

RIPE Labs

Operator Tools, Ideas, Analysis

LINX Meeting, London, 22 November 2011

Mirjam Kühne, RIPE NCC



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

RIPE NCC RIPE NETWORK COORDINATION CENTRE

Search RIPE Labs

RIPE Database Database Support DNS Statistics & Analytics Projects RIPE Labs RIPE Atlas

Labs Home · Users · Data Repository · RIPE Database · Atlas · RIPEstat · About

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RIPE Labs

Innovative Internet tools & ideas

- ✓ Share experience
- ✓ Showcase tools
- ✓ Present research

New contributions

0 comments **DNSSEC Deployment Today**
Wolfgang Nagels — 30 August 2011 11:00

The RIPE NCC has been signing its zones since 2005. Other operators waited for the root to be signed. And signing the root zone in June 2010 clearly encouraged others to deploy DNSSEC. In this article we describe the status of those zones maintained by the RIPE NCC and give an overview of the global deployment of DNSSEC.

[Read more](#)

0 comments **The Big Medical Drop in SpamRankings.net**
John S. Quarterman — 29 August 2011 14:45

Preliminary confirmation for outbound spam reputational rankings.

tagcloud

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

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Increase of DNSSEC deployment since the root got signed? Read on #RIPELabs: <http://t.co/TjHvRZ2>
30 August 2011 13:40

New on #RIPELabs: The Big Medical Drop in SpamRankings.net: <http://t.co/BHnMhif>
29 August 2011 16:16

New on #RipeLabs: RIPE NCC Local Certification Service launched. See <http://t.co/Utn76qj>
16 August 2011 17:39

New #RipeLabs article: Authentication Methods Used in the RIPE Database <http://t.co/F1tcNrX>
15 August 2011 15:11

Comparison of IPv4 and IPv6 performance on World IPv6 Day now on #RIPELabs: <http://t.co/F2MMR5p>

Project Pages

Twitter Feed

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Currently on RIPE Labs

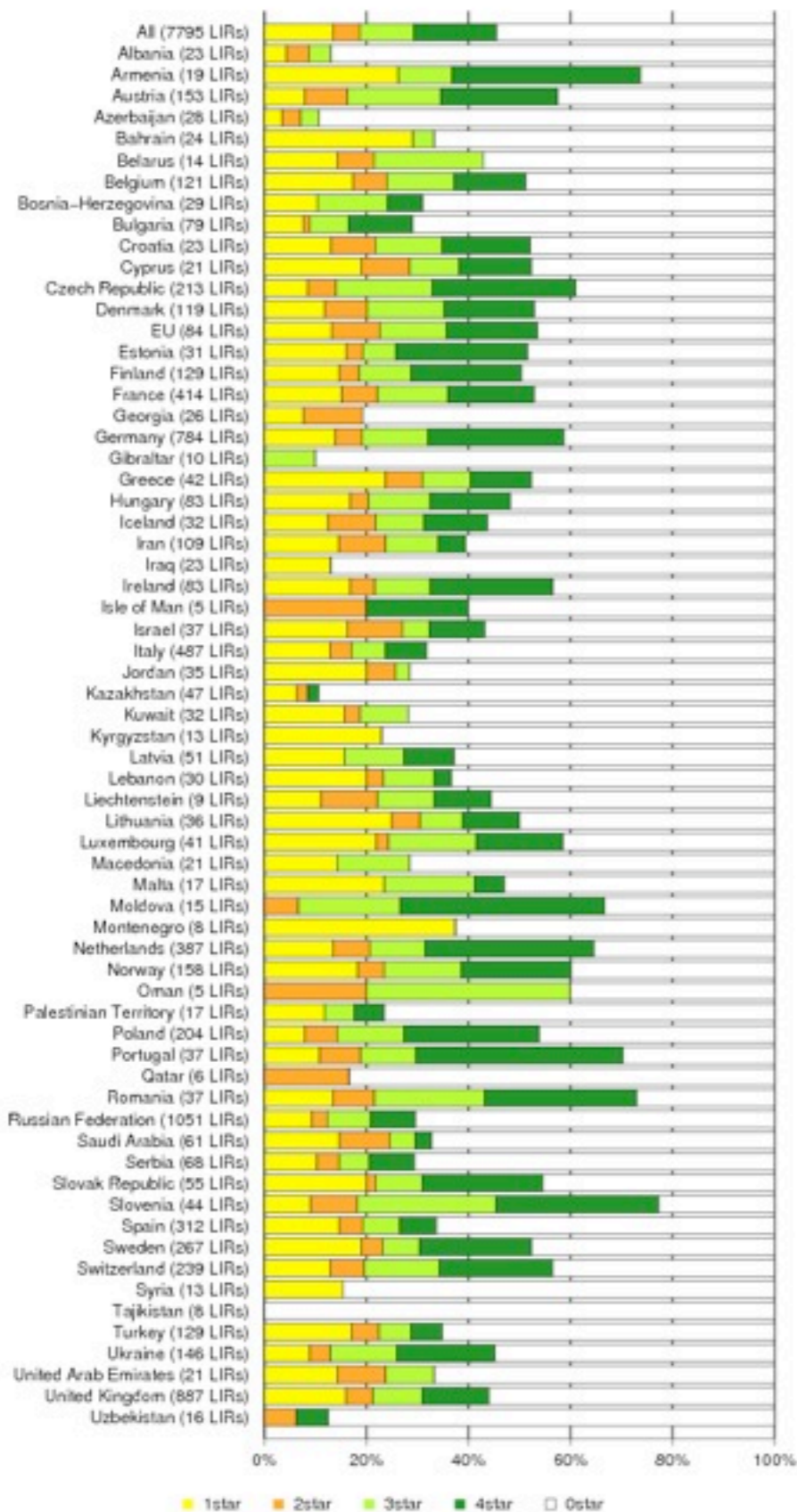
tagcloud

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 much, much more...

IPv6 RIPEness

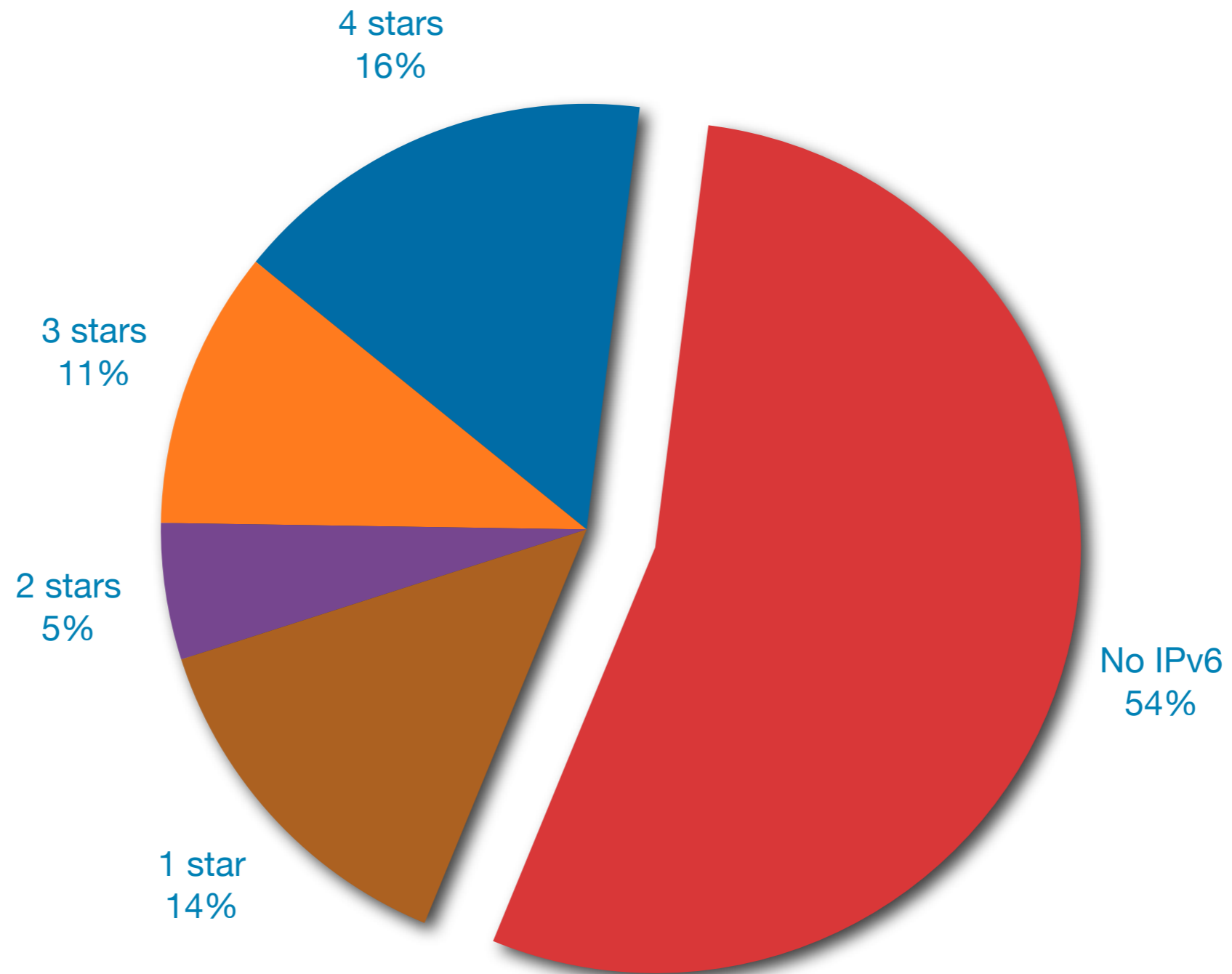
IPv6 'ripeness'—rating of LIRs per country (2011–10–26)



- Indication of an LIR's IPv6 readiness
 - IPv6 allocation
 - route6 object, prefix announced, reverse DNS
- Only countries with ≥ 5 LIRs
- Awards LIRs
 - Visibility on web site
- Updated regularly

IPv6 RIPEness in the RIPE NCC Service Region

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



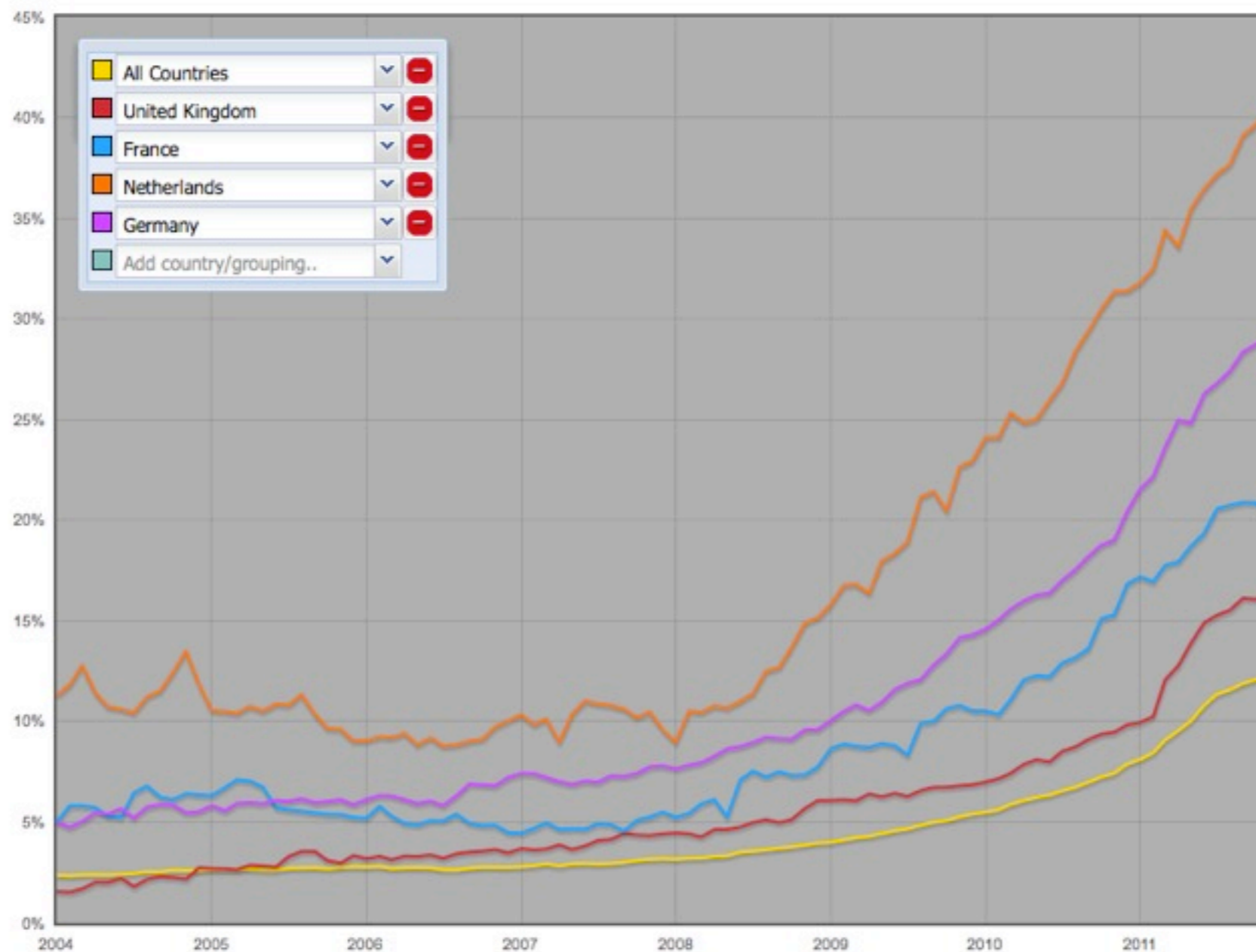
Prefix Length Filtering - IPv4 and IPv6

- Using Routing Information Service
- IPv4: Most prefixes are /24s (80% visibility)
- IPv6: Are /48s filtered out more often than /32s?



IPv6-enabled ASes in Global Routing

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



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 900 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?

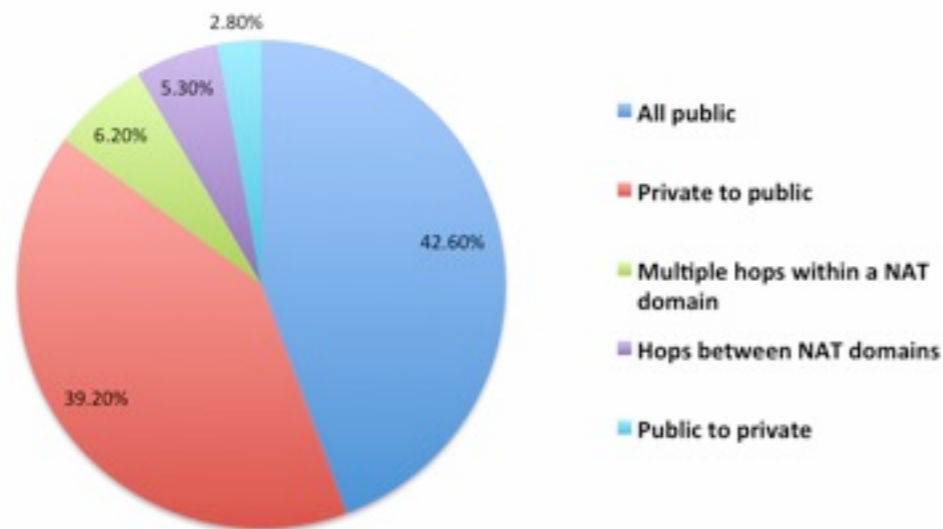
- Individual benefits
 - Less expensive than rolling out your own measurements infrastructure
 - More vantage points and more data available
- Community benefits
 - Unprecedented situational awareness
 - Wealth of data
- TTM could be part of RIPE Atlas infrastructure
 - LINX is hosting a TTM box
 - Thanks for contributing feedback

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”



DNS Anycast Checks (K-root)

- Probes do anycast instance discovery
 - Which probes see what instance of K-root



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

RIPEstat



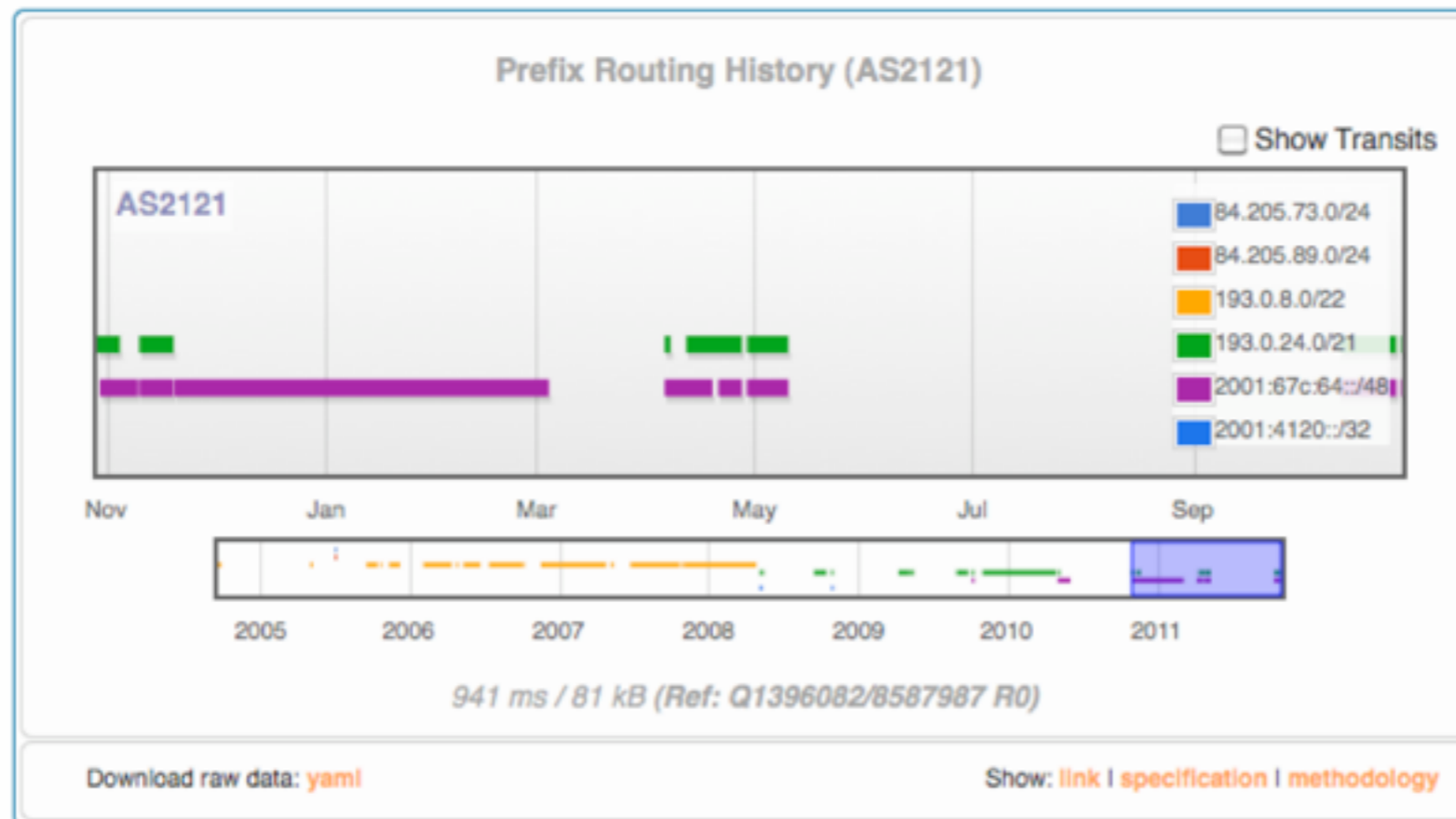
What is RIPEstat? <http://stat.ripe.net>

- Modular and extendable toolbox
 - Graphical interface
 - Developed together with the community - you!
 - Public live demo sessions once a month
 - next one: 29 November 10:30 - 11:00 UTC

The screenshot shows the RIPEstat website interface. At the top is the RIPE NCC logo and a search bar for AS numbers or prefixes. Below the search bar, there are three callout boxes: 'View' pointing to the 'Resource Information' section, 'Raw Data' pointing to the 'Wholesale Matches' section, and 'Methodology' pointing to the 'Methodology' link in the 'Resource Information' section. The 'Resource Information' section displays details for AS2121, including its name 'RIPE-MEETING-AS RIPE Network Coordination Center' and a table of wholesale matches. The 'Wholesale Matches' section shows a table with columns for AS number, name, and other details. The 'Methodology' section is partially visible at the bottom. On the right side, there are sections for 'The current top queries', 'Your latest queries', 'News', and 'RIPEstat Development'.

RIPEstat Details

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

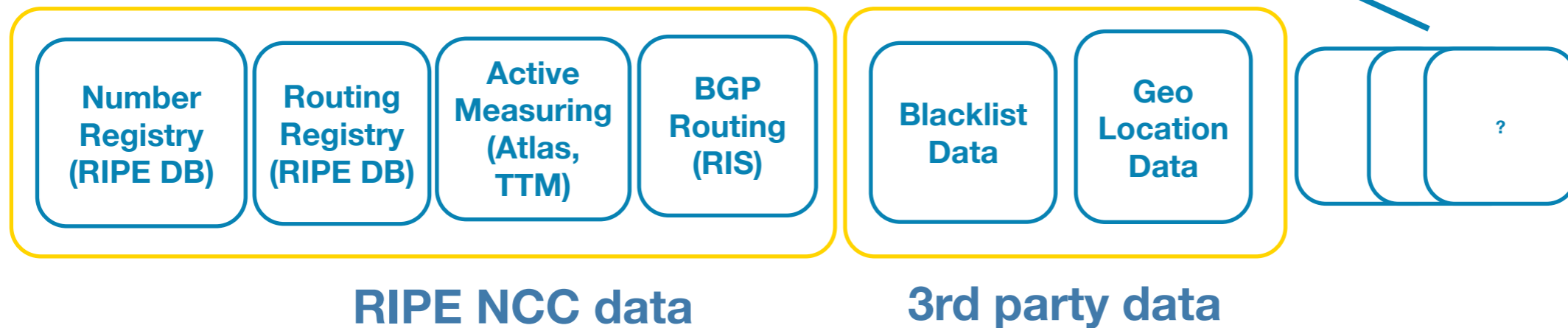


<http://labs.ripe.net/ripestat>

RIPEstat Data Sources



<http://stat.ripe.net>



RIPEstat Mobile

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

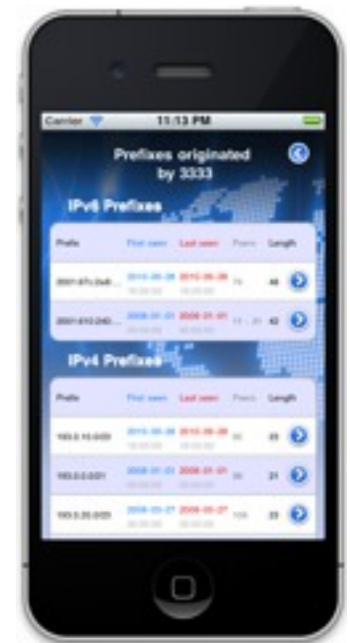
- iTunes Store

- **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?

