

RIPE NCC Tools & Measurements

Peering Day, Prague, CZ, 23 May 2013

Mirjam Kühne, RIPE NCC



Overview

- Recent developments on RIPE Labs
 - Statistics Dashboard
 - RIPE NCC Roadmap
 - IPv6 Statistics
- New developments in RIPEstat
- New developments in RIPE Atlas


RIPE Labs

What is RIPE Labs?

- It's a website - but more importantly, it is a platform and a tool **for the community**
- 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 Homepage

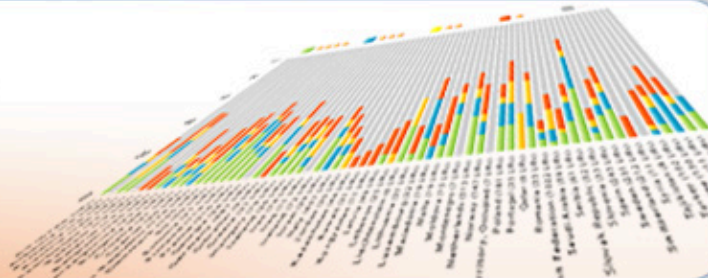


RIPE Labs

Innovative Internet tools & ideas

[Register!](#)

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



Statistics Dashboard

New contributions

RSS 

0 comments
Using RIPE Atlas User Defined Measurements to Find the Most Popular Instances of a DNS Anycast Name Server
Stéphane Bortzmeyer — May 03, 2013 09:30 AM

A DNS anycast name server has several physical instances, all behind the same IP address. Which one is used by a RIPE Atlas probe depends on the location of the probe in the BGP space. RIPE Atlas can query the physical identity of the probe and therefore help to determine which instances have the largest user base.

Tags: atlas

[» Read more](#)

0 comments
New Dashboard View and More: RIPE Atlas Update April 2013
Robert Kistelevi — Apr 26, 2013 08:55 AM



Our latest release includes a lot of new features, including completely new opening pages on the website for logged in users and the general public. We also have one-off measurements, APIs, new maps, probe sharing and more! Please find all the details below, and don't forget to tell us what you think.

Tags: atlas

[» Read more](#)

List of Articles

Statistics

 **9163**
Number of LIRs

 **16.23 Million**
IPv4 Allocation Pool

 **5532**
LIRs with IPv6

[View more statistics](#)

RIPE NCC Roadmap

RIPE NCC Roadmap

 **RIPE NCC Roadmap**

Tag Cloud

tagcloud

allocation api ases atlas certification country cpe

RIPE Labs Content

tagcloud

allocation api ases **atlas**

certification country cpe
database

datarepository dns

dnssec geolocation

ipv4 ipv6 ipv6day

ipv6launch ixp k-root lirs

measurements

membership pi **policy**

reputation rex ripe db ripe

meetings ripe ncc **ripestat**

root-servers routing

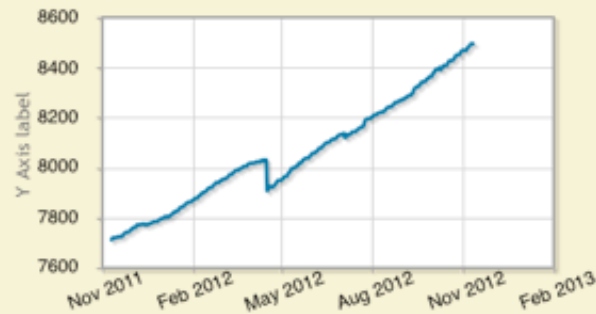
rpsl **security statistics**

syria **tools**

- Statistics and measurements
 - Routing, DNS, IPv4, IPv6, ...
- RIPE Database API and tools
- RIPE Atlas
- Tools (RIPEstat, Abuse Finder)
- And a lot more...
- Also external contributions

Statistics Dashboard

Total Number of LIRs



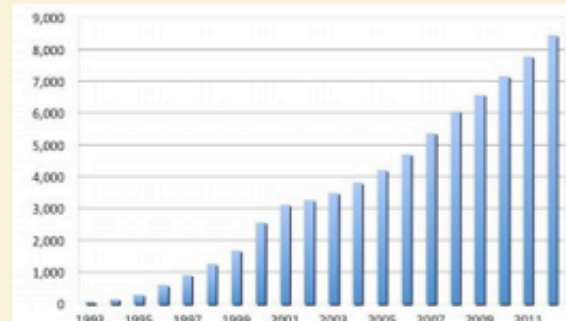
The current number of LIRs (in April LIRs with outstanding invoices get closed, hence the drop).

Current number of LIRs

8497

Tags: lirs

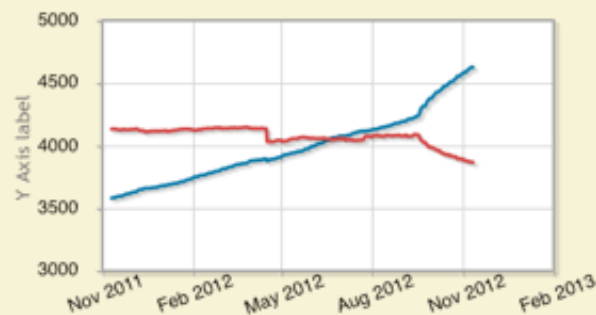
RIPE NCC Membership Statistics



Number of Local Internet Registries (LIRs) registered with the RIPE NCC per year. Note that the numbers for 2012 only show data until end of October 2012.

Tags: lirs

LIRs with and without IPv6

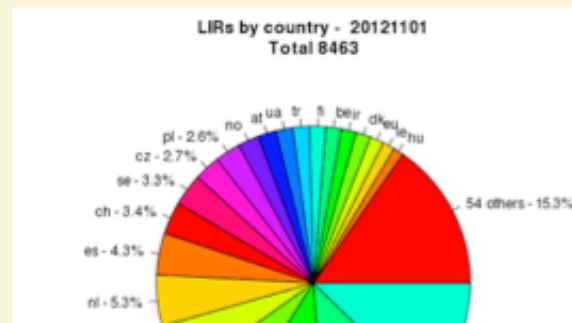


Number of Local Internet Registries (LIRs) in the RIPE NCC service region that have an IPv6 allocation (green line) and that don't have an IPv6 allocation (yet) (red line).

4630 | 3867

Tags: lirs ipv6

LIRs Sorted by Country

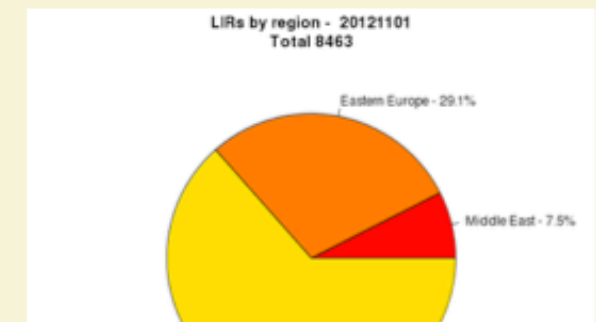


Current number of Local Internet Registries (LIRs) per country.

Tags: lirs

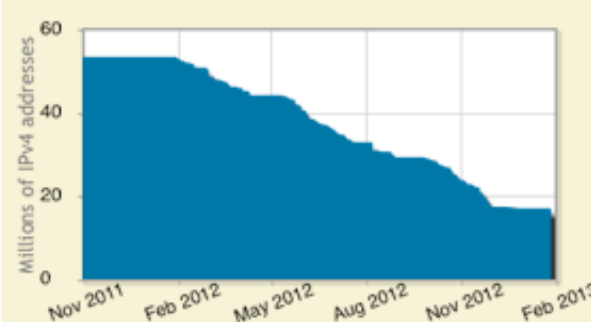
[View the full graph](#)

LIRs Sorted by Region



Current number of Local Internet Registries (LIRs) by region.

Number of Remaining IPv4 Addresses



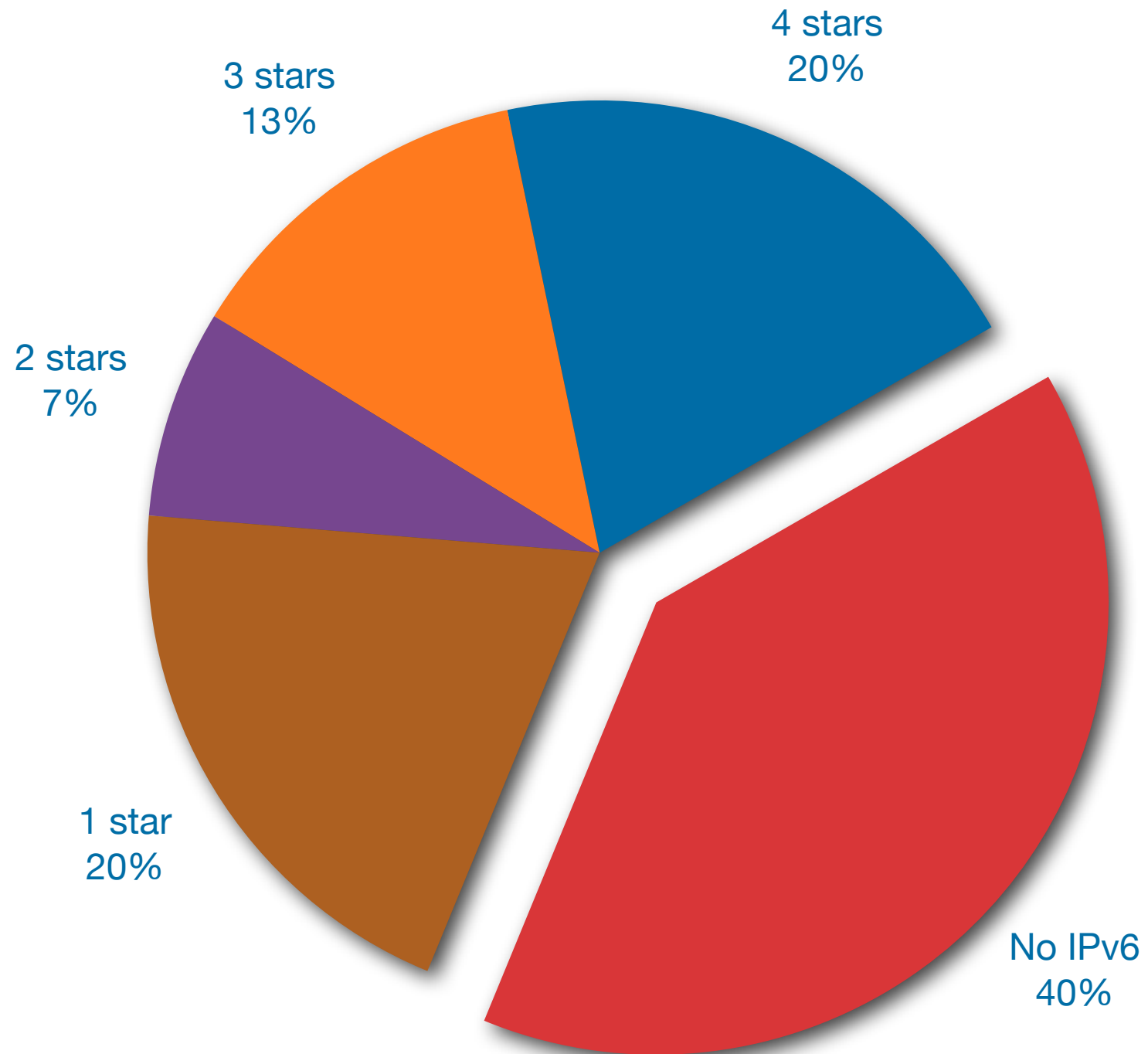
Amount of available and reserved IPv4 addresses managed by the RIPE NCC.

- All stats on one page
- Automatically updated
- Each graph is tagged
 - Easier to navigate

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

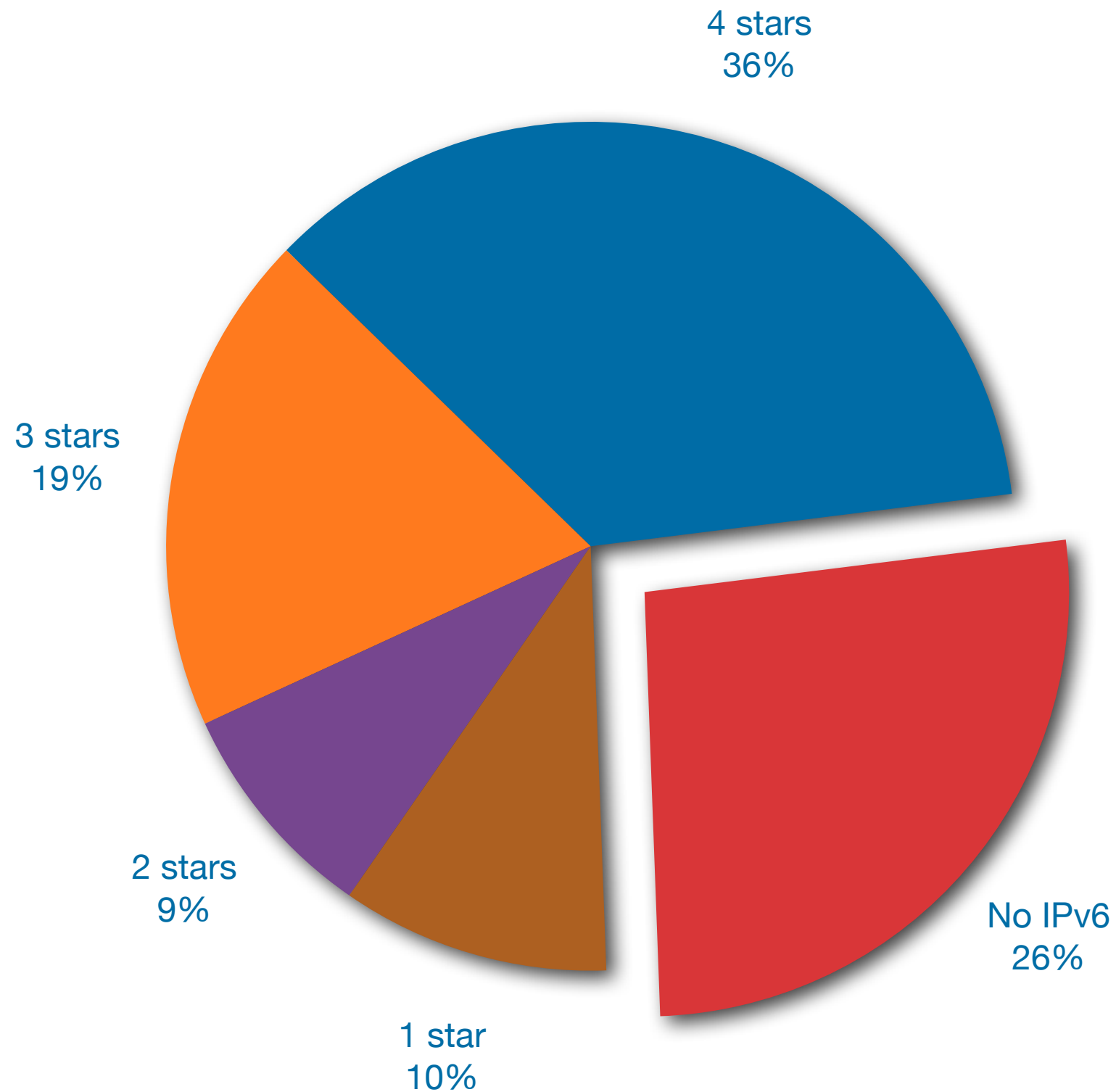
IPv6 RIPv6ness (9,196 LIRs)

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



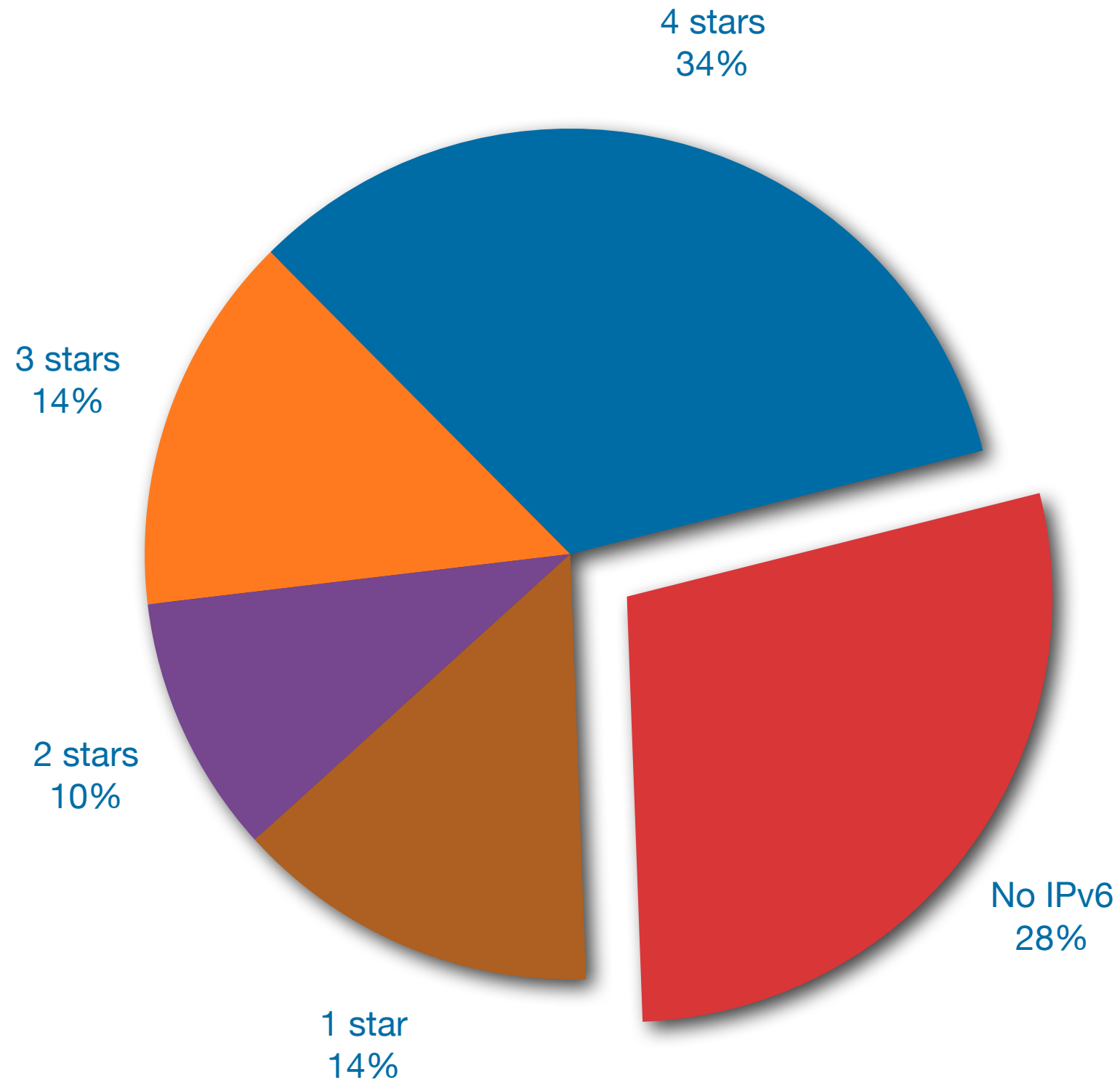
IPv6 RIPEness in CZ (235 LIRs)

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



IPv6 RIPEness in Austria (173 LIRs)

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



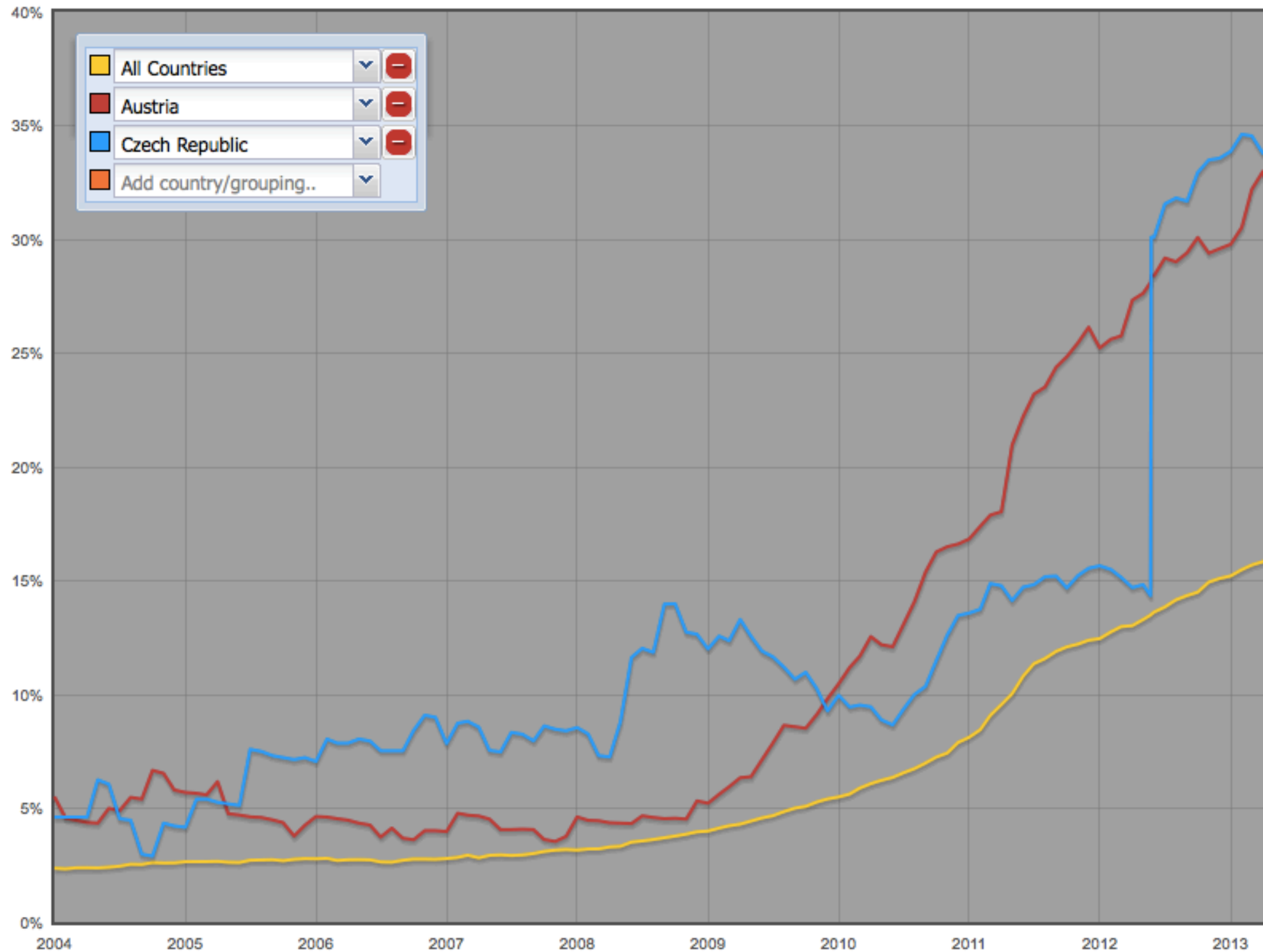
IPv6 RIPEness Deployment - Fifth Star

- LIRs providing content over IPv6
 - Based on Alexa 1M list
- LIRs providing IPv6 access to end users
 - Based on APNIC's Flash-based Google ads

All LIRs offering services in Austria

Access (last 6 months)	Access (last month)	Content	LIR
17.7 %	17.9 %	16.5 %	ACONET
37.5 %	100.0 %		APA - Austria Presse Agentur reg. Gen.m.b.H.
7.2 %		5.1 %	ASCUS Telecom GmbH
28.6 %	33.3 %		Citycom Telekommunikation GmbH
25.0 %			Elektrizitätswerk Wels AG
2.9 %			Infotech EDV-Systeme GmbH
100.0 %			Nessus GmbH
100.0 %			SelfNet Internet Ges.m.b.H.
15.1 %		4.0 %	Tele2 Telecommunication GmbH

ASNs Announcing IPv6 Prefixes



RIPE NCC Roadmap

- Latest developments and future plans of various RIPE NCC activities
 - DNSMON, RIPE Atlas, RIPE Database, RIPE Labs, RIPEstat, RPKI
- Is this useful? Please give us your feedback!

Requested
▶ Adding new users
▶ Automatic alarms
▼ Add DNSSEC-specific measurements
DNSSEC measurements may be an interesting feature to add.

Planned
▶ Pilot during Q3 2013
▼ Production service planned for Q4 2013
Remaining users will be migrated to the new DNSMON, based on the RIPE Atlas infrastructure, during Q4 2013.

In Progress
▶ Presentation of DNSMON Roadmap at RIPE66

Delivered
▶ Migrated DNSMON to members-only service
▼ Developed working DNSMON prototype using new measurement system
The RIPE NCC has developed a prototype DNSMON that transitions its measurement systems from the old TTM test boxes to RIPE Atlas anchors.

RIPE Atlas

RIPE Atlas - Active Measurements Network

- Next generation Internet measurements network
 - Thousands of measurement nodes
 - Probes run different measurements
 - ping, traceroute, SSL, DNS
- Instead of building small, individual, private infrastructures, build a HUGE common infrastructure that serves both private and community goals

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

RIPE Atlas Update

- 3,000 active probes and 6,700 users worldwide
 - Increasing number of requests
 - Working on next version of probes
- RIPE Atlas anchors pilot started (15 volunteers)
 - Collecting data as enhanced RIPE Atlas probes
 - Acting as targets for regional measurements
- New generation probes
 - TP-LINK TL-MR 3020
(no WiFi capabilities for privacy reasons)



Currently Under Development

- REST APIs to interact with the system
 - Probe API: info about vantage points
 - Measurement API: info about measurements
 - API for starting measurements
- One-off measurements & Quick Look (members)
 - Allow for immediate, one-time measurements
 - In addition to user-defined measurements
- Code released
 - Measurement source code
 - Analysis and statistics code

RIPE Atlas Use Cases



- Effects storm Sandy had on parts of Internet

- <https://labs.ripe.net/Members/mirjam/sandy-2012>

Name server instance	Nr. of probes connecting to instance	Percentage
dns.th2.nic.fr	173	36%
dns.fra.nic.fr	173	36%
dns.lon.nic.fr	47	10%
dns.lyn2.nic.fr	29	6%
dns.lyn1.nic.fr	25	5%
dns.bru.nic.fr	19	4%
dns.ix1.nic.fr	18	4%

- Find most popular instances of DNS anycast servers

RIPEstat

The screenshot shows the RIPEstat website interface for AS3333. At the top, there is a search bar with the text "Get information on an AS number or IP prefix" and a "Sign in" button. Below the search bar, it displays "Your network: AS3333, 193.0.20.0/23" and "e.g. IPv4 prefix/range, IPv6, ASN". A navigation bar contains "source data", "embed code", "permalink", and "Info".

The main content area is divided into several widgets:

- Resource Overview (AS3333):** Displays "RIPE-NCC-AS - Reseaux IP Europeens Network Coordination Centre (RIPE NCC)". It shows results from 2012-11-10 15:26:00Z to 2012-11-13 15:26:00Z.
- Registry Browser (AS3333):** Shows details for "aut-num: AS3333":
 - as-name: RIPE-NCC-AS
 - descr: Reseaux IP Europeens Network Coordination Centre (RIPE NCC)
 - org: ORG-RIEN1-RIPE
 - admin-c: JDR-RIPE
 - admin-c: BRD-RIPE
 - tech-c: OPS4-RIPE
 - mnt-by: RIPE-NCC-END-MNT
 - mnt-by: RIPE-NCC-MNT
- Geoloc (AS3333):** A map showing the location of AS3333 in Europe, with a "100.00%" visibility indicator. It includes "Map" and "Satellite" buttons.
- Routing Status (AS3333):** Shows "AS3333 is visible by 100% of 100 IPv4 and 100% of 88 IPv6 RIS full peers." It also notes "First ever seen before Jan 2001." and lists:
 - Originated IPv4 prefixes: 6
 - Originated IPv6 prefixes: 1
 - Observed BGP neighbours: 167
 - Address space announced (IPv4): 4608 IPs
 - Address space announced (IPv6): equiv. to 1 /48s

- Toolbox

- All data in one place
- Routing, IP, geoloc, BLs, etc.
- Graphical interface
- Nearly 40 widgets & growing

- Updates on RIPE Labs

- User feedback important!

What's New in RIPEstat

- Command-line interface
 - Text Service on port 43
- BGPlay now integrated in RIPEstat
- Country Routing Statistics widget
- Abuse Contact Finder widget
- New interface & My Views

Please give us feedback

New RIPEstat Interface

RIPEstat

Your network: **AS33333, 2001:67c:2e8::/48** e.g. IPv4 prefix/range, IPv6, ASN

RIPEstat is your source for Internet-related stats & status — stat! [learn more...](#)

Welcome,
Mirjam Kühne
([sign out](#))

Permalink

☰

At a Glance (4)

Routing (7)

DNS (1)

Anti Abuse (1)

Database (9)

Geographic (2)

Resource Overview (2001:67c:2e8::/48)

This prefix is announced by

AS33333
RIPE-NCC-AS - Reseaux IP Europeens Network Coordination Centre (RIPE NCC)

Showing results for 2001:67c:2e8::/48 as of 2012-11-07 00:00:00Z

[source data](#) [embed code](#) [permalink](#) [info](#)

Registry Browser (2001:67c:2e8::/48)

inet6num:
2001:67c:2e8::/48

netname	RIPE-NCC-NET
descr	Reseaux IP Europeens Network Coordination Centre (RIPE NCC)
org	ORG-RIEN1-RIPE
country	NL
admin-c	JDR-RIPE
admin-c	BRD-RIPE
tech-c	OPS4-RIPE
status	ASSIGNED PI
mnt-by	RIPE-NCC-END-MNT
mnt-lower	RIPE-NCC-END-MNT
mnt-by	RIPE-NCC-MNT
mnt-routes	RIPE-NCC-MNT
mnt-domains	RIPE-NCC-MNT

Showing results for 2001:67c:2e8::/48 as of 2012-11-08 12:15:39Z

Geoloc (2001:67c:2e8::/48)

Address space without geographic information: **100.00%**

► Geoloc details

Showing results for 2001:67c:2e8::/48 as of 2012-11-08 00:00:00Z

[source data](#) [embed code](#) [permalink](#) [info](#)

Routing Status (2001:67c:2e8::/48)

✔ **2001:67c:2e8::/48 is 100% visible (by 88 of 88 RIS full peers).**

🕒 First ever seen announced by **AS33333**, on **2010-09-28 16:00:00Z**.

Originated by: **AS33333** (valid route object in **RIPE**)

No less-specific covering prefixes.

[Compare](#) to **1 week** [earlier](#)

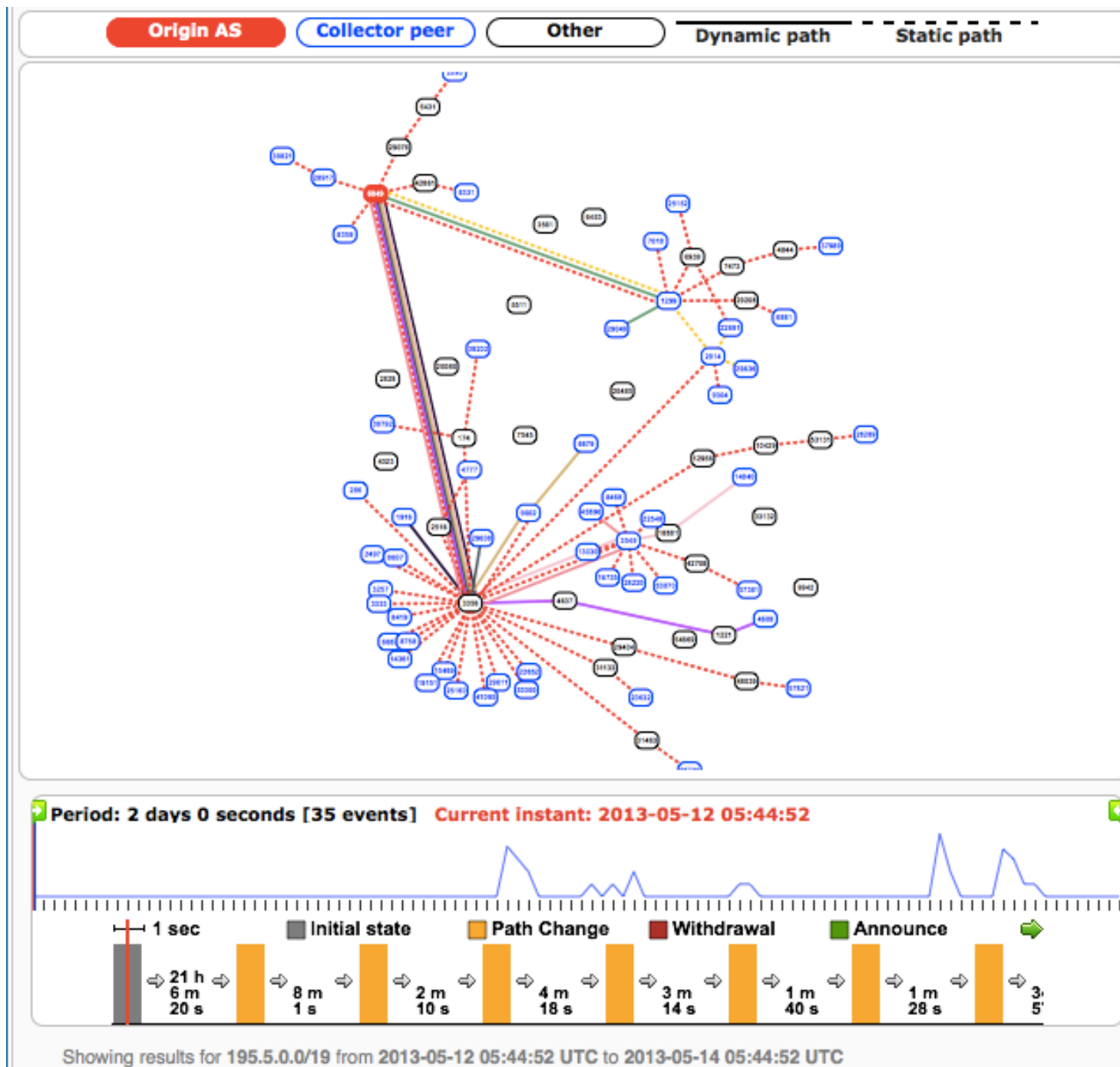
Showing results for 2001:67c:2e8::/48 as of 2012-11-07 00:00:00Z

[source data](#) [embed code](#) [permalink](#) [info](#)

Tabbed layout

New 'At a Glance' view

New BGPlay Integrated in RIPEstat



- Popular demand
- Improved visualisation
- Collaboration with Roma Tre University

Country Routing Statistics

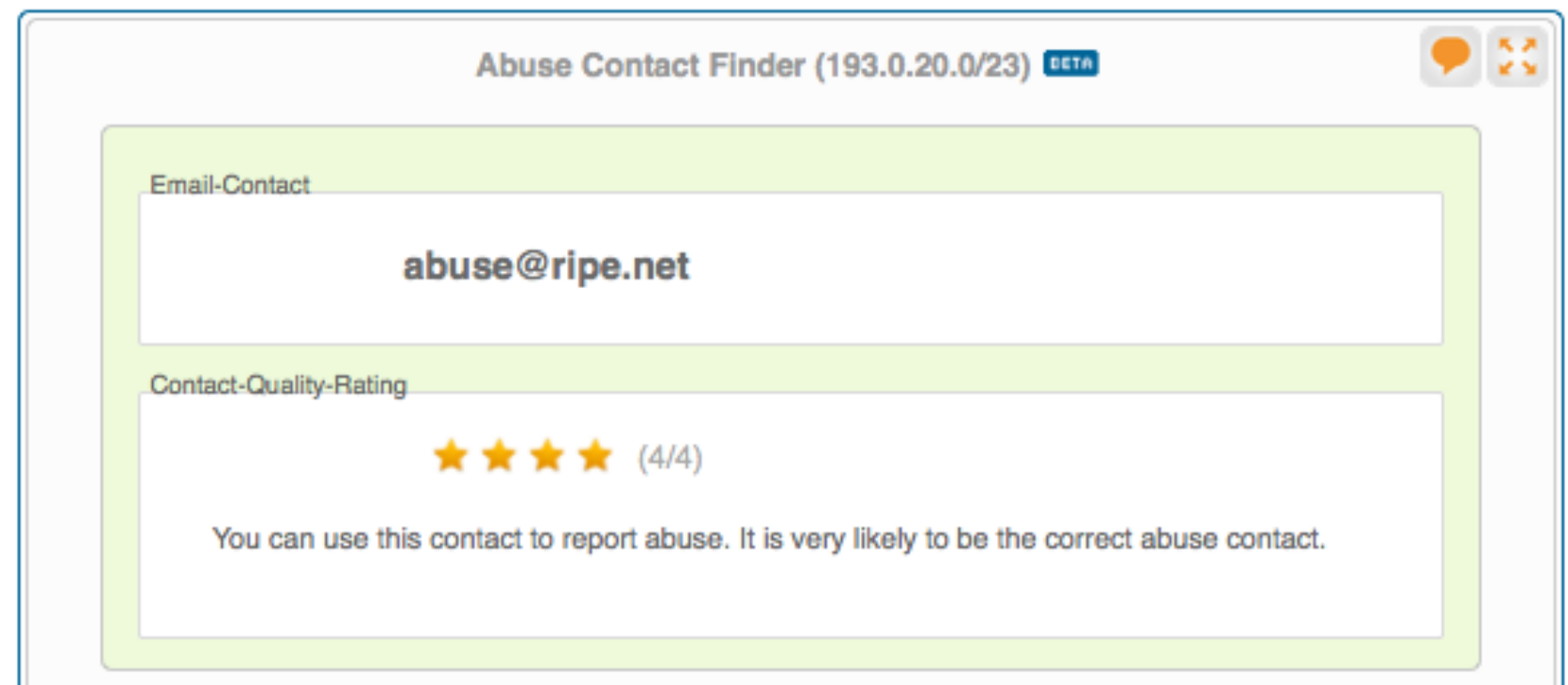
- IPv4, IPv6, ASNs per country over time
 - <https://stat.ripe.net/widget/country-routing-stats>
- Compare with another country
 - <https://stat.ripe.net/special/country-comparison>



Abuse Contact Finder

- Finds potential contacts to report abuse cases
 - <https://stat.ripe.net/special/abuse>
- Rates the quality of the information found
- New policy requires “abuse-c:” attribute in RIPE

Database



Questions?

