



RIPE NCC
RIPE NETWORK COORDINATION CENTRE

RIPE NCC Measurements and Tools

Training Course

Training Services | RIPE NCC | January 2017

Schedule



09:00 - 09:30	Coffee, Tea
11:00 - 11:15	Break
13:00 - 14:00	Lunch
15:30 - 15:45	Break
17:30	End

Introduction



- **Name**
- **Number on the list**
- **Experience**
 - RIPE Database
 - RIPEstat
 - RIPE Atlas
- **Goals**

Overview 1 - RIPEstat



RIPEstat

- Introduction to RIPE and the RIPE NCC
- Introduction to RIPEstat
- More about widgets
 - *Exercise A: Querying for a Resource*
- Visualising BGP Routing Information
 - *Exercise B : BGPlay*
- Reporting Abuse

Overview 2 - RIPE Atlas



RIPE Atlas

- Introduction to RIPE Atlas
- Using RIPE Atlas as a Visitor
- Looking up Public Probes
- Finding Results of Public Measurements
- Creating a Measurement
 - ***Demo: Create a Measurement***
 - ***Exercise C: Create a measurement***
- Network Monitoring
 - ***Exercise D: Using Streaming API***
- Command-line Interface Toolset
 - ***Exercise E: Using RIPE Atlas CLI***
- More RIPE Atlas Features
- Take Part in the Atlas Community



Introduction to the RIPE NCC

Section 1

RIPE NCC - Who are we?



- Located in Amsterdam
- Not-for-profit organisation
- One of the five Regional Internet Registries (RIRs)
- 13,000+ members (LIRs)

Our service region





What do we do?

- Distribute IPv4, IPv6, ASNs
- Training courses
- RIPE Database
- Support RIPE community
- RIPE Atlas, RIPEStat, Resource Certification

RIPE (Reséaux IP Européens)



- Started in 1989
- Discussion forum open to all parties
- Not a legal entity, no formal membership
- Develops policies
- Work done in Working Groups
- Activities on a voluntary basis
- Decisions by consensus





Introduction to RPEstat

Section 2

What is RIPEstat?



One interface for Internet data and statistics

“One-stop shop”



RIPE NCC
RIPEstat



What data? What sources?



- RIPE Database
- Other RIR data
- BGP routing data (RIS)
- Active measurements (RIPE Atlas, DNSMON)
- Geolocation (third party)
- Blacklist data (third party)
- More...

Landing page



**RIPEstat shows
your own IP/ASN**

- RIPEstat Home <<
- About RIPEstat >
- Documentation >
- Use Cases >

Your IP address is:
2001:67c:2e8:9::c100:14e6

System Statistics

1,252,054

Requests seen in the last full hour on RIPEstat

On RIPE Labs

Processing RIPE Atlas and RIPEstat
Data with Hadoop
Nov 19, 2015

Updates to the RIPE NCC Routing
Information Service
Oct 12, 2015

The Internet in North Korea - Hanging
by a Single Thread?
Aug 26, 2015

Is it Really Worth Peering at IXPs? A
Comparative Study
Aug 03, 2015

RIPE Atlas DataViz Hackathon Results
Apr 10, 2015

Search RIPEstat

» Search

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

**Lost in the
address space?**
Find your way with the
Address Space Hierarchy
widget.

About RIPEstat	Documentation	Use Cases
FAQ	Interfaces & APIs	Notable Network Events
Data Sources	Demos	Compare Results
Widget List	Roadmap	Looking for Abuse Information
Top Queries	Changelog	Global Internet Statistics
Workshops	Known Issues	
Feedback		

Query Types



- IPv6 address/prefix
- IPv4 address/prefix
- ASN
- Hostname
- Country code

Results page



More tabs
with results

RIPE Database (Whois) Website

Search the content of this website

Manage IPs and ASNs > Analyse > Participate > Get Support > Publications > About Us >

You are here: Home > Analyse > Statistics > RIPEstat > 193.0.20.0/23

RIPEstat

Search

At a Glance (4)

- Routing
- DNS
- Anti Abuse
- Database
- Geographic
- Activity
- Suggestions

Prefix Overview (193.0.20.0/23)

Announced

This prefix is announced by **AS3333**

"RIPE-NCC-AS Reseaux IP Europeens Network Coordination Centre (RIPE NCC),NL"

Show IANA Registry Information

Geoloc (193.0.20.0/23)

Map Satellite

Geoloc details

Data is based on MaxMind's GeoLite City data set and valid for the stated query time (see below)

Showing results for 193.0.20.0/23 as of 2015-05-22 08:00:00 UTC

Registry Browser (193.0.20.0/23)

inetnum: 193.0.20.0/23

No database object matches your query.

However, you may be interested in:

- route: 193.0.20.0/23
- inetnum: 193.0.18.0-193.0.21.255

Showing results for 193.0.20.0/23 as of 2015-05-22 12:04:28 UTC

RIPE NCC members can access historical information by signing in with their RIPE NCC Access account.

Routing Status (193.0.20.0/23)

At 2015-05-22 08:00:00 UTC, 193.0.20.0/23 was 100% visible (by 101 of 111 RIS full peers).

First ever seen announced by AS3333, on 2008-03-27 00:00:00 UTC.

Originated by: AS3333 (valid route object in RIPE)

No less-specific covering prefixes.

Advanced Settings

Showing results for 193.0.20.0/23 as of 2015-05-22 08:00:00 UTC

Results exclude routes with very low visibility (less than 3 RIS peers seeing).

created 2015-05-22T12:04:28 UTC -- server version 3490.c344383583e -- server stat.app? -- widget API version 2428-571e9b07b63

f t in

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Widgets

Why use RIPEstat?



- For your own network:
 - Is someone else announcing my prefix?
 - How visible is my new IPv6 network?
 - Is my BGP routing consistent with the Routing Registry?
 - Are my DNS and reverse DNS consistent?
 - Location of my customers' prefixes
 - Was my prefix visible yesterday in Tokyo?

Why use RIPEstat?

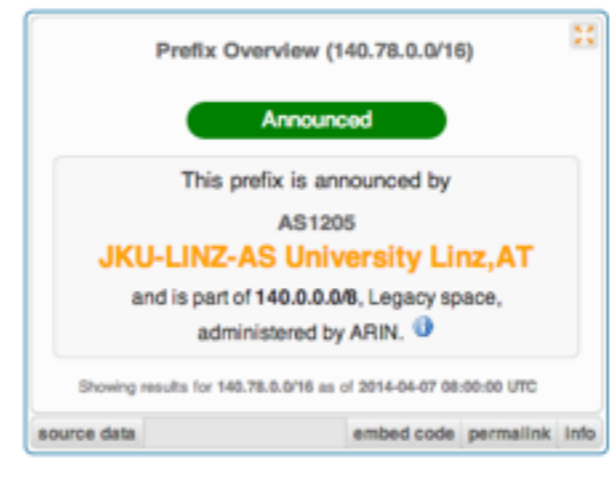
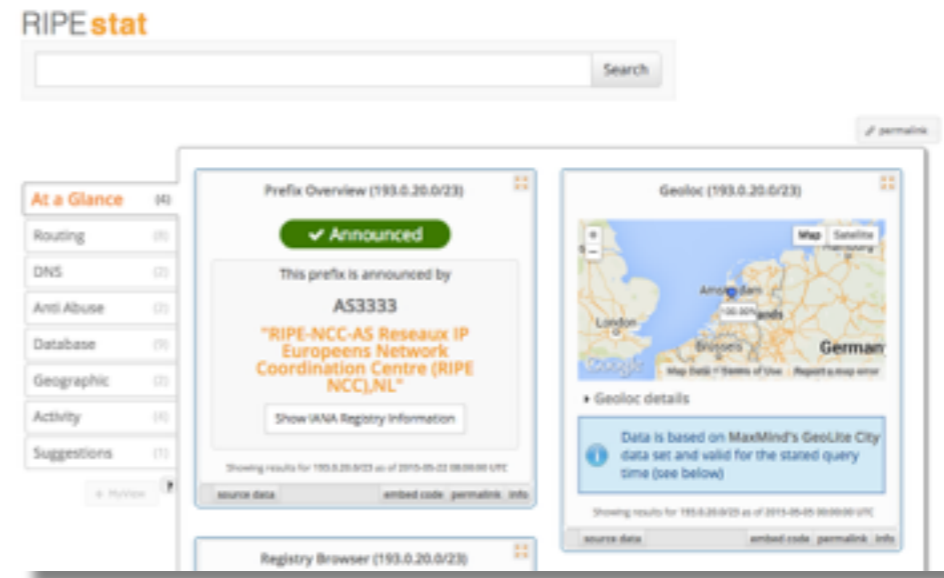


- For viewing other networks:
 - How many IPv6 prefixes are announced in my country?
 - IPv6 in my country compared to neighbours
 - Who has more peers, AS1 or AS2?
 - How does the upstream outage look?
 - Is the prefix/ASN that I want already announced?
 - Which ASN announces an IP?
 - Where can I report abuse from an IP?

RIPEstat Interfaces



- <https://stat.ripe.net>
- RIPEstat widget API
- RIPEstat data API

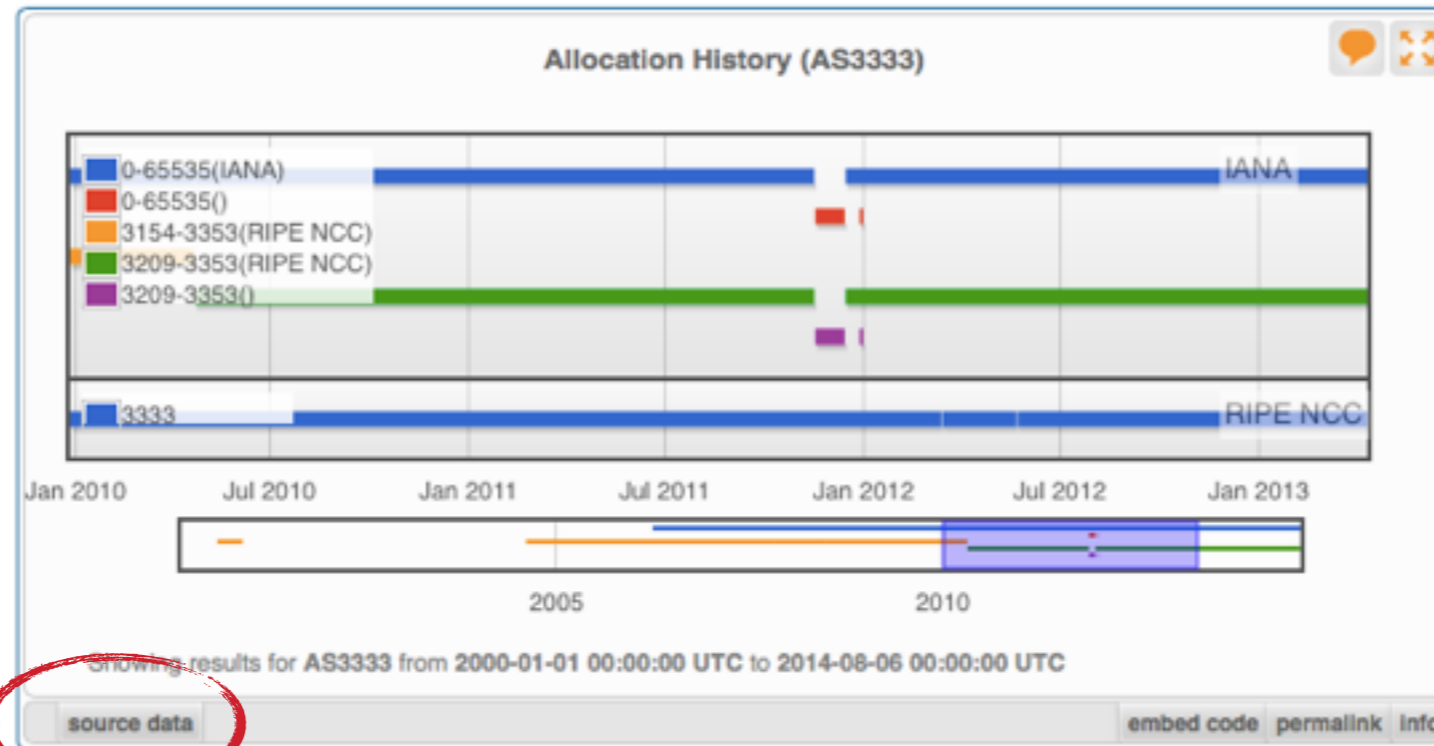




More About Widgets

Section 3

Get the data behind the widget!



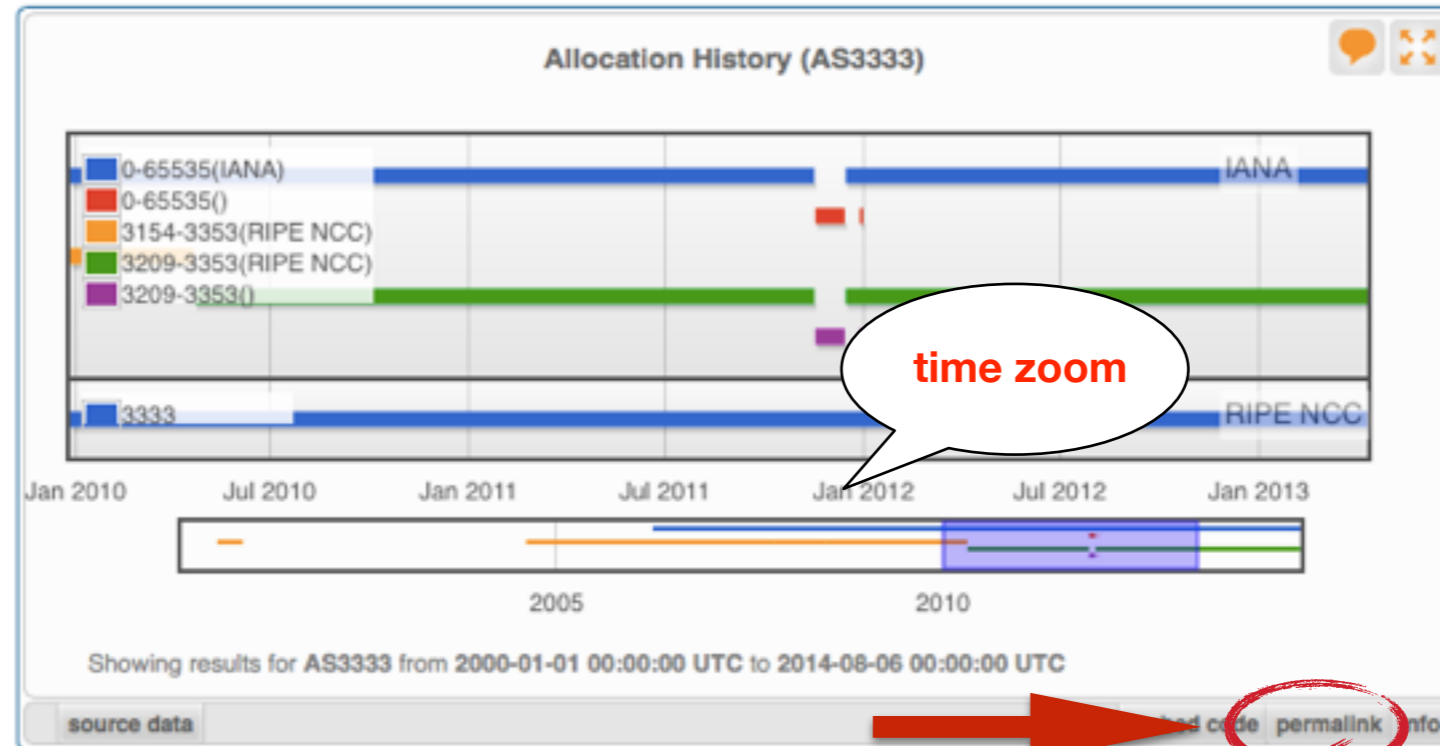
source data embed code permalink info

Get the data behind this widget with the Data API

<https://stat.ripe.net/data/allocation-history/data.json?resource=AS3333>

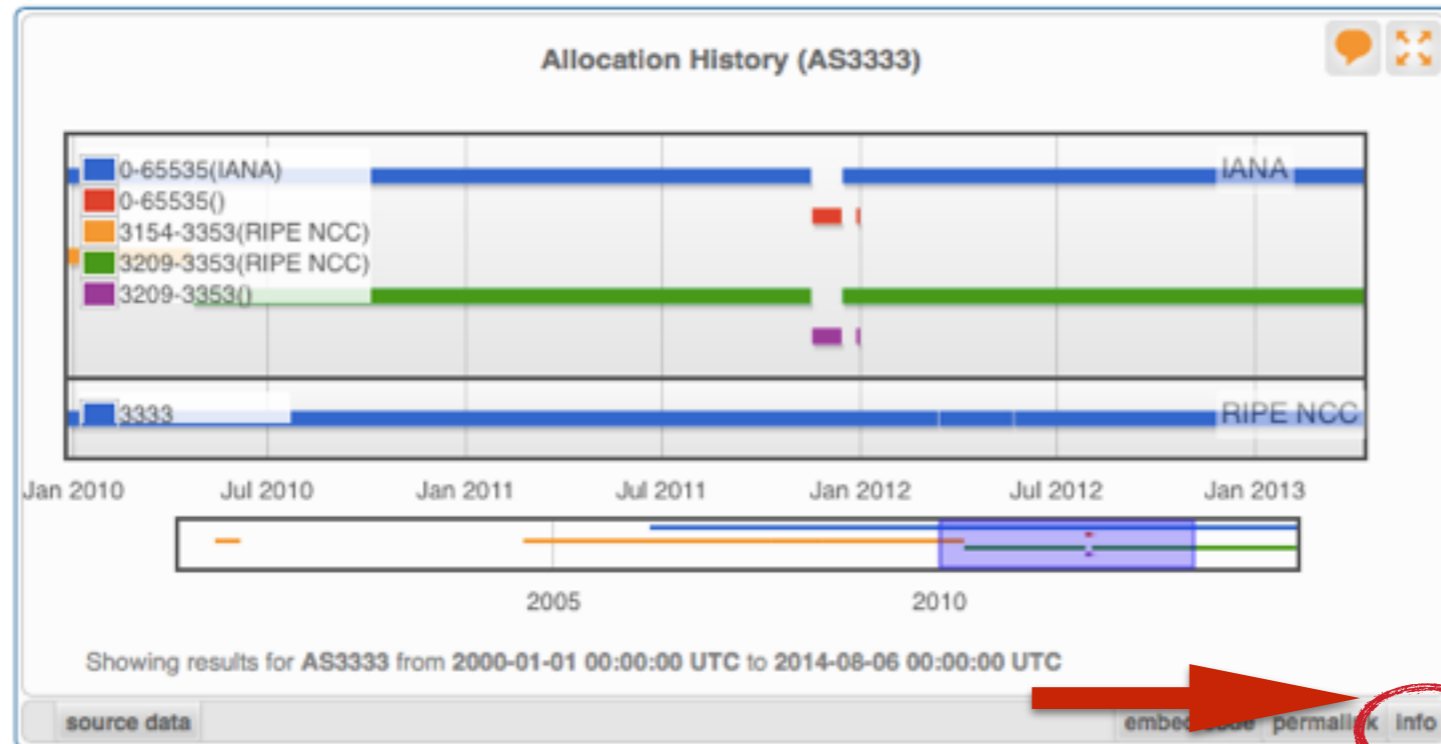
```
{
  "cached": true,
  "data": {
    "query_endtime": "2014-08-06T00:00:00",
    "query_starttime": "2000-01-01T00:00:00",
    "resource": "3333",
    "results": {
      "IANA": [
        {
          "resource": "0-65535",
          "status": "IANA",
          "timelines": [
            {
              "endtime": "2007-10-11T00:00:00",
              "starttime": "2007-10-11T00:00:00"
            },
            {
              "endtime": "2008-11-03T00:00:00",
              "starttime": "2007-10-27T00:00:00"
            }
          ]
        }
      ]
    }
  }
}
```

Shareable results URL



- Immutable shareable URL for each result!
- URL includes:
 - Zoom
 - History

Where's the data from?



source data embed code permalink info

Content Explanation

What does this widget show?
Allocation History displays information about allocations and direct assignments of prefixes or AS numbers.

How can the visualisation be interpreted?
When the queried resource was a prefix, the graph will show how that prefix and related (more or less specific prefixes) were allocated over time. When the queried resource was an ASN, the graph will show the allocation of that ASN.
The legend will display all resources, including those which are not announced during the time range displayed. It is possible to change the displayed time period with the timeline selector underneath the graph.



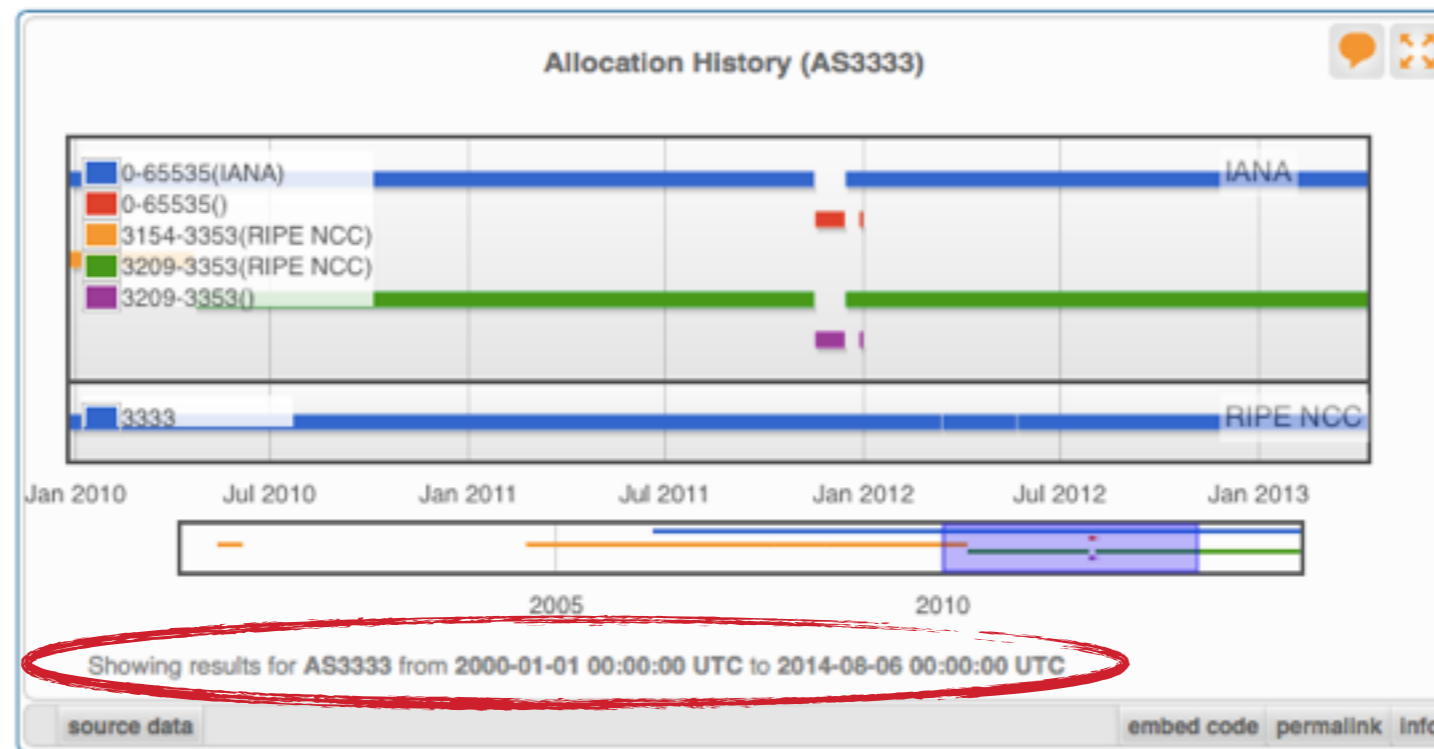
The shaded area is displayed in the graph. This area can be adjusted by moving to the left or right end of the shaded area and then dragging it to the desired location. It is possible to change not only the start and end time, but also the length of the period which is shown.



What is the data source?
The RIR statistics files summarise the current state of allocations and assignments of Internet number resources. They are intended to provide a snapshot of the status of Internet number resources, without any transactional or historical details. Find details for each RIR here:

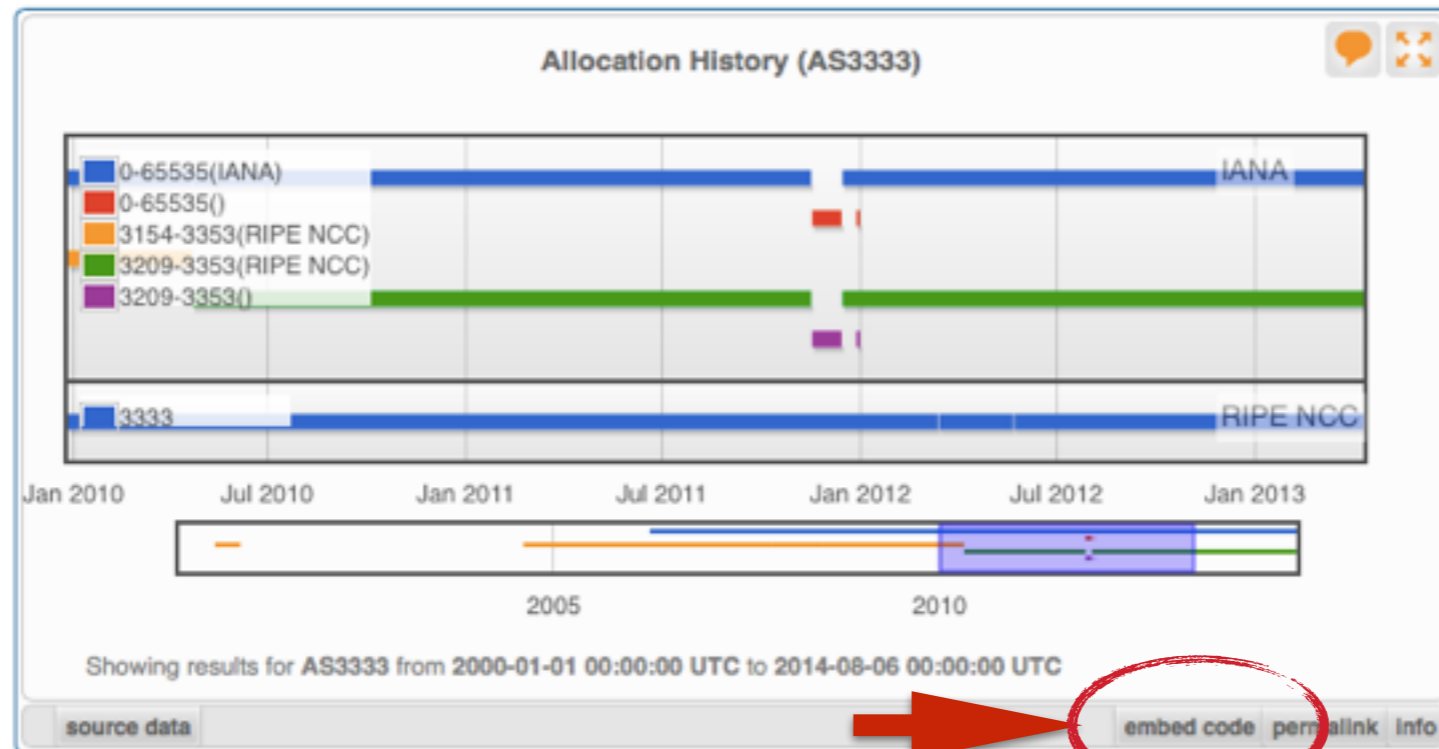
- AFRINIC
- APNIC
- ARIN
- LACNIC
- RIPE NCC

Freshness and timescale of the data



- Timestamp and time period
- Different widgets = different update frequency
- Adjustable usually
 - Limits: different maximum granularities

Embed the widget!



source data embed code permalink info

Embed this widget on your page

```
<script src="https://stat.ripe.net/widgets/widget_api.js"></script>
<div class="statwdgtauto"><script>ripestat.init("allocation-history",
{"resource": "AS3333"}, null, {"size": "medium", "disable": ["controls"]})</script>
</div>
```

Copy and paste this code into an HTML webpage. Note: `widget_api.js` (the 1st line) only needs to be included once per page.

For more usage details please view the RIPEstat Widget API documentation.

Embedding widgets on your site



- ISP embedded widgets on its page

Prefix Count widget

AS Path Length widget

The screenshot shows the website for AS42093.net. At the top, there's a navigation bar with links: Home, Network load, Peers, Peering policy, Maintenance, and Looking glass. Below this, there's a 'Welcome' section with a brief introduction and an emergency contact number. The 'Network status' section indicates no current issues. The 'Network Details' section mentions tools generated by Ripe. The 'Prefixes' section includes a line graph showing the number of IPv4 and IPv6 prefixes from 2010 to 2013. The 'AS Path Length' section features a radar chart showing average path lengths to various ISPs.

Prefixes

The table shows every prefix that originated from our AS in the last week.

number of Prefixes Addresses

Legend: IPv4 Prefixes (blue), IPv6 Prefixes (green)

Showing results for AS42093 from 2000-01-01 00:00:00 UTC to 2013-09-09 00:00:00 UTC

AS Path Length

The diagram shows the average length of all AS paths seen in the last week originating from our AS.

Legend: Minimum (yellow), Average (no prepending) (red)

Showing results for AS42093 from 2013-09-09 08:00:00 UTC to 2013-09-09 16:00:00 UTC

Widgets List



<https://stat.ripe.net/widget/list>

RIPEstat Widgets

This is a complete list of all of the widgets that RIPEstat offers. Each of these widgets can be accessed using the links below.

When you view a widget you can also get code for **embedding** it in your own pages. The full procedure for embedding and configuring widgets is described in the [Widget API Documentation](#).

Show entries

Search:

Title (show slug)	Example	Prefix	IP address	ASN	Hostname	Country code
Abuse Contact Finder		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Address Space Hierarchy		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Address Space Usage		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Allocation History		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Announced Prefixes		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AS Overview		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AS Path Length		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AS Routing Consistency		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ASN Neighbours		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ASN Neighbours History		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RIPE Atlas Probes		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
RIPE Atlas Measurement Targets		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



Querying for a Resource

Exercise A



Visualising BGP Routing Information

Section 3

Querying

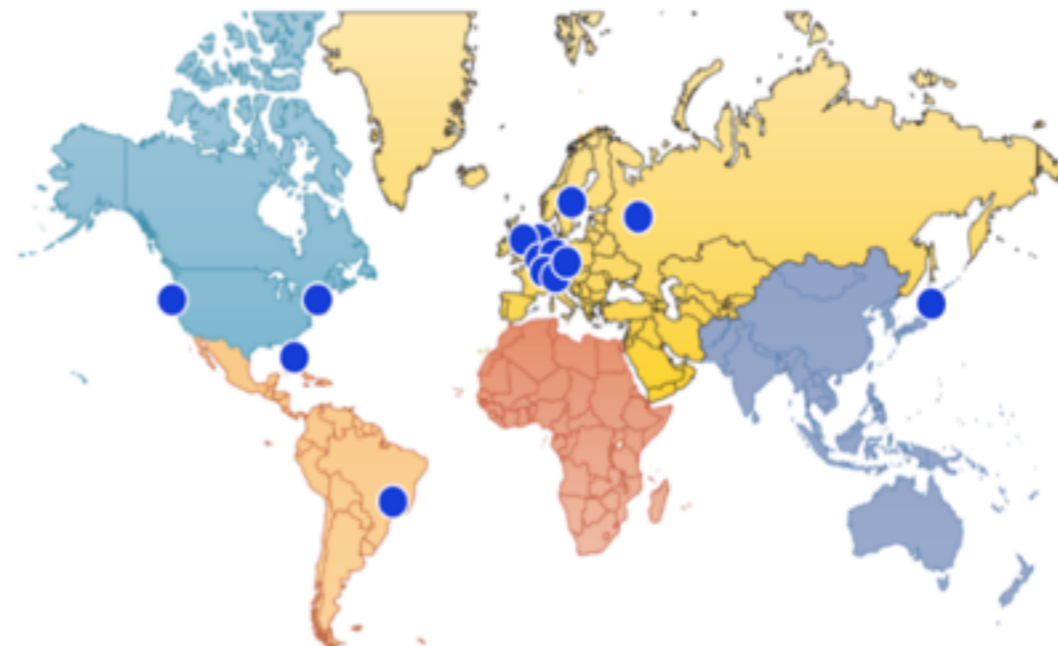


- IP or ASN queried?
 - You get different widgets!
- ASN often visualised based on the prefixes it announces

RIS - Routing Information Service



- RIPE NCC collecting BGP information since 1999
 - Raw data: ris.ripe.net
- 15 route collectors
600+ peers
- RIPEstat visualises RIS data



At-a-glance view: Prefix queried



At a Glance

Prefix Overview (140.78.0.0/16)

Announced?
By which AS?

Announced

This prefix is announced by **AS1205**
JKU-LINZ-AS University Linz,AT
and is part of 140.0.0.0/8, Legacy space, administered by ARIN.

Showing results for 140.78.0.0/16 as of 2014-08-13 08:00:00 UTC

Registry Browser (140.78.0.0/16)

Last updated on 2014-05-27 at 12:53:54 UTC. Show more

inetnum:
140.78.0.0/16

netname JKU-LAN
descr Johannes Kepler University
country AT
org ORG-JKU1-RIPE
admin-c ULAC1-RIPE
tech-c ULNA1-RIPE
status LEGACY
mnt-by AS1205-MNT
mnt-by ACONET-LIR-MNT

Showing results for 140.78.0.0/16 as of 2014-08-13 13:26:45 UTC

RIPE NCC members can access historical information by signing in with their LIR's RIPE NCC Access account.

Geoloc (140.78.0.0/16)

100.00%

Data is based on MaxMind's GeoLite City data set and valid for the stated query time (see below)

Showing results for 140.78.0.0/16 as of 2014-08-01 00:00:00 UTC

Routing Status (140.78.0.0/16)

At 2014-08-13 08:00:00 UTC, 140.78.0.0/16 was 100% visible (by 97 of 97 RIS full peers).

First ever seen before Jan 2004 (= beginning of available data).
Originated by: AS1205 (valid route object in RIPE)
No less-specific covering prefixes.

Advanced Settings
Compare to 1 week earlier | Exclude low visibility routes

Showing results for 140.78.0.0/16 as of 2014-08-13 08:00:00 UTC

Results exclude routes with very low visibility (less than 3 RIS peers seeing).

Registered in the RIPE Database?

Announced?
By which AS?
What % visible?
Since when?

At-a-glance view: ASN queried



At a Glance (4)

- Routing (11)
- DNS (1)
- Anti Abuse (1)
- Database (5)

AS Overview (AS1205)

Announced

Holder of this ASN:
JKU-LINZ-AS University Linz,AT

Showing results for AS1205 as of 2014-08-13 08:00:00 UTC

source data embed code permalink info

Registry Browser (AS1205)

Updated on 2014-05-27 at 17:51 UTC.

ASN: AS1205

as-name	JKU-LINZ-AS
org	ORG-JKU1-RIPE
descr	University Linz
admin-c	ULAC1-RIPE
tech-c	ULNA1-RIPE
mnt-by	AS1205-MNT
mnt-by	ACONET-LIR-MNT

Showing results for AS1205 as of 2014-08-13 13:49:15 UTC

RIPE NCC members can access historical information by signing in with their LIR's RIPE NCC Access account.

source data embed code permalink info

Geoloc (AS1205)

Map Satellite

Map Data Terms of Use Report a map error

Geoloc details

Data is based on MaxMind's GeoLite City data set and valid for the stated query time (see below)

Showing results for AS1205 as of 2014-08-01 00:00:00 UTC

source data embed code permalink info

Routing Status (AS1205)

At 2014-08-13 08:00:00 UTC, AS1205 was visible to 100% of 97 IPv4 and 2% of 95 IPv6 RIS full peers.

First ever seen as origin announcing 193.186.172.0/22, on 2004-01-03 00:00:00 UTC.

Originated IPv4 prefixes: 3
Originated IPv6 prefixes: 0
Observed BGP neighbours: 2
Address space announced (IPv4): 67584 IPs
Address space announced (IPv6): equiv. to 0 /48s

Advanced Settings

Change to 1 week earlier | Exclude low visibility routes

Showing results for AS1205 as of 2014-08-13 08:00:00 UTC

Results exclude routes with very low visibility (less than 3 RIS peers seeing).

Given query time (2014-08-13 08:00:00 UTC) has been changed because it is earlier than the time there is data available for!

source data embed code permalink info

The rest is the same as for a prefix

BGPlay



- See how your network is routed
 - Announcements
 - Withdrawals
 - Path changes
- Shows routing history
 - Animated graphic
 - Highly interactive

<https://stat.ripe.net/widget/bgplay>

BGPlay



BGP event, ASN
or ASN path details

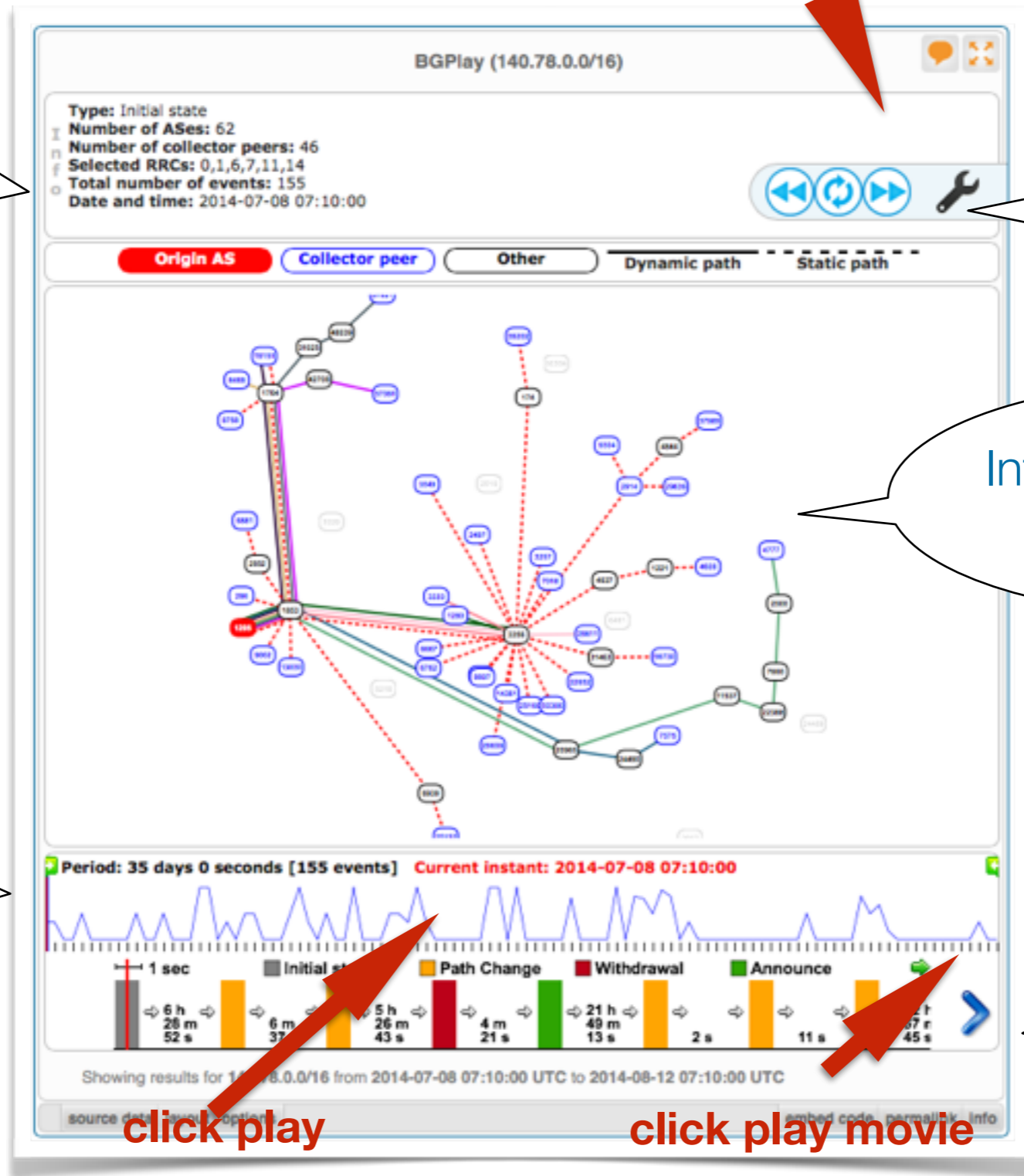
click play

Control panel:
• Covered time period
• RRC selection

Interactive animated
graph

Control timeline

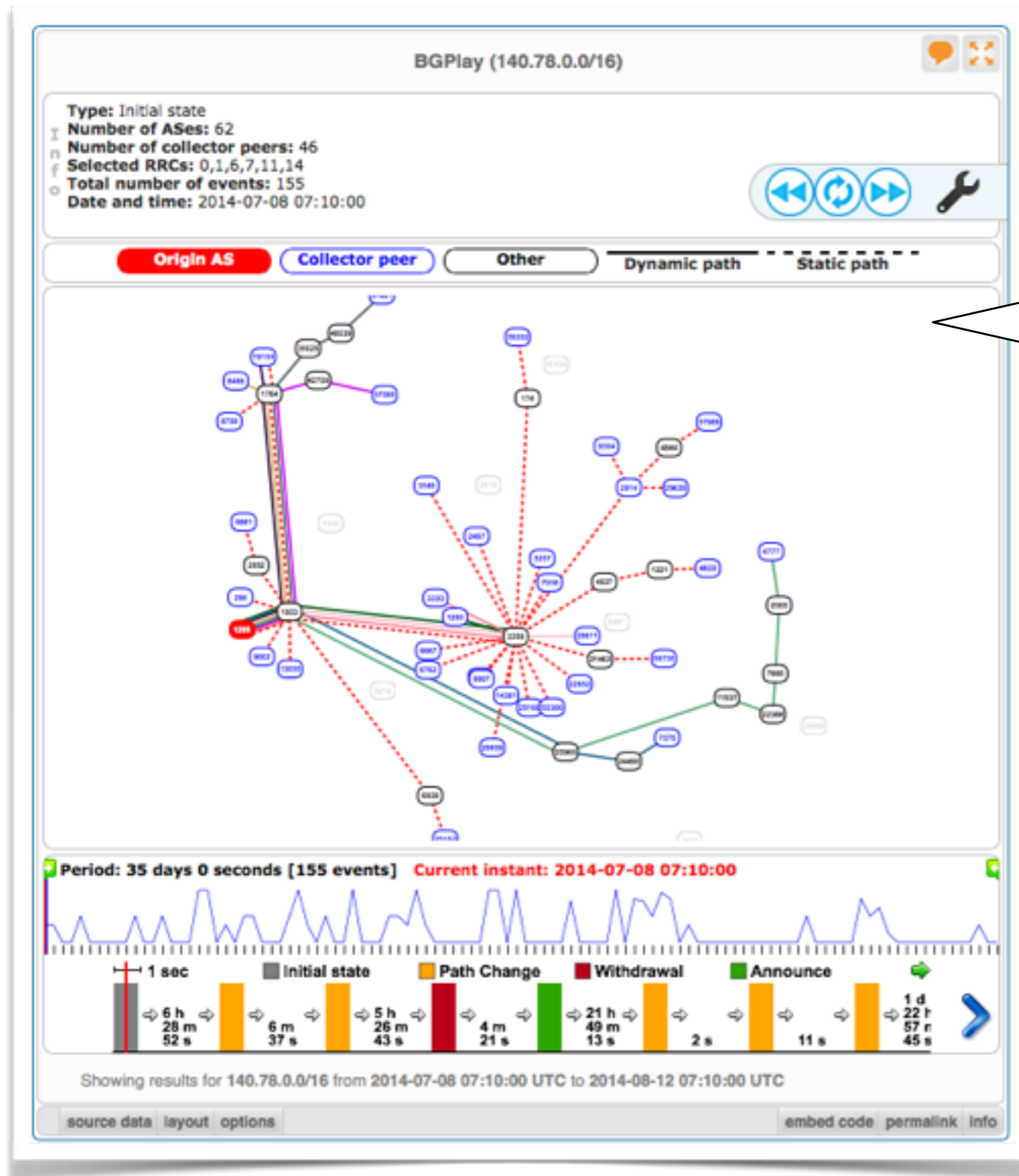
Detailed timeline
with events



click play

click play movie

BGPlay



Examples: (2013/8/28-30)

- Prefix with announcements & withdrawals:
84.205.64.0/24
- Check IPv6 connectivity:
2001:67c:2e8::/48
- Multi-homed prefix:
199.7.80.0/24
- BGP hijacking
2008-02-28: 208.65.153.0/24
Youtube traffic by Pakistan Telecom
AS17557
- Blackholing:
193.33.96.64

Prefixes visible for this ASN



Announced Prefixes (AS1205)

Show 10 entries Search:

Prefix	First Seen ?	Last Seen ?
193.186.176.0/22	2014-07-30 08:00:00 UTC	2014-08-13 08:00:00 UTC
193.186.172.0/22	2014-07-30 08:00:00 UTC	2014-08-13 08:00:00 UTC
140.78.0.0/16	2014-07-30 08:00:00 UTC	2014-08-13 08:00:00 UTC

Showing 1 to 3 of 3 entries

[Click here to load the entire history, starting from 2004-01-01 00:00 UTC!](#)

[Advanced Settings](#)

Exclude low visibility prefixes

Showing results for AS1205 from 2014-07-30 08:00:00 UTC to 2014-08-13 08:00:00 UTC

i Results exclude routes with very low visibility (less than 3 RIS peers seeing).

source data embed code permalink info

IPv4 vs IPv6?
Sort by prefix
or
Search "." vs "::"



Time period
shown in widget
Default:
last two weeks

Announced Prefixes: useful for ASN



Announced Prefixes (AS1205)

Show entries Search:

Prefix	First Seen ?	Last Seen ?
193.186.176.0/22	2004-01-22 16:00:00 UTC	2014-08-13 08:00:00 UTC
193.186.172.0/22	2004-01-01 00:00:00 UTC	2014-08-13 08:00:00 UTC
193.171.8.0/24	2008-12-09 08:00:00 UTC	2008-12-11 16:00:00 UTC
193.171.32.0/20	2008-12-09 08:00:00 UTC	2008-12-11 16:00:00 UTC
193.171.200.0/21	2008-12-09 08:00:00 UTC	2008-12-11 16:00:00 UTC
193.170.32.0/21	2008-12-09 08:00:00 UTC	2008-12-11 16:00:00 UTC
140.78.0.0/16	2004-01-01 00:00:00 UTC	2014-08-13 08:00:00 UTC

Showing 1 to 7 of 7 entries

Advanced Settings

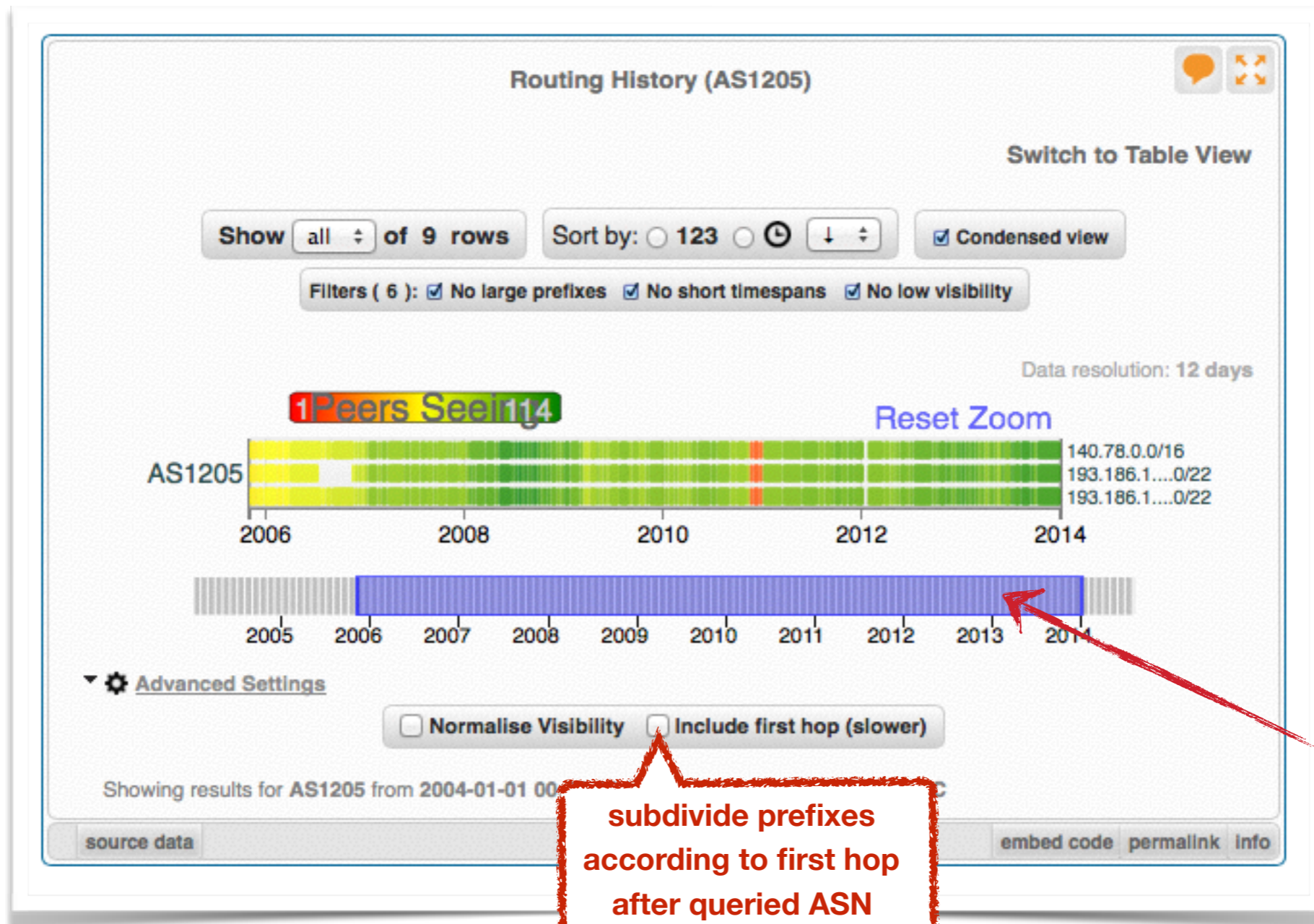
Exclude low visibility prefixes

Showing results for AS1205 from 2004-01-01 00:00:00 UTC to 2014-08-13 08:00:00 UTC

i Results exclude routes with very low visibility (less than 3 RIS peers seeing).

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

History of prefixes announced by ASN



Time scale selection



BGPlay

Exercise B



Reporting Abuse

Section 4

What to do if your network is attacked?



- Spam or unauthorised access?
 - Find IP in message headers or logs
- Want to contact their admin?
 - Find the correct email for reporting abuse
- RIPE Database
 - Contact details for every ASN and IP address
 - In Europe, Middle East, Central Asia

Reporting Abuse



- Take action with the Abuse Contact Finder

<https://stat.ripe.net/abuse>

RIPEstat Abuse Contact Finder

The RIPEstat Abuse Contact Finder may be able to help you find the email address that should be used to report network abuse originating from a particular IP address.

- You can learn more about network abuse in general and what you can do to stop it on the RIPE NCC's [Abuse Information page](#).
- You can learn more about how the RIPEstat Abuse Contact Finder works and how to report abuse in [this tutorial on RIPE Labs](#).

RIPEstat Abuse Contact Finder BETA

Enter an IP address

In -depth information about abuse

Enter IP address

source data embed code permalink info

For regular RIPEstat users: this widget, of course, can also be found on the regular result page in the "Anti Abuse" tab.

The screenshot shows the RIPEstat Abuse Contact Finder interface. It features a title, a brief description, and two bullet points with links. Below this is a search widget with a text input field and a search button. Two red callout boxes with arrows point to the search input field and the 'Abuse Information page' link. The search input field contains the text 'Enter an IP address'. The 'Abuse Information page' link is highlighted in blue. The search widget has a 'source data' button and 'embed code', 'permalink', and 'info' links. A note at the bottom explains that the widget is also available on the regular result page.

Reporting Abuse



Abuse Contact Finder (2001:67c:2e8::/48) **BETA**

Email-Contact

abuse@ripe.net

Contact-Quality-Rating

★★★★★ (5/5)

This contact can be used to report abuse.

Show Complete Details
 Info for Resource Holders

Showing results for 2001:67c:2e8::/48 as of 2013-08-30 14:39:00 UTC

BETA Beta status: Please note that even highly rated contacts can be incorrect

source data embed code permalink info

Rating of the contact

Email contact to report abuse

Reporting Abuse



Abuse Contact Finder (2001:67c:2e8::/48) **BETA**

Email-Contact

abuse@ripe.net

Contact-Quality-Rating

★★★★★ (5/5)

This contact can be used to report abuse.

Show Complete Details
 Info for Resource Holders

Showing results for 2001:67c:2e8::/48 as of 2013-08-30 14:39:00 UTC

BETA Beta status: Please note that even highly rated contacts can be incorrect

source data embed code permalink info

Details about the resource and abuse contact:

Show Complete Details

Details

- Results for

193.0.18.0-193.0.21.255 ^o
abuse@ripe.net from abuse-contact role

- Special Network Resource Information

This resource has been identified to be related to this information:
RIPE NCC PI Allocation

Hold by:
n.a. ^o

- RIR Information

RIR	RIPE NCC	RIPE's Whois
		https://apps.db.ripe.net/search/query.html



Questions





RIPE Atlas

Overview 2 - RIPE Atlas



RIPE Atlas

- Introduction to RIPE Atlas
- Using RIPE Atlas as a Visitor
- Looking up Public Probes
- Finding Results of Public Measurements
- Creating a Measurement
 - ***Demo: Create a Measurement***
 - ***Exercise C: Create a measurement***
- Network Monitoring
 - ***Exercise D: Using Streaming API***
- Command-line Interface Toolset
 - ***Exercise E: Using RIPE Atlas CLI***
- More RIPE Atlas Features
- Take Part in the Atlas Community



Introduction to RIPE Atlas

Section 5

Goals



- Learn how to use RIPE Atlas for network monitoring and troubleshooting
- Get answers to your questions

RIPE Atlas



-is a global, open, distributed Internet measurement platform, consisting of thousands of measurement devices that measure Internet connectivity in real time

Global active measurements platform

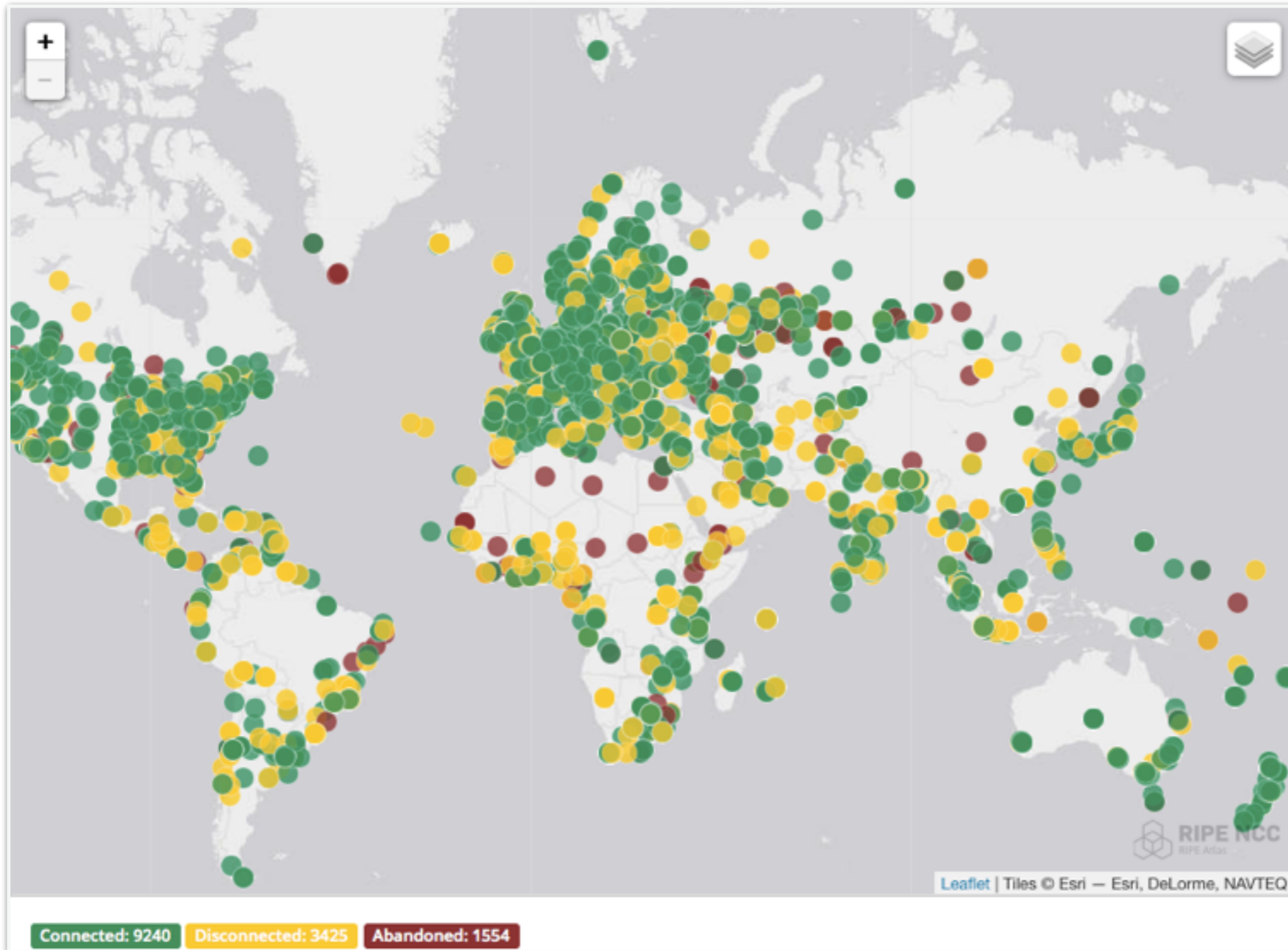
- Goal: View Internet reachability
- Probes hosted by volunteers
- Measurements towards root name servers
 - Visualised as Internet traffic maps
- Users can also run customised measurements
 - ping, traceroute, DNS & SSL/TLS, NTP and HTTP*
- Data publicly available

RIPE Atlas in numbers: April 2016



- 9,400+ probes
- Countries: 184
- Originating ASNs:
 - 3,398 (IPv4) = 6,4% coverage
 - 1,246 (IPv6) = 11,21% coverage

RIPE Atlas Global Coverage



Measurements Devices



- v1 & v2: Lantronix XPort Pro
- v3: TP-Link TL-MR3020 powered from USB port
 - Does not work as a wireless router
 - Same functionality as the old probe
- RIPE Atlas anchor: Soekris net6501-70



Most Popular Features



- Six types of measurements: ping, traceroute, DNS, SSL/TLS, NTP and HTTP (to anchors)
- APIs and CLI tools to start measurements and get results
- Streaming data for real-time results
- New: “Time Travel”, LatencyMON, DomainMON
- Status checks (Icinga & Nagios)



Using RIPE Atlas As a Visitor

Section 6

Internet Traffic Maps



- RIPE Atlas <<
- About RIPE Atlas >
- Get Involved >
- Probes and Anchors >
- Measurements, Maps and Tools** v
- Measurements
- Internet Maps
- Tools
- Resources >
- RIPE NCC Members
- My Atlas >
- Staff Pages >

Internet Maps

DNS Root Instances

Shows, for each probe, which root DNS server instance the probe ends up querying, when they ask a particular root server. In other words, it shows the "gravitational radius" for root DNS server instances.

Comparative DNS Root RTT

Shows a comparison of response time for DNS SOA queries to all the root DNS servers. For each probe, a marker shows the "best" root server with colour identifying the related minimum response time.

Root Server Performance

This map shows the reply time to the SOA query of a particular root DNS server, over the selected transport protocol (UDP, TCP or comparison of the two) for each probe.

RTT to Fixed Destinations

Shows the colour coding for the RTT value for the particular destination for each probe. The minimum / average / maximum values are based on standard "ping" measurements.

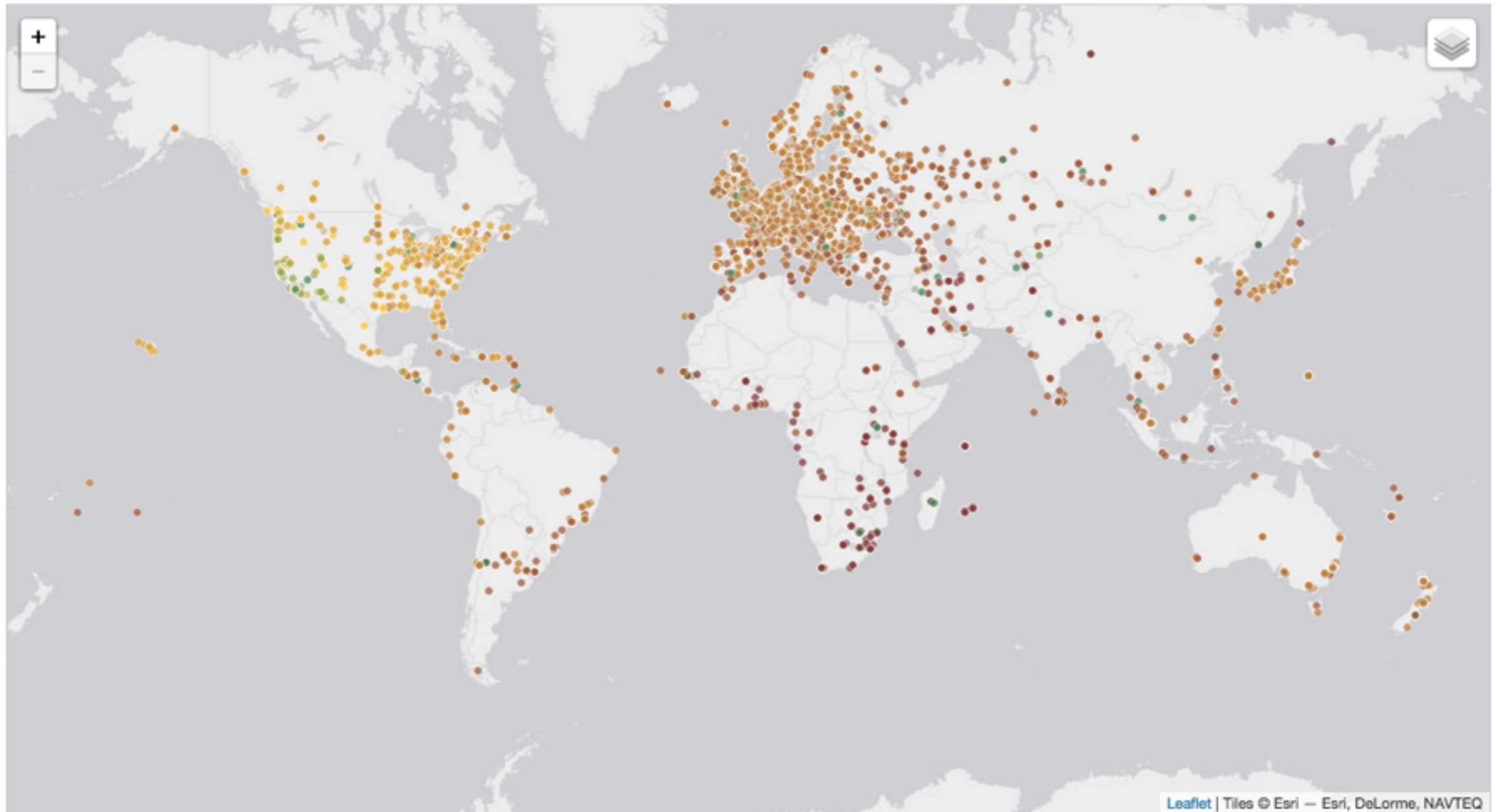
Reachability of Fixed Destinations

Shows if the particular fixed destination is reachable or not from each probe. Red markers indicate that the specific destination for these probes are unreachable and green reachable.

Where is B-root?

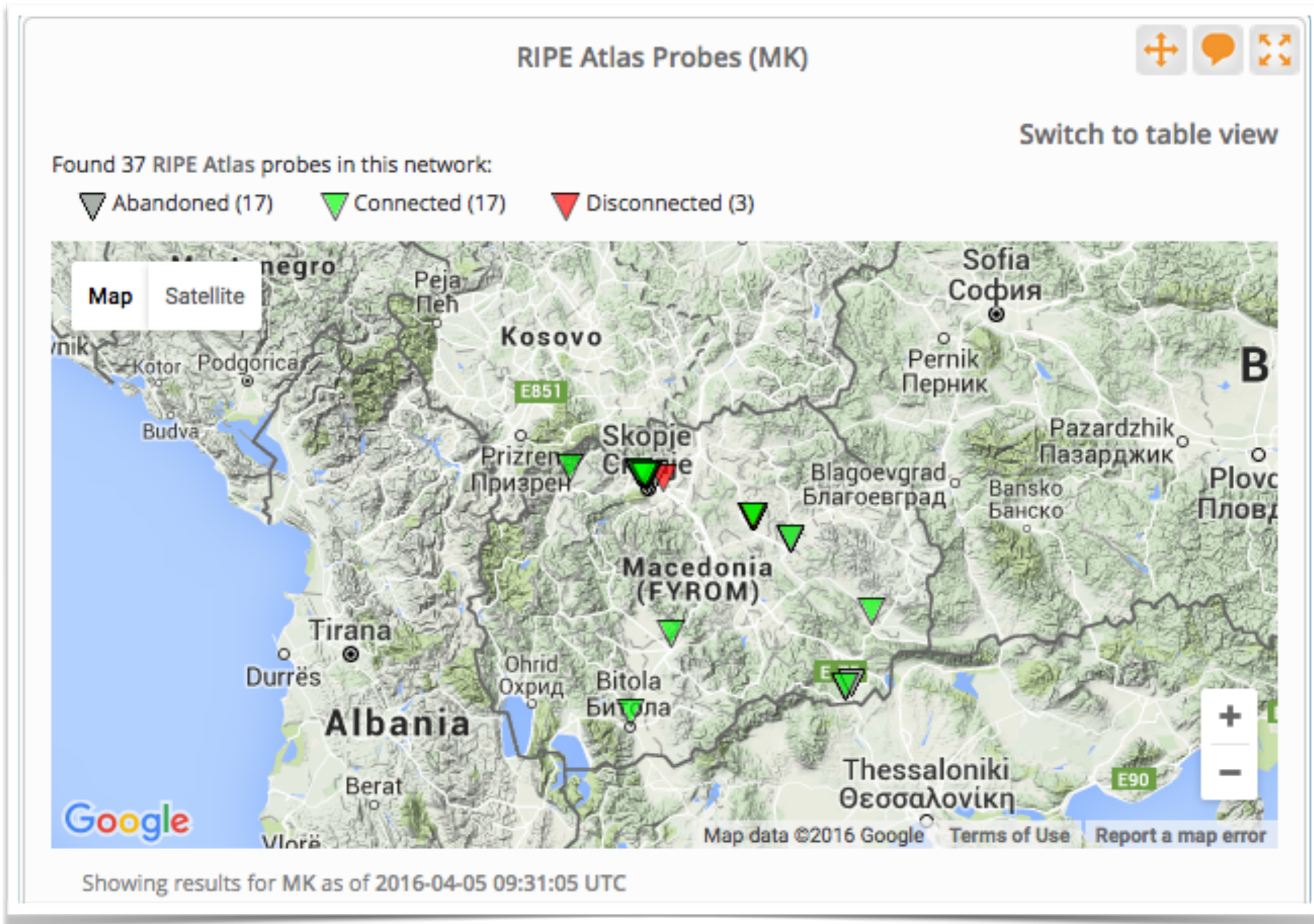


We display measurement results from the last hour only.

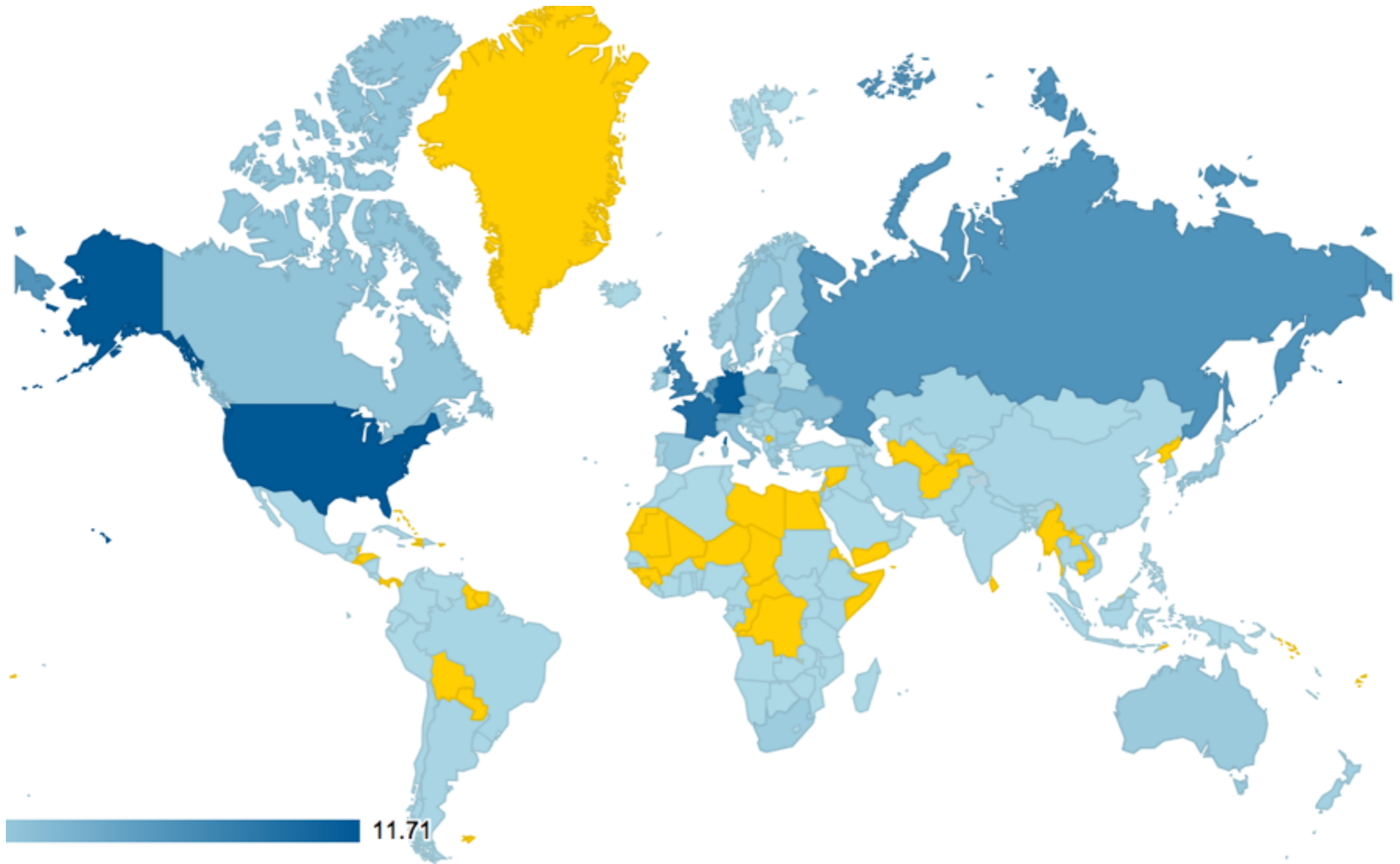


< 10ms: 225	< 20ms: 84	< 30ms: 112	< 40ms: 83	< 50ms: 74	< 100ms: 666	< 200ms: 5078	< 300ms: 1385	> 300ms: 315	No Data: 260	Unreachable: 0
-------------	------------	-------------	------------	------------	--------------	---------------	---------------	--------------	--------------	----------------

Probes per ASN (in RIPEstat)



Where we want to place probes





Looking Up Public Probes

Section 7

Searching for probes



The screenshot shows the RIPE NCC website's 'Probes' page. At the top, there is a search bar for IP addresses or ASNs. Below the navigation menu, a breadcrumb trail indicates the current location: Home > Analyse > Internet Measurements > RIPE Atlas > Probes. The main heading is 'Probes', followed by a brief description and a list of links: 'Learn more about probes', 'See the probes map', and 'Apply for your own probe'. A filter bar allows users to filter by 'id/asn/country/description', 'Any Status', 'IPv4/v6', and 'Any Country'. Below the filter bar, there are tabs for 'Public' and 'Login to see more'. The main content is a table of probes with columns for Id, ASN v4, ASN v6, Country, Description, and Connection Status. The table lists several probes, including SURFnet bv, Leaseweb Network B.V., and Afilias.

Id	ASN v4	ASN v6	Country	Description	Connection Status
6175	1103	1103		SURFnet bv	4 weeks
6146	60781	60781		Leaseweb Network B.V.	4 weeks
6152	28753	28753		Leaseweb Network B.V.	4 weeks
6137	3333	3333		nl-ams-as3333-preprod	4 weeks
6147	33280	33280		Afilias	4 weeks
6112	197216	197216		Delta Softmedia Ltd	4 weeks
6161	27843	27843		Optical Technologies	4 weeks
6142	63403	63403		Afilias	4 weeks
6008	2607	2607		AA sk-bts-as2607	4 weeks
6001	3333	3333		AA nl-ams-as3333	4 weeks

Filter based on
ASN, country,
location...

Probe page



» You are here: Home > Analyse > Internet Measurements > RIPE Atlas > Probes > Probe #10010

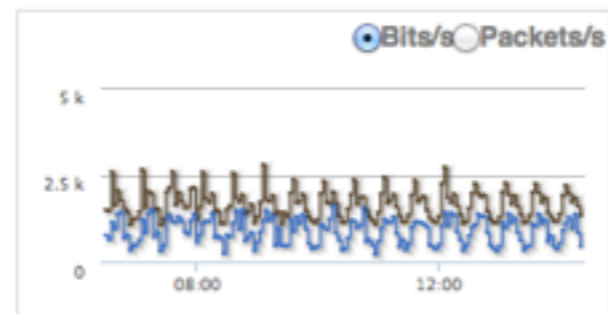
Probe #10010 (Register)

General Network Built-in Measurements User-defined Measurements

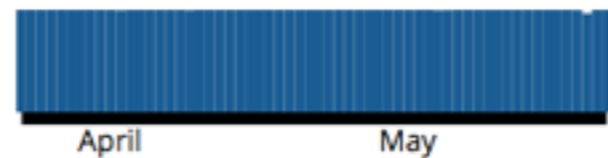
General Information [Edit](#)

Id	10010
MAC Address	F8:D1:11:A9:F3:2C
Architecture	tl-mr3020
Firmware Version	4680 (1070)
Router Type	
Bandwidth Limit	Not set
DNS Entry	Off
Shared Publicly	Yes
User Tags	NAT Chello 200MB
System Tags	V3 Resolves A Correctly Resolves AAAA Correctly IPv4 Works Auto GEOIP city IPv4 Capable IPv4 RFC1918

Connection & Traffic [Edit](#)



Connected Time [3 days, 9 hours](#)



 [3 days, 9 hours](#)

Firmware #10010
4680

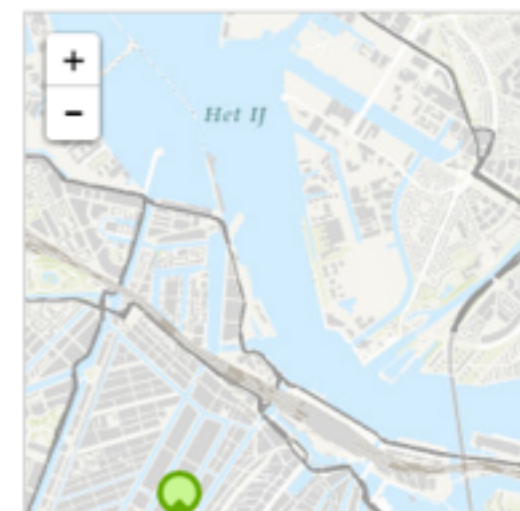
Architecture 
tl-mr3020

MAC Address
F8:D1:11:A9:F3:2C

The displayed location is an automatic best guess of the city based on IP address.

By manually setting a more accurate location you can help to improve the usefulness and correctness of RIPE Atlas.

[Update Location](#)



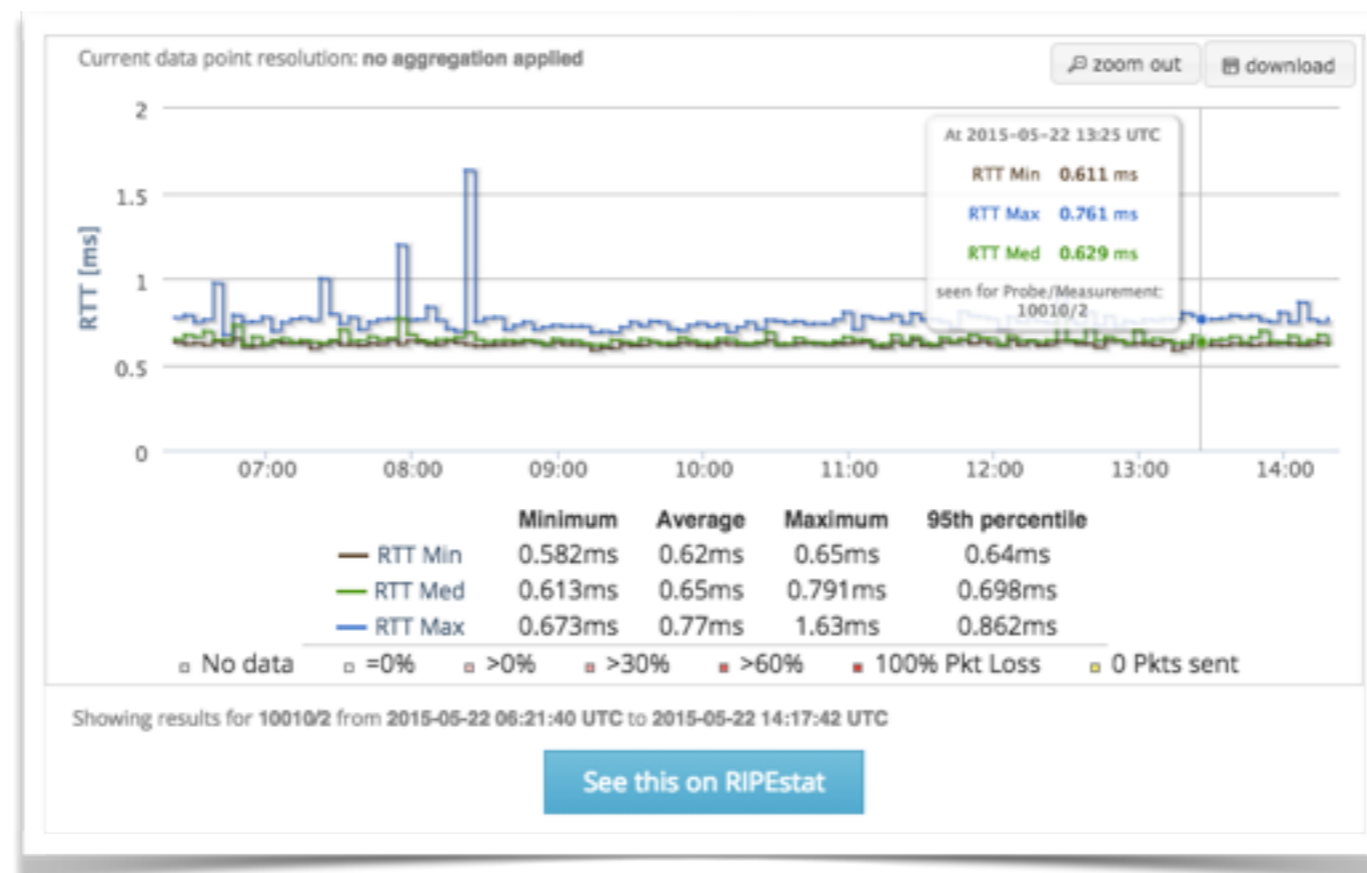
Management Sharing [Edit](#)

Only the probe host is permitted to administer this probe.

Zoomable Ping Graph



- Replace multiple RRD graphs: zoom in/out in time, in the same graph
- Easier visualisation of an event's details
- Selection of RTT class (max, min, average)





Finding Results of Public Measurements

Section 7

Looking up Measurements Results



- <https://atlas.ripe.net/measurements/>

The screenshot shows the RIPE Atlas website interface. At the top, there are navigation tabs: Manage IPs and ASNs, Analyse (selected), Participate, Get Support, Publications, and About Us. A left sidebar menu is open, showing 'RIPE Atlas' and 'Measurements, Maps and Tools' (selected). The main content area displays a list of measurements with the following columns: ID, Status, Target, Description, Probes, Time (UTC), and Status. The measurements listed are:

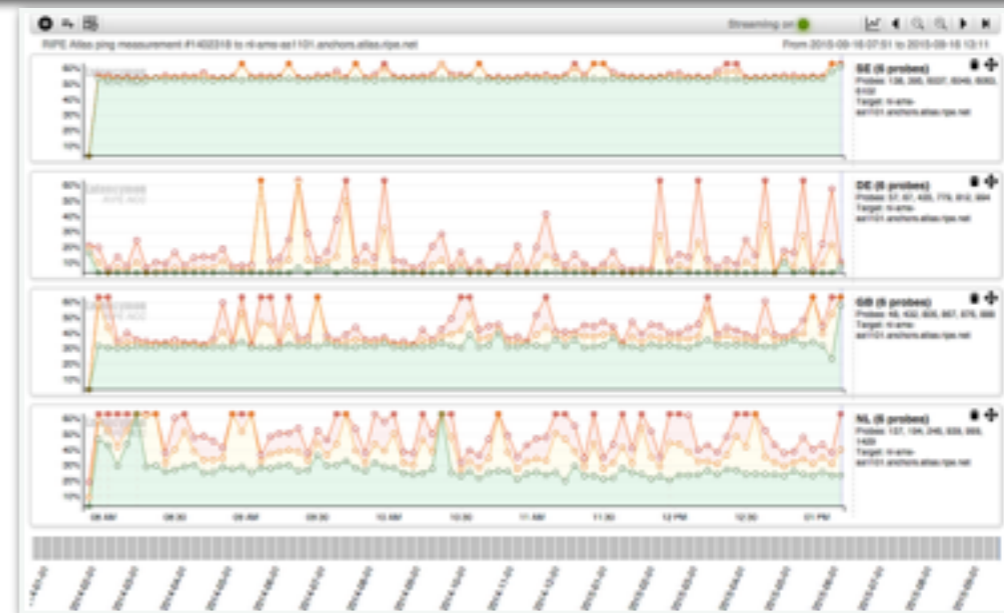
ID	Status	Target	Description	Probes	Time (UTC)	Status
		nog.net	de-fra-as5580.anchors.atlas.ripe.net	0	2019-11-14 00:30 No Stop Defined	⚙️
1411440	🔄	de-muc-as5539.anchors.atlas...	de-muc-as5539.anchors.atlas.ripe.net	0	2019-08-01 00:15 No Stop Defined	⚙️
3625872	🔄	uk-lon-as5459.anchors.atlas...	Traceroute measurement to uk-lon-as5459.anchors...	Calculating...	2016-03-17 12:00 2016-03-21 12:00	⚙️
3625873	🔄	ca-mtr-as852.anchors.atlas....	Traceroute measurement to ca-mtr-as852.anchors....	Calculating...	2016-03-17 12:00 2016-03-21 12:00	⚙️
3625874	🔄	it-mil-as16004.anchors.atla...	Traceroute measurement to it-mil-as16004.anchor...	Calculating...	2016-03-17 12:00 2016-03-21 12:00	⚙️
3625875	🔄	nl-haa-as201682.anchors.atl...	Traceroute measurement to nl-haa-as201682.ancho...	Calculating...	2016-03-17 10:42 No Stop Defined	⚙️
3625876	🔄	nl-haa-as201682.anchors.atl...	Traceroute measurement to nl-haa-as201682.ancho...	Calculating...	2016-03-17 10:42 No Stop Defined	⚙️

Available visualisations: ping



- List of probes: sortable by RTT
- Map: colour-coded by RTT
- LatencyMON: compare multiple latency trends

Probe	ASN (v4)	ASN (v6)		Time	RTT
6019	3333	3333		2015-05-19 09:23	1.157
6069	59469	59469		2015-05-19 09:23	15.253
6111	198068	198068		2015-05-19 09:23	37.760
6112	197216	197216		2015-05-19 09:23	35.494
10008	3851			2015-05-19 09:23	24.664
10218	6876			2015-05-19 09:23	37.952
10246	39608			2015-05-19 09:23	36.313
10252	50288			2015-05-19 09:23	62.441
10267	12322			2015-05-19 09:23	31.498
10296	51214			2015-05-19 09:23	Unreachable



Available visualisations: traceroute



- List of probes, colour-coded number of hops

www.seil.jp

General Information Probes Map OpenIPMap Prototype Download Results

Probe	ASN(v4)	ASN(v6)		Time	RTT	Hops
2043	3313		🇮🇹 🟢	2014-08-25 07:44	308.018	21
3246	41135		🇫🇷 🟡	2014-08-25 07:41	259.912	12
3389	3302		🇮🇹 🟢	2014-08-25 07:43	285.608	17
4092	37497		🇫🇷 🟢	2014-08-25 07:40	452.889	19
4228	3269		🇮🇹 🟢	2014-08-25 07:41	329.862	20
10024	42353		🇸🇪 🟢	2014-08-25 07:44	✖	1

- Traceroute paths map, geolocation using OpenIPMap: github.com/RIPE-Atlas-Community/openipmap



Available visualisations: DNS



- Map, colour-coded response time or diversity



- List of probes, sortable by response time

DNS measurement to ns1.opteamax.de							
General Information		Probes	Map	Download Results	Modification Log		
Probe	ASN (v4)	ASN (v6)		Time	Name	Response Time	
17840	6327				2015-05-19 09:38	null	362.009
18035	43030				2015-05-19 09:50	null	347.39
18129	327805				2015-05-19 09:49	null	207.743
15844	32098				2015-05-19 09:48	null	184.237
17857	852				2015-05-19 09:37	null	177.694
19894	6327				2015-05-19 09:36	null	168.689
19204	21513				2015-05-19 09:50	null	141.199
15922	30036				2015-05-19 09:47	null	133.309

Downloading Measurements Results



- Click on msm, then “Download”
- Or URL
- Or API
- Results in JSON
- Libraries for parsing on GitHub

DNS measurement to j.root-servers.net

General Information Probes Map **Download Results**

Download the raw measurement result data here.

You can use this form to download the data through your browser, or use the preview on the right to help you query the REST API directly.

Start Date*: 2015-05-11 (start time of this measur...
All dates are start-of-day

Stop Date*: 2015-05-11 (start time of this measur...
All dates are end-of-day

Format: JSON

Download

URL Preview

```
https://atlas.ripe.net/api/v1/measurement/1999490/result/?start=1431302400&stop=1431388799&format=json
```

Search for Measurements by Target in RIPEstat



RIPEstat — Internet Measurements and Analysis

https://stat.ripe.net/widget/atlas-targets#w.resource=8.8.8.8

You are here: Home > Data & Tools > RIPEstat > atlas-targets

RIPE Atlas Measurement Targets (8.8.8.8)

8.8.8.8

Show 10 targets/page Search:

Measurement ID	Stopped	Type	Target IP	Target Hostname
1040720	ongoing	ping	8.8.8.8	google-public-dns-a.google.com
1006491	ongoing	traceroute	8.8.8.8	not specified
1006192	ongoing	ping	8.8.8.8	not specified
1004827	ongoing	traceroute	8.8.8.8	not specified
1002630	ongoing	ping	8.8.8.8	not specified
1478085	2014-02-24 13:41 UTC	dns	8.8.8.5	not specified

Go to “RIPEstat > RIPE Atlas Activity”

Finding one specific measurement



- If you know the measurement ID:
 - <https://atlas.ripe.net/measurements/ID>
 - <https://atlas.ripe.net/measurements/2340408/>

Use Existing Measurements



- Many measurements already running!
- Search for existing public measurements first...
- Only then schedule your own measurement



Creating a Measurement

Section 8

Prerequisites



- RIPE NCC Access account ?
 - If not, create one: ripe.net/register
- Do you have credits to spend?
 - Redeem voucher “Vienna2016 ” online:
<https://atlas.ripe.net/user/credits/?page=2#!redeem>
- Redeem LIR credits monthly

Logging In



- Log in to atlas.ripe.net
 - Use your RIPE NCC Access account
 - Same account for LIR Portal, RIPE Atlas, RIPEstat, RIPE Labs...
 - Create an account if you don't already have one

The screenshot shows the RIPE Atlas homepage. The header includes the RIPE NCC logo and a search bar. The main content area features a 'Welcome to RIPE Atlas' message, a 'Log in' button, and a 'Use Cases' section. A sidebar on the left contains navigation links for 'RIPE Atlas', 'About RIPE Atlas', 'Get Involved', 'Probes and Anchors', 'Measurements, Maps and Tools', 'Resources', and 'RIPE NCC Members'. A statistics section on the right displays 'Probes connected to RIPE Atlas: 9397', 'Measurements currently running: 11986', and 'Results collected per second: 3737'. Below this is a 'Current Sponsors' section featuring the ICANN logo and a 'Become a Sponsor' link.

The screenshot shows the RIPE Atlas login page. The header includes the RIPE NCC logo and a search bar. The main content area features a 'Sign in using your RIPE NCC Access account' heading, a link to create an account, and a 'Sign in' button. The login form includes fields for 'Email' and 'Password', and a 'Forgot your password?' link. A yellow box at the bottom contains the text 'New: Two-step verification. Learn more...'. The breadcrumb trail shows 'You are here: Home > Access'.

Create a Measurement Using the GUI

- Periodic, long-term measurement
 - Single measurement? Choose “one-off”
- Choose type, target, frequency, number of probes, region...
- You will spend credits
- Each measurement: unique ID

Credit System



- Measurements cost credits
 - ping = 10 credits, traceroute = 20, etc.
- Why? Fairness and avoid overload
- Hosting a probe earns credits
- Earn extra credits by:
 - Being a member
 - Hosting an anchor
 - Sponsoring probes

Credits



You are here: Home > Analyse > Internet Measurements > RIPE Atlas > My Atlas > My Credits

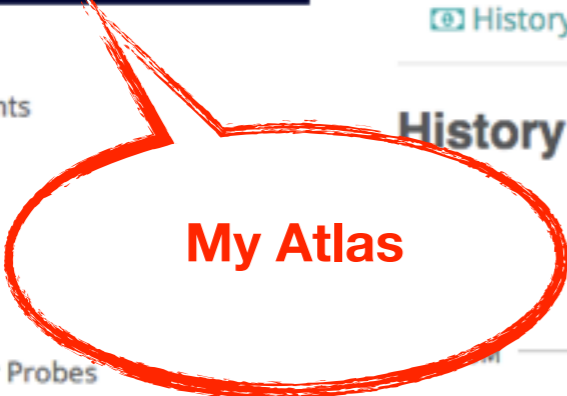
- RIPE Atlas <<
- About RIPE Atlas >
- Get Involved >
- Results >
- My Atlas** v
- Probes
- Measurements
- Credits
- API Keys
- Messages
- Ambassador Probes
- LIR Benefits
 - Claim 1 Million Credits
 - IPv6 Connectivity Test
 - Quick Look
- Settings

Account Information

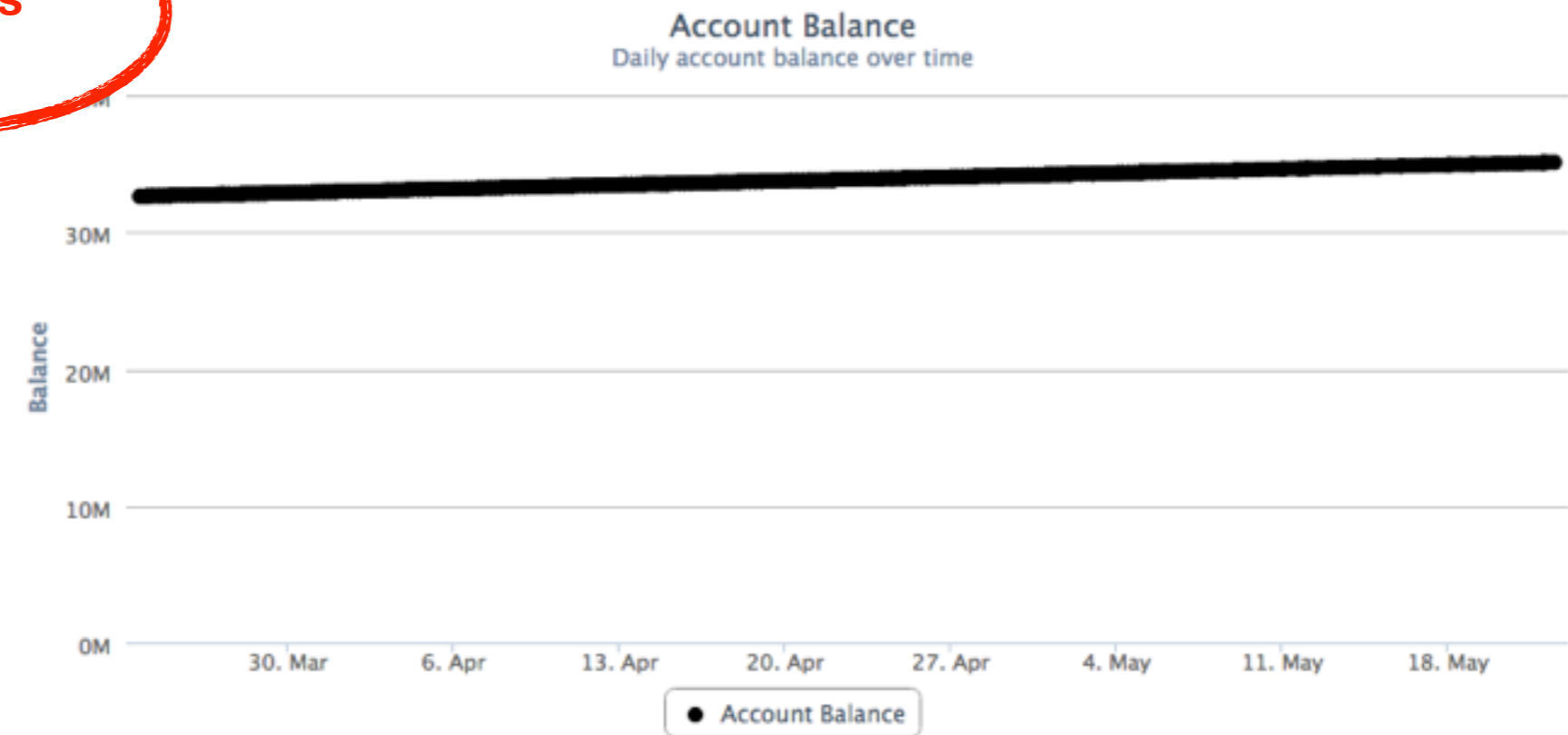
This is where you're able to view the history of your credit use. There are visualisations available, and you can also transfer credits to someone else.

35,107,046
1,760.00 credits / hour

- History
- Charts & Archives
- Transfer



History





DEMO

Create a Measurement (GUI)
Explore advanced parameters



Create a Measurement

Exercise C

Tasks



- Create a TCP traceroute measurement:
 - Involving 10 probes
 - The closest five to the training course location (Vienna)
 - To a target of your choice
 - Duration of two days
 - Repeated every 60 seconds



Network Monitoring

Section 9

Network Monitoring



- Tools to monitor network health
 - Nagios & Icinga
- Tools receive input from RIPE Atlas via the API
- Benefits:
 - Pings from 1000 out of thousands of probes worldwide
 - See your network from the outside
 - Plug into your existing practices

Steps for integration



1. Create a RIPE Atlas ping measurement
2. Go to “status checks” URL (RESTful API call)
 - https://atlas.ripe.net/api/v1/status-checks/2340408/?median_rtt_threshold=10
 - <https://atlas.ripe.net/docs/status-checks/>
3. Add your alerts in Nagios or Icinga
 - Make use of the built-in “check_http” plugin
 - https://github.com/RIPE-Atlas-Community/ripe-atlas-community-contrib/blob/master/scripts_for_nagios_icinga_alerts



RIPE Atlas streaming



- Receive measurement results - **in real time**
 - Publish/subscribe through web sockets

- Three types of data:
 - Measurement results
 - Probe connection status events
 - Measurements metadata



RIPE Atlas streaming

- Visualising network outages
 - <http://sg-pub.ripe.net/demo-area/atlas-stream/conn/>
- Real-time server and performance monitoring
- Filtering and reusing measurement results
 - <https://atlas.ripe.net/docs/result-streaming/>



How it Works (Client)

1. Create a socket
2. Create a callback (function)
 - for each event type
 - to be executed for each message received
3. Start listening to the channel
4. Declare what you want to receive for that event type



Using streaming API

Exercise D

EX1: Monitoring server reachability



- Scenario: customers complaining it takes long time to reach your server
- Action: ping your server from 500 probes
 - what is an acceptable latency threshold?
 - notice and react when you start receiving samples
- Task: Use the ping measurement ID 2340408

Steps



1. Go to
<http://atlas.ripe.net/webinar/streaming01.html>
2. Open the development console
3. Wait for results to arrive
4. Save the HTML file locally and edit the code

before



```
untitled
1 <html>
2   <head>
3     <title>Streaming exercise 01</title>
4     <meta charset="UTF-8">
5     <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   </head>
7   <body>
8     <div>Current maximum RTT: <b><span id="output">nothing yet</span></b></div>
9     <div>Open the source code to see how it works. Create your tool/visualisation with the RIPE Atlas streaming!</div>
10  </body>
11
12  <script src="https://stat.ripe.net/widgets/lib/js/jquery/jquery-1.11.2.min.js"></script>
13
14
15  <!-- The following file is needed for the streaming -->
16  <script src="https://atlas-stream.ripe.net/socket.io.js"></script>
17  <script>
18    var $outputDiv = $("#output");
19
20    // Create a connection
21    var socket = io("https://atlas-stream.ripe.net", { path : "/stream/socket.io" });
22
23    // Declare a callback to be executed when a measurement result is received
24    socket.on("atlas_result", function(result){
25
26      console.log("I received ", result); // Print the result in the console
27
28      if (result.hasOwnProperty("max")) {
29        $outputDiv.html(result["max"]); // Print the result in the html page
30      }
31
32    });
33
34    // Subscribe to results coming from all the probes involved in the measurement 2340408
35    socket.emit("atlas_subscribe", { stream_type: "result", msm: 2340408 });
36
37  </script>
38 </html>
39
40
```



Page Source



```
view-source:sg-pub.ripe.net/webinar/streaming01.html
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Streaming exercise 01</title>
5     <meta charset="UTF-8">
6     <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   </head>
8   <body>
9     <div>Current maximum RTT: <b><span id="output">nothing yet</span></b></div>
10    <div>Open the source code to see how it works. Create your tool/visualisation with the
RIPE Atlas streaming!</div>
11  </body>
12
13  <script src="https://stat.ripe.net/widgets/lib/js/jquery/jquery-1.11.2.min.js"></script>
14
15
16  <!-- The following file is needed for the streaming -->
17  <script src="https://atlas-stream.ripe.net/socket.io.js"></script>
18  <script>
19    var $outputDiv = $("#output");
20
21    // Create a connection
22    var socket = io("https://atlas-stream.ripe.net", { path : "/stream/socket.io" });
23
24    // Declare a callback to be executed when a measurement result is received
25    socket.on("atlas_result", function(result){
26
27      console.log("I received ", result); // Print the result in the console
28
29      if (result.hasOwnProperty("max")) {
30        $outputDiv.html(result["max"]); // Print the result in the html page
31      }
32
33    });
34
35    // Subscribe to results coming from all the probes involved in the measurement 2340408
36    socket.emit("atlas_subscribe", { stream_type: "result", msm: 2340408 });
37
38  </script>
39 </html>
40
41
```


Example of results



```
Elements Network Sources Timeline Profiles Resources Audits Console AngularJS
<top frame> Preserve log
Filter  Regex  All  Errors  Warnings  Info  Logs  Debug  Hide network messages
XHR finished loading: GET "http://atlas-stream.ripe.net/stream/socket.io/?EI0=2&transport=polling&t=1431095373684-0".
XHR finished loading: GET "http://atlas-stream.ripe.net/stream/socket.io/?EI0=2&transport=polling&t=1431095373739-1&sid=eB0kM7zFWFT2c-ScAAaH".
I received ▶ Object {af: 4, prb_id: 16669, result: Array[3], ttl: 42, avg: 326.841...}
I received ▶ Object {af: 4, prb_id: 16669, result: Array[3], ttl: 42, avg: 325.7933333333...}
I received ▶ Object {af: 4, prb_id: 16669, result: Array[3], ttl: 42, avg: 326.048...}
I received ▶ Object {af: 4, prb_id: 16669, result: Array[3], ttl: 42, avg: 327.3253333333...}
I received ▶ Object {af: 4, prb_id: 15965, result: Array[3], ttl: 45, avg: 47.6313333333...}
I received ▶ Object {af: 4, prb_id: 15965, result: Array[3], ttl: 45, avg: 47.6996666667...}
I received ▶ Object {af: 4, prb_id: 15965, result: Array[3], ttl: 45, avg: 47.4816666667...}
I received ▶ Object {af: 4, prb_id: 19566, result: Array[3], ttl: 40, avg: 47.054...}
I received ▶ Object {af: 4, prb_id: 19566, result: Array[3], ttl: 40, avg: 47.8626666667...}
I received ▶ Object {af: 4, prb_id: 19566, result: Array[3], ttl: 40, avg: 47.5946666667...}
I received ▶ Object {af: 4, prb_id: 19566, result: Array[3], ttl: 40, avg: 47.5003333333...}
I received ▶ Object {af: 4, prb_id: 18311, result: Array[3], ttl: 49, avg: 32.577...}
I received ▶ Object {af: 4, prb_id: 18311, result: Array[3], ttl: 49, avg: 34.0843333333...}
I received ▶ Object {af: 4, prb_id: 18311, result: Array[3], ttl: 49, avg: 32.7513333333...}
I received ▶ Object {af: 4, prb_id: 16010, result: Array[3], ttl: 46, avg: 182.4463333333...}
I received ▶ Object {af: 4, prb_id: 16010, result: Array[3], ttl: 46, avg: 193.9953333333...}
I received ▶ Object {af: 4, prb_id: 16010, result: Array[3], ttl: 46, avg: 182.2913333333...}
I received ▶ Object {af: 4, prb_id: 16010, result: Array[3], ttl: 46, avg: 191.6103333333...}
I received ▶ Object {af: 4, prb_id: 14918, result: Array[3], ttl: 49, avg: 34.817...}
I received ▶ Object {af: 4, prb_id: 14918, result: Array[3], ttl: 49, avg: 35.0093333333...}
I received ▶ Object {af: 4, prb_id: 14918, result: Array[3], ttl: 49, avg: 35.0843333333...}
I received ▶ Object {af: 4, prb_id: 20668, result: Array[3], ttl: 45, avg: 38.8846666667...}
I received ▶ Object {af: 4, prb_id: 20668, result: Array[3], ttl: 45, avg: 38.8626666667...}
I received ▶ Object {af: 4, prb_id: 20668, result: Array[3], ttl: 45, avg: 38.8806666667...}
I received ▶ Object {af: 4, prb_id: 6093, result: Array[3], ttl: 49, avg: 128.7273333333...}
I received ▶ Object {af: 4, prb_id: 6093, result: Array[3], ttl: 49, avg: 128.7373333333...}
I received ▶ Object {af: 4, prb_id: 6093, result: Array[3], ttl: 49, avg: 128.8883333333...}
```


EX2: Monitoring server reachability



- Imagine you are in the situation described in the exercise before, but you didn't schedule a measurement in advance
 - You don't have a measurement ID
- You want to get all the measurements reaching 193.0.10.197
- Now restrict the results to just include ping measurements

Hint for EX2



```
socket.emit("atlas_subscribe", {  
  stream_type: "result",  
  msm: "2340408",  
  type: "ping",  
  destinationAddress: "193.0.10.197"  
});
```

- Documentation:
 - <https://atlas.ripe.net/docs/result-streaming/>



Command-line Interface (CLI) Toolset

Section 10

RIPE Atlas CLI



- Network troubleshooting for command line pros
- Familiar output (ping, dig, traceroute)
- Linux/OSX
 - <http://ripe-atlas-tools.readthedocs.org/en/latest/installation.html#requirements-and-installation>
- Windows [experimental]
 - <https://github.com/chrisamin/ripe-atlas-tools-win32>



RIPE Atlas CLI

- Open source
 - RIPE NCC-led community contribution
- Documentation
 - <https://ripe-atlas-tools.readthedocs.org/>
- Source:
 - <https://github.com/RIPE-NCC/ripe-atlas-tools/>

Install RIPE Atlas tools



- OSX:
 - `sudo easy_install pip`
 - `sudo pip install ripe.atlas.tools`

- Linux:
 - available from many package repositories
 - or same as in OSX

Install RIPE Atlas tools (L)



- `sudo easy_install pip`
- `sudo pip install ripe.atlas.tools`

Configure RIPE Atlas CLI



- Use the API key
 - Create it at <https://atlas.ripe.net/keys/>
- Configure your CLI
 - `ripe-atlas configure --set authorisation.create=MY_API_KEY`

Create API Key



- Go to MyAtlas
- Click on “Create an API Key”
- Choose type: “create a new user-defined measurement”
- “Object” is not applicable (N/A) for this type
- Give it a label

Task 1.2: Create API Key (cont'd)



- Give it duration of validity (or empty if default value)
- “Key” value will be passed on to the API call

RIPE Atlas	«
About RIPE Atlas	>
Get Involved	>
Results	>
My Atlas	∨
Probes	
Measurements	
Credits	
API Keys	
Messages (81 new)	
Anchors	

API Keys

[+ Create an API key](#)

<input type="checkbox"/> Key	Created	Permission	Object	Label	Valid From	Valid To	Enabled
<input type="checkbox"/> 984a774c-33ce-4b97-9767-fb48efda6c12	2013-01-31 13:05 UTC	Download results of a user defined measurement	1002953 b.hosteddnsservice.com				✓
<input type="checkbox"/> e5ba646b-abf1-4f01-8bf1-5267a9dd56ce	2013-01-31 12:52 UTC	Download results collected by a specific probe	13: k13				✓
<input type="checkbox"/> 9788b7e0-9d4b-4787-8a42-fce8f2f2e929	2013-01-11 14:53 UTC	Download results of a user defined measurement	1002676 www.google.com				✓

Fetch an existing measurement



- Fetch the ping measurement 2340408
 - ripe-atlas report 2340408



Search probes

- Search all probes in AS 3333
 - ripe-atlas probes --asn 3333
- Show specific fields
 - ripe-atlas probes --asn 3333 --field asn_v6 --field country --field is_public --field description --field status
- Search for probes in and around Paris
 - ripe-atlas probes --location "Paris, France" --radius 15

Create a measurement



- Create a ping measurement to wikipedia.org
 - One-off, default parameters
 - `ripe-atlas measure ping --target wikipedia.org`

```
Looking good! Your measurement was created and details about it can be found here:
```

```
https://atlas.ripe.net/measurements/3499718/
```

```
Connecting to stream...
```

```
48 bytes from probe #18433 94.112.176.45 to 91.198.174.192 (91.198.174.192): ttl=50 times:41.979, 41.492, 40.769,  
48 bytes from probe #20111 37.151.230.180 to 91.198.174.192 (91.198.174.192): ttl=57 times:100.511, 100.136, 100.325,  
48 bytes from probe #25003 176.193.48.211 to 91.198.174.192 (91.198.174.192): ttl=59 times:47.967, 47.476, 47.403,  
48 bytes from probe #20313 5.199.160.9 to 91.198.174.192 (91.198.174.192): ttl=58 times:36.501, 36.245, 36.285,  
48 bytes from probe #22573 89.176.43.44 to 91.198.174.192 (91.198.174.192): ttl=52 times:28.747, 27.712, 28.446,  
48 bytes from probe #19413 89.71.47.56 to 91.198.174.192 (91.198.174.192): ttl=51 times:49.89, 49.779, 50.277,  
48 bytes from probe #18635 78.52.132.137 to 91.198.174.192 (91.198.174.192): ttl=57 times:37.462, 38.095, 37.73,  
48 bytes from probe #23223 62.65.126.46 to 91.198.174.192 (91.198.174.192): ttl=53 times:23.169, 23.412, 33.067,  
48 bytes from probe #17511 87.81.148.2 to 91.198.174.192 (91.198.174.192): ttl=56 times:13.281, 12.885, 13.039,  
48 bytes from probe #12584 46.175.22.202 to 91.198.174.192 (91.198.174.192): ttl=59 times:36.073, 35.788, 35.883,
```

Other examples of ping



- Geo-specific from 20 probes from Canada:
 - `ripe-atlas measure ping --target example.com --probes 20 --from-country ca`
- 20 Canadian probes that definitely support IPv6:
 - `ripe-atlas measure ping --target example.com --probes 20 --from-country ca --include-tag system-ipv6-works`
- Create a recurring measurement:
 - `ripe-atlas measure ping --target example.com --interval 3600`



Using RIPE Atlas CLI

Exercise E

Search probes



- Use the traceroute command to test the reachability of wikipedia.org on TCP port 443 from 20 probes in France
- Render the results collected in the previous exercise in json format



More RIPE Atlas Features

Section 11

Secure Measurement creation and sharing



- Use API keys to:
 - Create measurements without logging in
 - Securely share your measurement data with others
- To create, manage and delete API keys:
 - <https://atlas.ripe.net/keys/>
 - <https://atlas.ripe.net/docs/keys2/>
- Examples:
 - <https://atlas.ripe.net/docs/rest/>

Security Aspects



- Probes:
 - Hardware trust material (regular server address, keys)
 - No open ports; initiate connection; NAT is okay
 - Don't listen to local traffic
 - No passive measurements
- Measurements triggered by “command servers”
 - Inverse ssh tunnels
- Source code published

Additional Membership Benefits



- RIPE Atlas:
 - Guaranteed to host a probe
 - Do NOT have to host probe to perform customised measurements
 - 1,000,000 extra credits monthly via LIR Portal
 - “Quick Look” measurements via LIR Portal
 - IPv6 reachability testing (free)
 - Share probe management with LIR colleagues
- RIPEstat:
 - Historical view of RIPE Database objects



Take Part in the RIPE Atlas Community

Section 12

RIPE Atlas community (part 1)



- Volunteers host probes in homes or offices
- Organisations host RIPE Atlas anchors
- Sponsor organisations give financial support or host multiple probes in their own networks

RIPE Atlas community (part 2)



- Ambassadors help distribute probes at conferences, give presentations, etc.
- Developers contribute free and open software
- Network operators create measurements to monitor and troubleshoot
- Researchers and students write papers



Hosting a probe

- Create a RIPE NCC Access account
- Go to <https://atlas.ripe.net/apply>
- You will receive a probe by post
- Register your probe
- Plug in your probe
- If you receive a probe from an ambassador (trainer, sponsor, someone at a conference), just register it and plug it in!



Contact us

- <https://atlas.ripe.net>
- <http://roadmap.ripe.net/ripe-atlas/>
- Users' mailing list: ripe-atlas@ripe.net
- Articles and updates: <https://labs.ripe.net/atlas>
- Questions and bugs: atlas@ripe.net
- Twitter: @RIPE_Atlas and #RIPEAtlas



Questions





RIPE NCC

Academy

Graduate to the next level!

<http://academy.ripe.net>



twitter

@TrainingRIPENCC

Feedback!



The End!

Край

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An Críoch

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Einde

Канец

Конец

Slut

Slutt

დასასრული

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Амаіа

Lopru

Tmíem

Koniec