Update from the RIPE NCC

INEX Meeting, Dublin, 14 December 2011

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RIPE
NCC

Outline

- RIPE Labs
  - Background, Purpose, Content, Participation

- IPv6 Activities and Statistics

- RIPE Atlas

- RIPEstat

RIPE Labs

A Bit of History

- RIPE NCC started as the coordination centre for the RIPE community
  - RIPE Database, mailing lists, meetings

- Only later, the RIPE NCC became an RIR once
  - It was accepted as a neutral place
  - It provided a platform for operators to coordinate activities

RIPE Labs - back to the roots

What is RIPE Labs?

- It's a website, but more importantly:
  - It is a platform and a tool **for the community**
  - Launched in Sept. 2009, constantly developed

- You can:
  - Test and evaluate new tools and prototypes
  - Contribute new ideas and research results
  - Provide feedback and discuss with others

http://labs.ripe.net/

RIPE Labs Home Page

Project Pages

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Currently on RIPE Labs

tagcloud

cpe dns dnssec
database rex
rpsl atlas
certification
datarepository
ipv4 ipv6
ipv6day
measurements
policy reputation
ripestat
root-servers
routing
statistics tools

- IPv4 and IPv6 measurements

- RIPE Database API and tools

- RIPE Atlas

- Statistics and Measurements

- Tools (RIPEstat, Abuse Finder)

- and a lot more...

RIPE
NCC

Overview of Recent Articles on RIPE Labs

- RPKI Capable Routers
    - Contribution by Florian Hibler
    - Made two routes available for testing

- Abuse Handling in the RIPE Database
    - technical design for introduction of abuse contacts

- RIPE TTM User Survey Results

- Analysis of two Happy Eyeball implementations

128.0.0.0/16 and Filtering

- BGP Debogon

- Active & Passive Measurements

- 20-50% of ASes/prefixes have 128.0/16 filtered

- Also looked at 128.0/16 as seen by RIPE Atlas
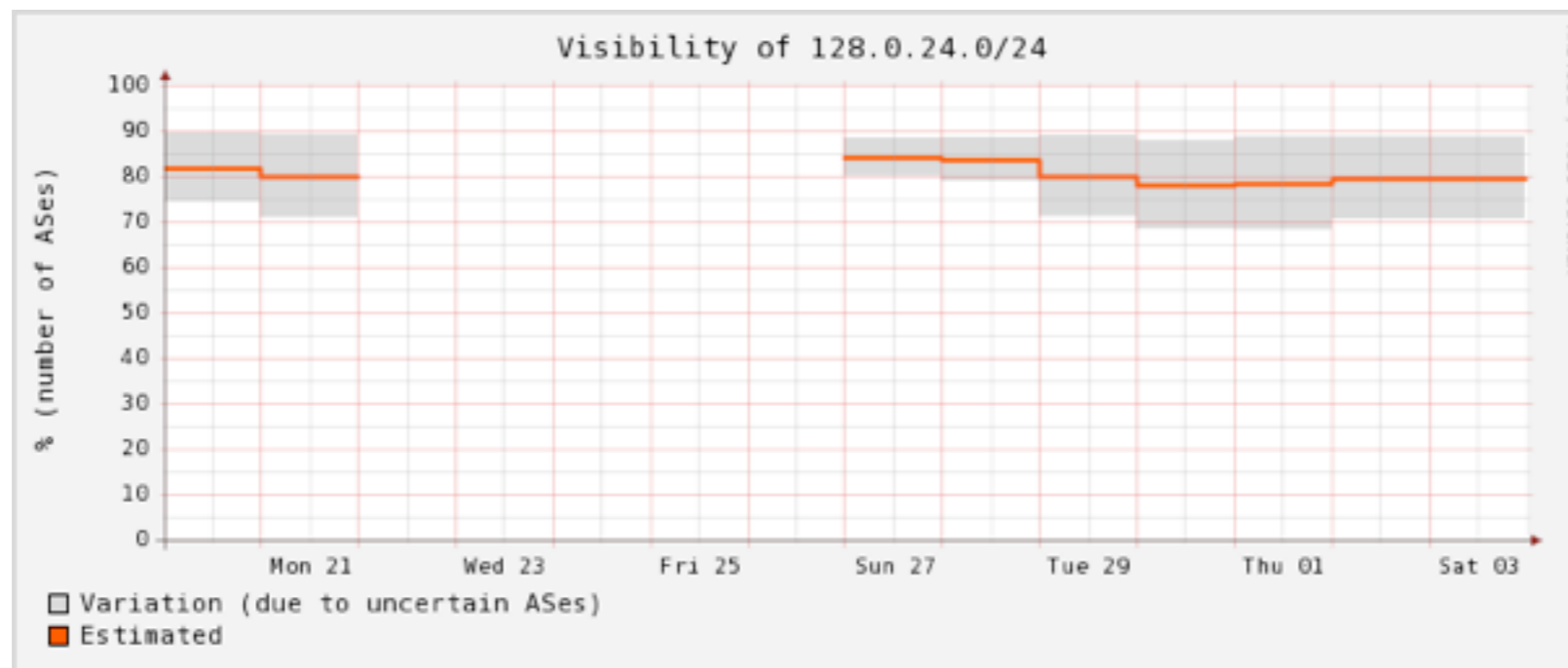
# IPv6 on
RIPE Labs

IPv6 RIPEness

- Rating system:
  - One star if the LIR has an IPv6 allocation

- Additional stars if:
  - IPv6 prefix is announced
  - A route6 object is in the RIPE Database
  - Reverse DNS is set up

- A list of all 4-star LIRs and country graphics:

http://ripeness.ripe.net/

Thursday, December 15, 2011

IPv6 RIPEness in the RIPE NCC Service Region

● 1 star ● 2 stars ● 3 stars ● 4 stars ● No IPv6

4 stars
16%

3 stars
11%

2 stars
5%

1 star
14%

No IPv6
54%

IPv6 RIPEness in Ireland (87 LIRs)
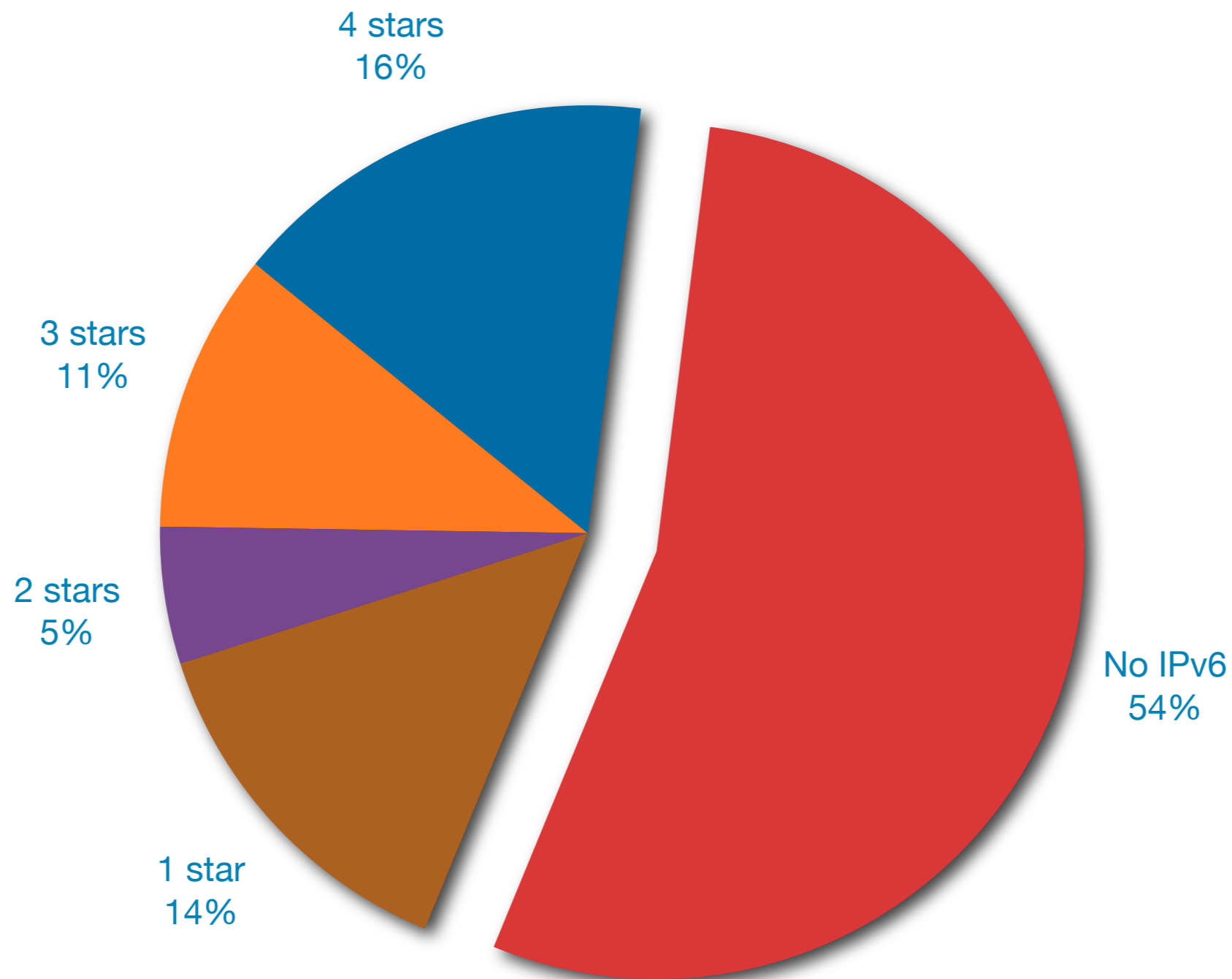
Legend: ● 1 star ● 2 stars ● 3 stars ● 4 stars ● No IPv6

4 stars 23%
3 stars 10%
2 stars 6%
1 star 15%
No IPv6 46%
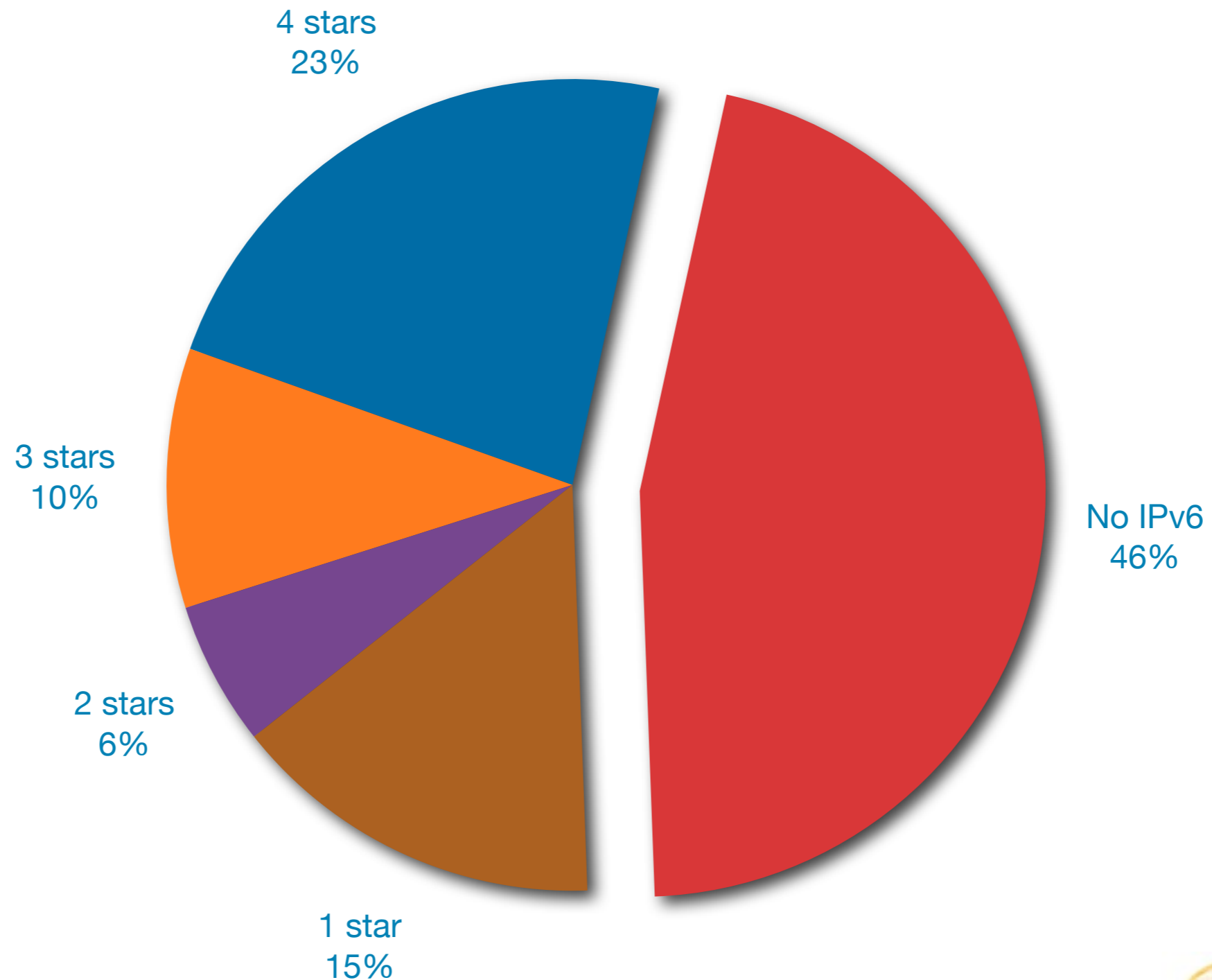
IPv6-enabled ASes in Global Routing

- Any country or region possible
- Updated daily, permalink provided

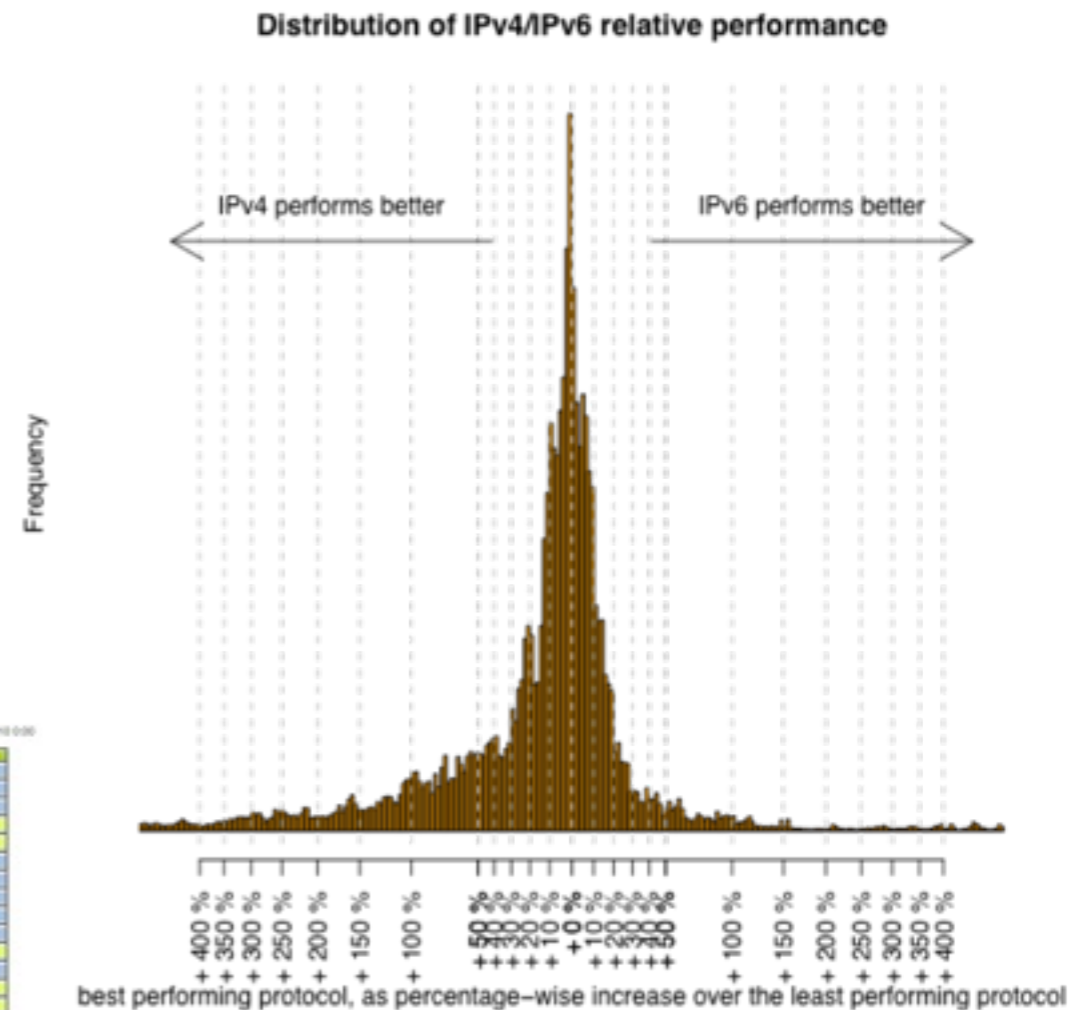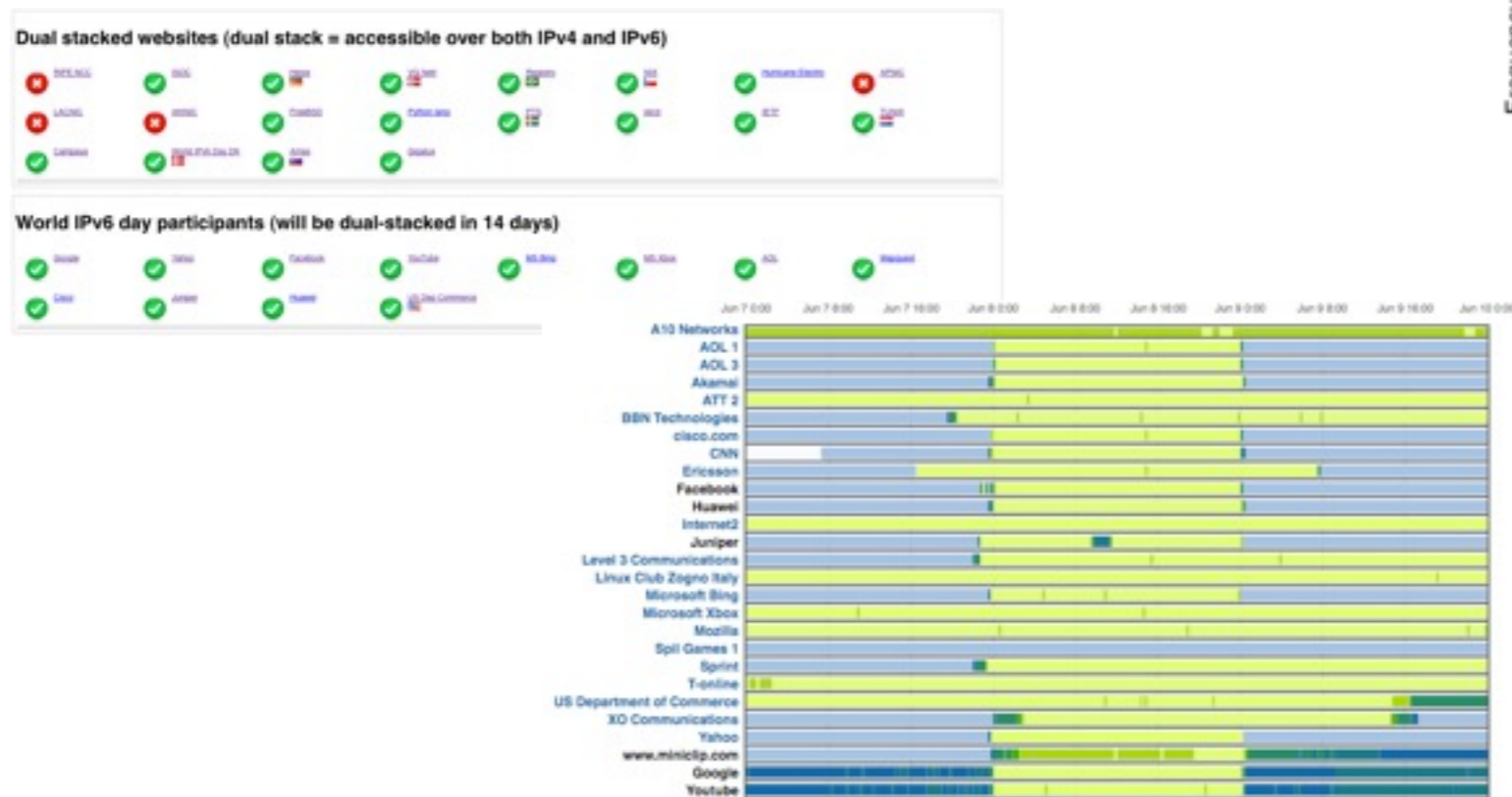http://v6asns.ripe.net
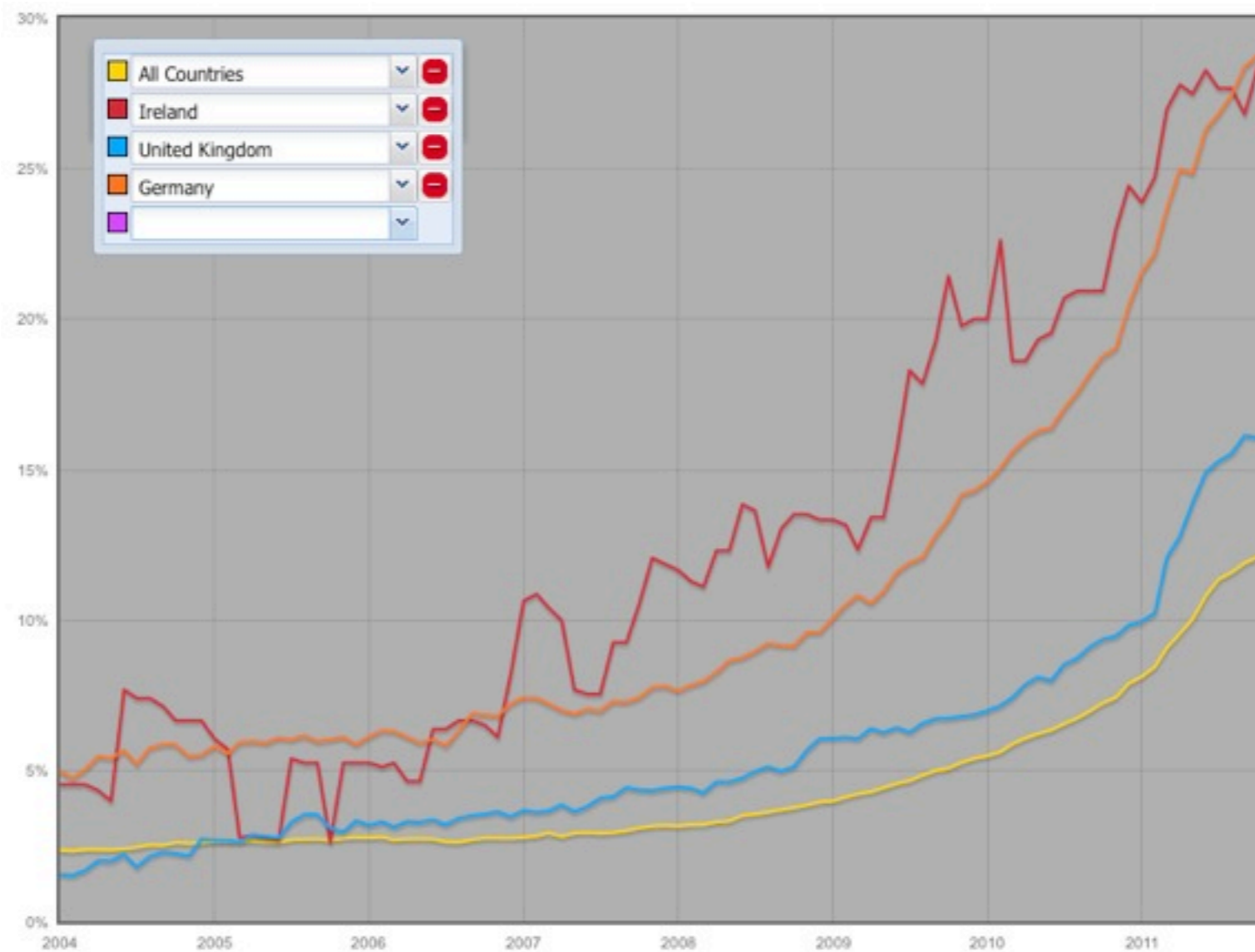
Prefix Length Filtering - IPv4 and IPv6

- Using Routing Information Service

- IPv4: Most prefixes are /24s (80% visibility)

- IPv6: Are /48s filtered out more often than /32s?

World IPv6 Day Measurements

- Various measurements before, during, after
  - performance measurements
  - identifying glitches
  - monitoring long-term effects

http://labs.ripe.net/ipv6day

Equipment Requirements (ripe-501)

- Requirements for IPv6 in ICT Equipment
  - targeted for governments and other large enterprises
  - when ordering ICT equipment
  - to ensure it is IPv6 capable

- Co-authored by RIPE community members

- Reviewed and approved by RIPE IPv6-WG

- New Version out soon

http://www.ripe.net/ripe/docs/other-documents/requirements-for ipv6-in-ict-equipment

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IPv4 Addresses

- RIPE NCC's available pool of IPv4 addresses
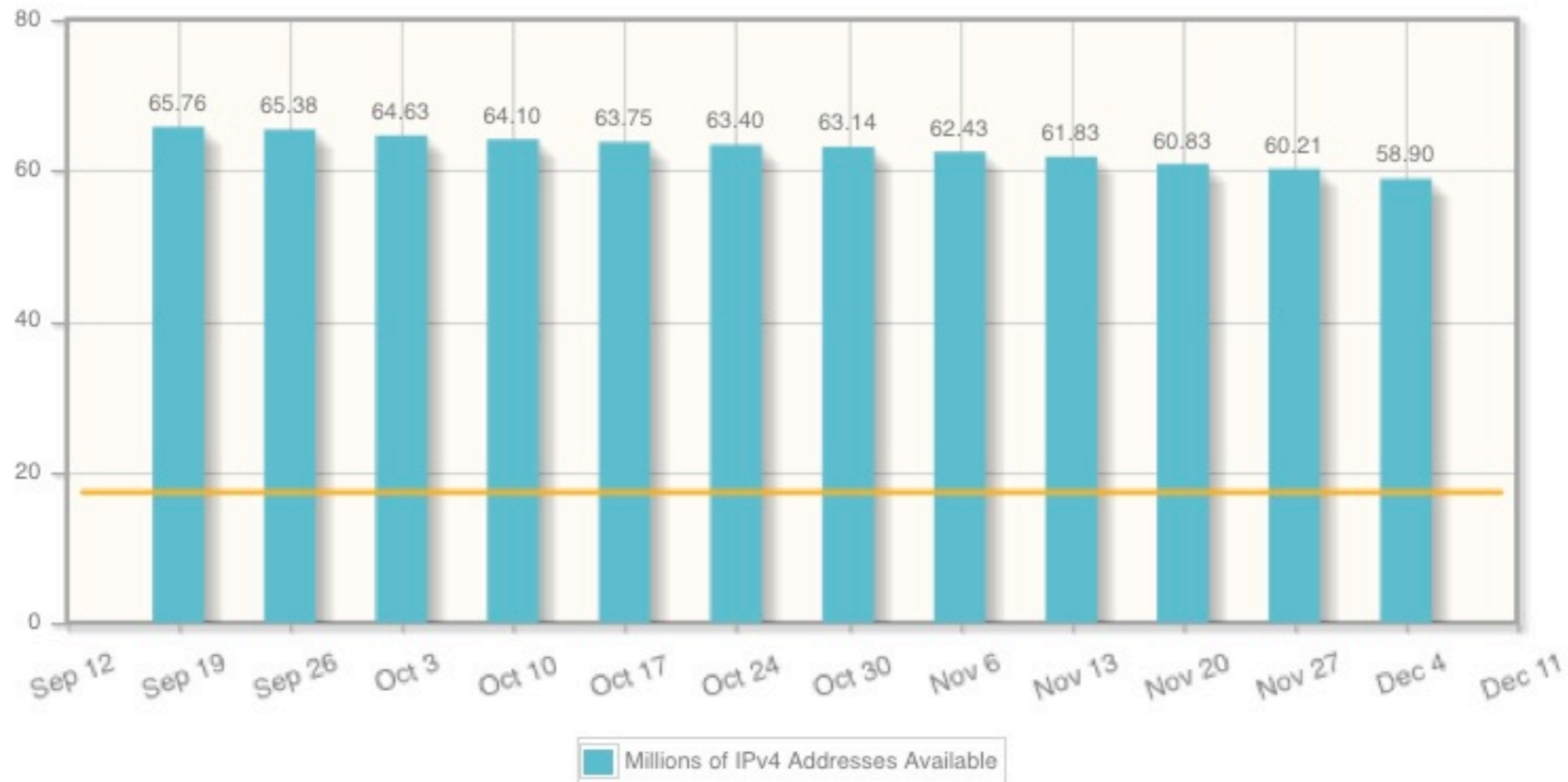
RIPE Atlas

RIPE Atlas - Active Measurements

- Next generation Internet measurement network
  - Aims to support thousands of measurement nodes
  - Can be hosted by ISPs, IXPs, individuals...

- Currently 1000 active probes worldwide
  - Performing ping, traceroute, DNS lookup

- Hosted and sponsored by community

  http://labs.ripe.net/atlas
  http://atlas.ripe.net/
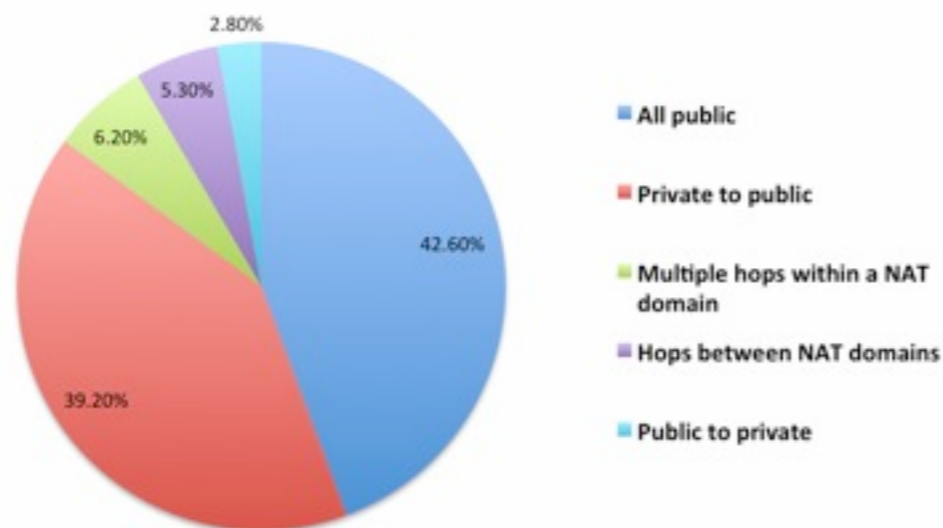
What's In It For You?

- Individual benefits
  - Less expensive than rolling out your own measurements infrastructure
  - More vantage points and more data available

- Community benefits
  - Unprecedented situational awareness
  - Wealth of data

- TTM could be part of RIPE Atlas infrastructure

Using RIPE Atlas to Measure NATs

- Richard Barnes looked at all public hosts
 - Looked for RFC 1918 addresses

Network	% of 1st hops	% of second hops
10.0.0.0/8	12%	9%
172.16.0.0/12	5%	2%
192.168.0.0/16	34%	4%
public	49%	86%

  - Looked at "transfer table" to determine how often data packets change address "class"

2.80%
5.30%
6.20%
42.60%
39.20%

- All public
- Private to public
- Multiple hops within a NAT domain
- Hops between NAT domains
- Public to private

DNS Anycast Checks (K-root)

- ## Probes do anycast instance discovery
  - Which probes see what instance of K-root
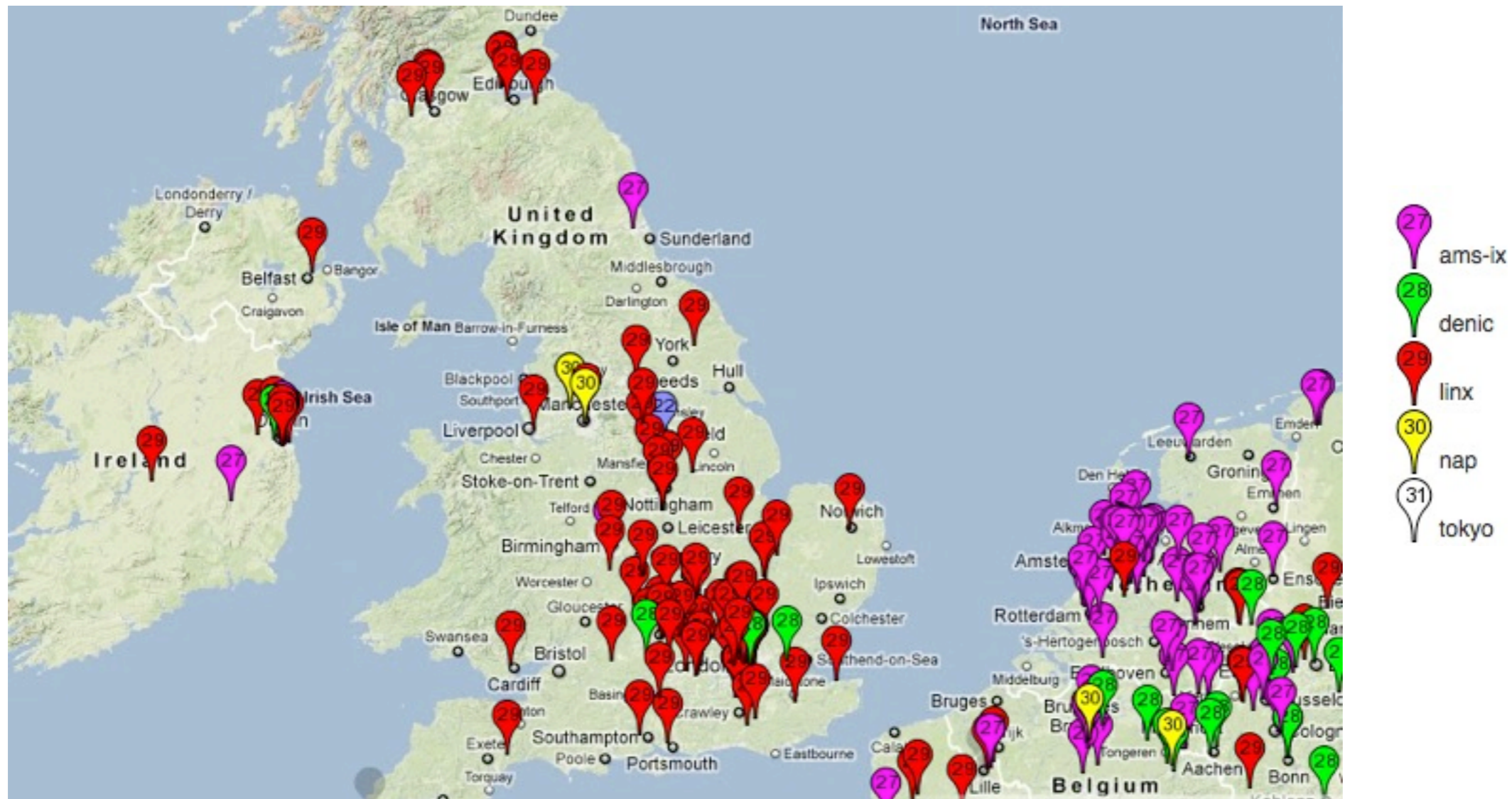
RIPE Atlas: News & Road Ahead

- News
  - More built-in ping destinations
  - Traceroutes to built-in destinations
  - DNS anycast checks

- Preparations for "user-defined measurements"
  - Specify: type, origin, target, frequency, reporting...

- Planned steps include
  - Real-time access to (raw) data
  - APIs to interact with the system
  - Automatic alerts and notifications

RIPE Atlas Resources

- RIPE Atlas on RIPE Labs
  - Results, Analysis, Announcements
  - **http://labs.ripe.net/atlas/**

- Registration Page
  - **http://atlas.ripe.net/atlas/register**

- Map Visualisations
  - **http://atlas.ripe.net/atlas/maps_index.html**

RIPEstat

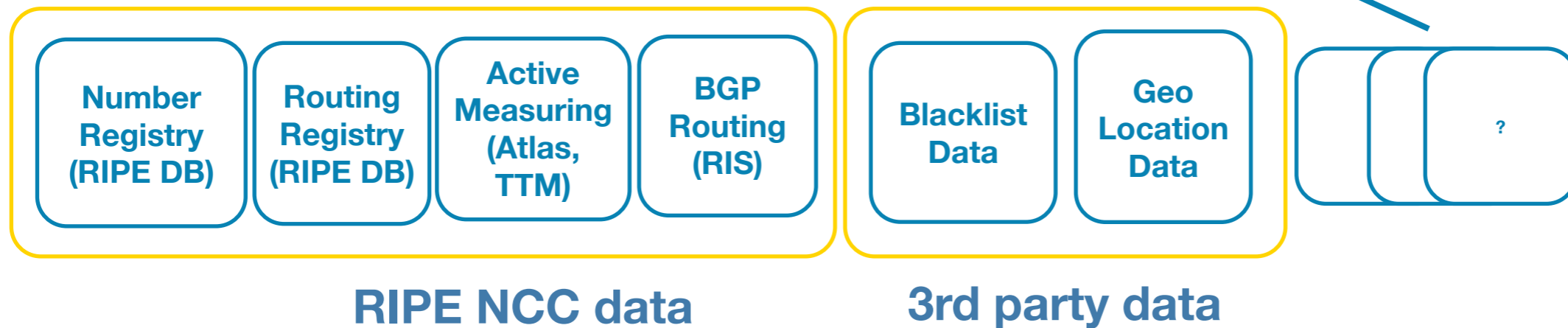# What is RIPEstat? http://stat.ripe.net

- Modular and extendable toolbox

  - Graphical interface

  - Developed together with the community - you!

  - Public live demo sessions once a month

    - Announcements posted on RIPE Labs

RIPEstat Data Sources

http://stat.ripe.net

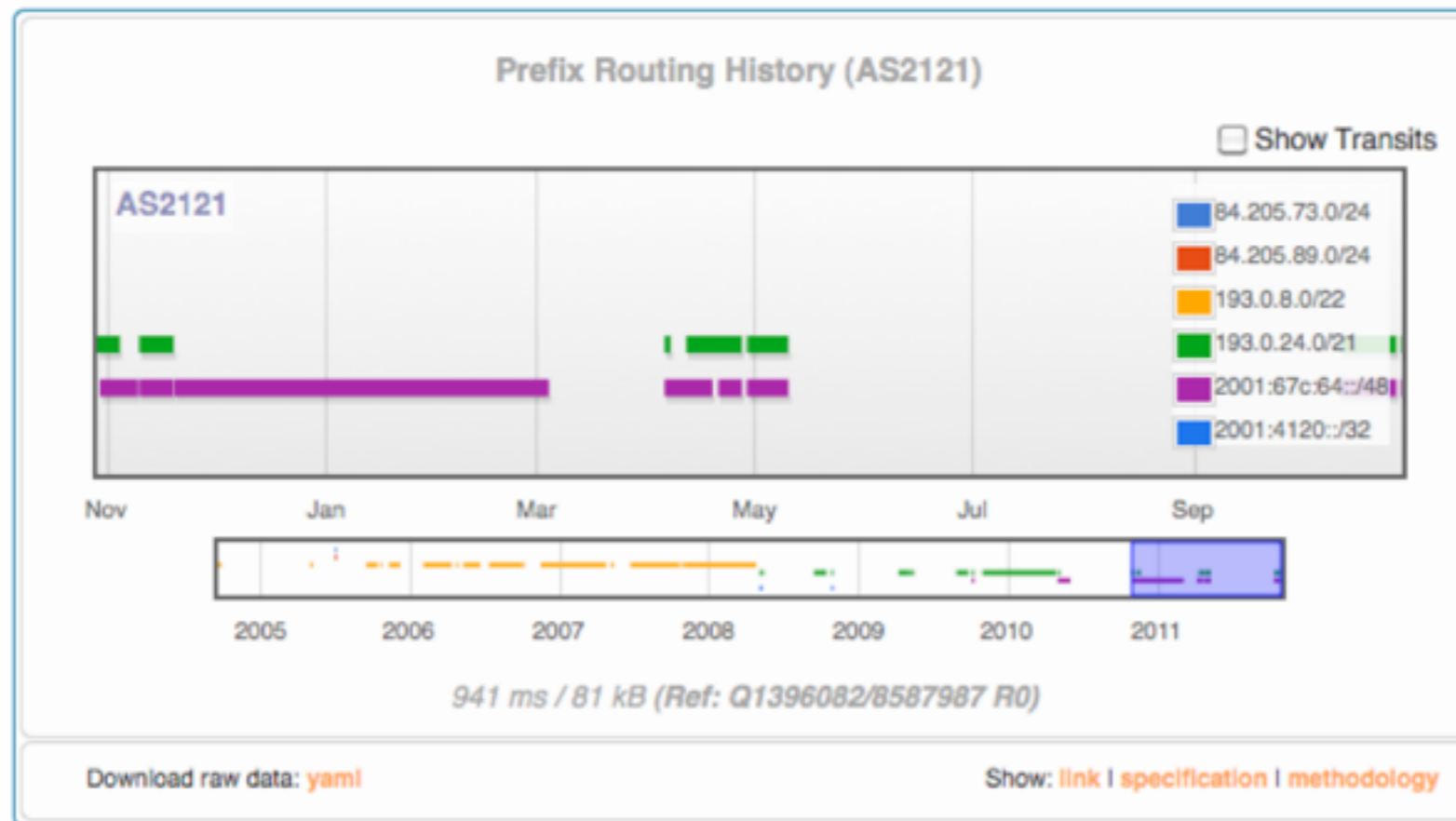| Number Registry (RIPE DB) | Routing Registry (RIPE DB) | Active Measuring (Atlas, TTM) | BGP Routing (RIS) | Blacklist Data | Geo Location Data | ? |

RIPE NCC data   **3rd party data**

RIPEstat Details

- Shows IPv4/IPv6 and ASN info
  - Statistics (time, aggregation, zoom)
  - Status (real time, aggregation, zoom)

http://labs.ripe.net/ripestat

RIPEstat Mobile

- http://labs.ripe.net/Members/gdl/ripestat-mobile

- iTunes Store

  - **FREE on the App Store**
  - Version: 1.03; Size: 2.6 MB
  - http://itunes.apple.com/us/app/ripestat/id465322734

- Requirements

  - Compatible with **iPhone, iPod touch and iPad**
  - Requires **iOS 4.0** or later

Why RIPE Labs?

- Faster, tighter innovation cycle
    - Provide useful prototypes early in development
    - Adapt to changing environment and requirements more quickly

- Closer involvement of the community
    - Openness
    - Make it easier and more effective to provide feedback and suggestions

Suggestions and Questions

- Please take a look and **participate**
  - Leave a comment under an article
  - Let us know what you would like to see

- Any ideas, tools, research you want to publish?

- Questions and suggestions to **labs@ripe.net**

http://labs.ripe.net/

Questions?