

RIPEstat

UKNOF

May 3rd 2012

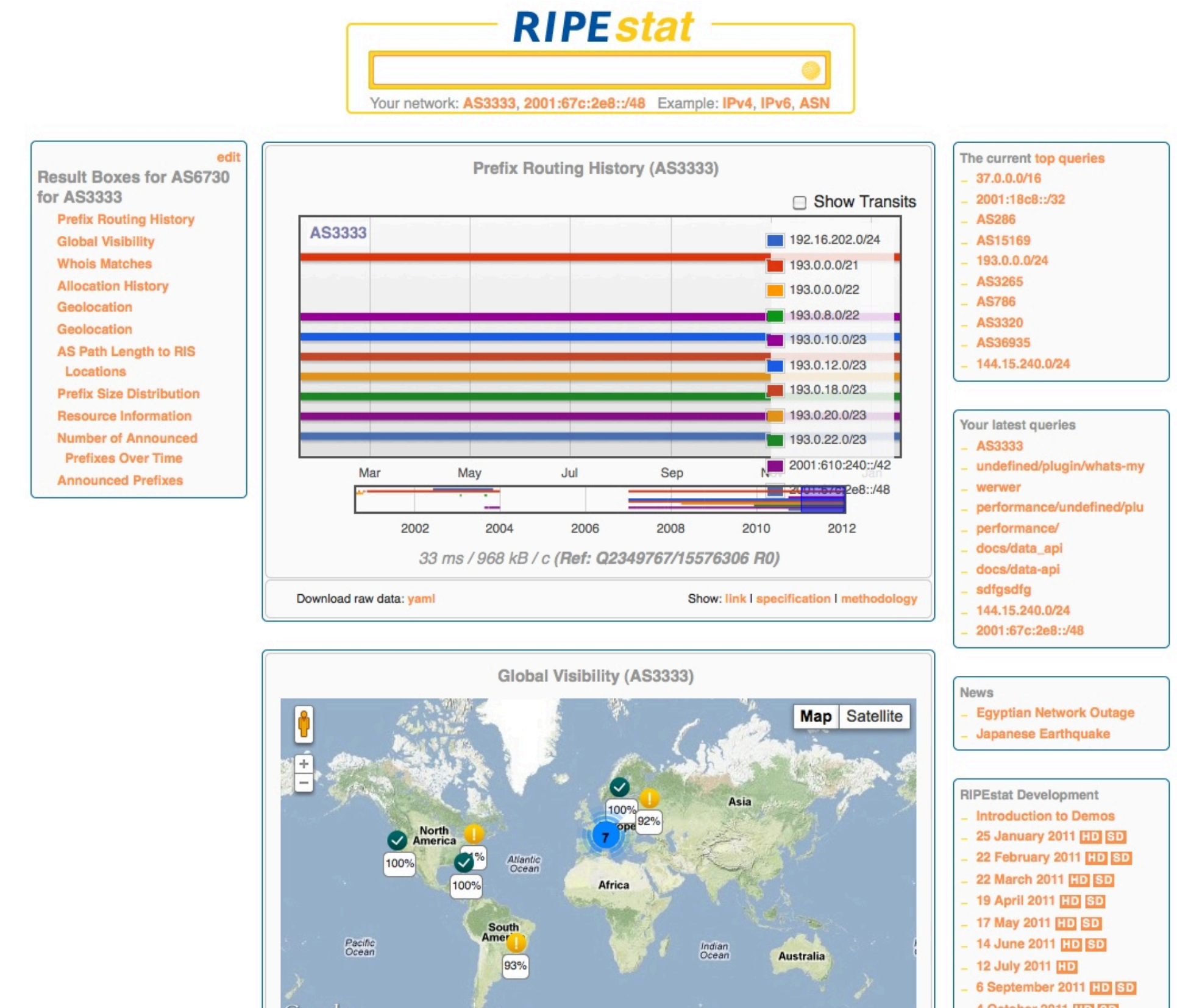
Daniel Karrenberg
<daniel.karrenberg@ripe.net>

(most slides 'stolen' from Christopher Amin)

What is RIPEstat?

<https://stat.ripe.net>

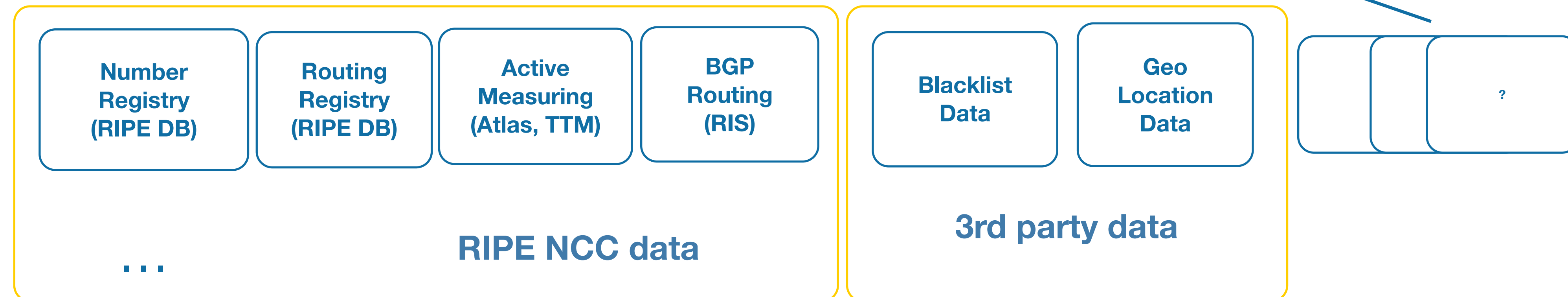
- stats, status – stat!
- a toolbox for internet measurements
- a RESTful data API
- widgets
 - put it where you want it
- community-driven
- Eventually will become the interface to all RIPE NCC measurement tools



RIPEstat Data Sources



<http://stat.ripe.net>



Database widgets

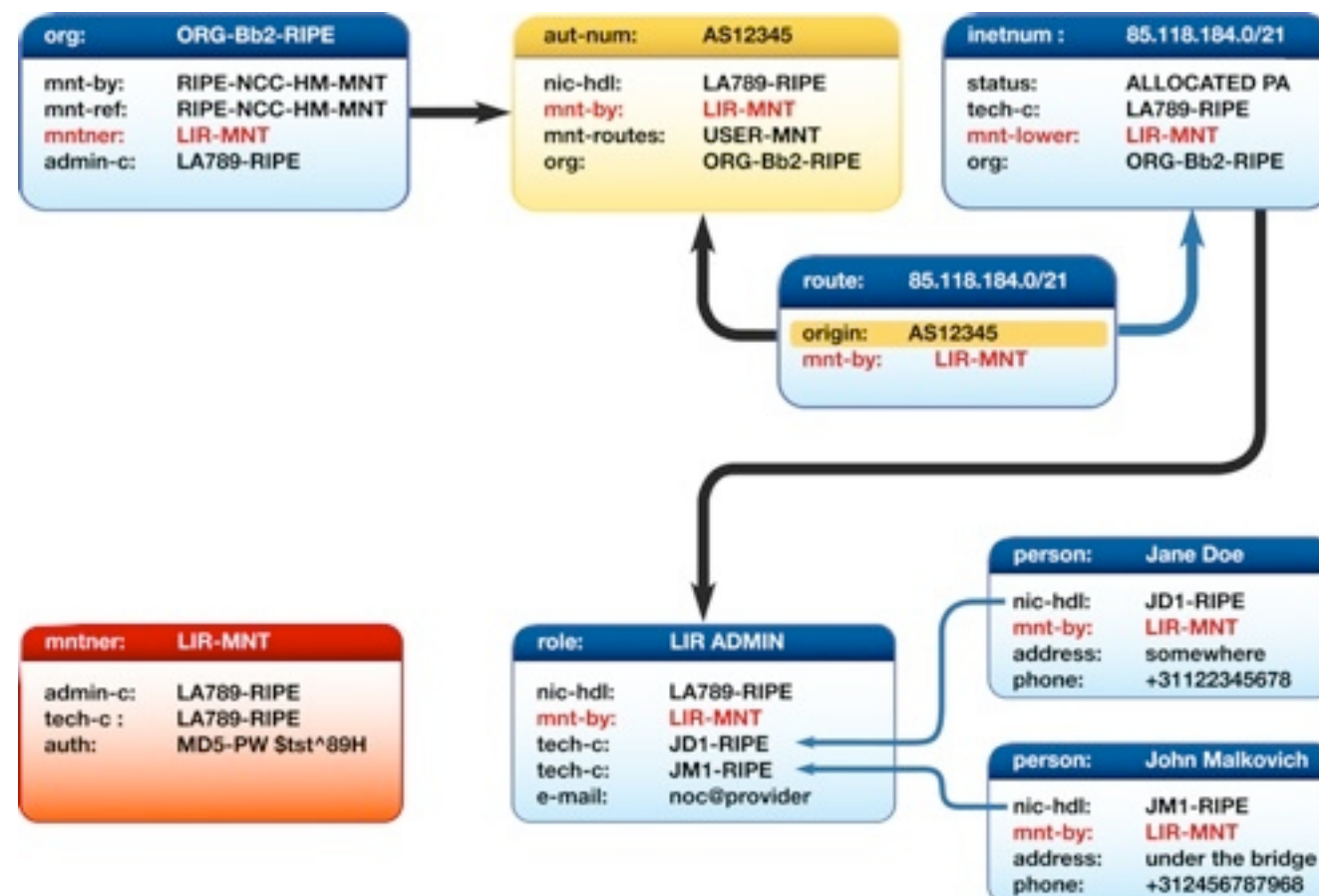
–DB is integral to ¼ of
our widgets

and the
focus of 2
new ones



Object Browser

- fast focus on relationships of any RIPE DB object
- may become more graphical
- RIPE DB only
- Rate limits apply



RIPEstat Object Browser (AS20712) NEW

Showing 2012-05-03 00:00:00 Use your browser's back button to see previous queries.

2012-04-18T12:29:48 to 2012-05-03T00:00:00 ↕
592 changes since 2002-08-12T06:51:07. Show all fields

aut-num: AS20712

as-name AS20712
descr Andrews and Arnold Ltd
mnt-by RIPE-NCC-END-MNT
mnt-by AA

↑ 33 × route, 4 × route6 ↓

route: 178.238.144.0/20 [origin] Show all

route: 194.60.203.0/24 [origin] Show all

route: 194.62.124.0/24 [origin] Show all

route: 217.169.0.0/19 [origin] Show all

route: 46.250.252.0/22 [origin] Show all

route: 79.98.36.0/24 [origin] Show all

route: 81.187.0.0/16 [origin] Show all

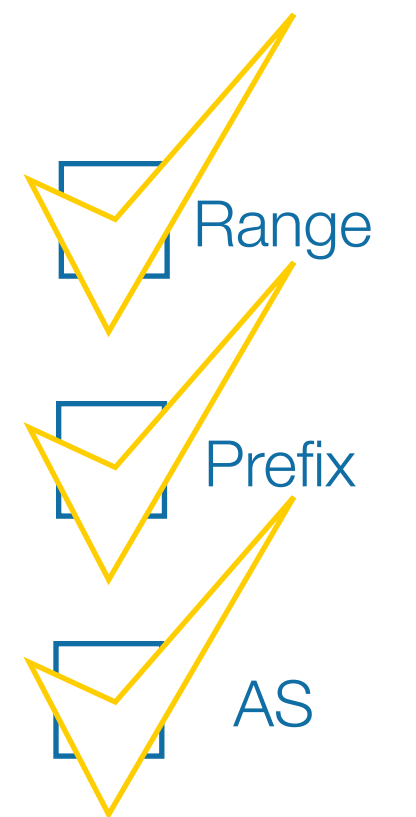
route: 81.187.0.0/19 [origin] Show all

mntner: RIPE-NCC-END-MNT [mnt-by] Show all

mntner: AA [mnt-by, mnt-lower, mnt-routes] Show all

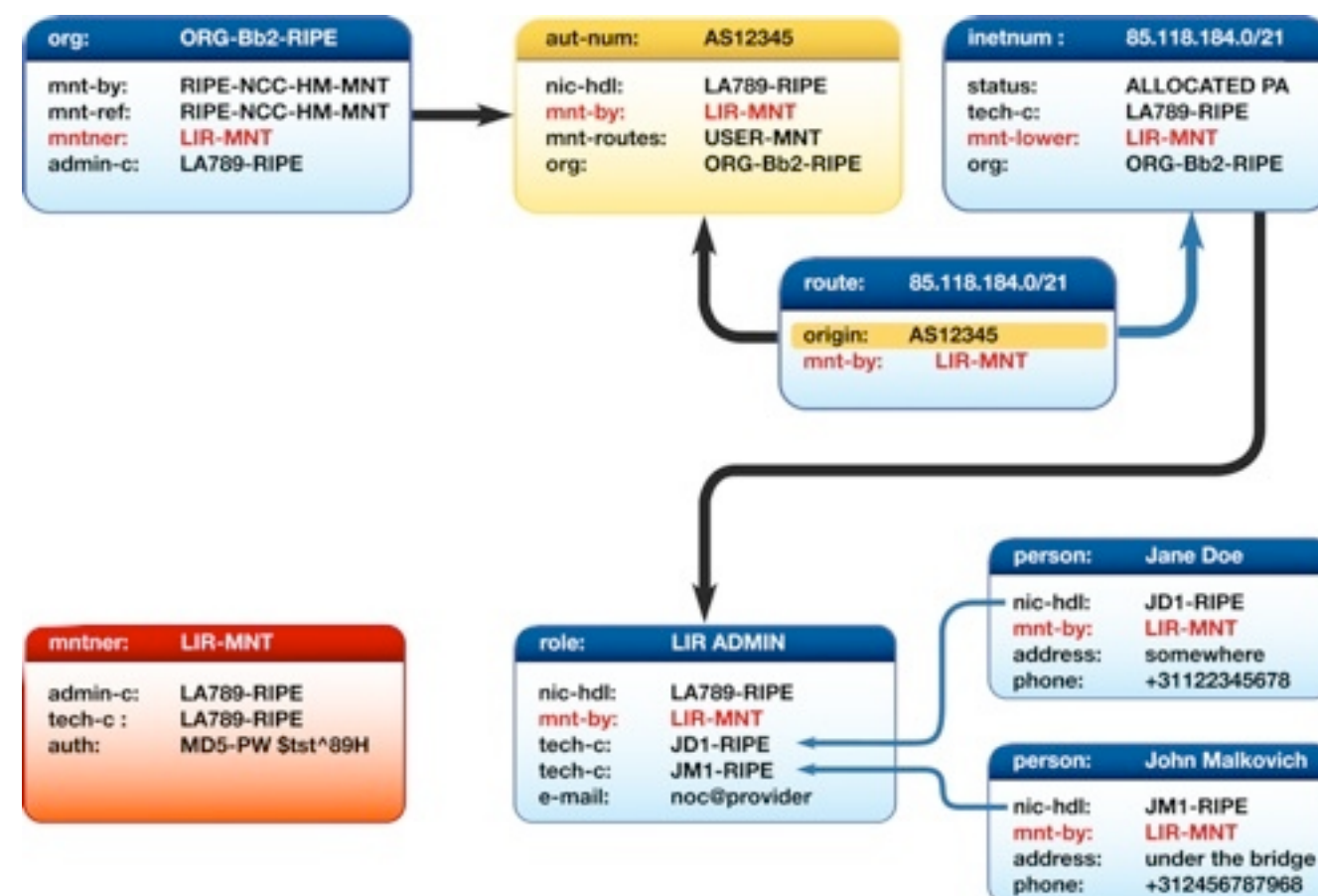
person: AAISP Support [admin-c, tech-c] Show all

! Browsing of restricted data has been enabled. This view is only for RIPE NCC employees.



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RIPEstat Object Browser (nic-hdl:AAIS-RIPE) NEW

Showing 2012-05-03 00:00:00 Use your browser's back button to see previous queries.

2004-04-02T15:06:50 to 2012-05-03T00:00:00 2 changes since 2004-04-02T15:06:35. Trim fields

person: AAISP Support

address Andrews & Arnold Ltd
address Enterprise Court
address Downmill Road
address BRACKNELL
address Berks
address UNITED KINGDOM
address RG12 1QS
nic-hdl AAIS-RIPE
phone +44 1344 400 999
mnt-by AA

aut-num: AS20712 [admin-c, tech-c] Show all **mntner: AA** [mnt-by] Show all

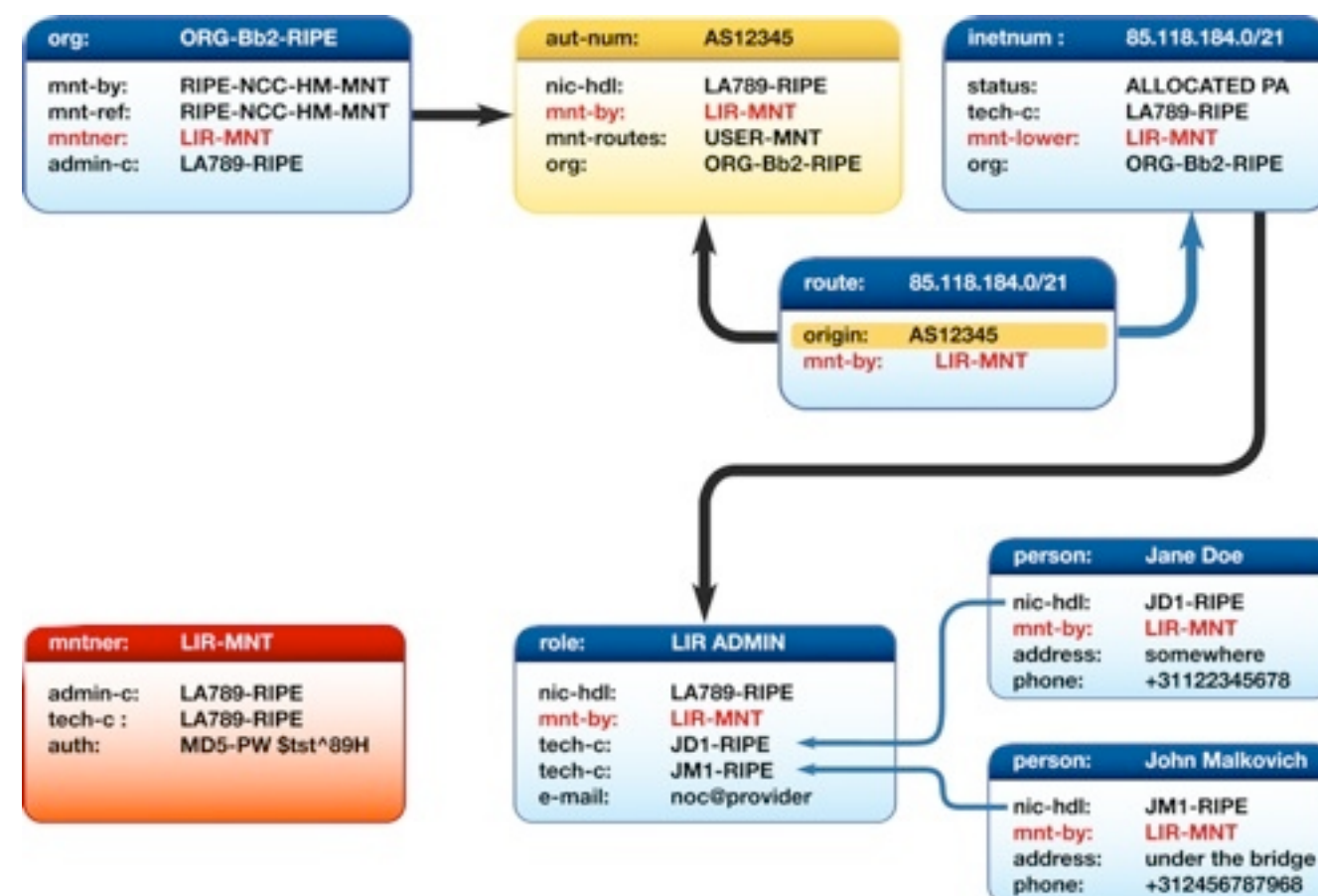
! Browsing of restricted data has been enabled. This view is only for RIPE NCC employees.

source data grab | permalink | info



Object Browser

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RIPEstat Object Browser (inetnum:90.155.34.0/23)

Showing 2012-05-03 00:00:00 Use your browser's back button to see previous queries.

2012-04-18T11:12:29 to 2012-05-03T00:00:00
2 changes since 2012-04-18T11:12:09.

inetnum: 90.155.34.0/23 [Show all fields](#)

country GB
netname UKNOF
descr UKNOF22
mnt-by AA
status ASSIGNED PA

[route: 90.155.0.0/18 \[route\]](#) [Show all](#)

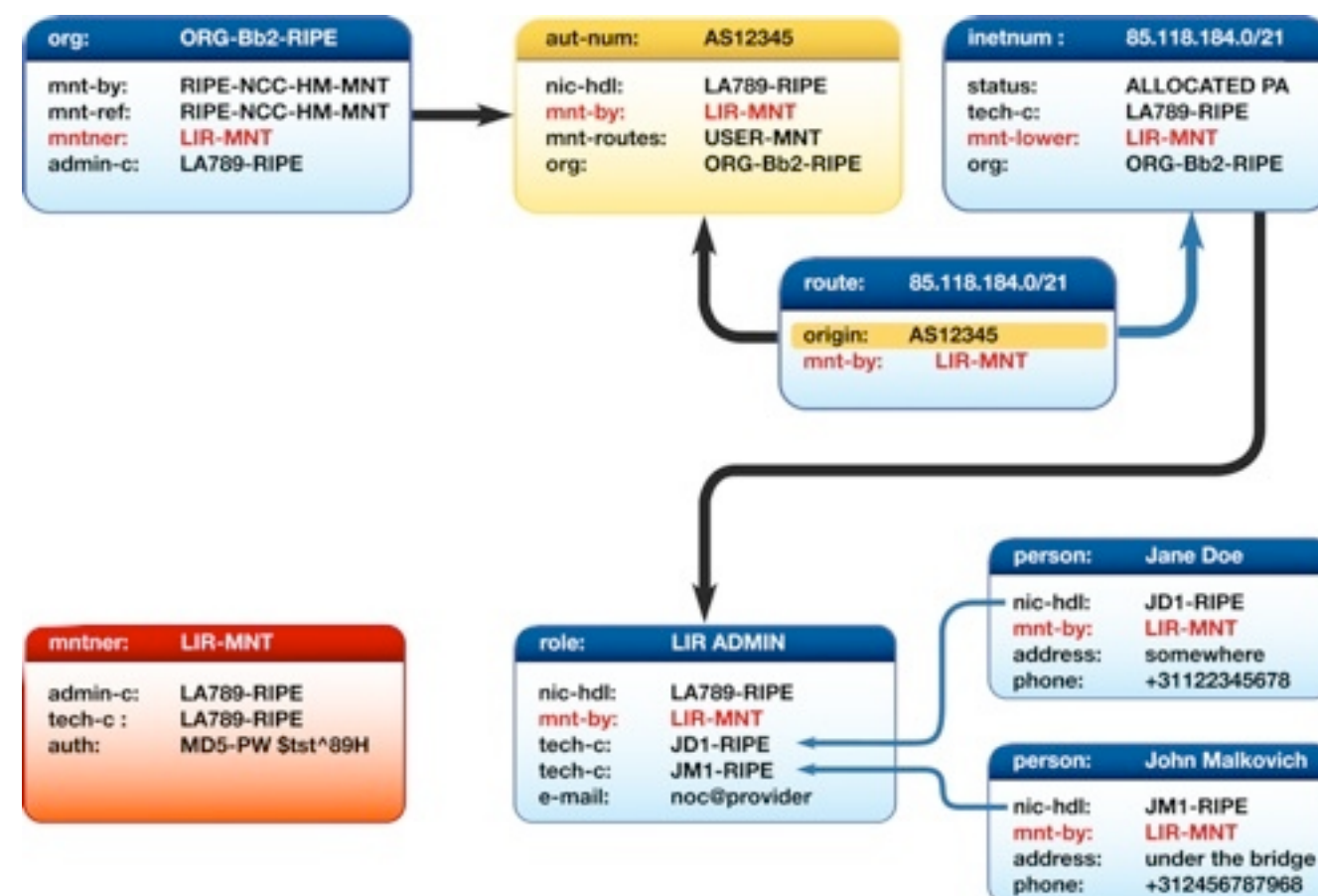
[person: Rev Adrian Kennard](#) [Show all](#)
[admin-c, tech-c]

[mntner: AA \[mnt-by\]](#) [Show all](#)

Browsing of restricted data has been enabled. This view is only for RIPE NCC employees.

Object Browser

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RIPEstat Object Browser (inetnum:90.155.34.0/23)

Showing 2012-04-18 11:12:28 Use your browser's back button to see previous queries.

2012-04-18T11:12:09 to 2012-04-18T11:12:28
2 changes since 2012-04-18T11:12:09.

inetnum: 90.155.34.0/23 [Show all fields](#)

country GB
netname UKNOF
descr None specified
mnt-by AA
status ASSIGNED PA

[route: 90.155.0.0/18 \[route\]](#) [Show all](#)

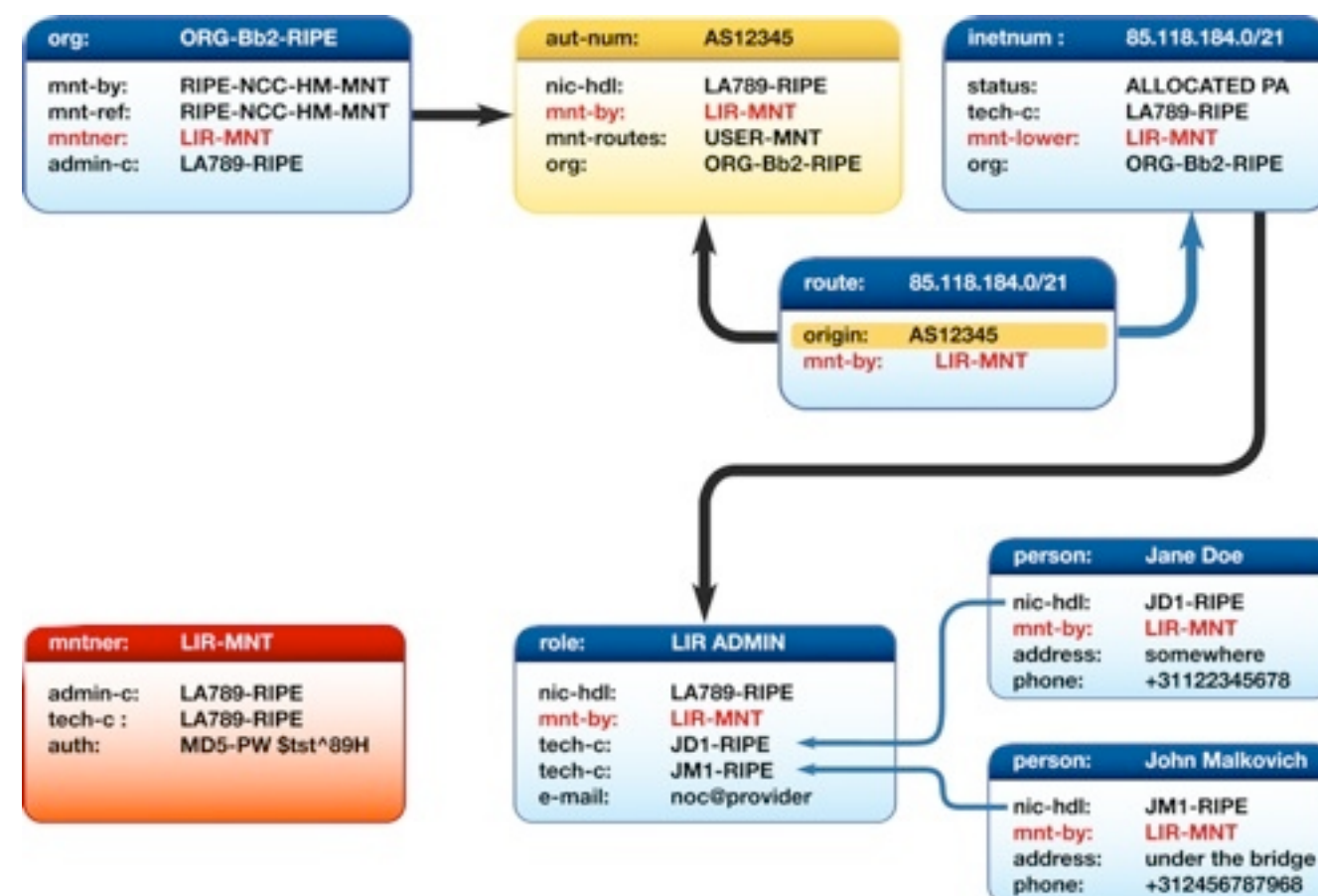
[person: Rev Adrian Kennard](#) [Show all](#)
[admin-c, tech-c]

[mntner: AA \[mnt-by\]](#) [Show all](#)

Browsing of restricted data has been enabled. This view is only for RIPE NCC employees.

Object Browser

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RIPEstat Object Browser (route:90.155.0.0/18|AS20712) NEW

Showing 2012-05-03 00:00:00 Use your browser's back button to see previous queries.

2010-08-27T15:17:40 to 2012-05-03T00:00:00 2 changes since 2010-08-27T15:17:33.

route: 90.155.0.0/18

descr AAISP
origin AS20712
mnt-by AA

inetnum: 90.155.0.0 - 90.155.111.255 [route] Show all

aut-num: AS20712 [origin] Show all

mntner: AA [mnt-by] Show all

Browsing of restricted data has been enabled. This view is only for RIPE NCC employees.

Privacy Controls

- Under discussion

Privacy Controls		
	history	personal data
NCC staff	YES	YES
LIRs	non-personal*	1000 objects/day
SSO accounts	NO	10 objects/day
anonymous	NO	NO

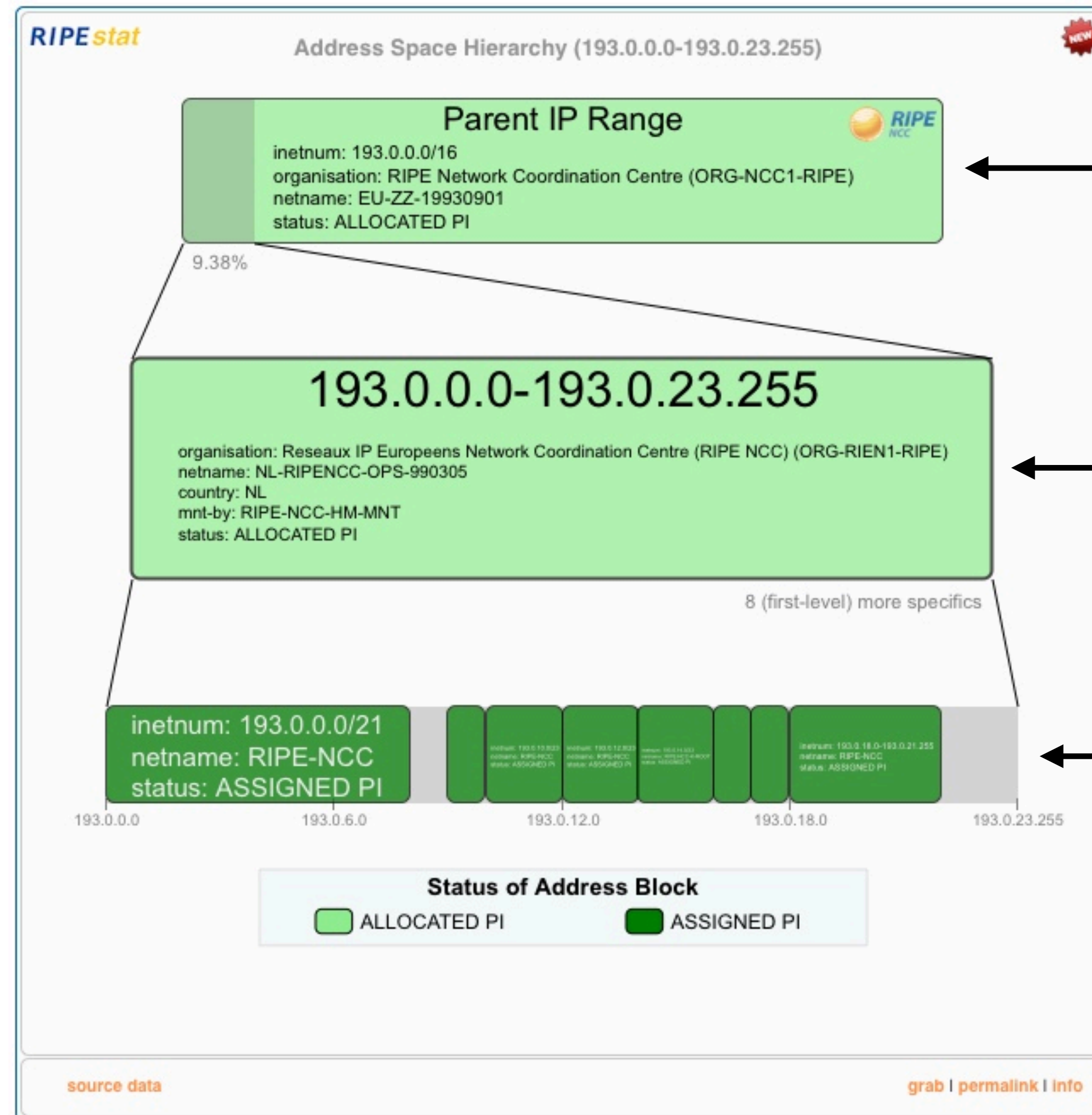
*except names, nic-hdl & date

R&D, 2012 April 5

 **RIPE**
NCC

Address Space Hierarchy

- inet(6)num hierarchy
- big picture: colors, icons, proportions
- zoom in for details
- RIPE DB only
- future feature: history?



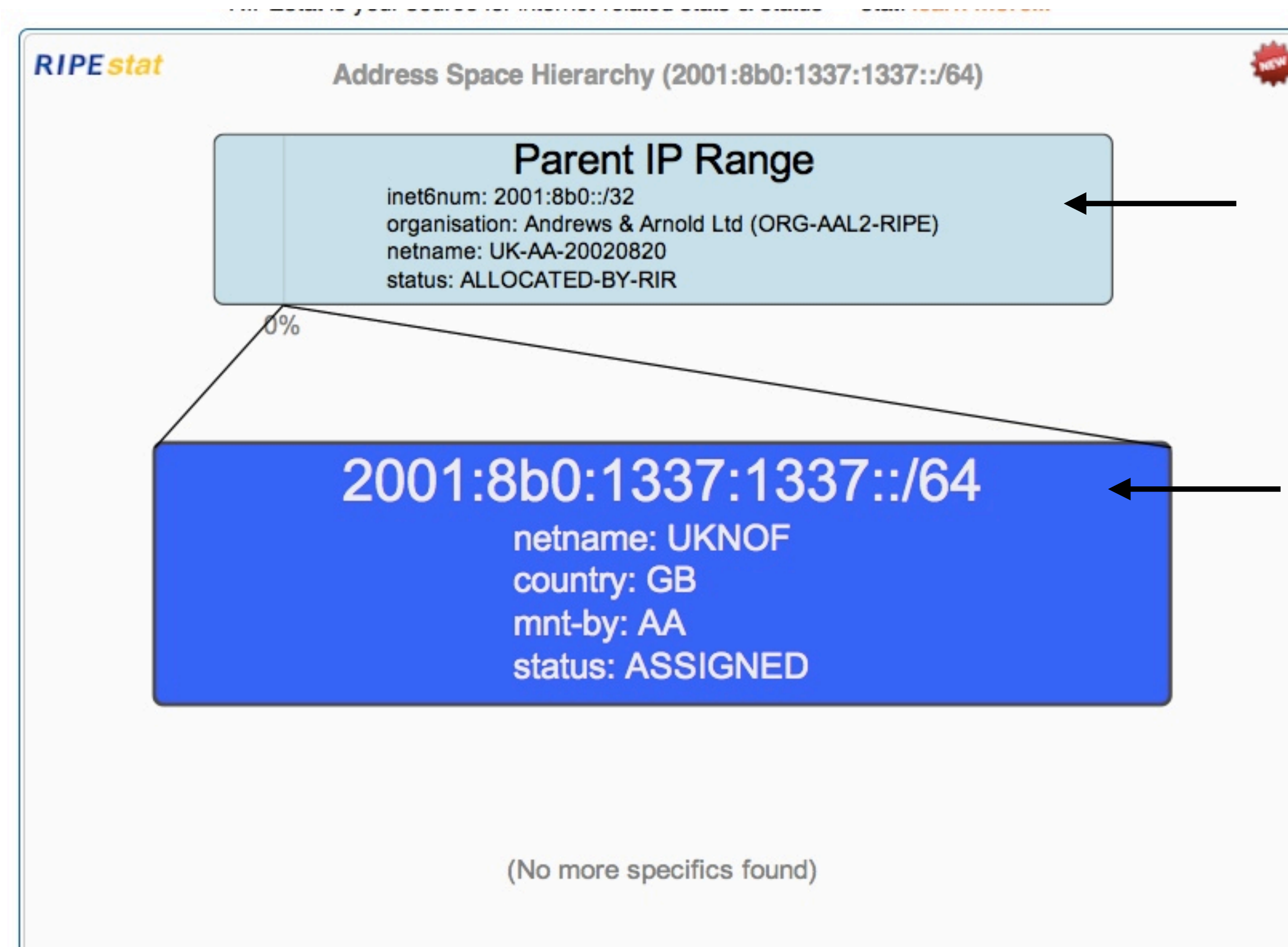
Less specific matches

Exact match

More specific matches

Address Space Hierarchy

- inet(6)num hierarchy
- big picture: colors, icons, proportions
- zoom in for details
- RIPE DB only
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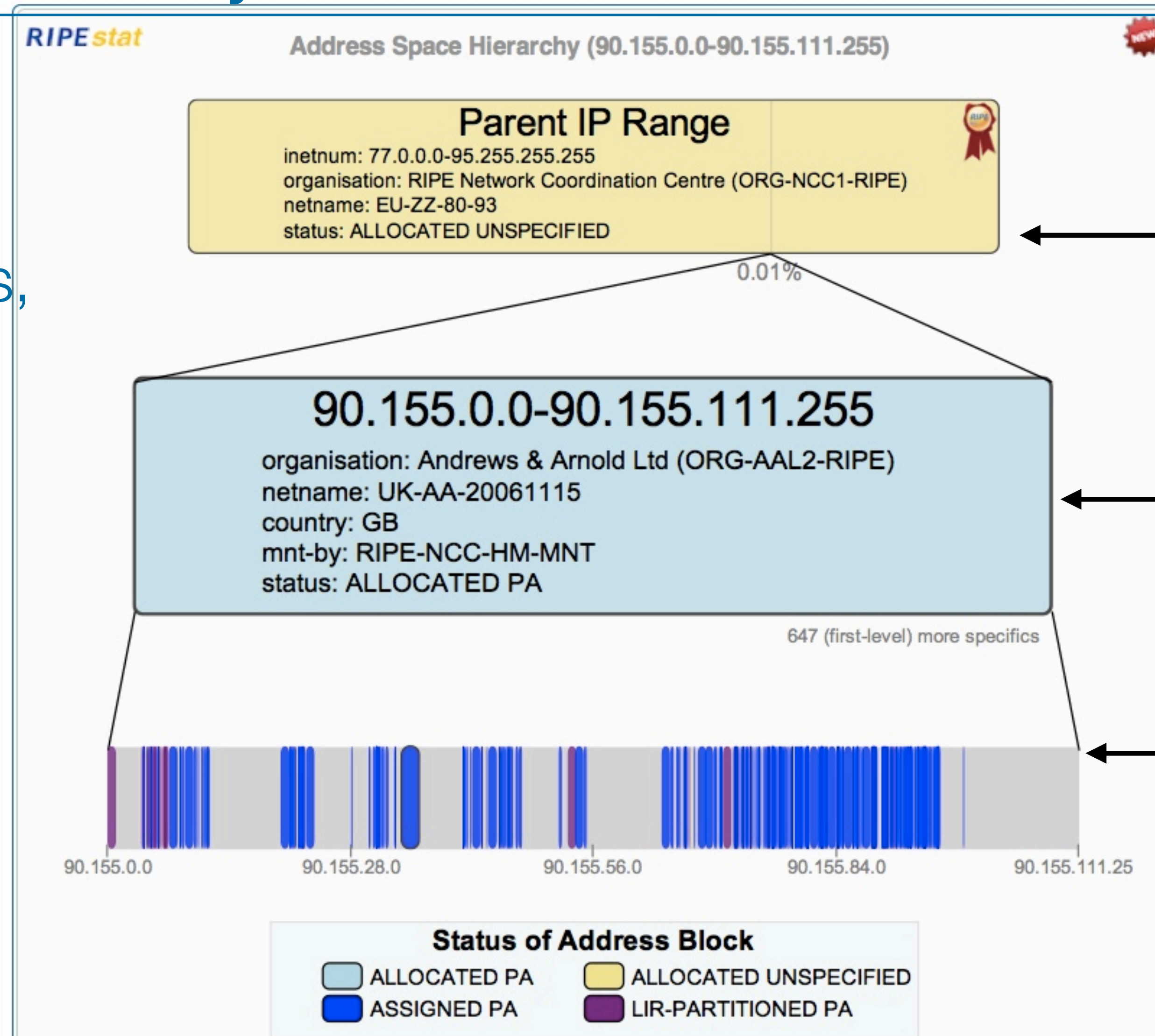


Less specific matches

Exact match

Address Space Hierarchy

- inet(6)num hierarchy
- big picture: colors, icons, proportions
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- future feature: history?



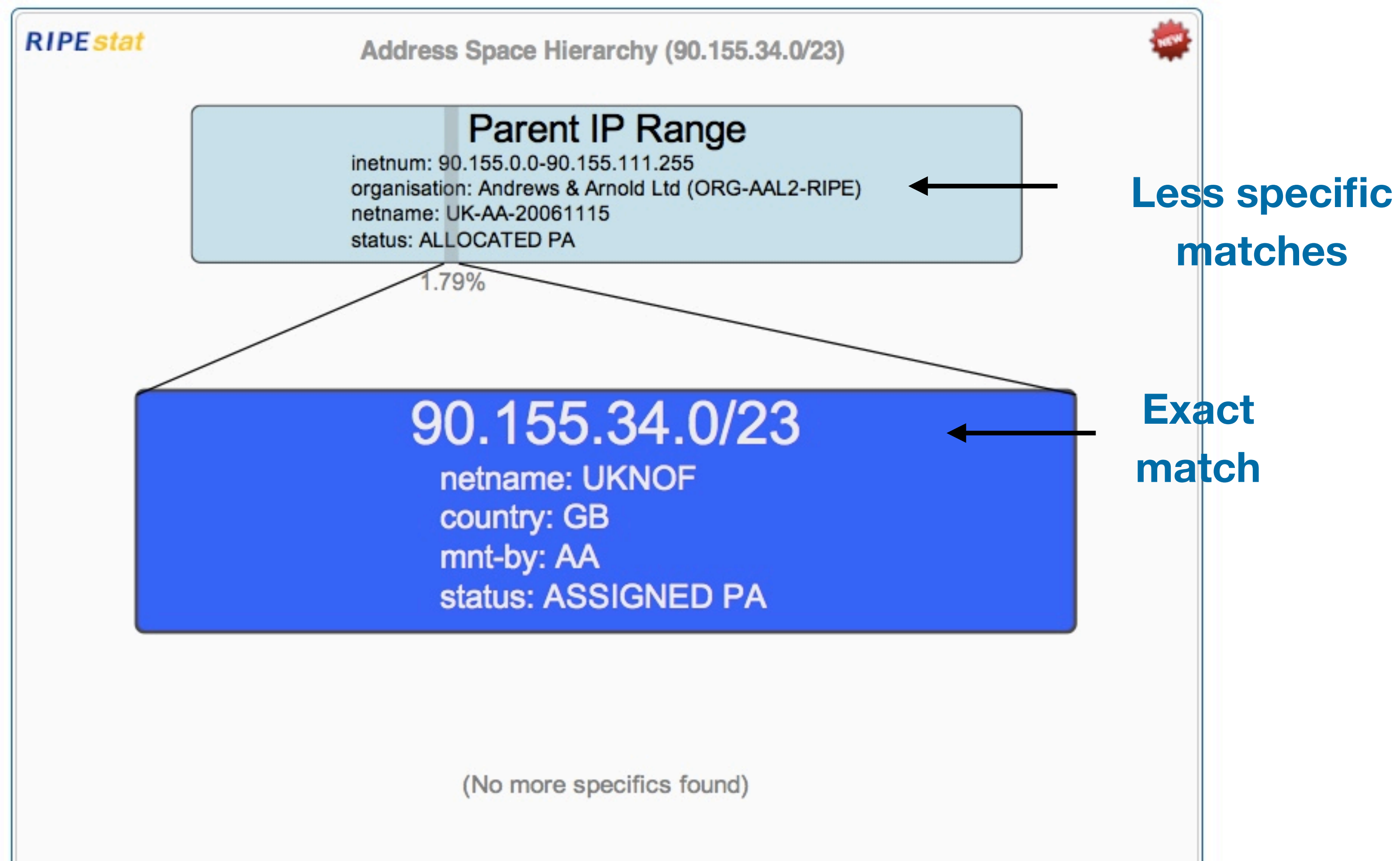
Less specific matches

Exact match

More specific matches

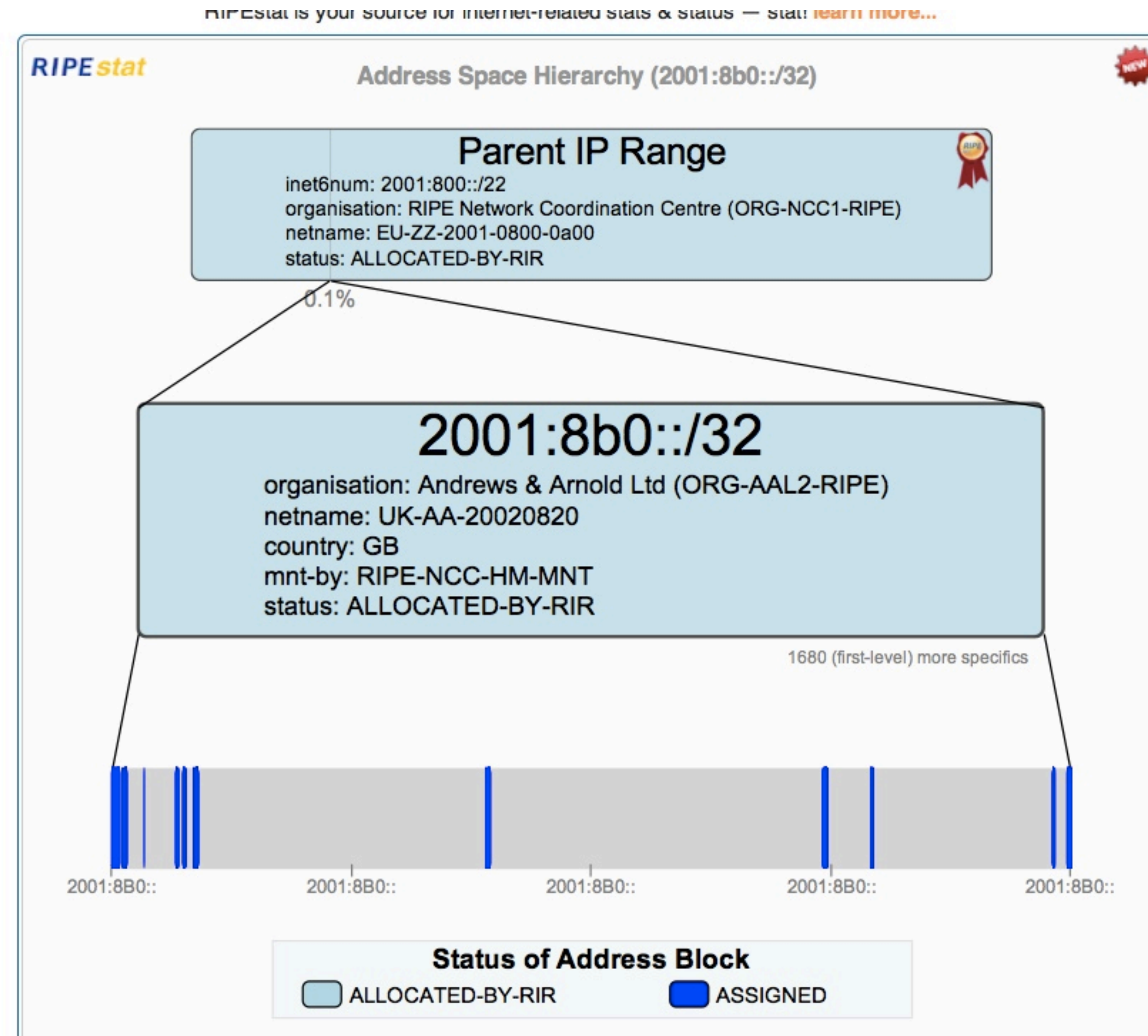
Address Space Hierarchy

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Address Space Hierarchy

- inet(6)num hierarchy
- big picture: colors, icons proportions
- zoom in for details
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- future feature: history?



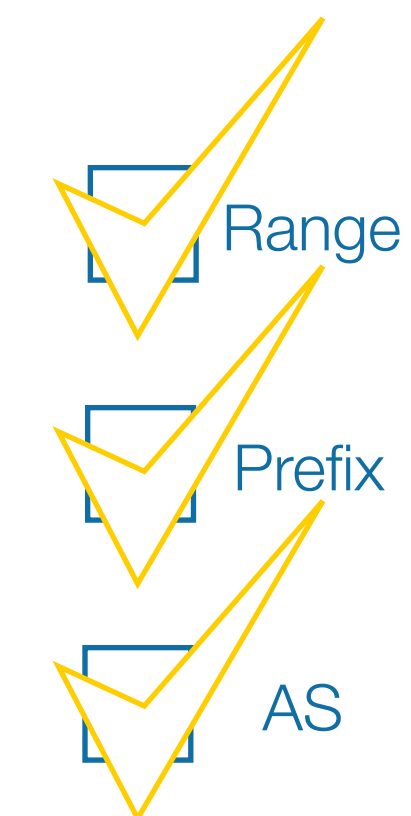
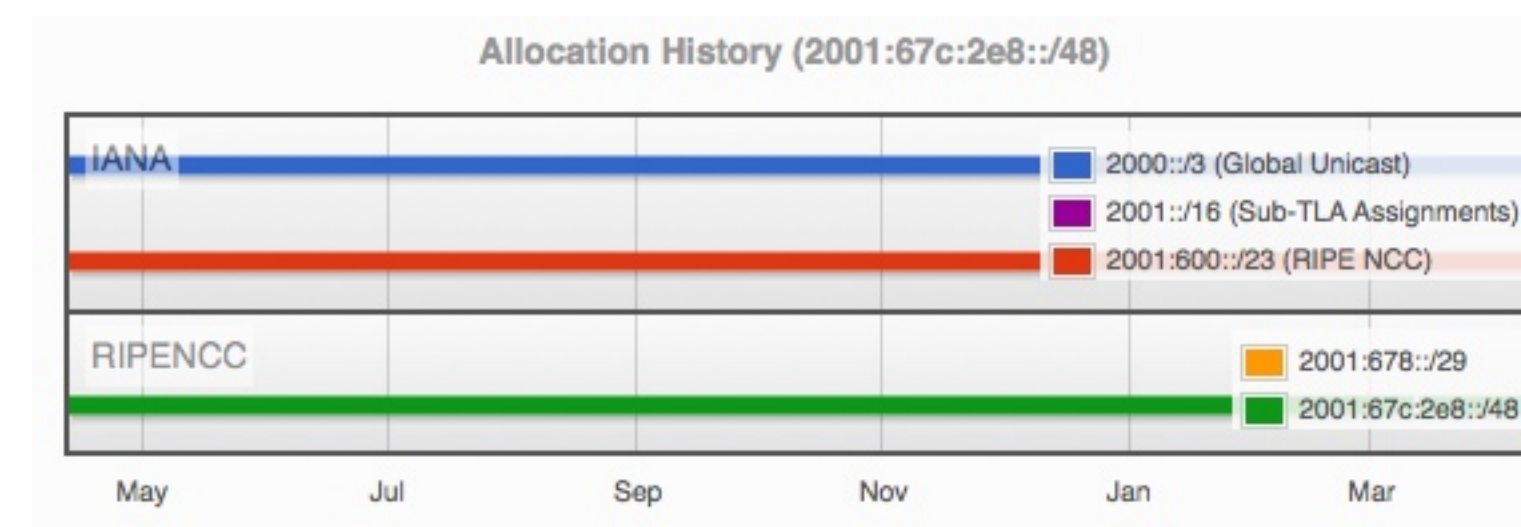
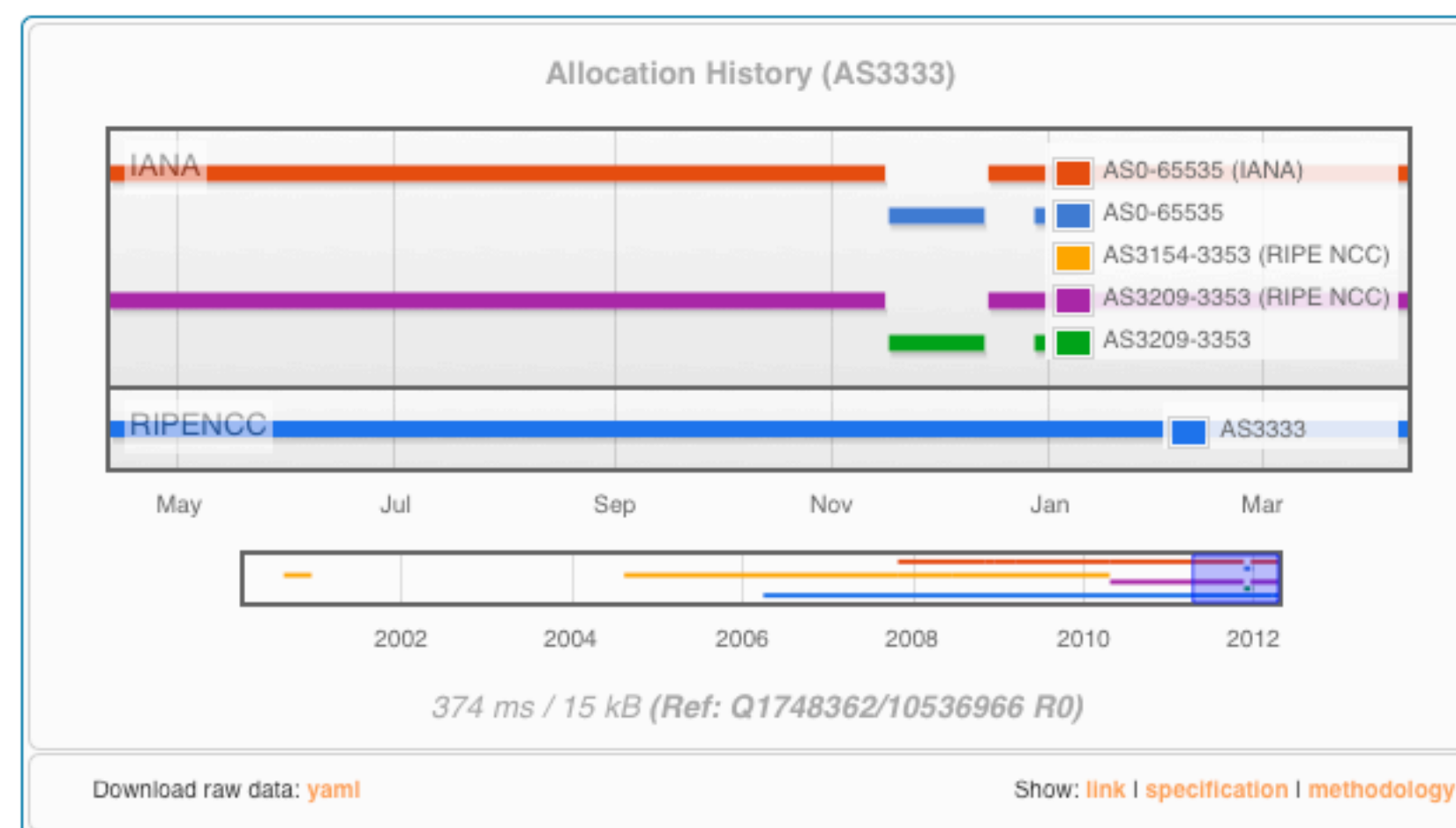
Less specific matches

Exact match

More specific matches

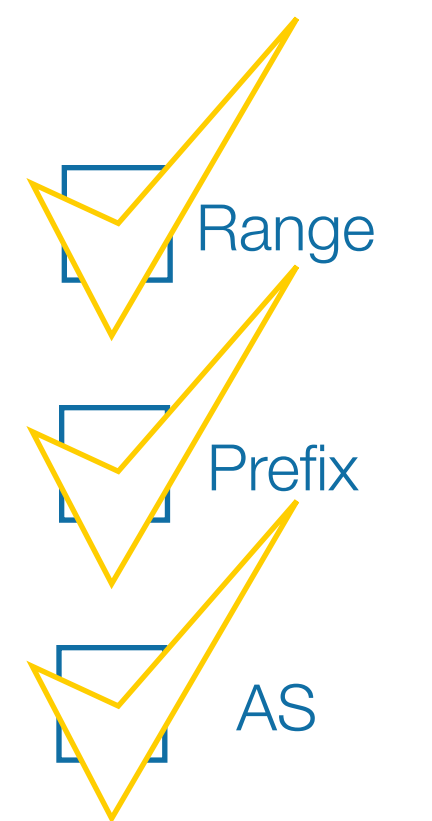
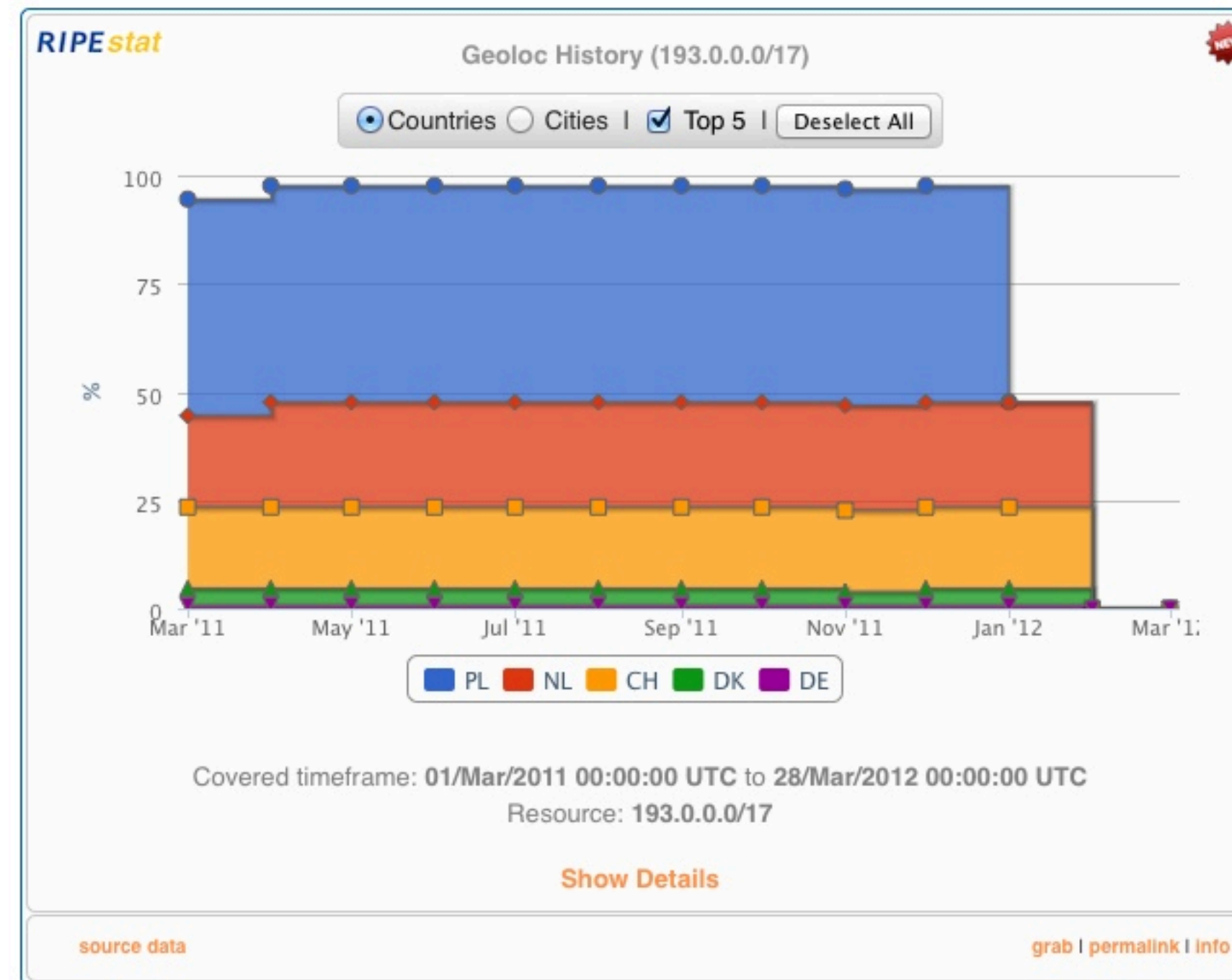
Allocation History

- Tracks allocation of resources from IANA and the RIRs
- Full history since mid-2004



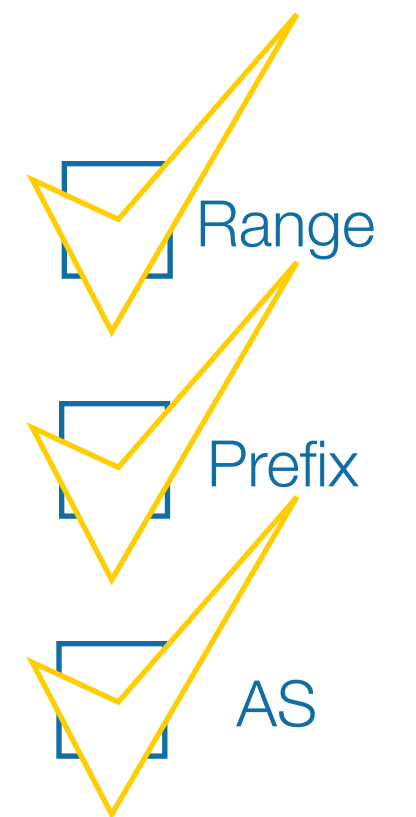
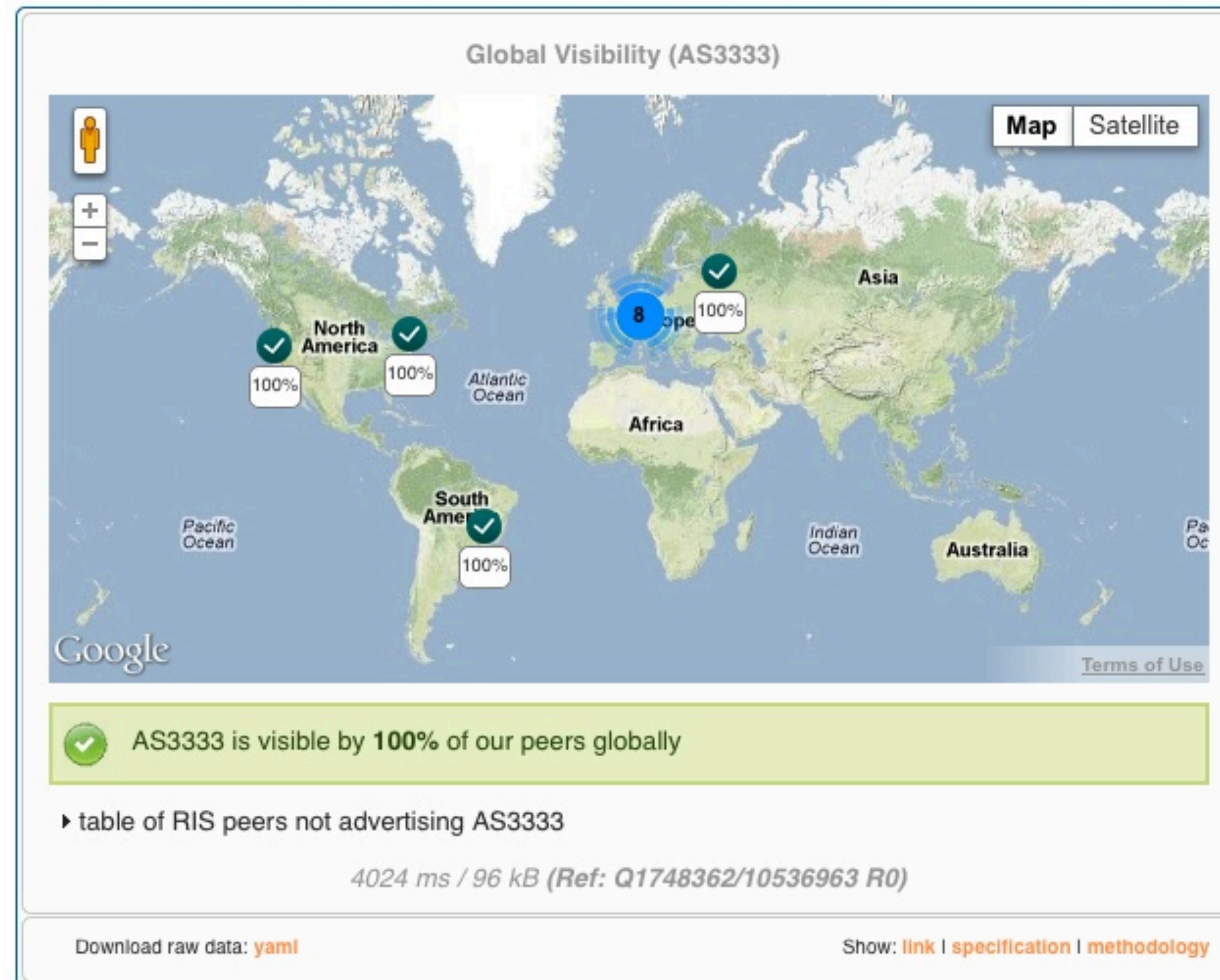
Geoloc History

- tracks proportions of address space or announced prefixes locations over time
- per country or per city



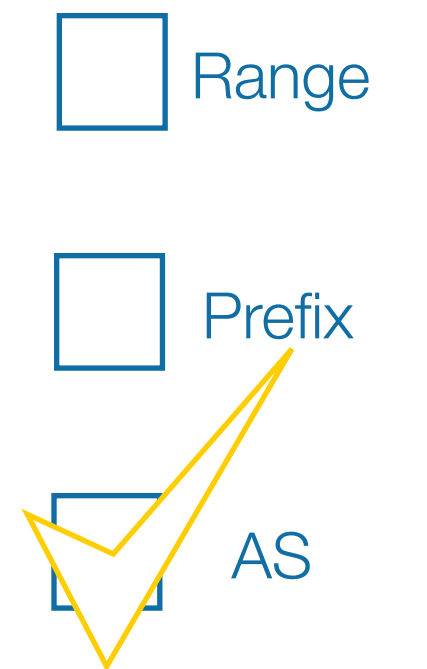
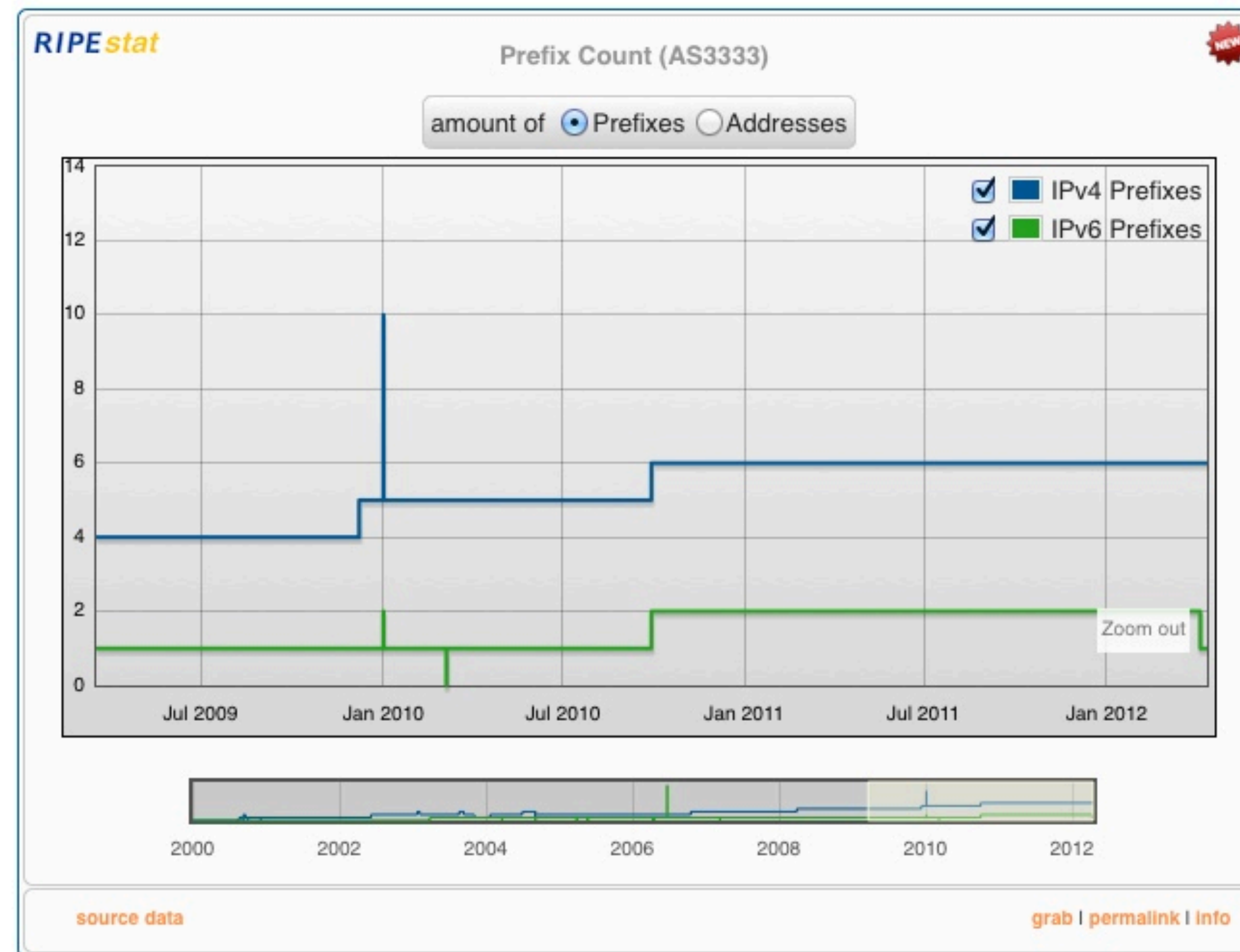
Global Visibility

–Geographical representation of visibility from the RIS route collectors



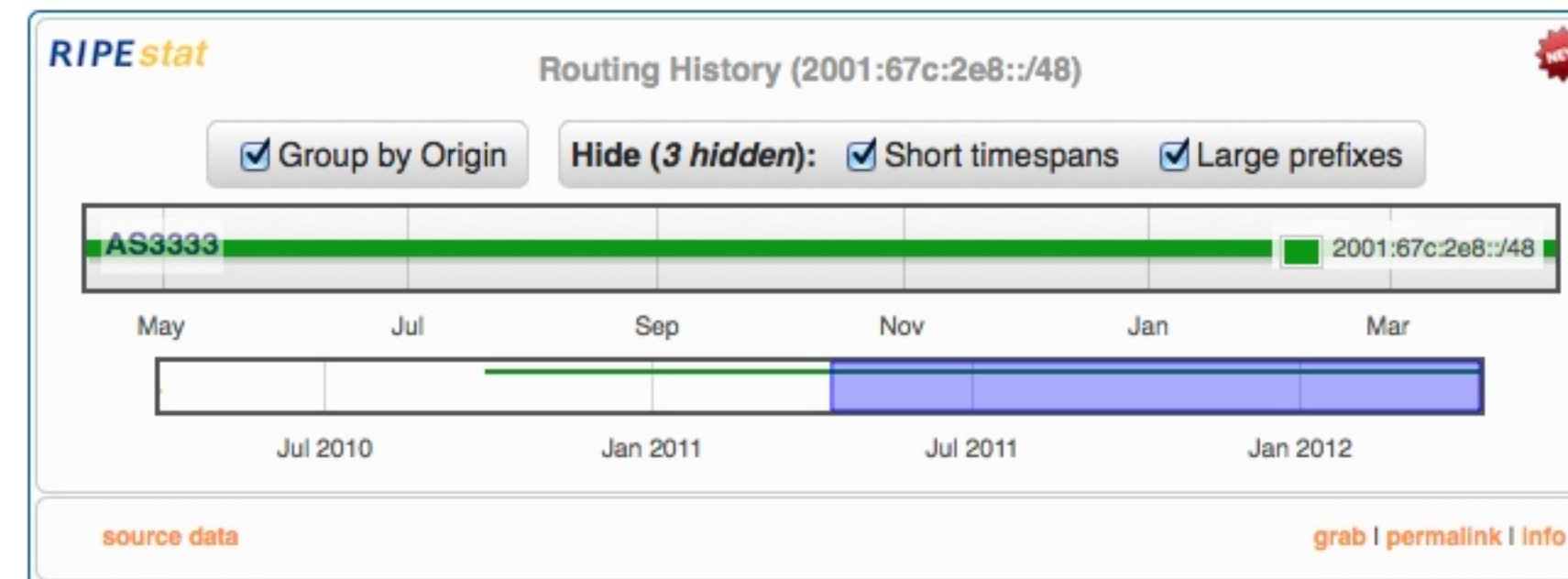
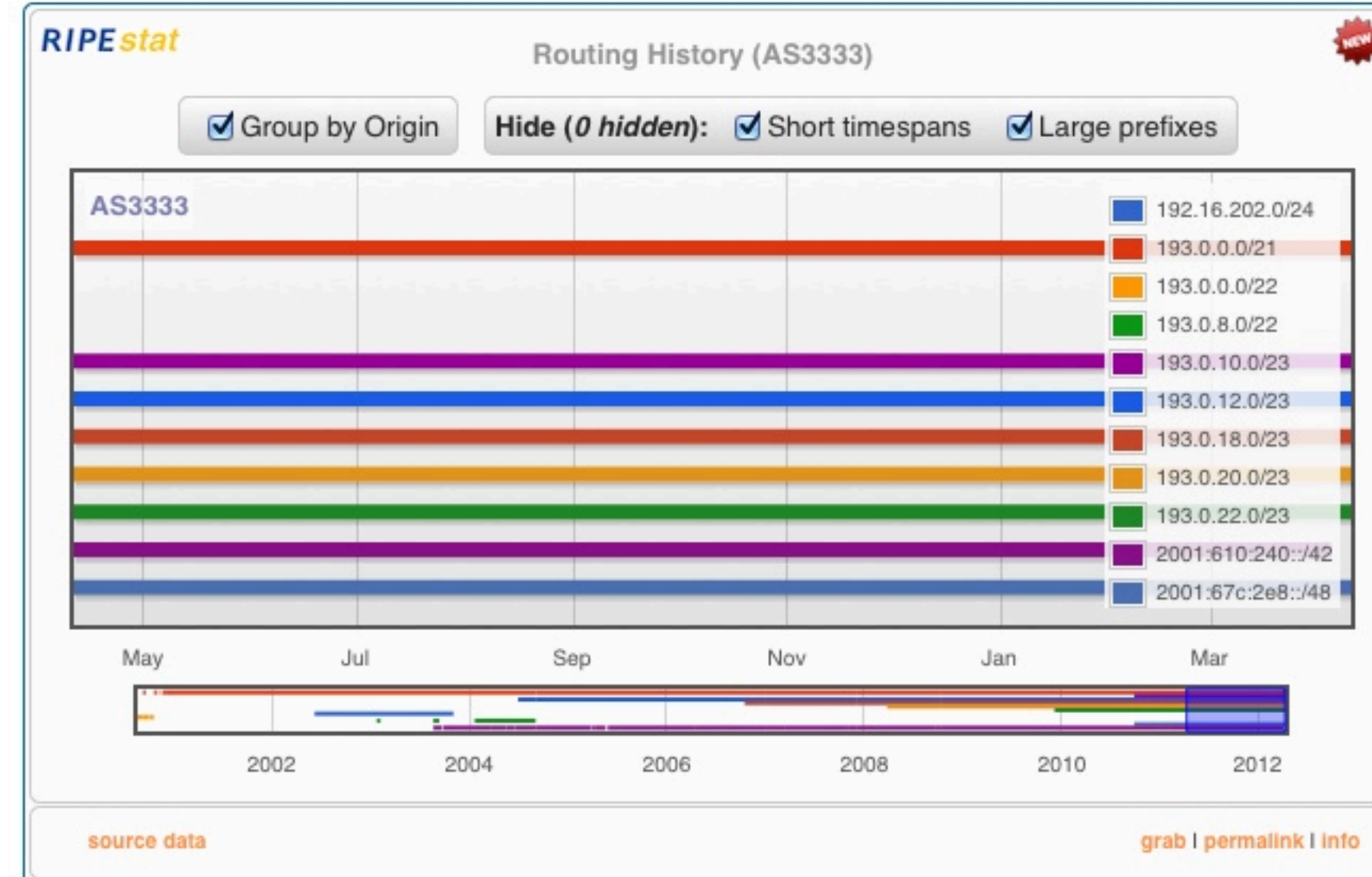
Prefix Count

- Numbers of prefixes or address space announced by an AS
- As seen by the RIS route collectors



Routing History

- Prefixes announced by an AS over time
- RIS route collectors



BGP Looking Glass

–**Realtime** routing
information from RIS
route collectors

RIPEstat BGP Looking Glass (2001:67c:2e8::/48) Search:

Amsterdam, Netherlands (RRC00)

29049 1273 3333
2a01:6480::1 from 2a01:6480::1 (85.132.80.30)
Origin IGP, localpref 100, valid, external, best
Community: 1273:22000 1273:22989
Last update: Wed Apr 4 16:31:16 2012

[Show more \(6\)](#)

London, United Kingdom (RRC01)

9002 3333
2001:7f8:4::232a:1 from 2001:7f8:4::232a:1 (87.245.225.190)
Origin IGP, localpref 100, valid, external, best
Last update: Thu Mar 29 16:31:30 2012

[Show me more \(9\)](#)

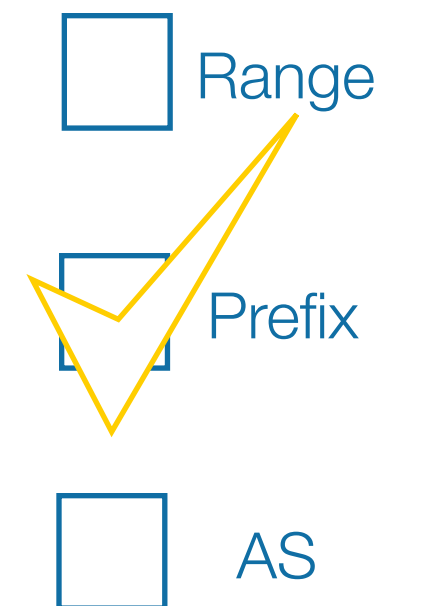
Amsterdam, Netherlands (RRC03)

3333
2001:7f8:1::a500:3333:1 from 2001:7f8:1::a500:3333:1 (193.0.0.56)
(fe80::212:1eff:fe23:40db)
Origin IGP, localpref 100, valid, external, best
Last update: Tue Feb 14 10:36:39 2012

[Show me more \(10\)](#)

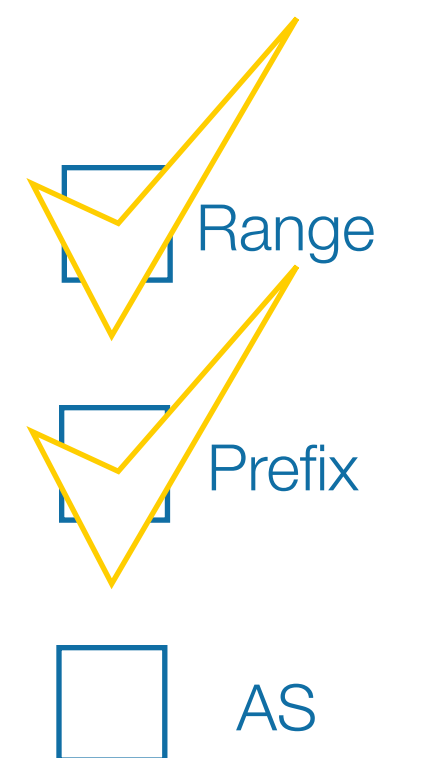
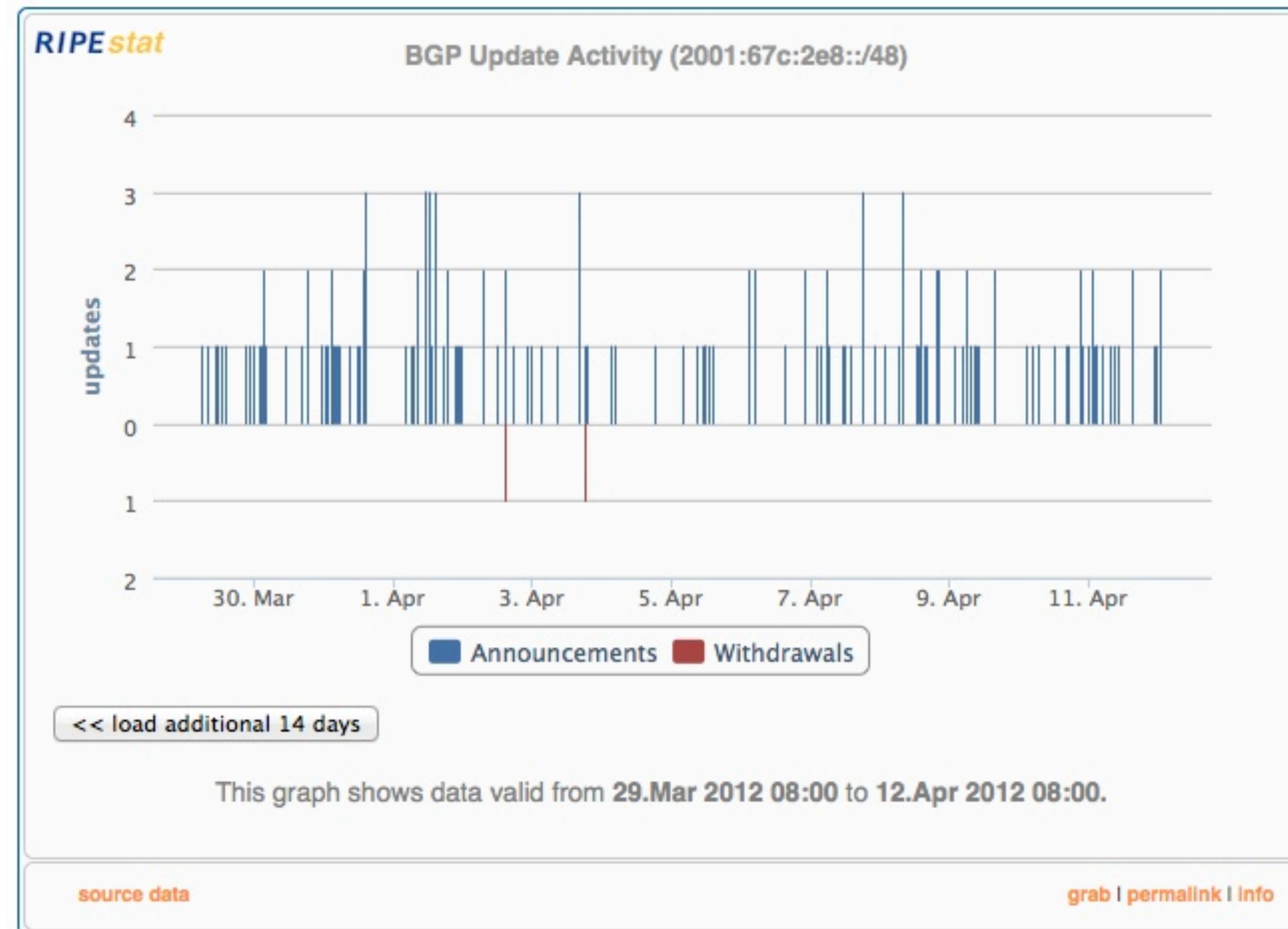
Geneva, Switzerland (RRC04)

559 20965 1103 3333
2001:7f8:1c:24a::22f:1 from 2001:7f8:1c:24a::22f:1 (130.59.32.60)
(fe80::20a:f3ff:fe30:1500)
Origin IGP, localpref 100, valid, external, best
Community: 20965:155 20965:1103
Last update: Wed Apr 11 05:17:33 2012



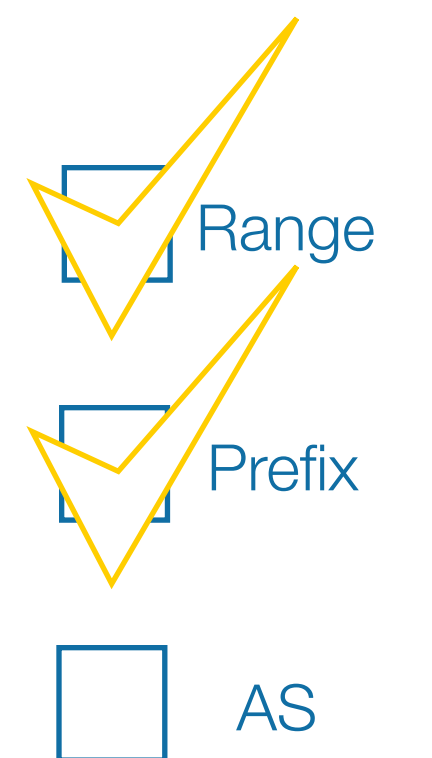
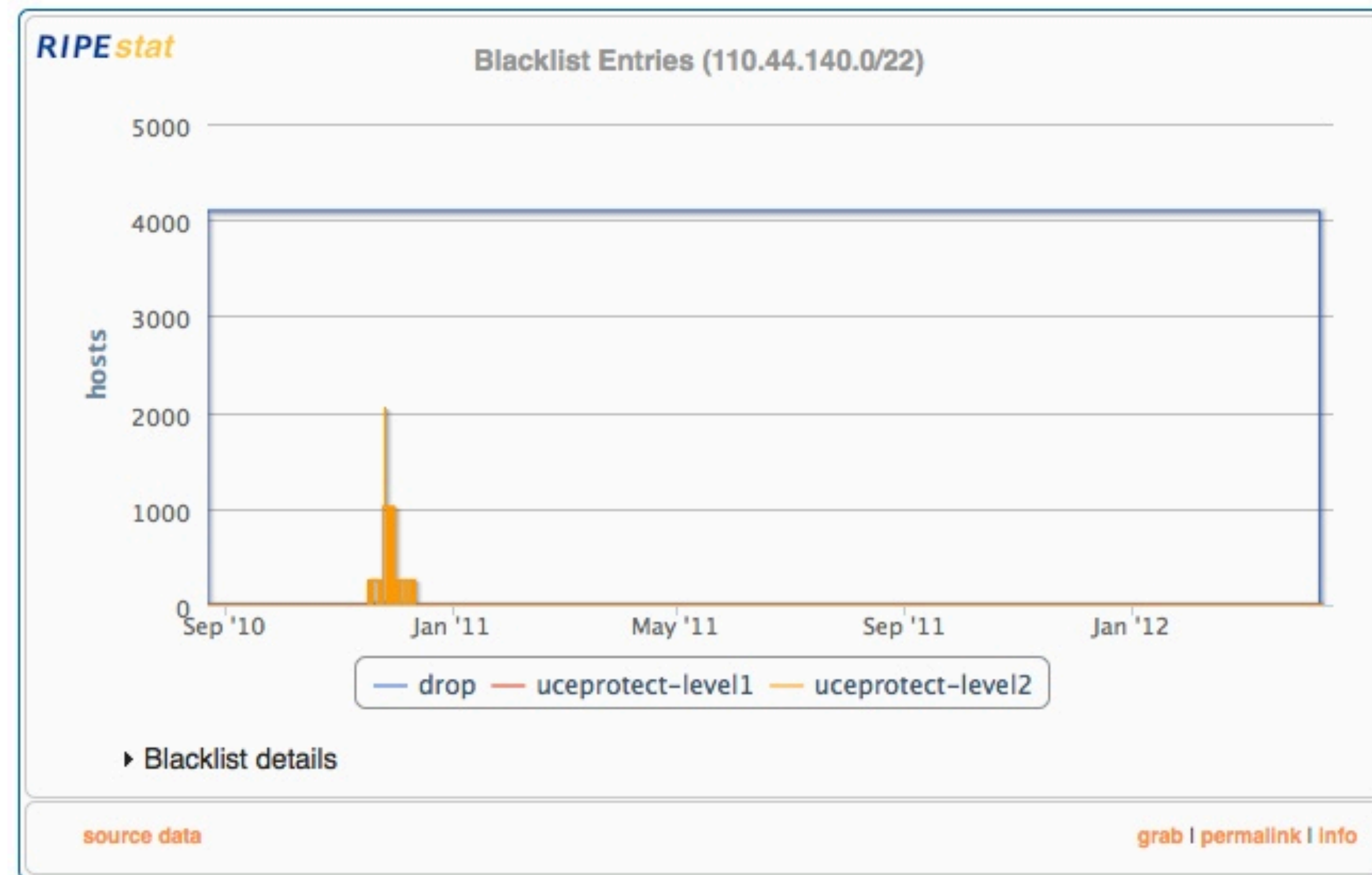
BGP Update Activity

- Shows numbers of announcements and withdrawals seen by RIS route collectors over time



Blacklist

- Finds periods when parts of a prefix featured in one of several blacklists
- So far, Spamhaus DROP and UCE PROTECT



Top Queries

- What is hot?

The current **top queries**

- **37.0.0.0/16**
- **2001:18c8::/32**
- **AS286**
- **AS15169**
- **193.0.0.0/24**
- **AS3320**
- **AS3265**
- **AS786**
- **AS36935**
- **144.15.240.0/24**

Features for Logged-in Users

- Personal history
- Personalisation
 - which result boxes
 - order of result boxes
 - ...
- Members-Only Content
- ...

Your query history (clear)

Show entries

Search:

Resource	Date
90.155.34.116/32	2012-05-03 10:56:47
90.155.0.0/18	2012-05-03 10:55:28
90.155.0.0/18	2012-05-03 10:55:25
2001:8b0::/32	2012-05-03 10:45:08
2001:8b0::/32	2012-05-03 10:43:18

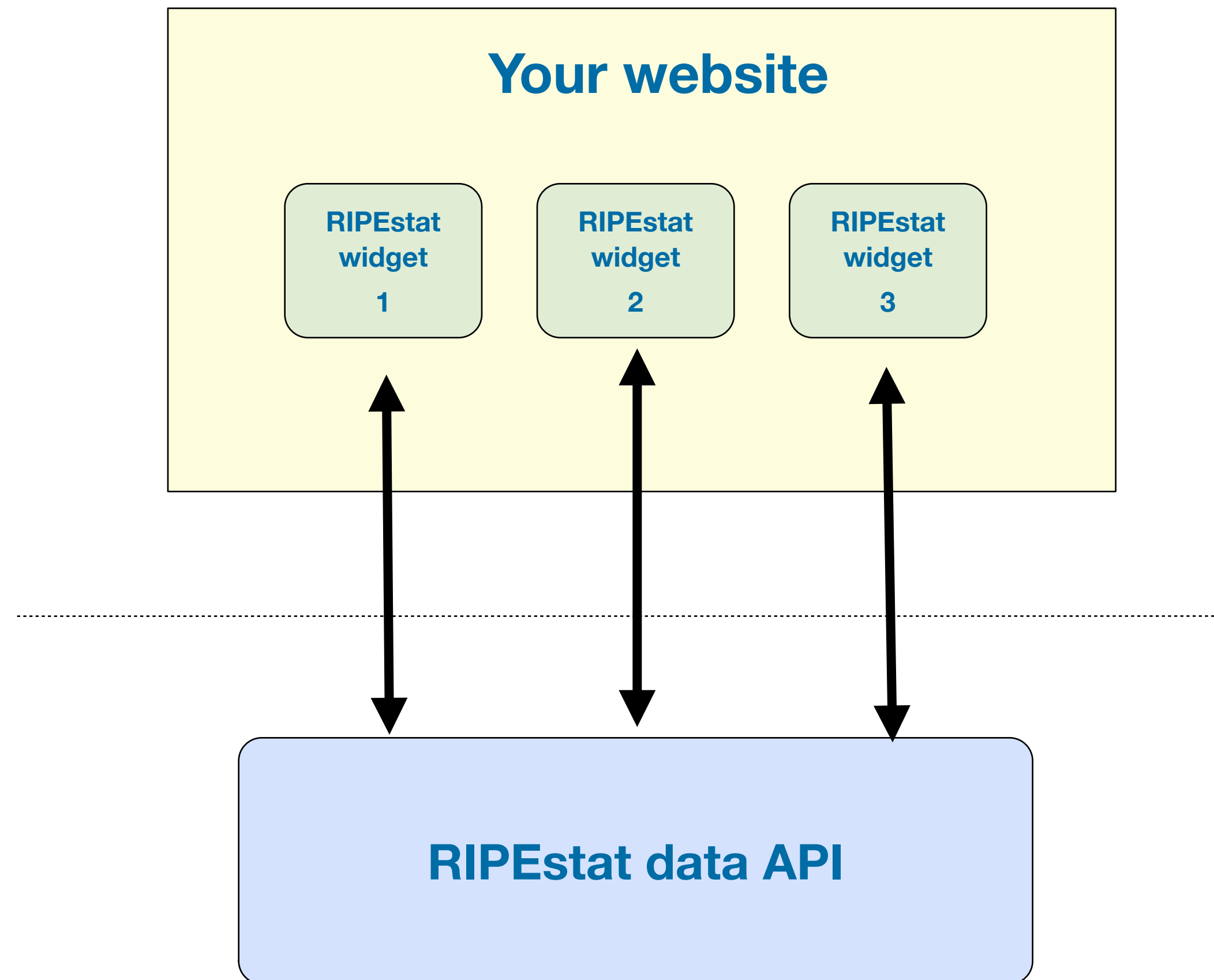
Showing 1 to 5 of 6 entries

lock | restore defaults

Result Boxes for 90.155.34.116/32

<input checked="" type="checkbox"/> prefix-overview (widget)	↑↓
<input checked="" type="checkbox"/> object-browser (widget)	↑↓
<input checked="" type="checkbox"/> address-space-hierarchy (widget)	↑↓
<input checked="" type="checkbox"/> routing-history (widget)	↑↓
<input checked="" type="checkbox"/> reverse-dns (widget)	↑↓
<input checked="" type="checkbox"/> whois (widget)	↑↓
<input checked="" type="checkbox"/> prefix-routing-consistency (widget)	↑↓
<input checked="" type="checkbox"/> geoloc-history (widget)	↑↓
<input checked="" type="checkbox"/> looking-glass (widget)	↑↓
<input checked="" type="checkbox"/> blacklist (widget)	↑↓
<input checked="" type="checkbox"/> bgp-update-activity (widget)	↑↓
<input type="checkbox"/> related-prefixes (widget)	↑↓
<input checked="" type="checkbox"/> allocation-history (widget)	↑↓
<input checked="" type="checkbox"/> address-space-usage (widget)	↑↓
<input checked="" type="checkbox"/> geoloc (widget)	↑↓
<input checked="" type="checkbox"/> visibility (widget)	↑↓

RIPEstat APIs



Widget API

- Embeddable on location in any HTML website
- Purely based on Javascript and HTML(5)
- Data fetched directly from data API via JSON(P)
- Input data configuration defines content
- Customizable layout (visible elements, size)
- Manipulation of the Widget after rendering (reload(), get_data(), etc) via scripting

RIPEstat Data API

- RESTful interface over HTTP
- Can return RIPEstat data in various formats (JSON, YAML)
 - Let us know if you'd like other formats
- Used by the Widgets, data is fetched directly by the browser
- Simple example:
 - ▶ <http://stat.ripe.net/plugin/whats-my-ip/data.json>

```
{
  "cached": false,
  "data": {
    "ip": "2001:67c:2e8:13:223:6cff:fe8d:388c"
  },
  "messages": [],
  "query_id": 11057,
  "status": "ok",
  "status_code": 200,
  "version": "0.1"
}
```

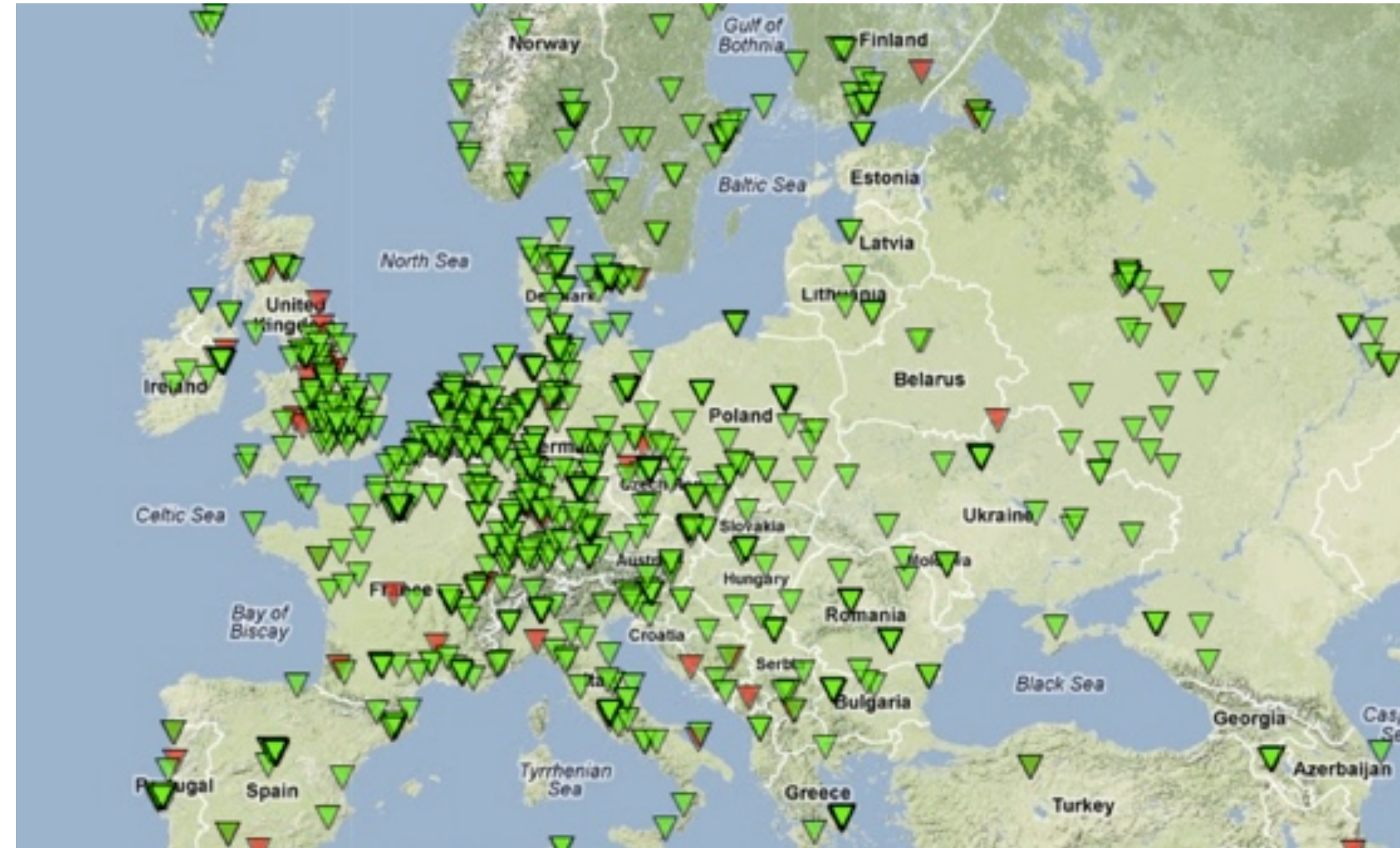

Example

–Embed RIPEstat widgets into your own webpage!

```
<script src="http://stat.ripe.net/widgets/widget_api.js"></script>
<div class="statwdgtauto"><script>
  ripestat.init("as-overview", {"resource": "AS2121"})
</script></div>
```

```
<script src="http://stat.ripe.net/widgets/widget_api.js"></script>
<div class="statwdgtauto"><script>
  ripestat.init("object-browser", {"resource": "AS2121"})
</script></div>
```

RIPE Atlas



- A network of active probes measuring the Internet infrastructure in real-time
- Started in 2010;
- currently more than 1500 probes online

RIPE Atlas

- Network built based on hosts and sponsors
 - Probes can be hosted by ISPs, Internet Exchange Points, individuals...
- User Benefits
 - Worldwide network for active measurements
 - Measure your network/services from the outside
- Community benefits
 - Situational awareness
 - Wealth of data



Example: Reachability of 128.0.0.0/16



User defined Measurements

- Run your own measurements
- Probe Hosts get Credits
- Sponsors get Credits
- RIPE NCC members now also can get Credits

<http://atlas.ripe.net/doc/udm>