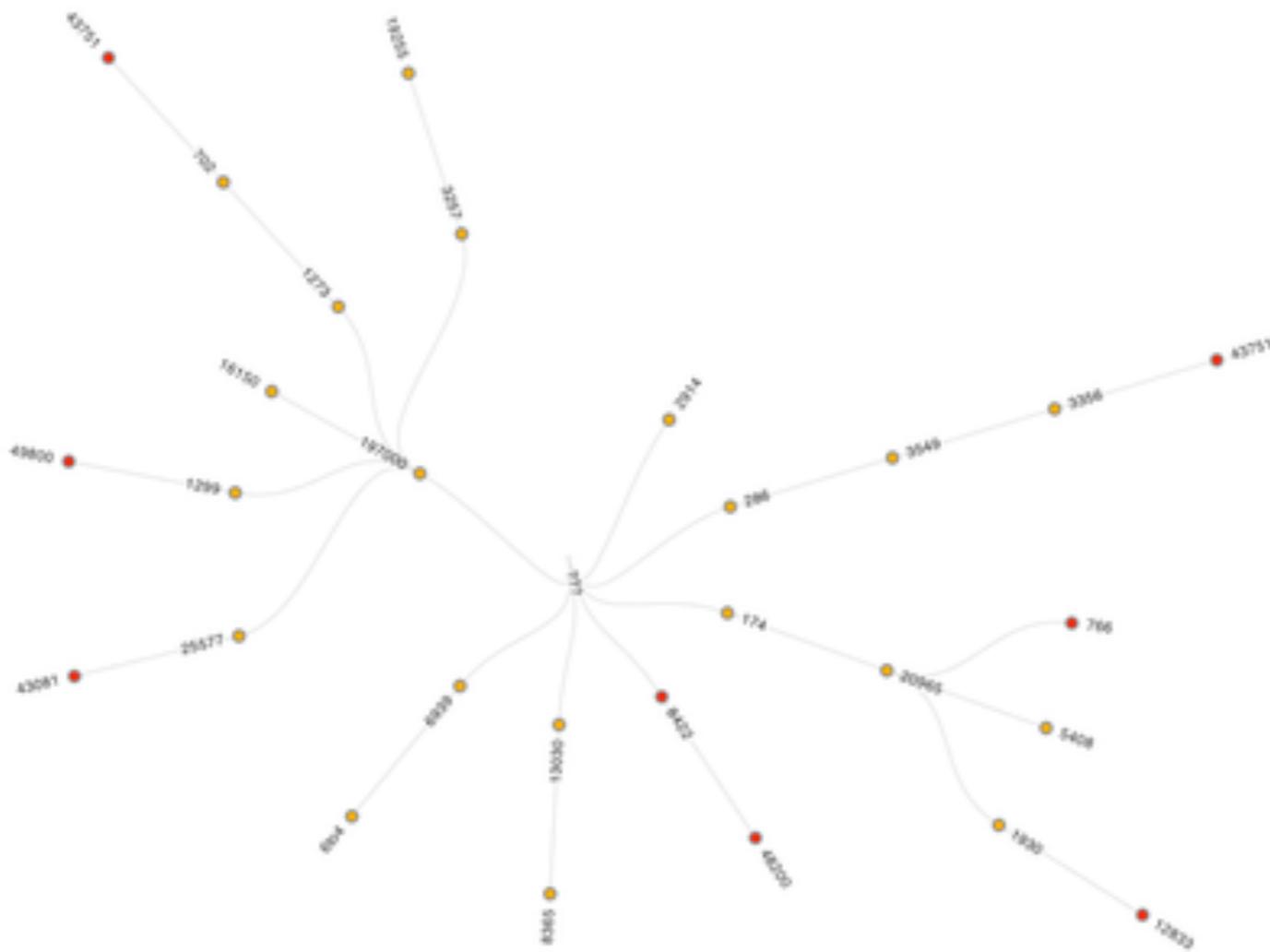
How Do Others See Your Site Over IPv6 1/6

- AS-level graph of successful traceroutes to ns.ripe.net



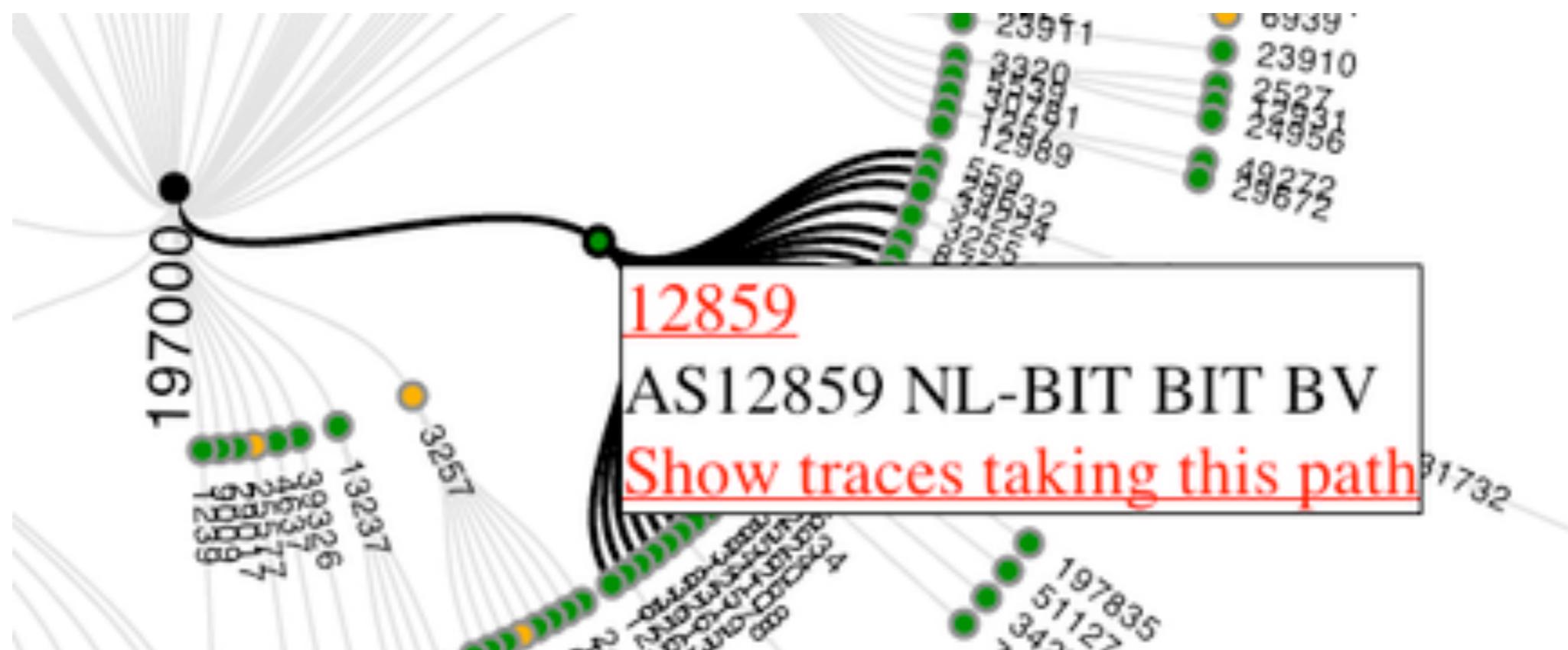
How Do Others See Your Site Over IPv6 2/6

- AS-level graph of unsuccessful traceroutes to ns.ripe.net



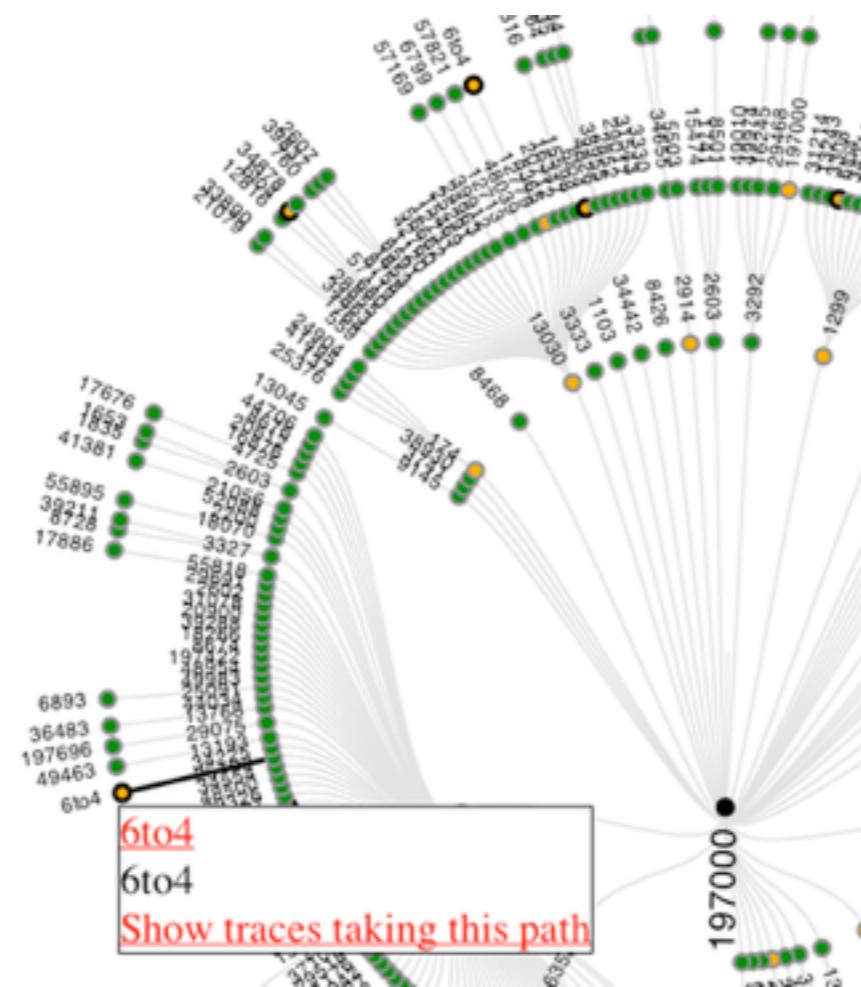
How Do Others See Your Site Over IPv6 3/6

- Hovering over a specific node produces a popup with additional information



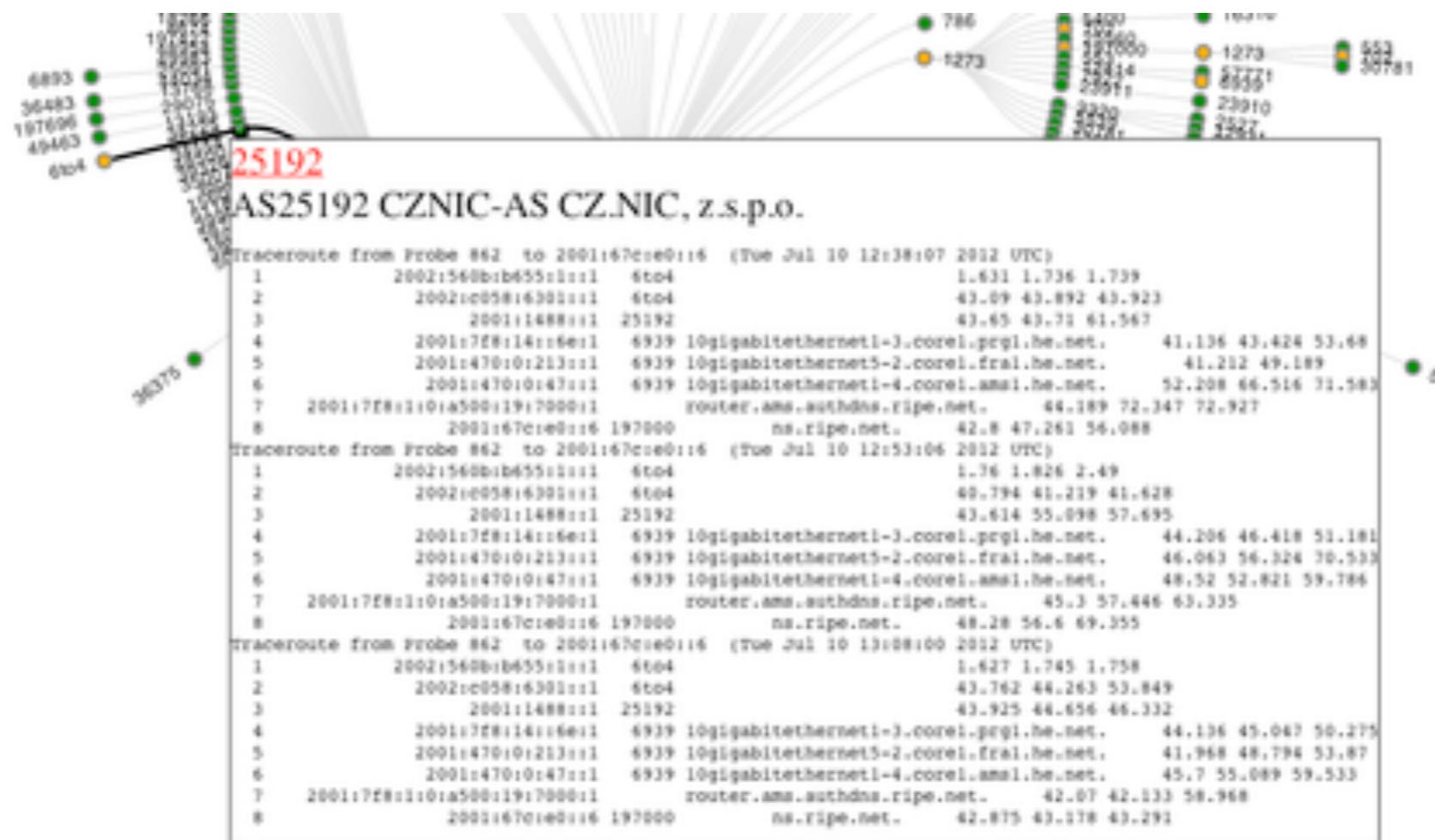
How Do Others See Your Site Over IPv6 4/6

- Hovering over a node that appears multiple times will make other instances of that AS in the graph more visible by putting a thicker black circle around them



How Do Others See Your Site Over IPv6 5/6

- Raw traceroute6 results for a specific node allow for verification of the visualisation and can help in debugging specific network issues



How Do Others See Your Site Over IPv6 6/6

- Live/interactive example:
 - http://albatross.ripe.net/cgi-bin/demo-area/v6reach.cgi?msm_id=1002799;nonce=2bb398946c5513d966e84182027fc20eaa941e6a204812c3349b769fb55ec503;no_embed=1
- To measure your network (currently for RIPE NCC members only):
 - https://atlas.ripe.net/atlas/ipv6_traces.html
- **Talk to us if you want a test run**

More Information

- Web interface to the measurements
 - <http://v6launch.ripe.net/>
- Analysis on RIPE Labs
 - <http://labs.ripe.net/ipv6launch>
- Raw data availability
 - <https://labs.ripe.net/darepository/data-sets/ripe-ncc-active-measurements-of-world-ipv6-launch-dataset>
 - <https://labs.ripe.net/Members/bwijnen/ripe-ncc-active-measurements-of-world-ipv6-launch-dataset-1>

Conclusions - What We Learned

- IPv6 works just fine.
 - Dual-stack = two chances for best performance
 - Most sites kept IPv6 enabled (as was the intent)
 - Some sites did not enable IPv6 during the event
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- For traceroute6 visualisations - please send us feedback or questions if at all possible.
 - See title page for email addresses.

Questions?

