# RIPE NCC Measurements Tools Workshop

Tehran | November 2014

# Overview 1 - RIPEstat



RIPEstat

- Introduction to RIPE and the RIPE NCC
- Introduction to RIPEstat
- More about widgets
- List of widgets
    - *Exercise: Querying for a Resource*
- Useful routing widgets
    - *Exercise: BGPlay*
- Handling abuse
    - *Exercise: Handling Abuse*
- Personalising RIPEstat
    - *Exercise: MyView*
- Comparing results
    - *Exercise: Comparing Results*
    - *Exercise: RIPEstat Use Cases*

# Overview 2 - RIPE Atlas



RIPE Atlas

- Introduction to RIPE Atlas
- What you can get from RIPE Atlas as a visitor
- Exploring public probes
  - *Live Demo*
- Finding public measurements
  - *Exercise F: Analyse results*
- Creating a measurement
  - *Exercise G: Create a measurement*
- Network Monitoring
  - *Exercise H: Setting up ‘Status Checks’*
- More RIPE Atlas features
- How to host a probe
- Advanced topics
  - Use cases and success stories
  - RIPE Atlas anchors
  - RIPE Atlas community

# Introduction to the RIPE NCC

## Section 1

# RIPE NCC - Who are we?



- RIPE NCC
- Located in Amsterdam
- Not-for-profit organisation
- One of the five Regional Internet Registries (RIRs)
- 10,000+ members (LIRs)

# Our service region



RIR SERVICE REGIONS

# What do we do?

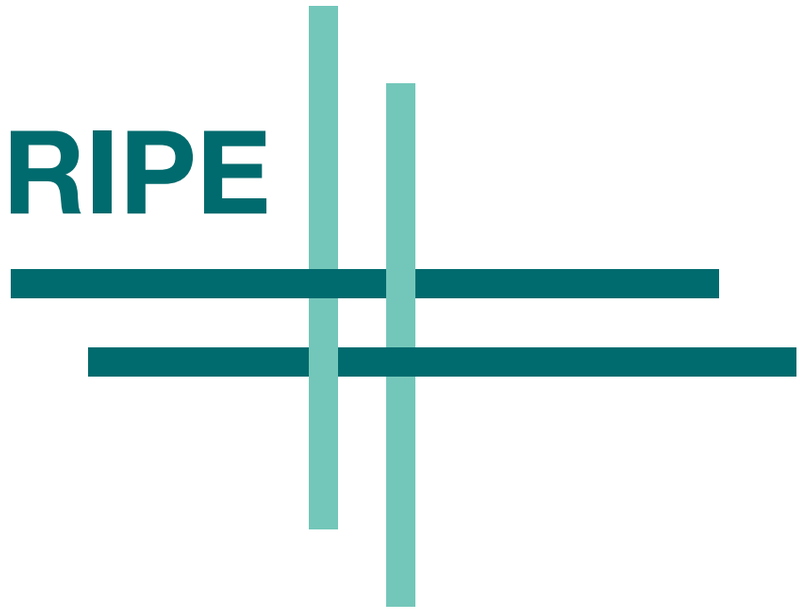


- Distribute IPv4, IPv6, ASNs
- Training courses
- RIPE Database
- Support RIPE community
- RIPE Atlas, RIPEstat, Resource Certification

# RIPE (Reseáux IP Européens)



- Started in 1989
- Discussion forum open to all parties interested
- Not a legal entity and no formal membership
- Develops policies
- Work done in Working Groups
- Activities are performed on a



# Introduction to RIPEstat

## Section 2

RIPE NCC

# What is RIPEstat?

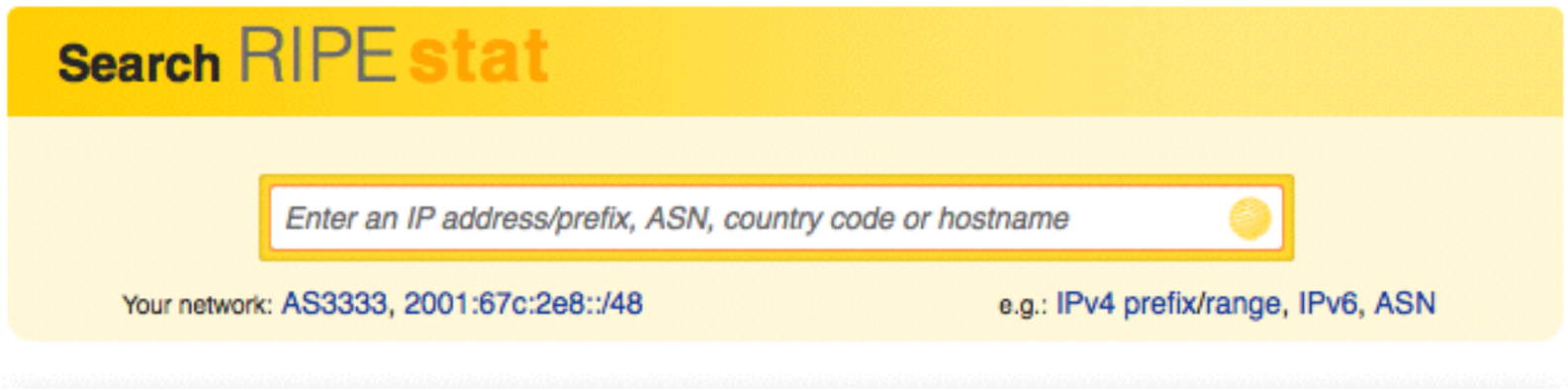


## One interface for viewing all Internet number resource data

## “One-stop shop”

# Landing page





# 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…

# Query?



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

# 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 Routing Registry?
  - Are my DNS and reverse DNS consistent?
  - Location of my customers' prefixes
  - Was my prefix visible yesterday in Tokyo?

# Why use RIPEstat?

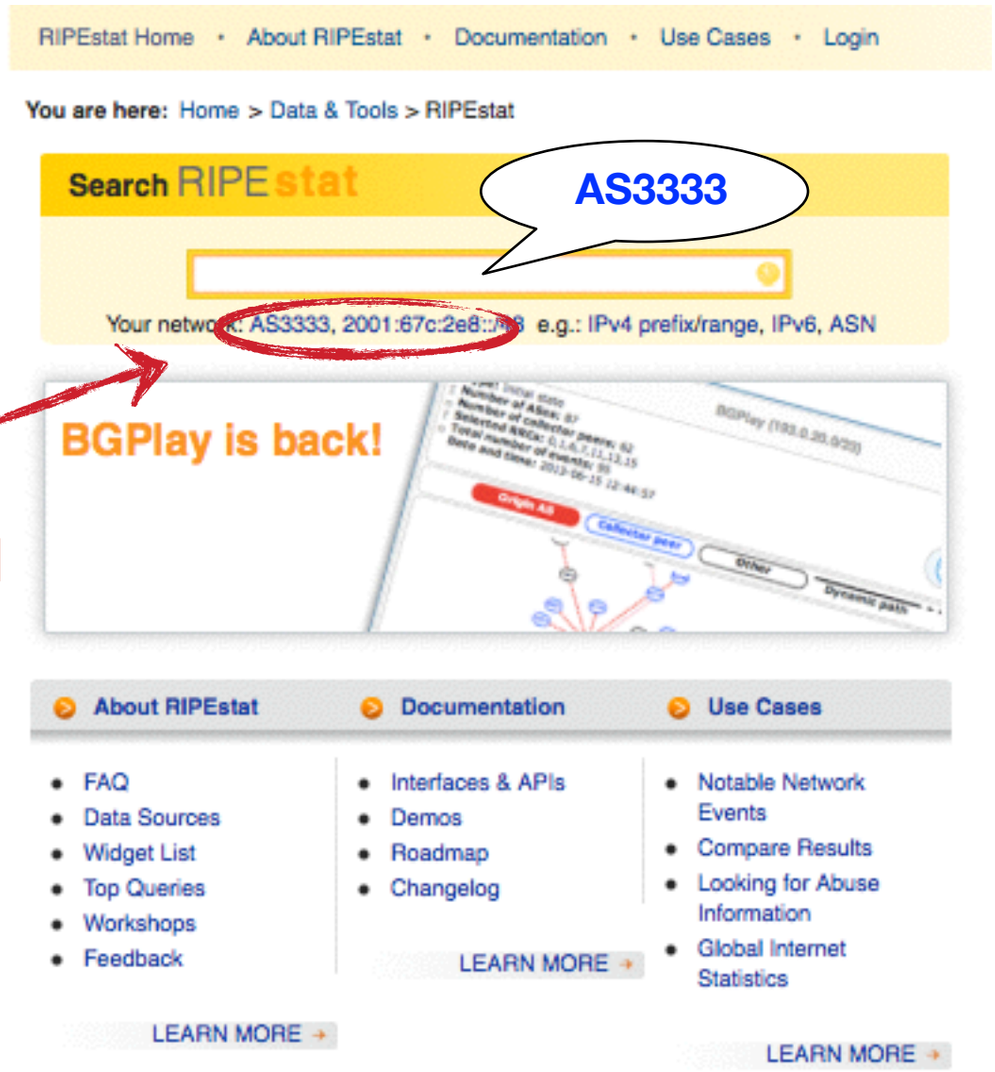


- For viewing other networks:
  - How many IPv6 prefixes are announced in my country?
  - IPv6 in my country compared to neighbours
  - Who has more peers, AS1 or AS2?
  - How does the upstream outage look?
  - Is the prefix/ASN that I want already announced?
  - Which ASN announces an IP?
  - Where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

# Query page

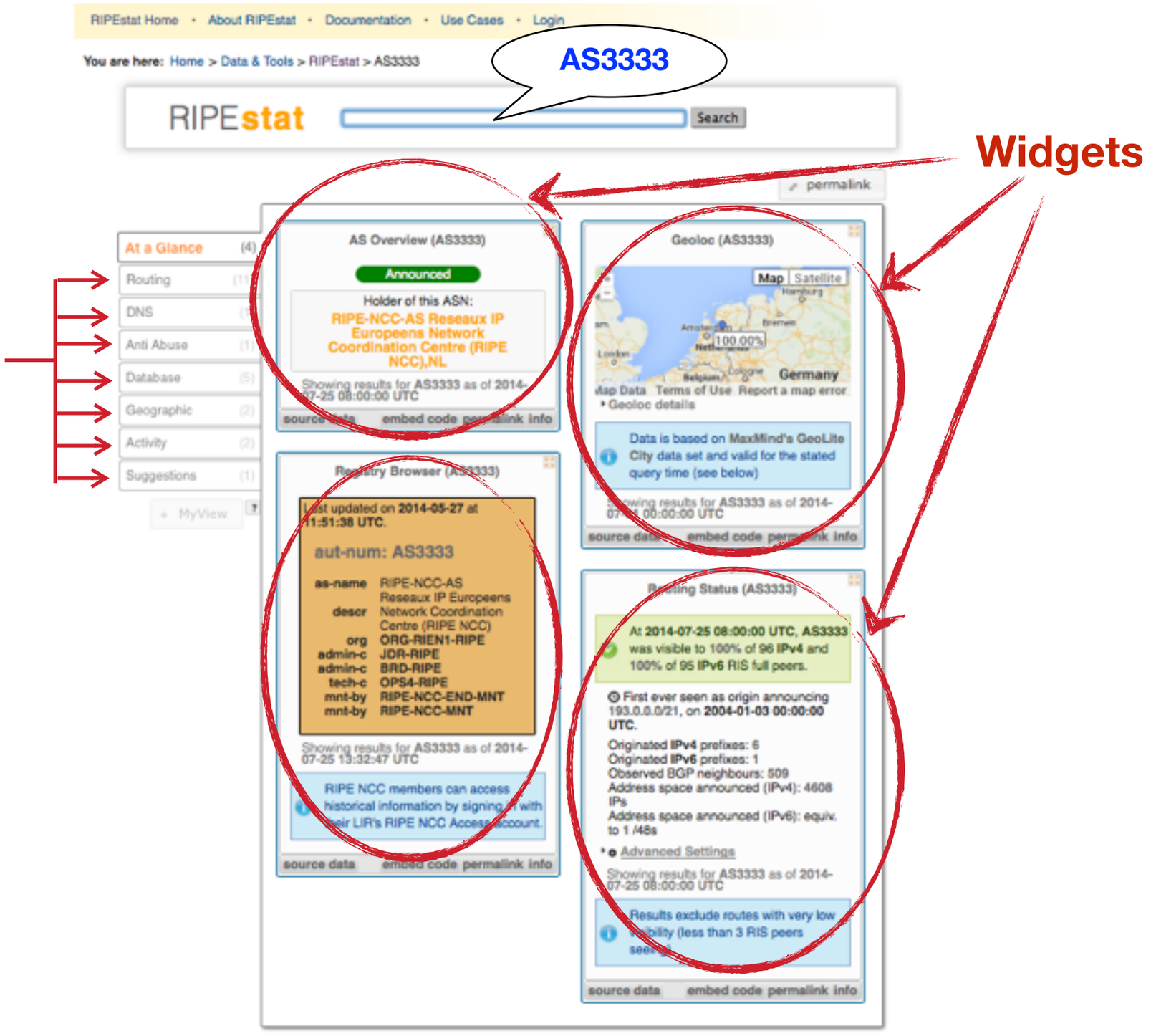


RIPEstat shows your own IP/ASN



# Results default tab





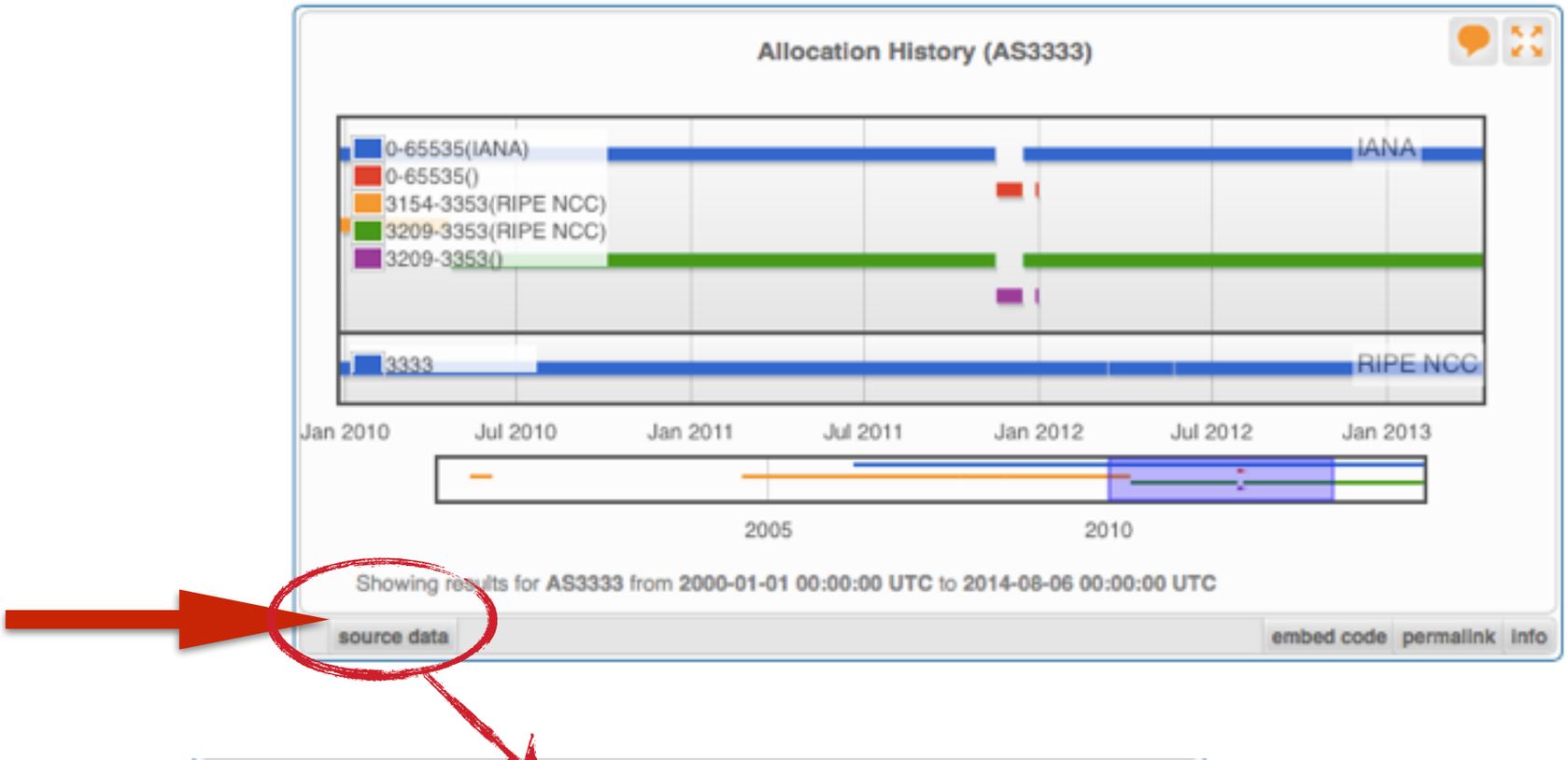
# More About Widgets

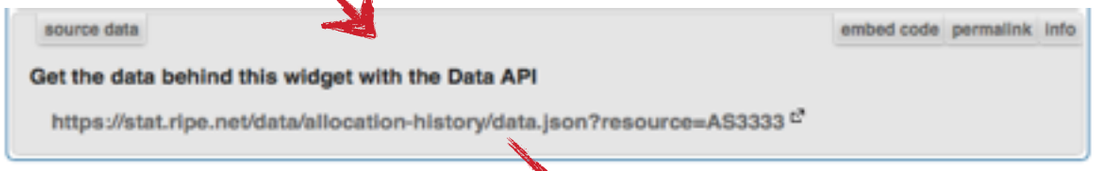
## Section 3

RIPE NCC

# Get the data behind the widget!





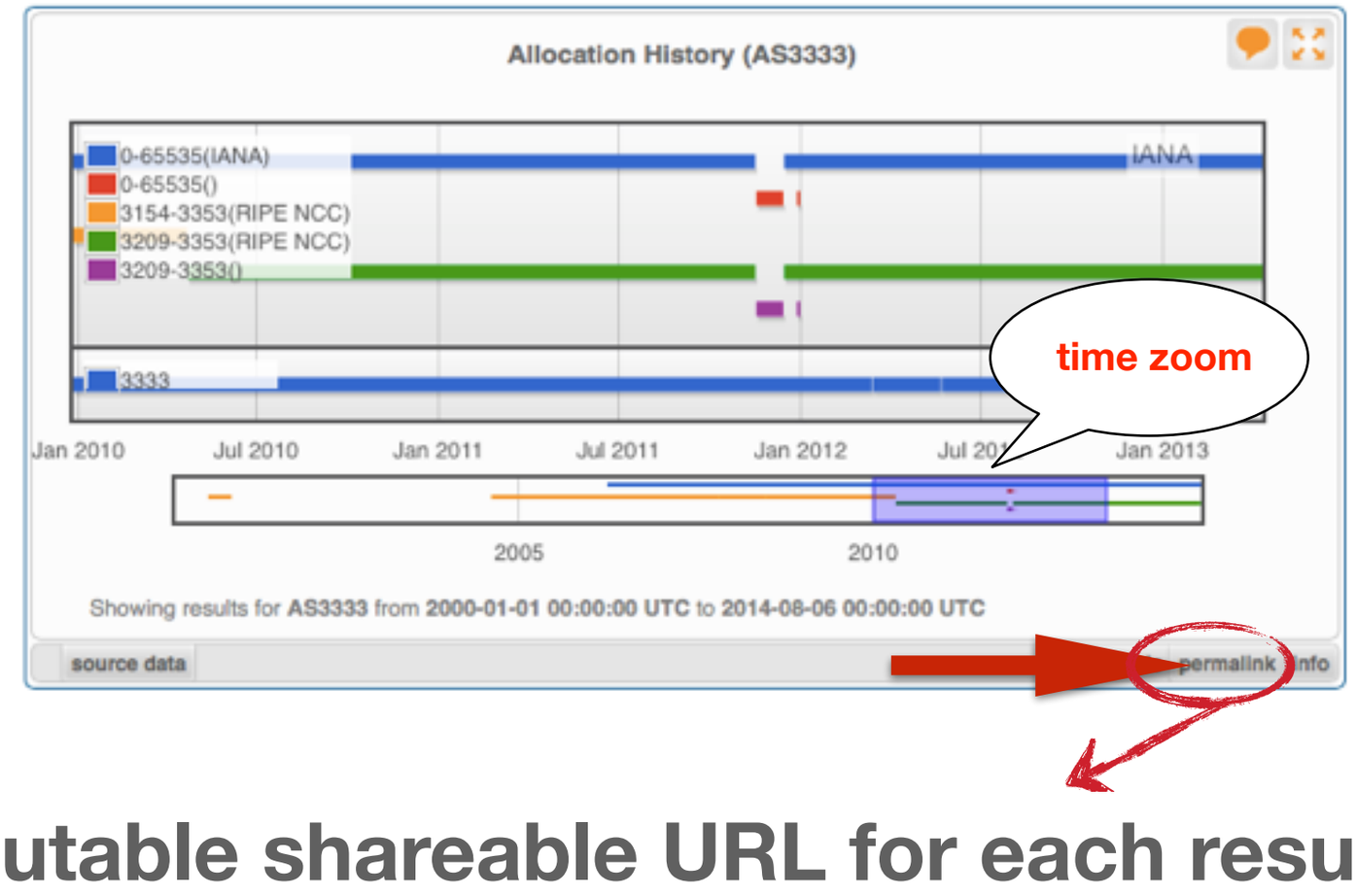





```
{
    "cached": true,
    "data": {
        "query_endtime": "2014-08-06T00:00:00",
        "query_starttime": "2000-01-01T00:00:00",
        "resource": "3333",
        "results": {
            "IANA": [
                {
                    "resource": "0-65535",
                    "status": "IANA",
                    "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 URL of results

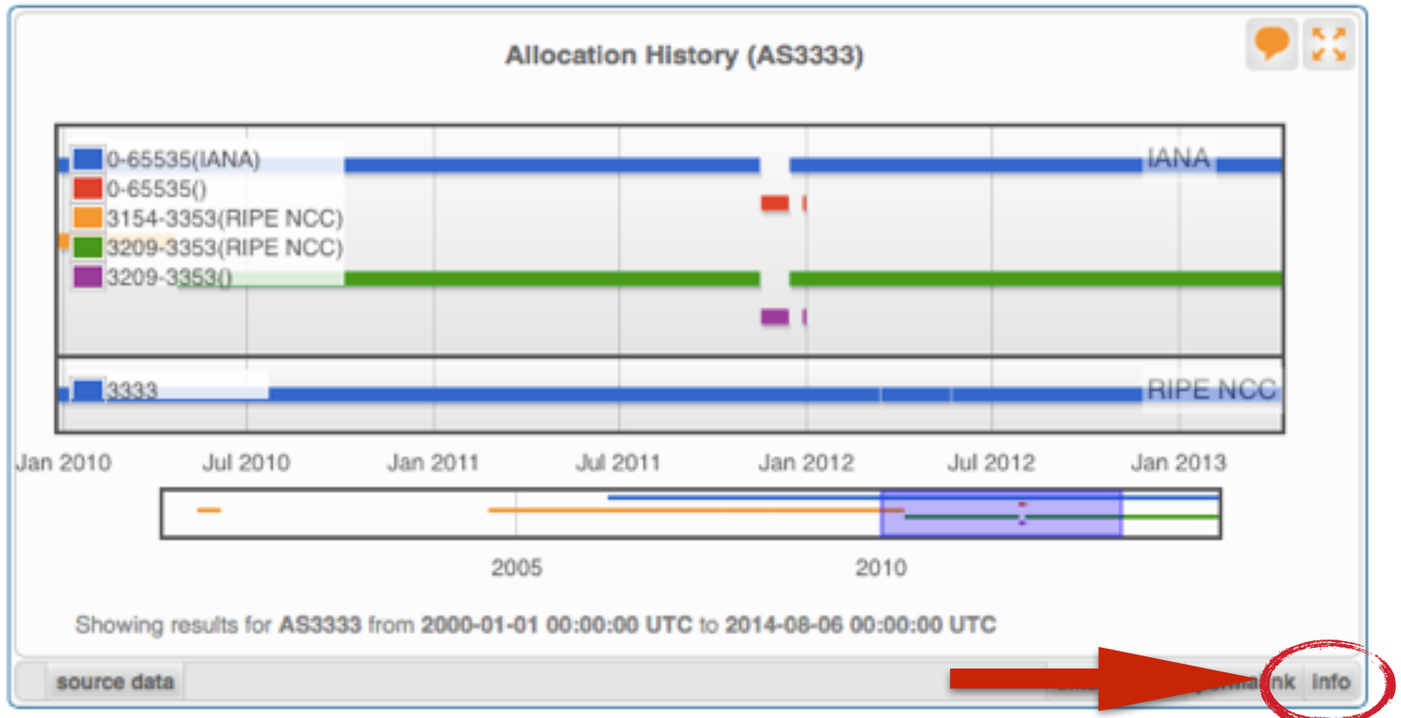





- Immutable shareable URL for each result!
- URL includes:
  - Zoom
  - History

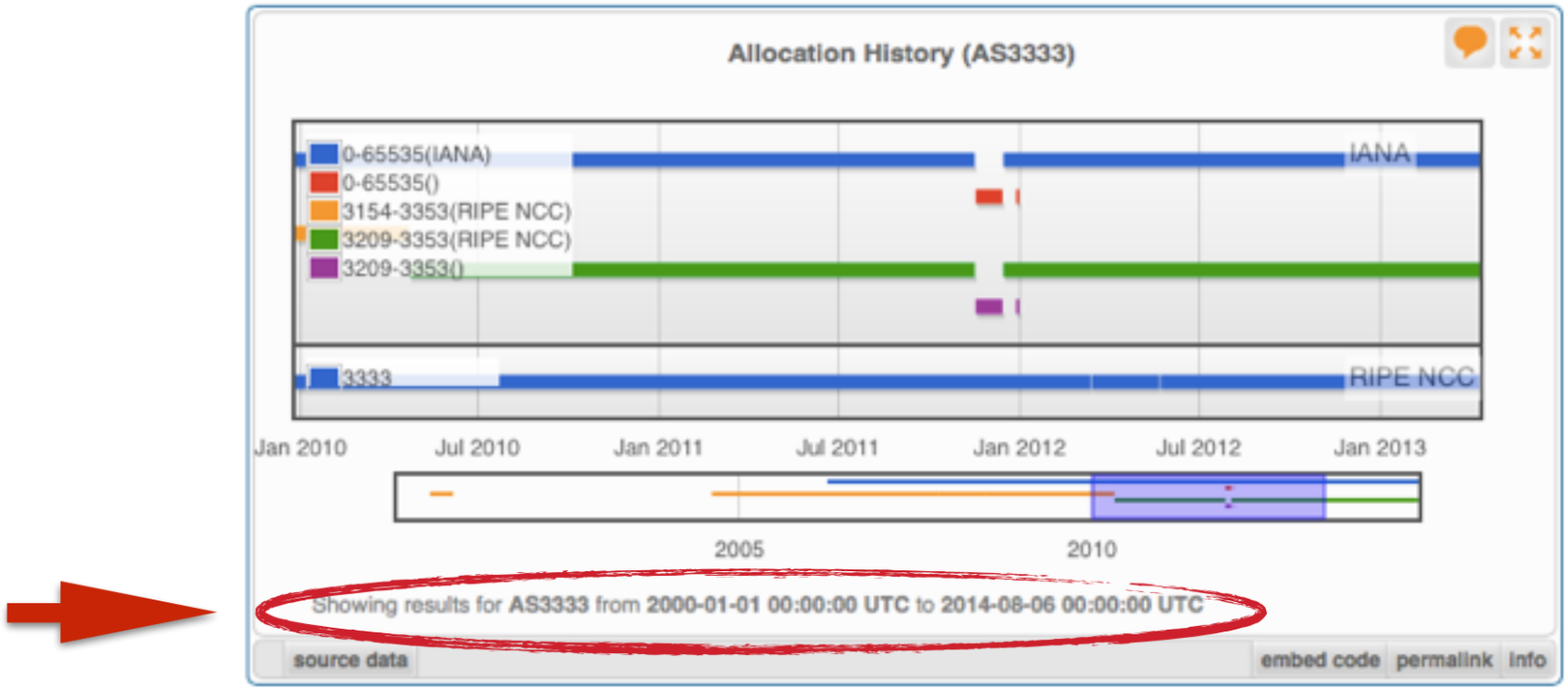
# Where’s the data from?






# Freshness and Timescale of the Data

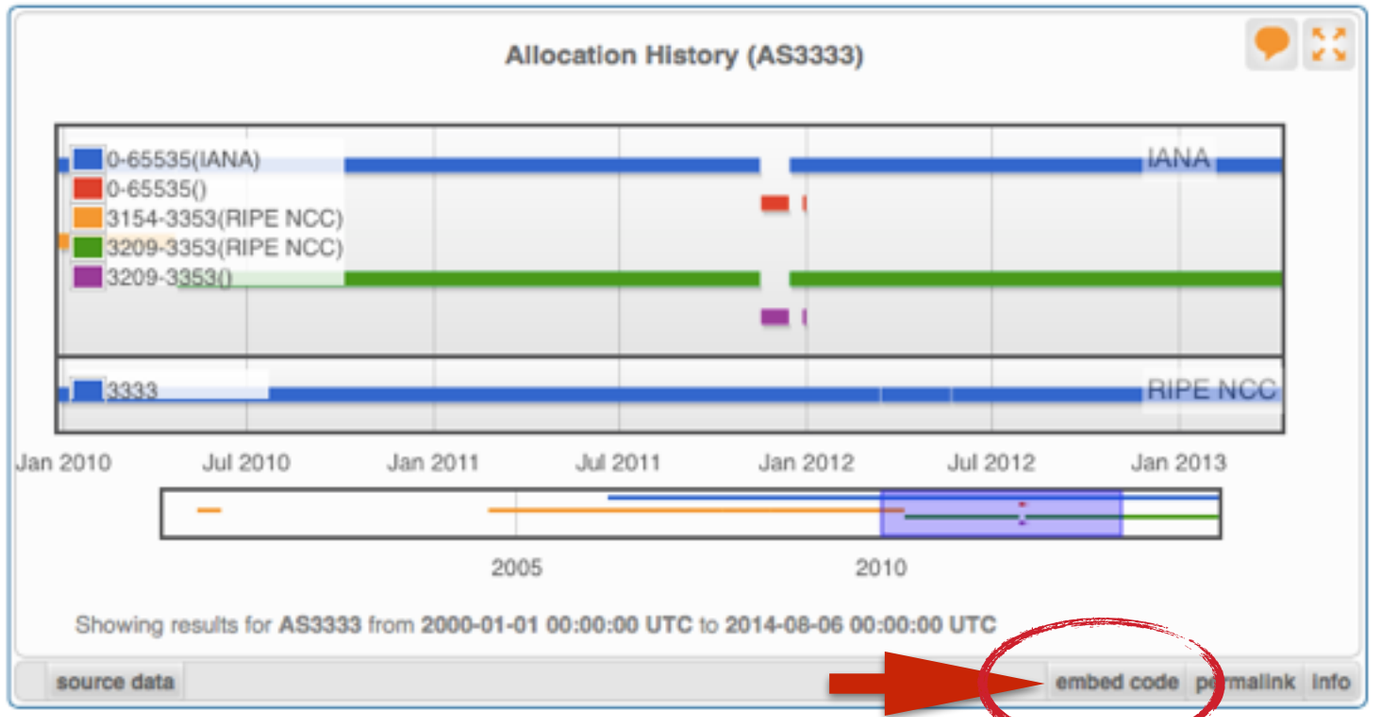





- Timestamp and time period of data
- Different widgets = different data update frequency
- Can be adjusted in most cases
  - Limits: Different maximum granularities

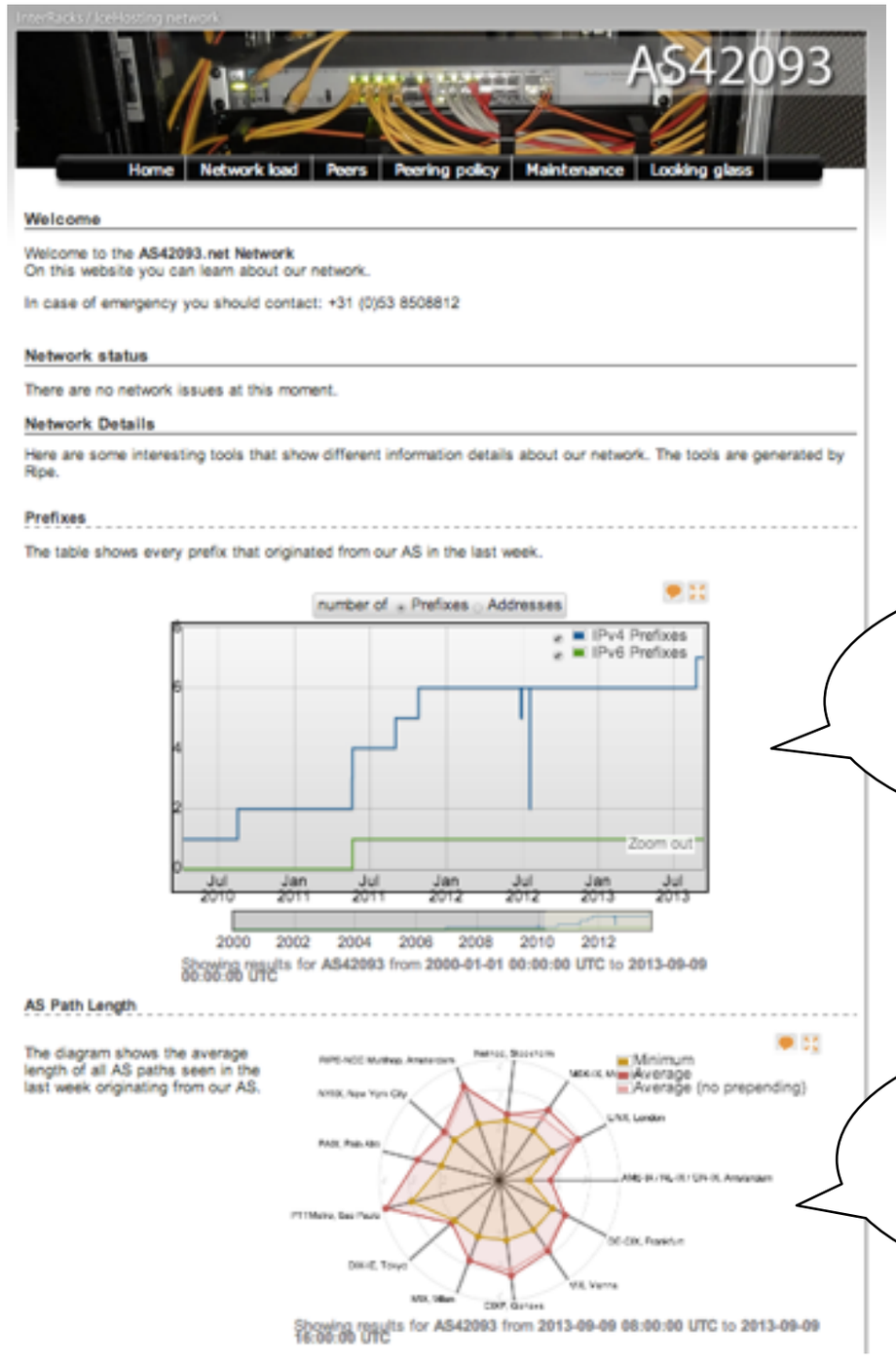
# Embed the widget!






# Embedding widgets on your site






This ISP embedded widgets on its page

Prefix Count widget

AS Path Length widget

# List of Widgets

## Section 4

# RIPEstat widgets (at a glance)



| AS queried | Prefix queried |
|---|---|
| AS Overview | Prefix Overview |
| Registry Browser | Registry Browser |
| Geolocation | Geolocation |
| Routing Status | Routing Status |

# Widget 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 100 entries  Search:

| Title (show slug) | Example | Prefix | IP address | ASN | Hostname | Country code |
|---|---|---|---|---|---|---|
| Abuse Contact Finder | | ✓ | ✓ | ✓ | | |
| Address Space Hierarchy | | ✓ | ✓ | | | |
| Address Space Usage | | ✓ | ✓ | | | |
| Allocation History | | ✓ | ✓ | ✓ | | |
| Announced Prefixes | | | | ✓ | | |
| AS Overview | | | | ✓ | | |
| AS Path Length | | | | ✓ | | |
| AS Routing Consistency | | | | ✓ | | |
| ASN Neighbours | | | | ✓ | | |
| ASN Neighbours History | | | | ✓ | | |
| RIPE Atlas Probes | | ✓ | ✓ | ✓ | | ✓ |
| RIPE Atlas Measurement Targets | | ✓ | ✓ | ✓ | ✓ | |

# RIPEstat widgets (routing)



| AS queried | Prefix queried |
|---|---|
| Routing Status | Routing Status |
| BGP Update Activity | BGPlay |
| Routing History | BGP Update Activity |
| Announced Prefixes | Routing History |
| AS Path Length | Routing History |
| ASN Neighbours | BGP Looking Glass |
| ASN Neighbours History | Visibility |
| Prefix Count | Related Prefixes |
| Visibility | Prefix Routing Consistency |
| Prefix Size Distribution | |
| AS Routing Consistency | |

# RIPEstat widgets (DNS)



| AS queried | Prefix queried |
| --- | --- |
| Reverse DNS Consistency | Reverse DNS |
| | Reverse DNS Consistency |

# RIPEstat widgets (anti-abuse)



| AS queried | Prefix queried |
|---|---|
| Abuse Contact Finder | Abuse Contact Finder |
| | Blacklist Entries |

# RIPEstat widgets (database)



| AS queried | Prefix queried |
|---|---|
| AS Overview | Prefix Overview |
| Registry Browser | Registry Browser |
| Allocation History | Address Space Hierarchy |
| Whois Matches | Allocation History |
| AS Routing Consistency | Address Space Usage |
| | RIR Prefix Size Distribution |
| | Prefix Routing Consistency |
| | Reverse DNS |
| | Whois Matches |

# RIPEstat widgets (geographic)



| AS queried | Prefix queried |
|---|---|
| Geolocation | Geolocation |
| Geolocation History | Geolocation History |

# RIPEstat widgets (activity)



| AS queried | Prefix queried |
|---|---|
| RIPE Atlas Probes | Observed Bandwidth Capacity |
| RIPE Atlas Measurement Targets | Observed Network Activity |
| | Geolocation |
| | Geolocation History |

# RIPEstat widgets (suggestions)



| AS queried | Prefix queried |
| --- | --- |
| RIPEstat Search Suggestions | RIPEstat Search Suggestions |

# Query: Country code



| | COUNTRY CODE queried |
|---|---|
| ROUTING | Country Routing Statisics |
| DATABASE | Country Resource List |
| ACTIVITY | Observed Bandwidth Capacity |
| | Observed Network Activity |
| | Address Space Distribution |

# Query: Hostname



| | HOST NAME queried |
|---|---|
| AT A GLANCE | Geolocation |
| | DNS Chain |
| | Forward DNS |
| DNS | DNS Chain |
| | Forward DNS |
| GEOGRAPHIC | Geolocation |
| | Geolocation History |
| ACTIVITY | RIPE Atlas Measurement Targets |

# Exercise: Querying for a resource

## Exercise A

Refer to the exercise booklet

# Tasks



- What network announces 140.78.50.90?
- Is 193.3.4.2 routed?
- In which country  is 91.229.42.0/23 used?
- What is its corresponding INETNUM object?
- What widget provides real-time routing status?
- By what percent did the number of prefixes announced within Greece increase over the last two years?
- How would you share interesting network events with a colleague?

# Visualising BGP Routing Information

## Section 5

RIPE NCC

# Querying

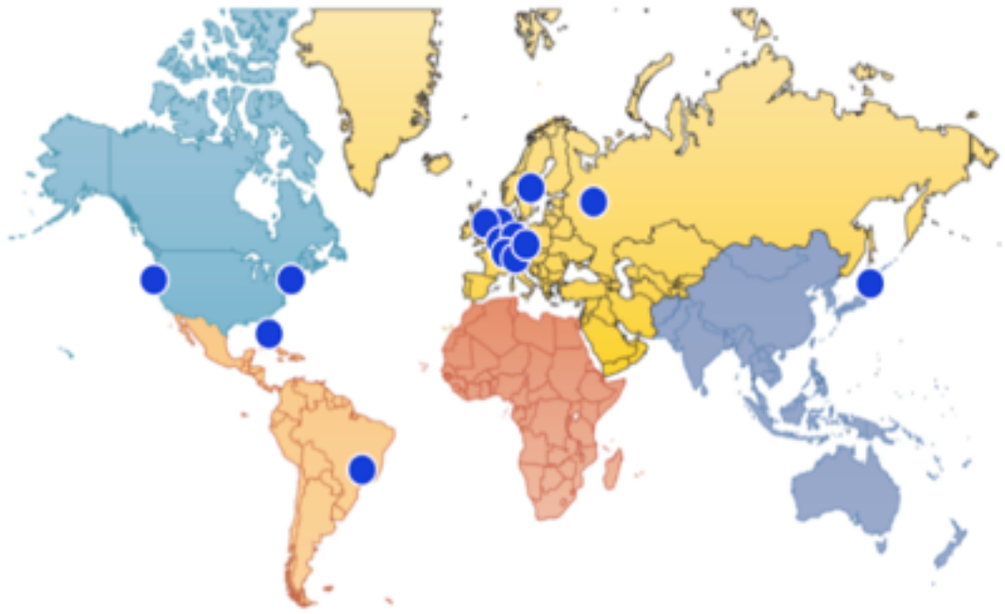


- IP or ASN queried?
  - You get different widgets!
- ASN often visualised based on the prefixes it announces

# RIS - Routing Information Service

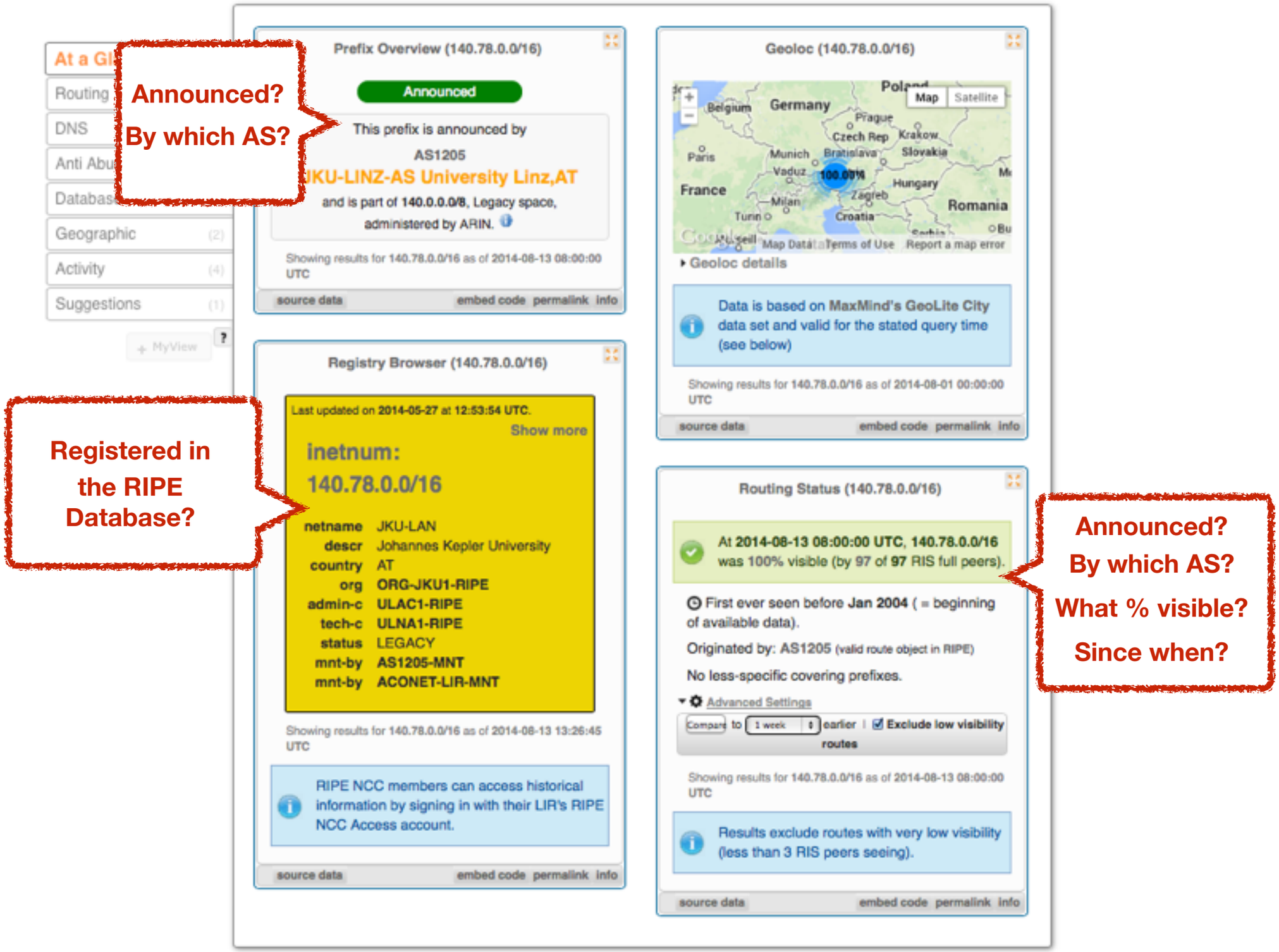


- RIPE NCC has been collecting BGP information since 1999
  - Raw data: ris.ripe.net
- RIS has 15 route collectors and 600+ peers
- RIPEstat visualises RIS data



# At-a-glance view: Prefix queried

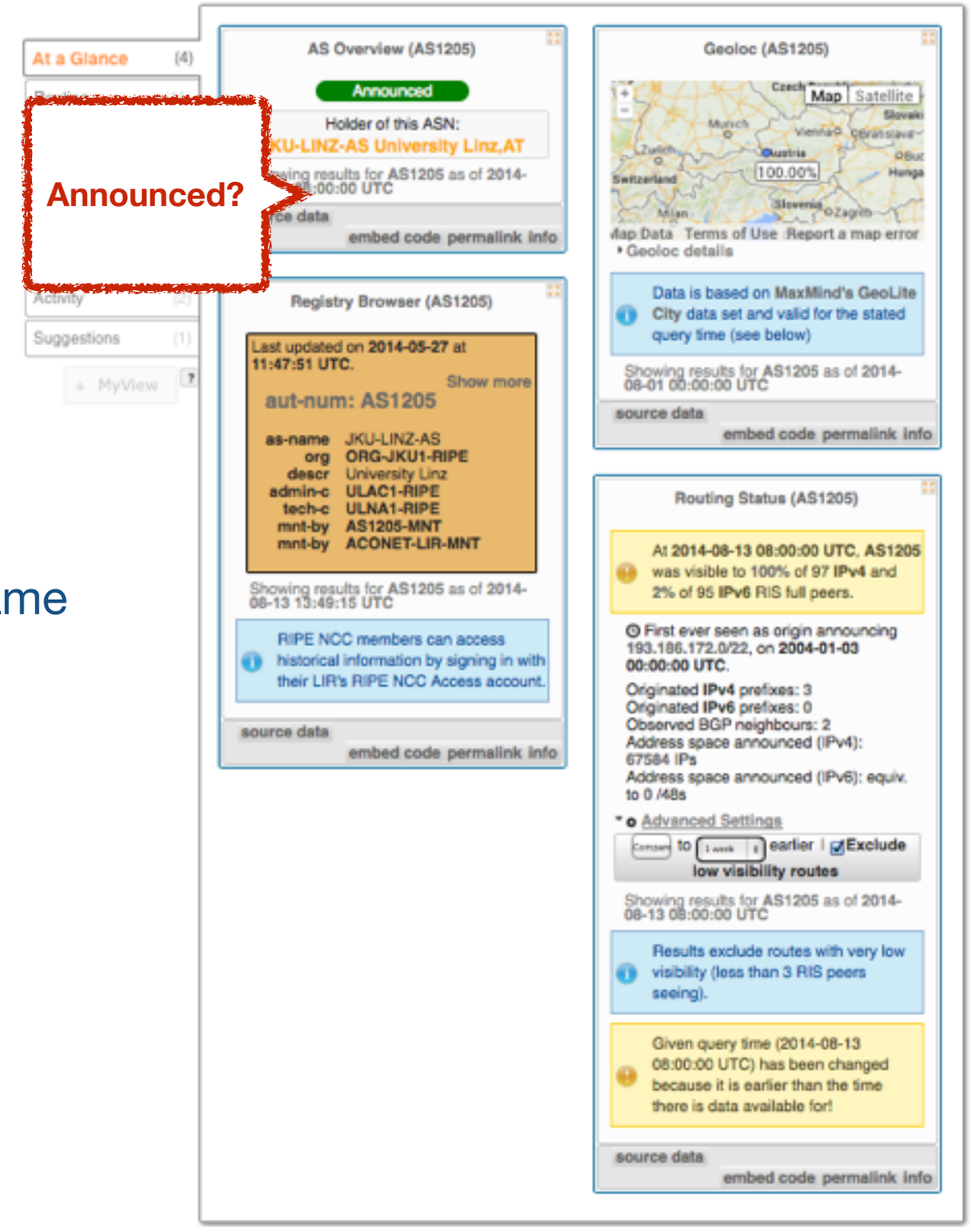




# At-a-glance view: ASN queried



The rest is the same as for a prefix



# BGPlay

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

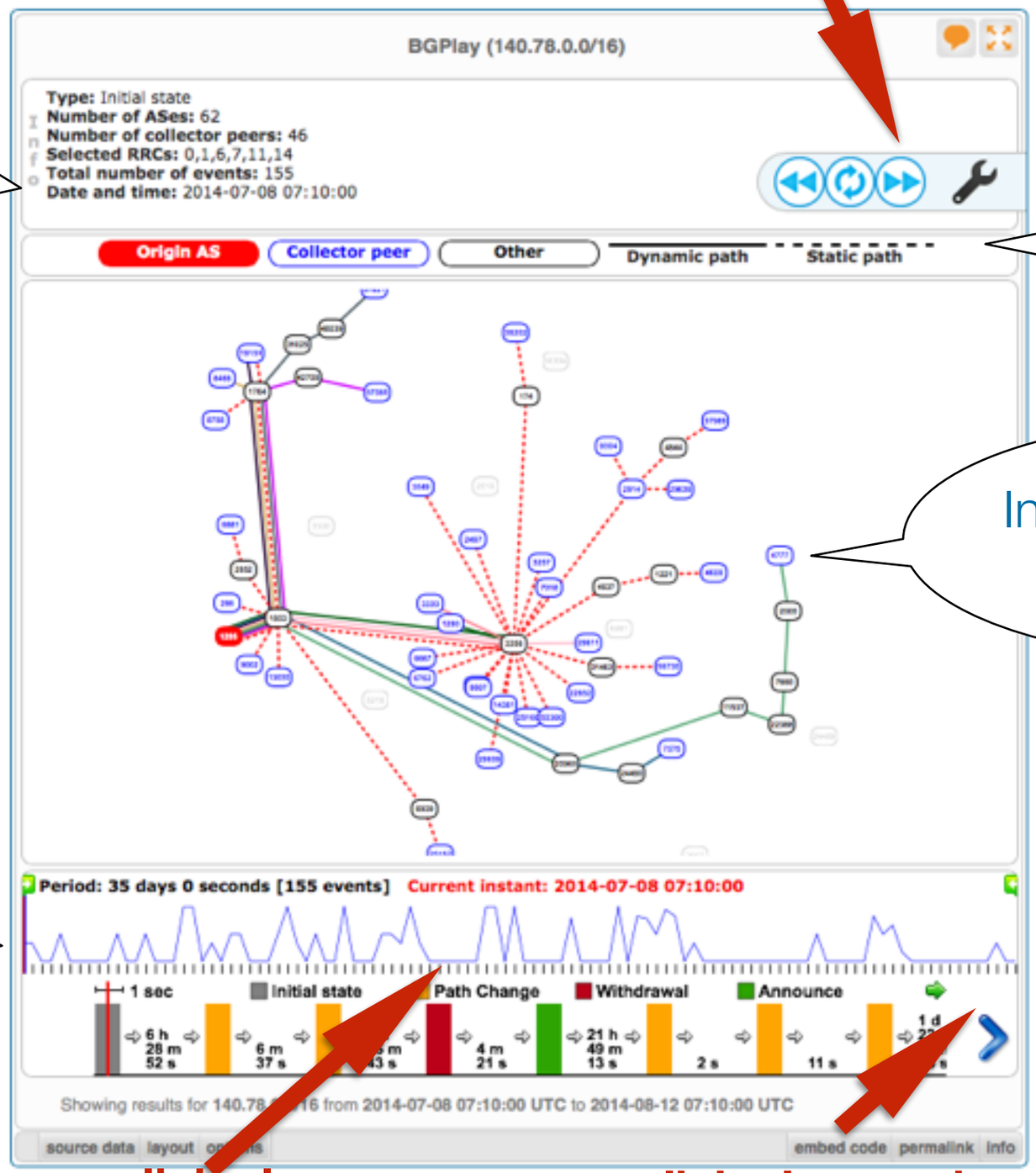
https://stat.ripe.net/widget/bgplay

# BGPlay



BGP event, ASN or ASN path details

click play




Control panel:

- Covered time period
- RRC selection

Interactive animated graph

Control timeline

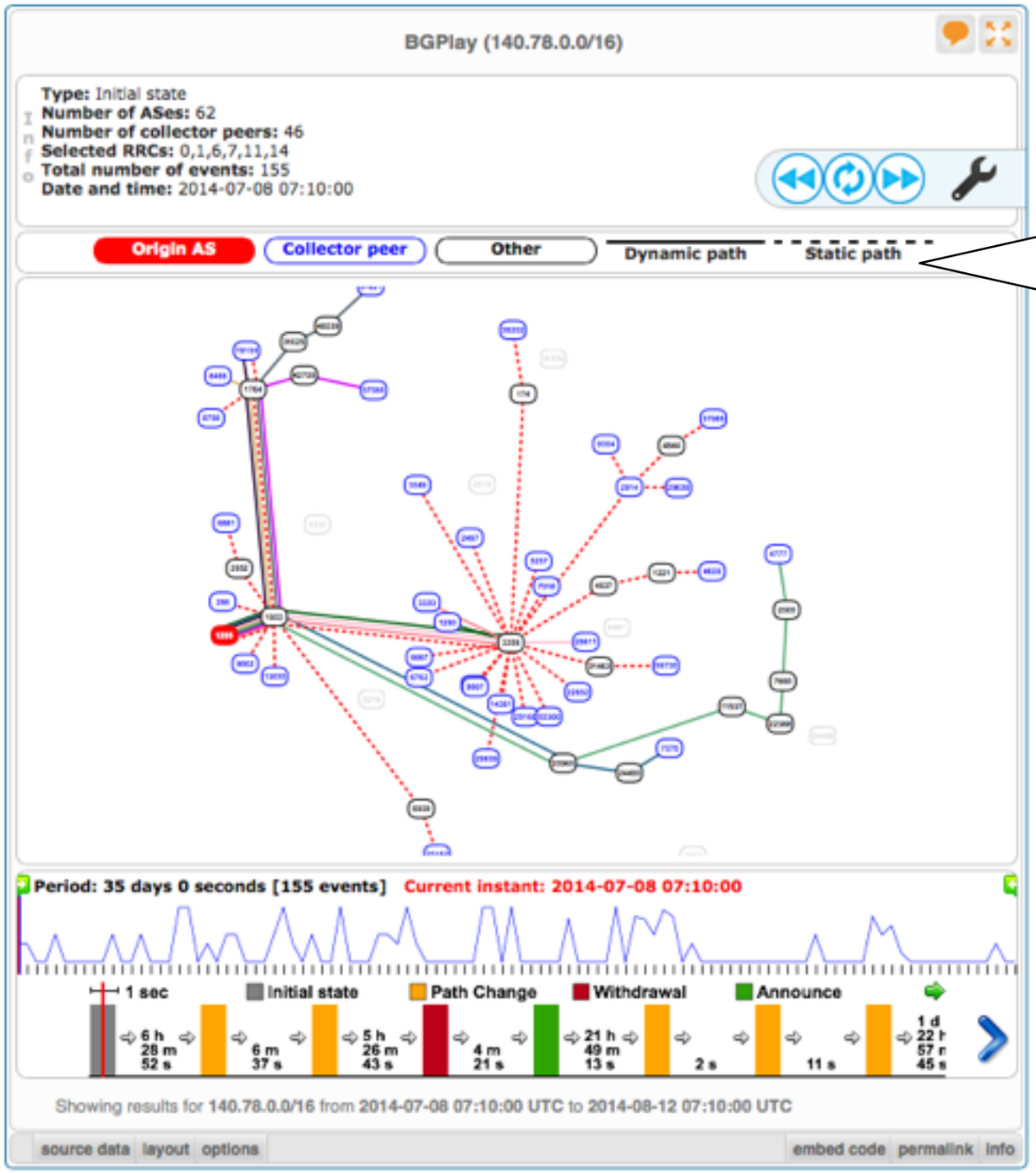
Detailed timeline with events

click play

click play movie

# BGPlay



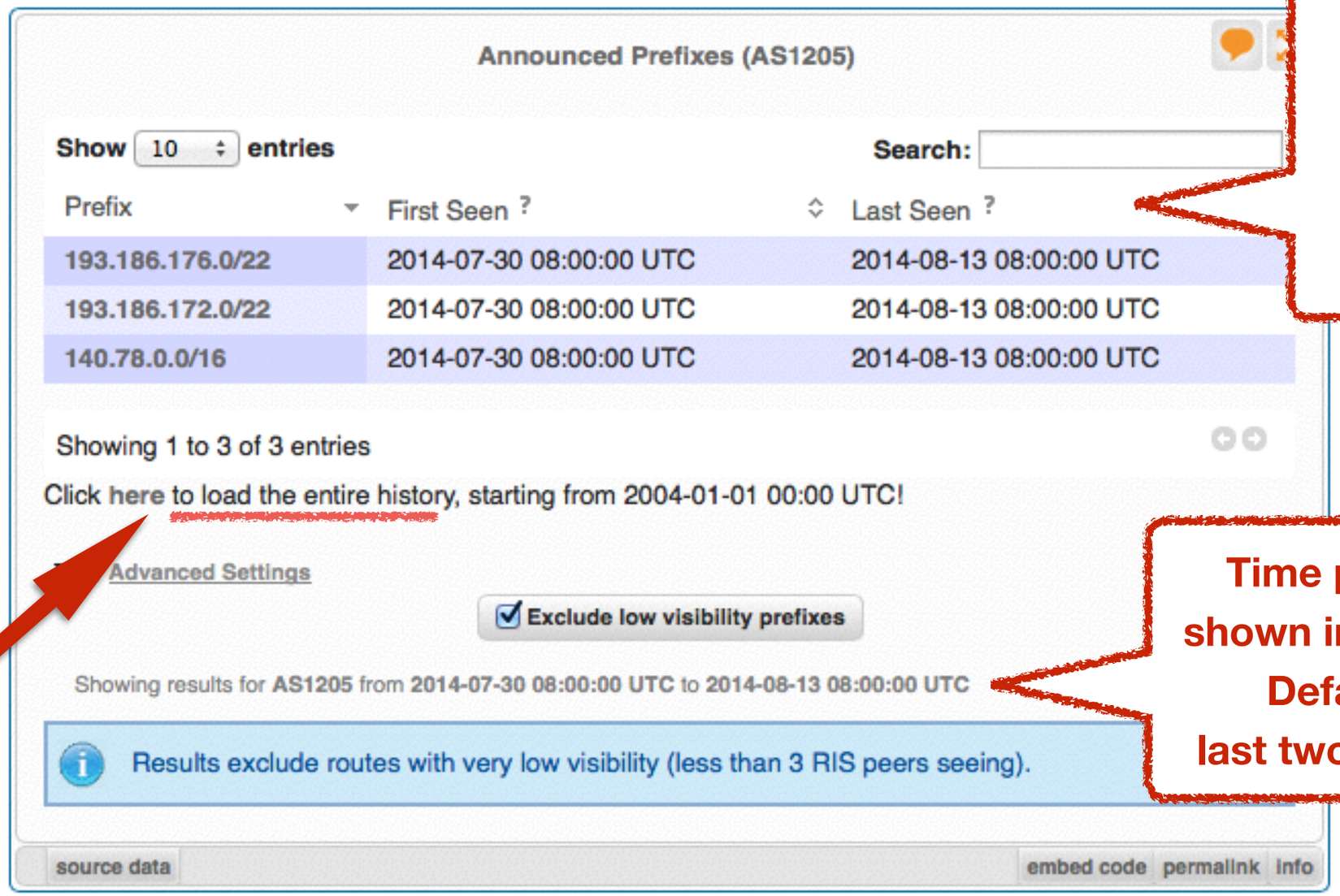



Examples: (2013/8/28-30)

- 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 - useful for ASN



**Announced Prefixes (AS1205)**

Show 10 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

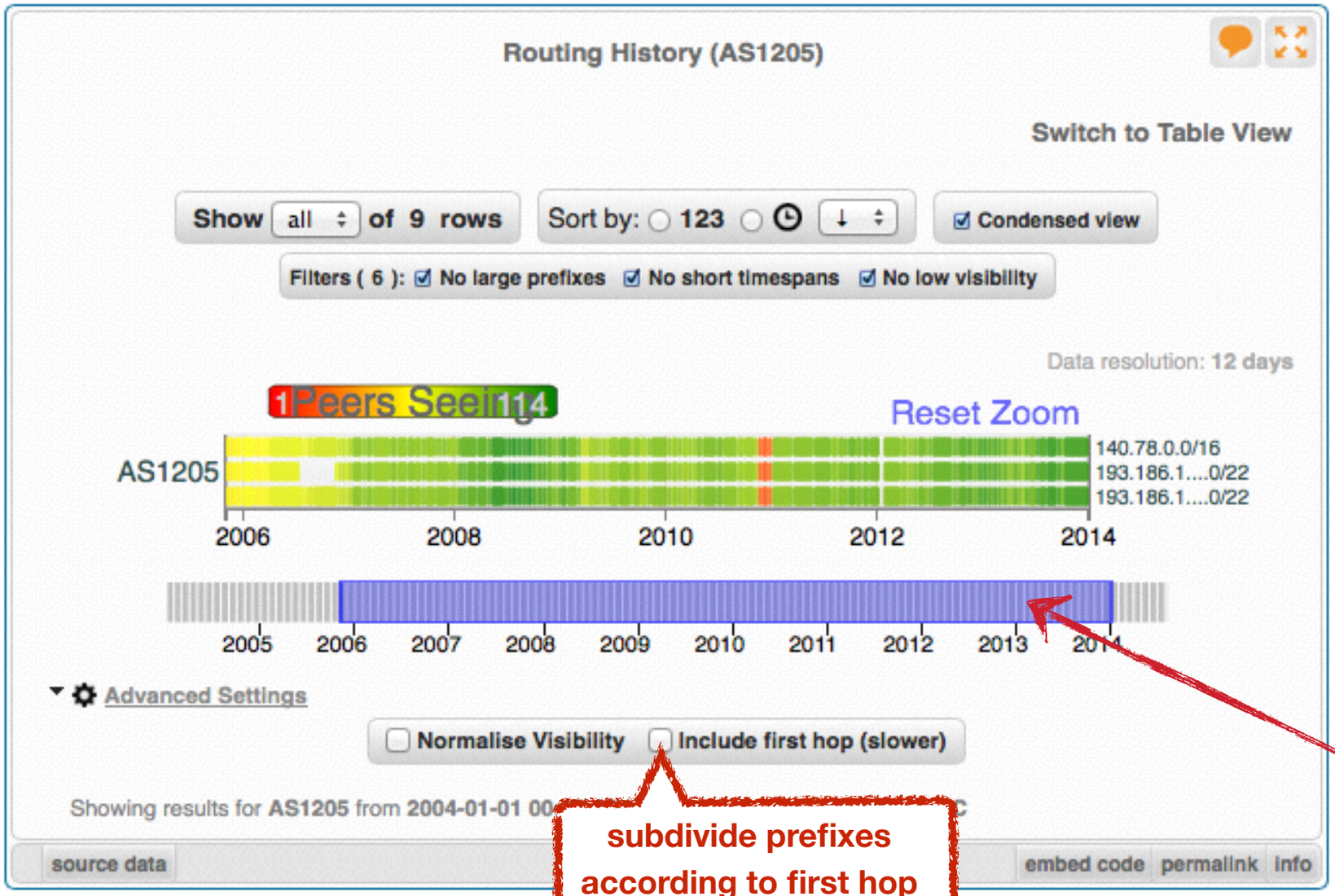
Showing results for **AS1205** from **2004-01-01 00:00:00 UTC** to **2014-08-13 08:00:00 UTC**

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






subdivide prefixes according to first hop after queried ASN

Time scale selection

# Exercise: BGPlay

## Exercise B

Refer to the exercise booklet

# Tasks



- Find the up-stream provider for AS1205
- Is AS3333 multi-homed?
- Check the IPv6 connectivity of your own network

# Reporting Abuse

## Section 6

RIPE NCC

# Reporting abuse



- Who is attacking your network?
- What kind of attack is it?

# 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, the Middle East and parts of Central Asia

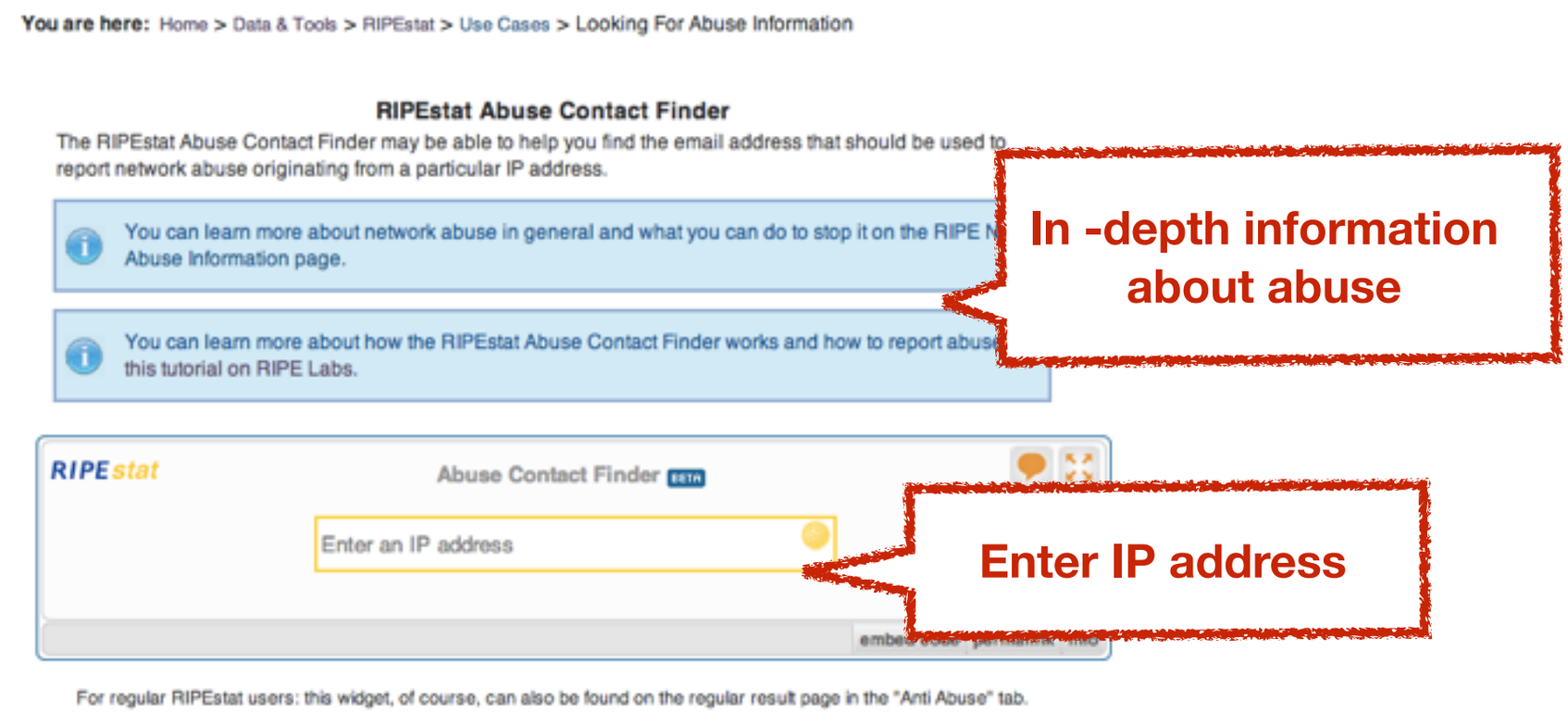
https://labs.ripe.net/Members/cteusche/finding-anti-abuse-contact-information-with-ripestat

# Reporting abuse



- Take action with the Abuse Contact Finder


Go to “Use Cases” >
“Looking for Abuse Information”

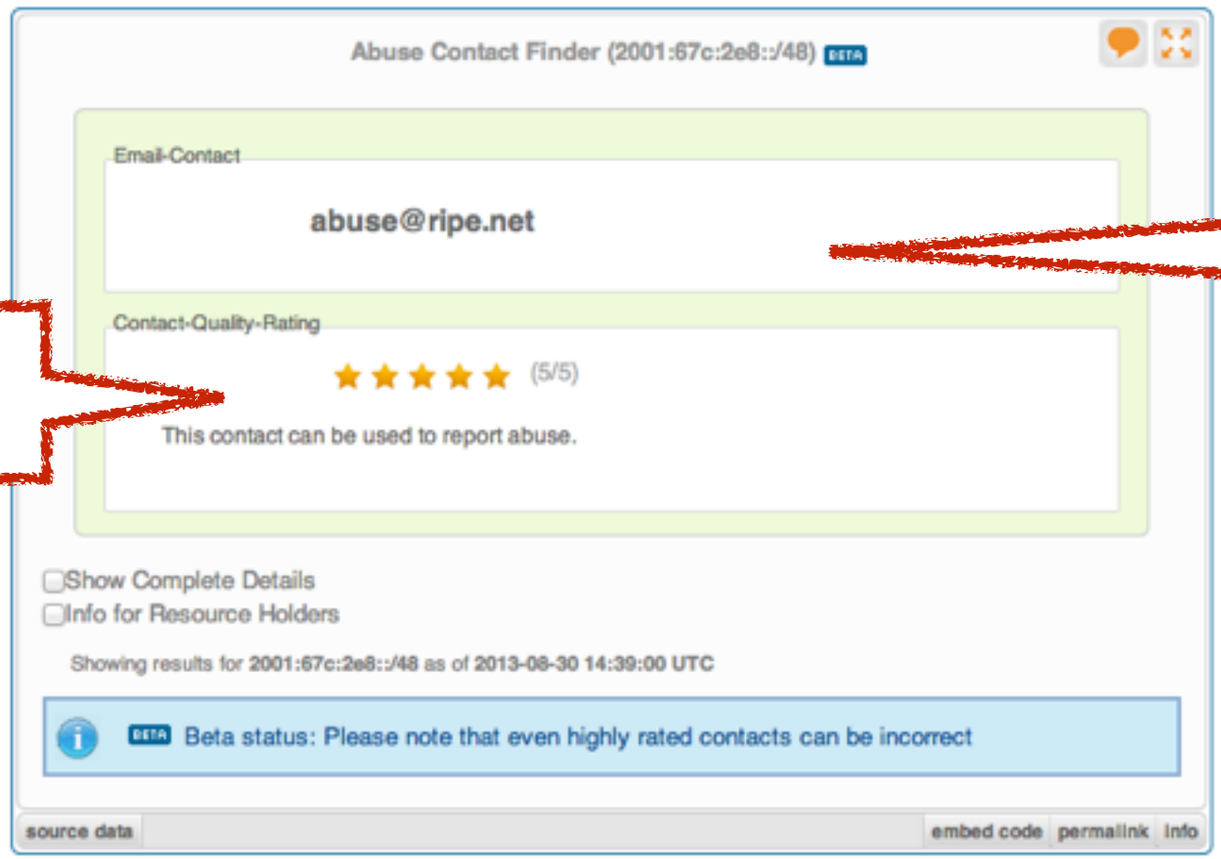



In -depth information about abuse

Enter IP address

# Reporting abuse



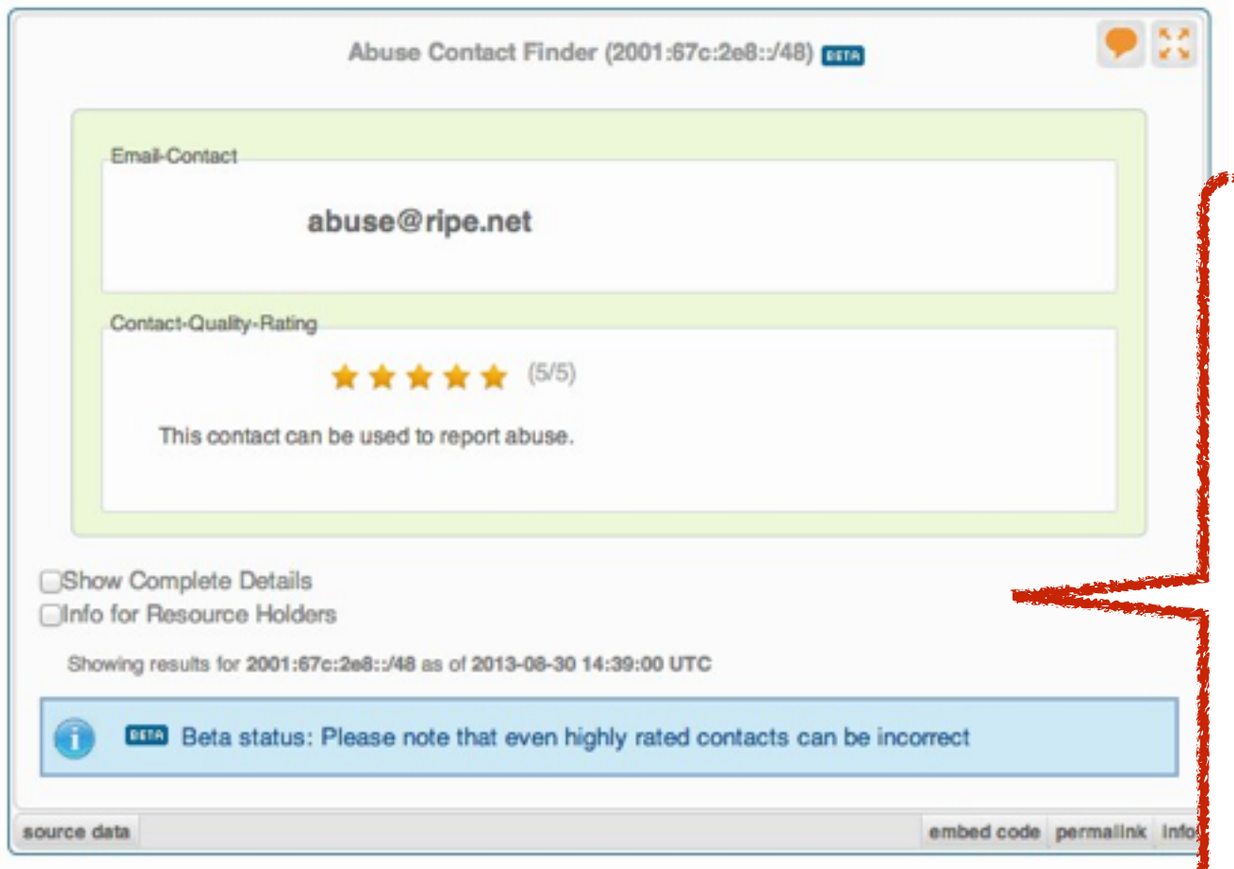



Email contact to report abuse

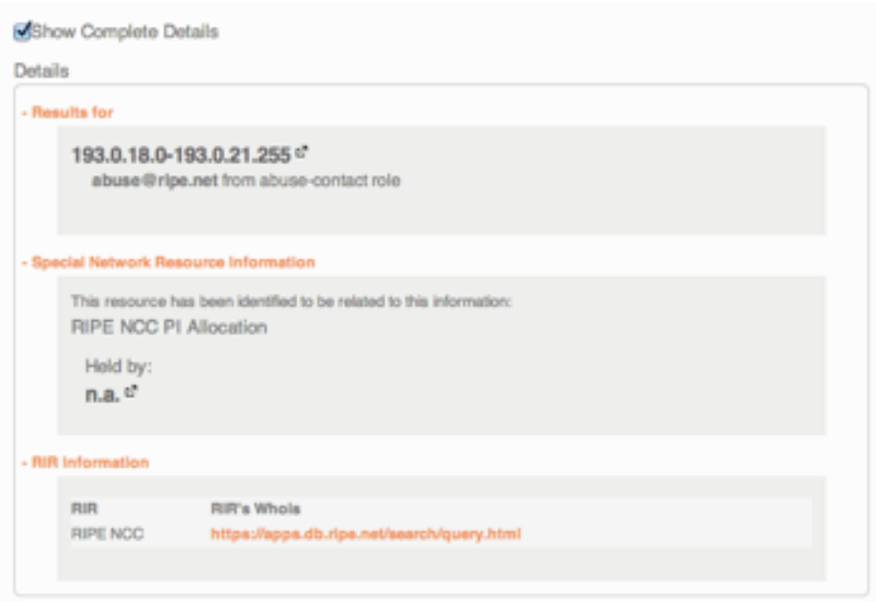
Rating of the contact

# Reporting abuse






Details about the resource and abuse contact:




# Exercise: Handling Abuse

## Exercise C

**Refer to the exercise booklet**

# Tasks



- What is the abuse contact for 193.0.20.22 or the hotel network?
- Check an IP address from your home network
- Discussion: What can you do in these cases?
  - No abuse contact found
  - No response on an abuse report

# Personalising RIPEstat

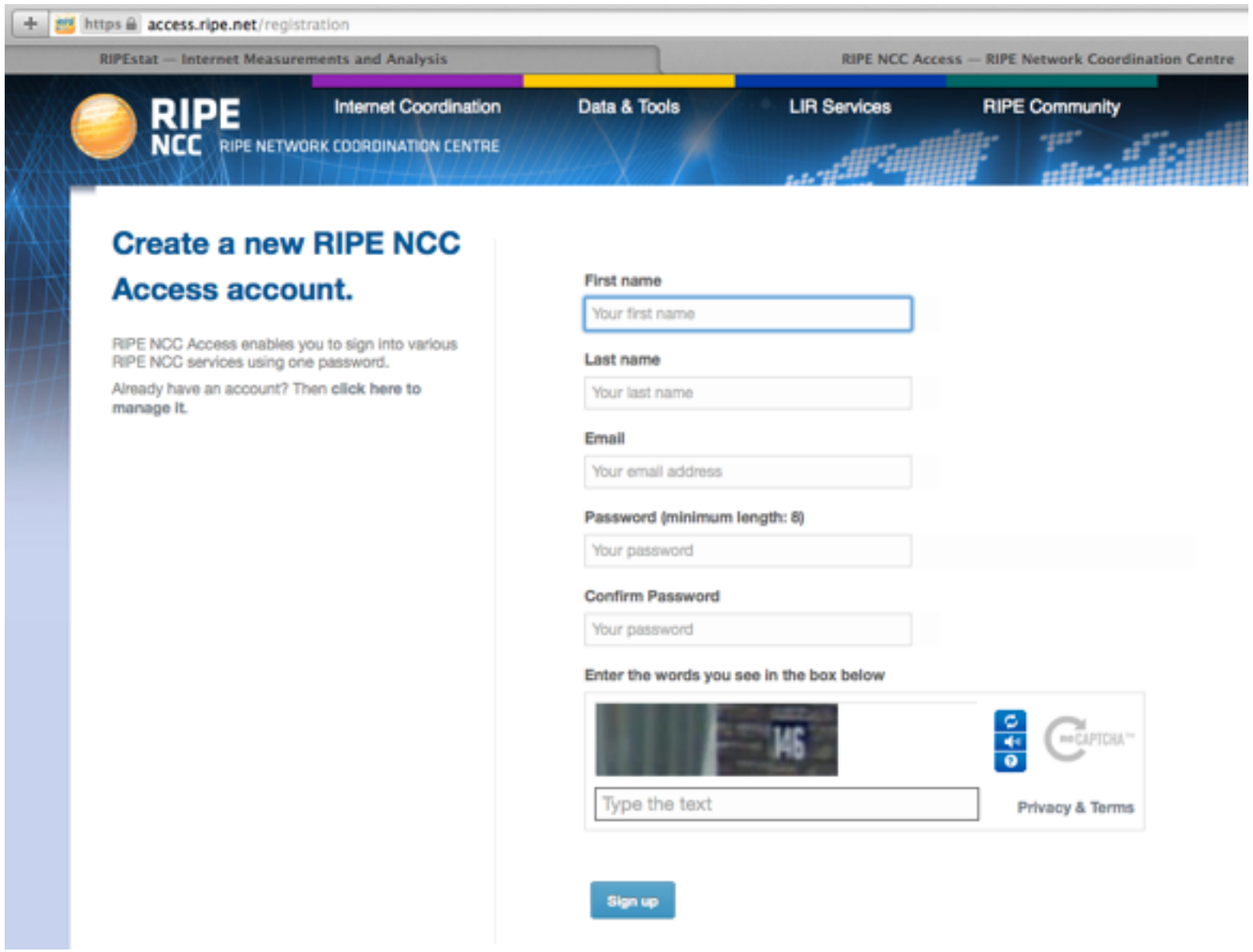
## Section 7

RIPE NCC

# Create a RIPE NCC Access account



## https://access.ripe.net



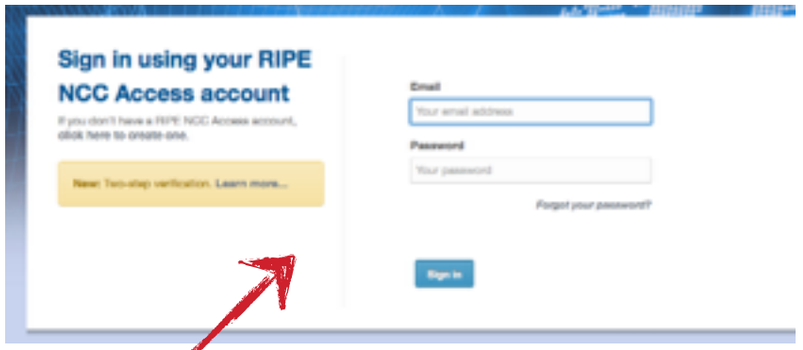
# Why personalise RIPEstat?

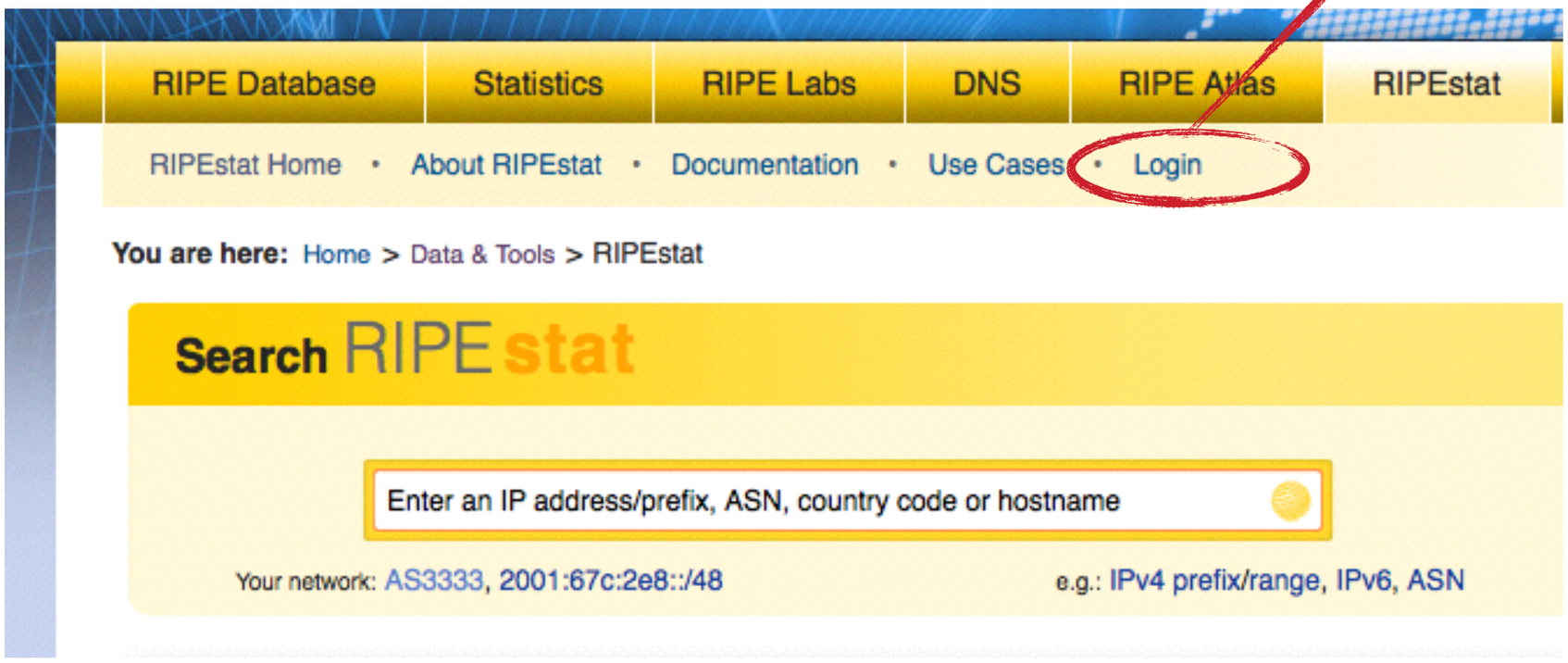


- If you have recurring lookup tasks that involve different widgets spread over multiple tabs
- Building a “history” of your lookups

# Log in to RIPE NCC Access account





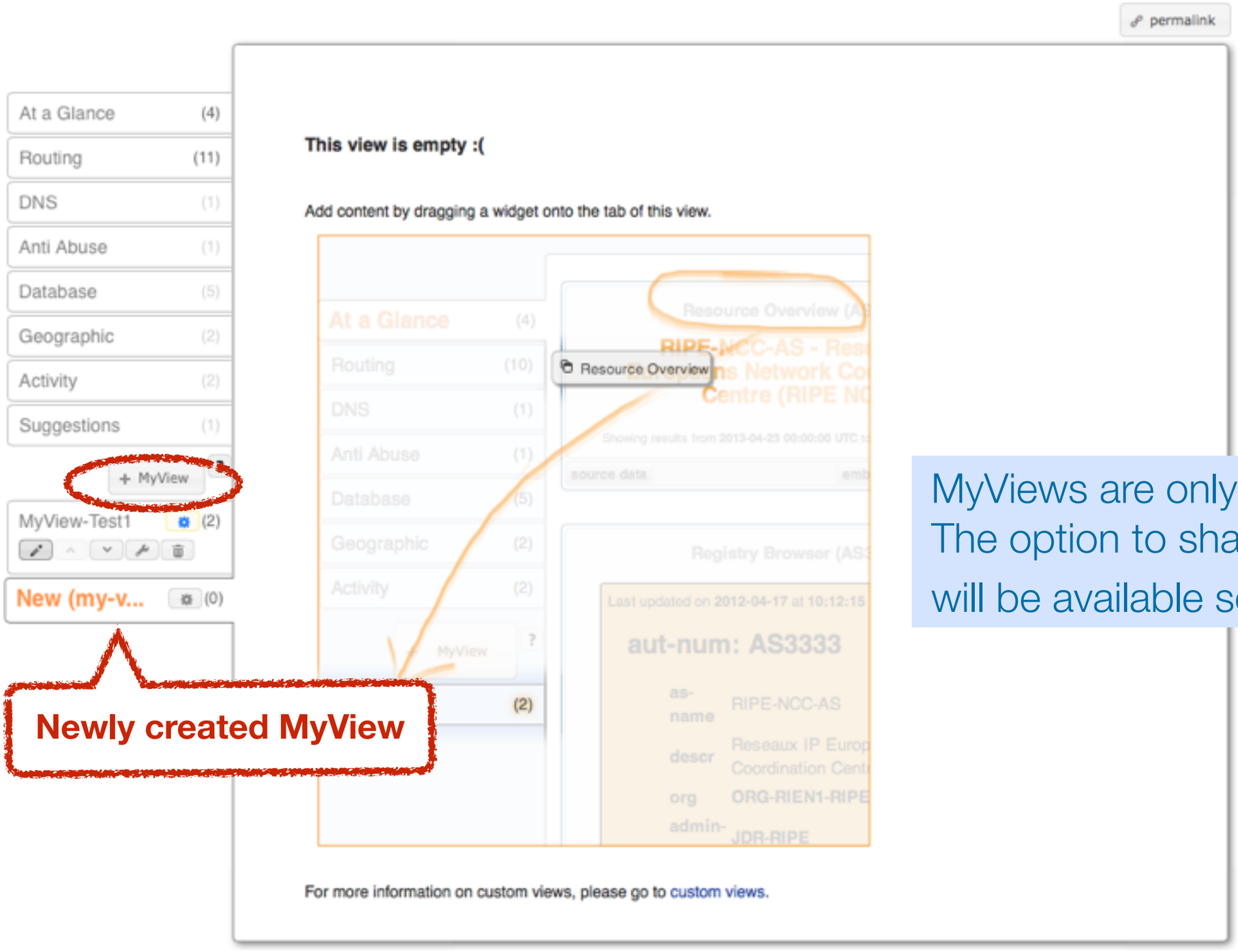



# MyView

- Create custom views
  - Click the “MyView” button
  - Drag and drop the widgets you want to the MyView tab
- Created under “ASN” or “IP”

# MyView

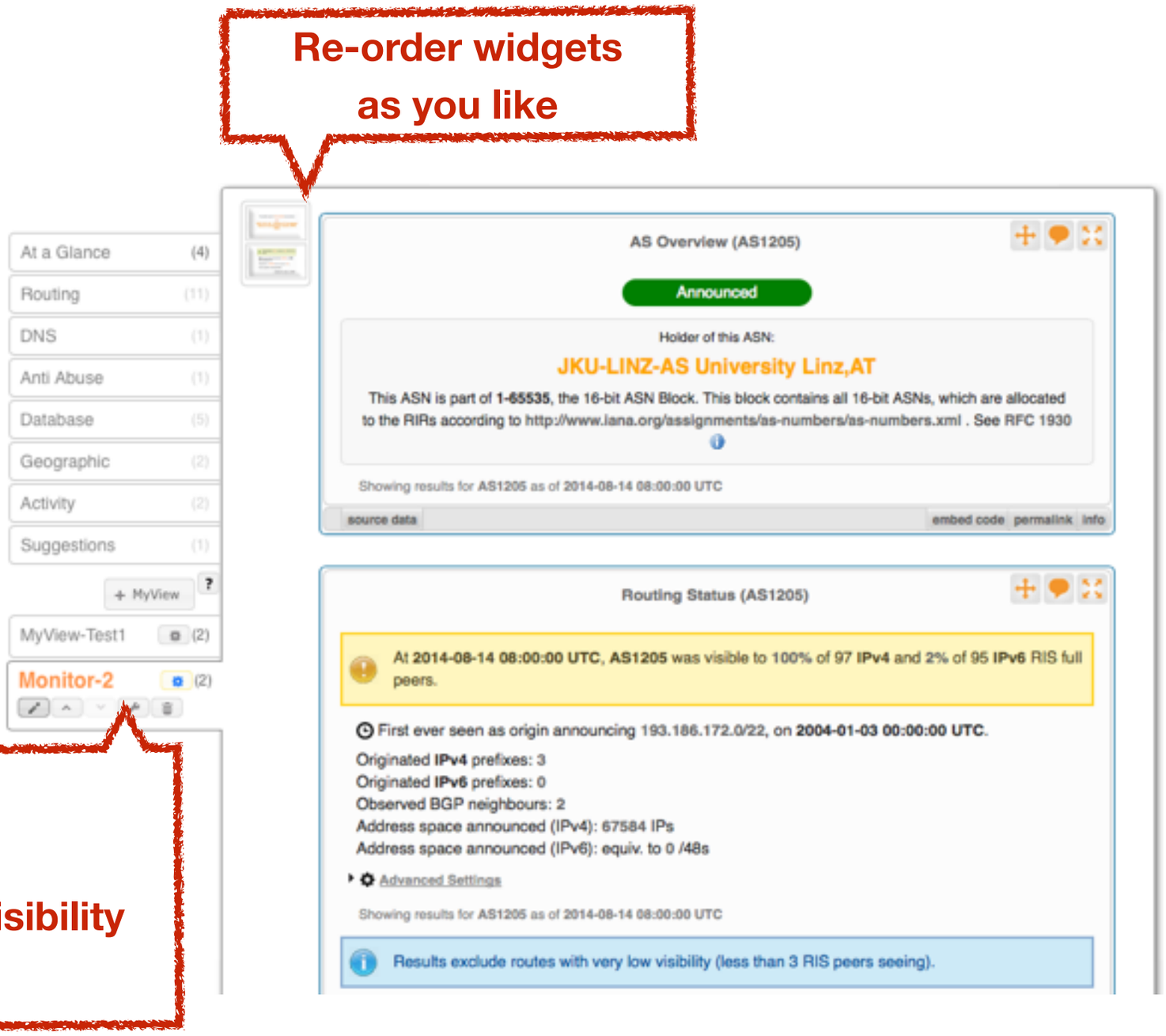





MyViews are only visible to you.
The option to share your views will be available soon!

# Customise MyView





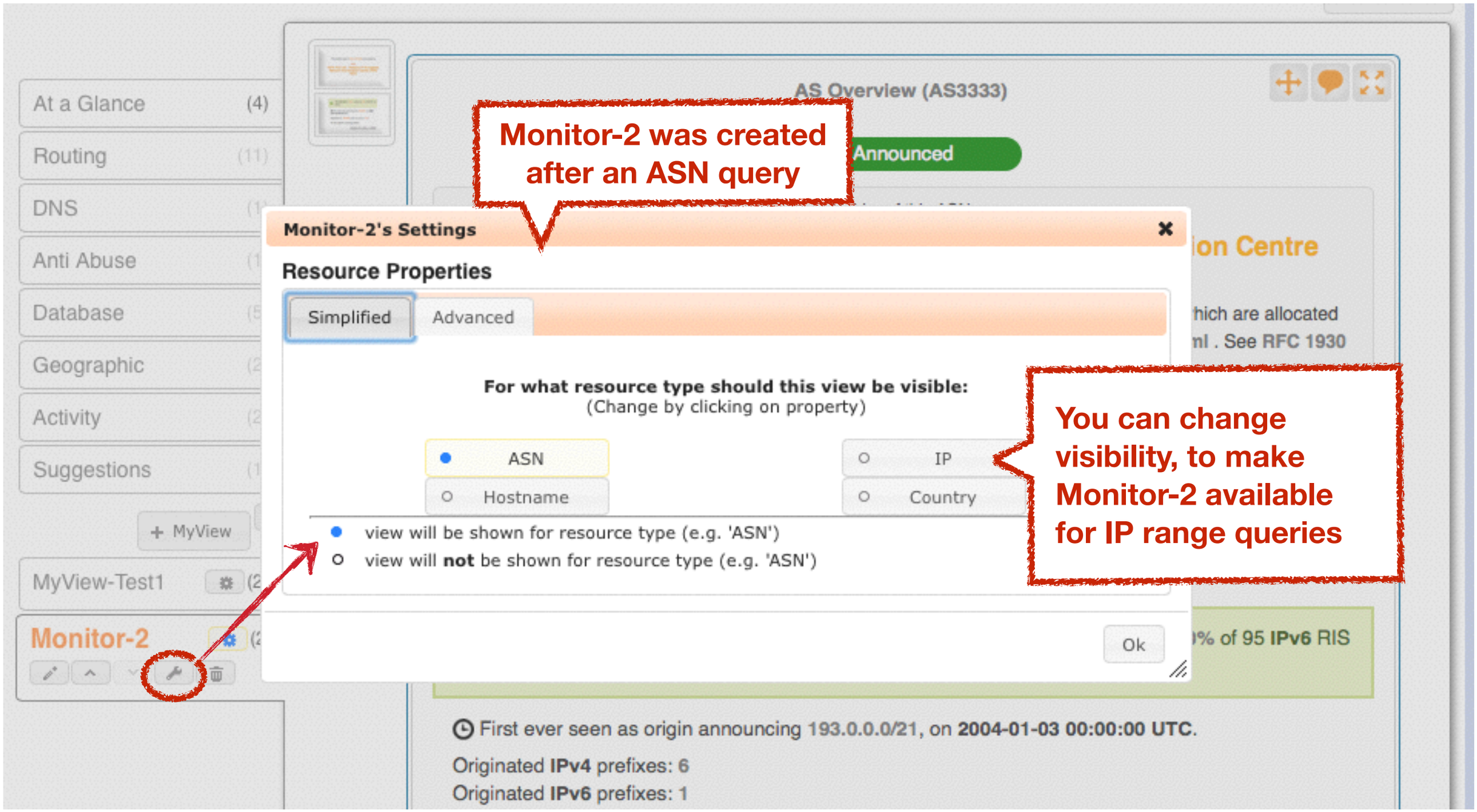
# Visibility of MyView



- MyView is only accessible after you have queried an ASN or IP
- A MyView created after an ASN query is only **visible** for other ASN queries
- A MyView created after IP query is only **visible** for other IP queries
- This can be changed via settings

# Controlling visibility






# MyView summary



- RIPEAccess login required
- Customised selection of widgets
- It’s like an extra tab, specifically for your queries
- By default, available for one type of resource (ASN or IP)
- Can’t be shared

# Exercise: MyView

## Exercise D

**Refer to the exercise booklet**

# Tasks

- Create a RIPE Access account (if you don't already have one)
- Create a MyView for a prefix containing the following widgets:

  Routing Status, Looking Glass and Routing History
- Create another MyView with a least two widgets and give it a meaningful name

# Comparing Networks

## Section 8

RIPE NCC

# Why compare networks?



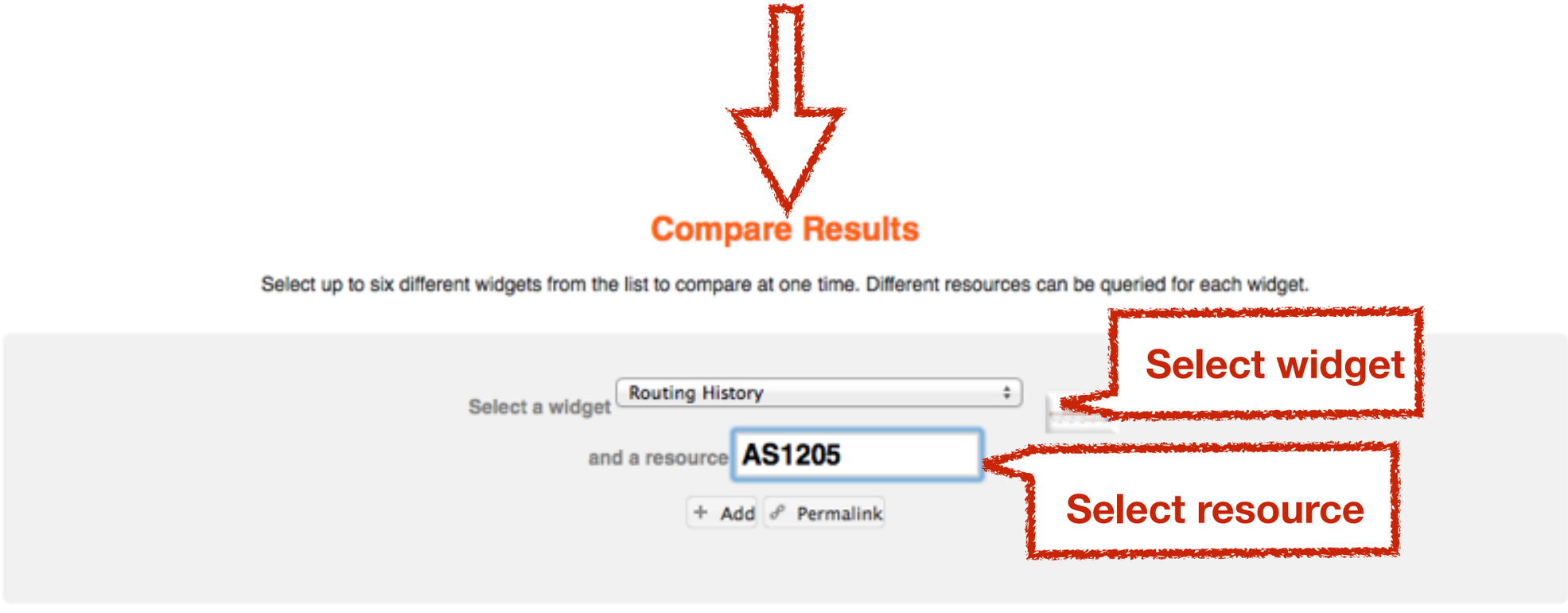
- Want to peer with AS-X?
  - Learn by opening multiple widgets about AS-X
- Choosing upstream ?
  - Compare AS-X with AS-Y by opening same widget loaded with two different ASNs
- Internet outage in a country?
  - Open multiple country-related widgets in same view

https://labs.ripe.net/Members/suzanne_taylor_muzzin/ripestats-multiple-widget-and-resource-comparison

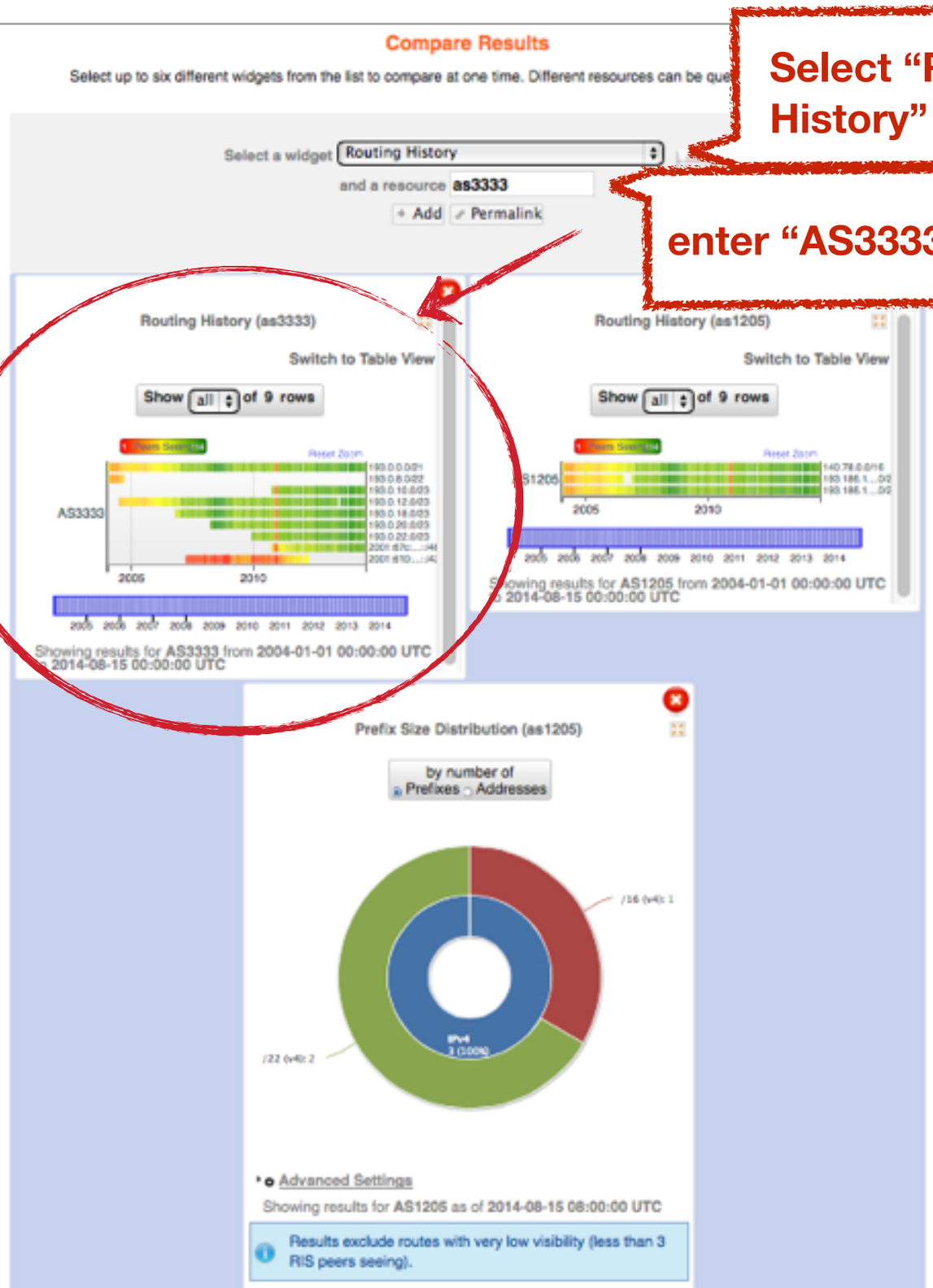
# How to compare



- Compare results in different widgets

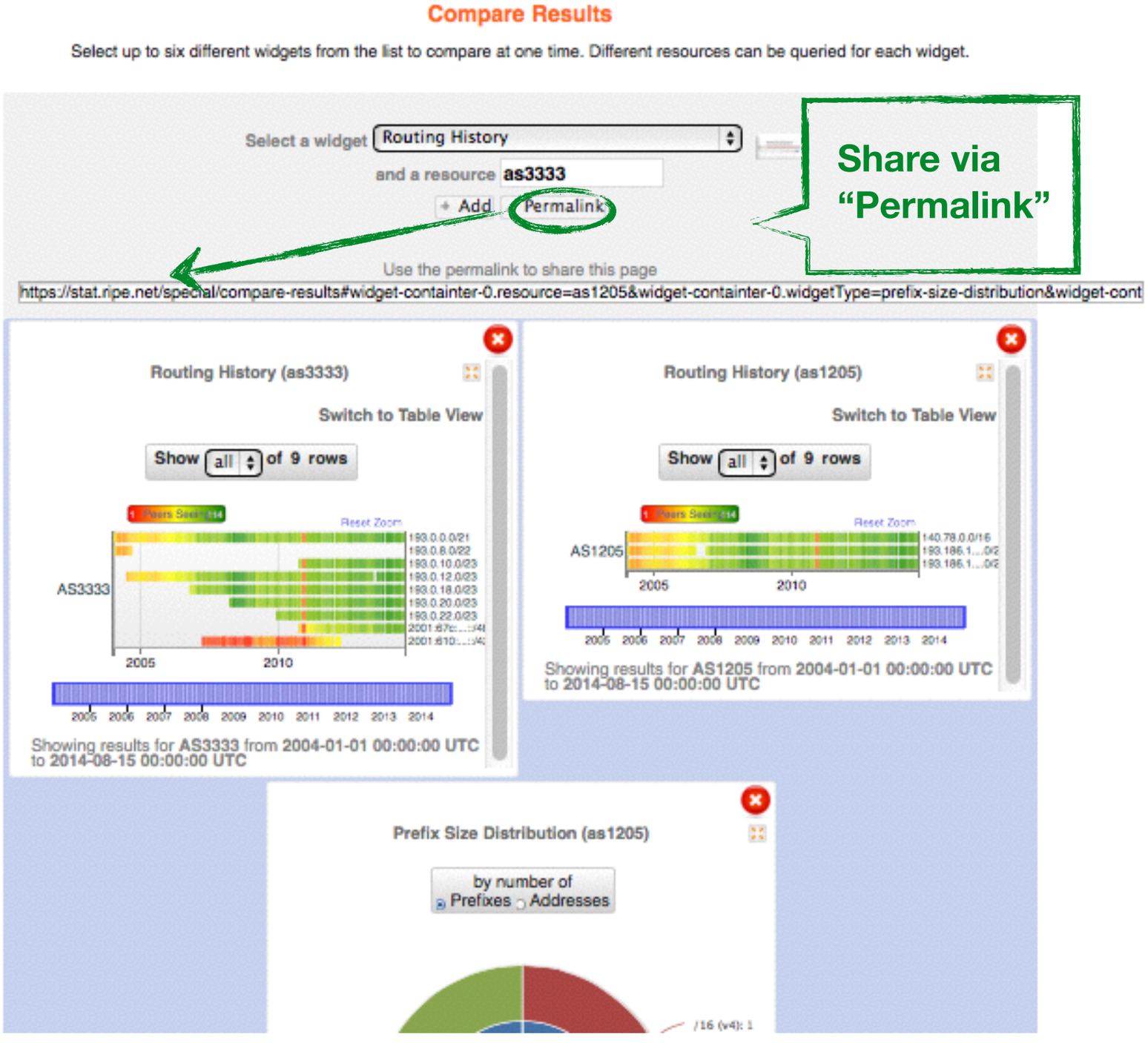



# Compare results



# Compare results








RIPE NCC

# Compare resources summary



- No login required
- Add widgets AND input query for each widget (ASN or IP or…)
- It is a result page with widgets and query results
- Share it via a permanent link

# Comparing countries in one widget



- Compare the growth of ASNs in DE and NL
- See IPv6 adoption rate in four countries at the same time
- Analyse IP hijacking with ‘BGP Update Activity Widget’

https://labs.ripe.net/Members/wilhelm/bgp-leaks-in-indonesia)

https://labs.ripe.net/Members/suzanne_taylor_muzzin/new-in-ripestat-in-widget-comparison-and-monitoring

# In-widget comparison



- Country Routing Statistics


# Exercise: Comparing Results

## Exercise E

**Refer to the exercise booklet**

RIPE NCC

# Tasks

- Compare the number of announced prefixes for two networks over the past two years using the widget comparison page
- How does the Internet in Greece compare to the UK? Use in-widget comparison!

# Exercise:
# RIPEstat Use Cases

## Exercise F

RIPE NCC

# Use cases



- How can you see whether someone has hijacked your prefixes?

- How can you see whether you had an outage?

# Questions?




# RIPE Atlas

RIPE NCC

# Overview 2 - RIPE Atlas



RIPE Atlas

- Introduction to RIPE Atlas
- What you can get from RIPE Atlas as a visitor
- Exploring public probes
  - *Live Demo*
- Finding public measurements
  - *Exercise F: Analyse results*
- Creating a measurement
  - *Exercise G: Create a measurement*
- Network Monitoring
  - *Exercise H: Setting up ‘Status Checks’*
- More RIPE Atlas features
- How to host a probe
- Advanced topics
  - Use cases and success stories
  - RIPE Atlas anchors
  - RIPE Atlas community

# Introduction to RIPE Atlas

## Section 9

RIPE NCC

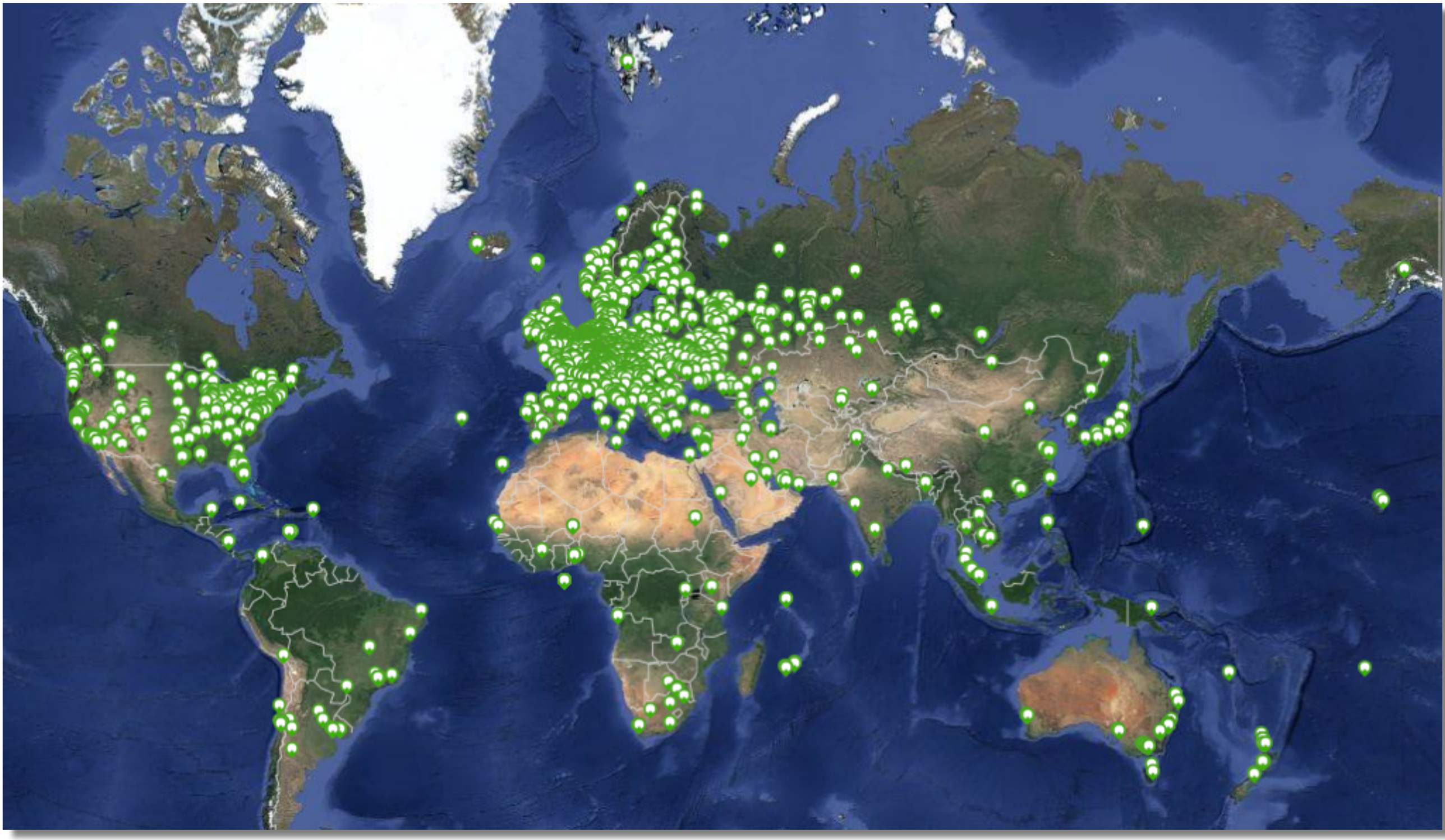
# Definition



- RIPE Atlas = global active measurements platform
- Goal: View Internet reachability
- Probes hosted by volunteers
- Measurements performed towards root name servers
  - Visualised as Internet traffic maps
- Users can also run customised measurements
  - ping, traceroute, DNS & SSL
- Data publicly available

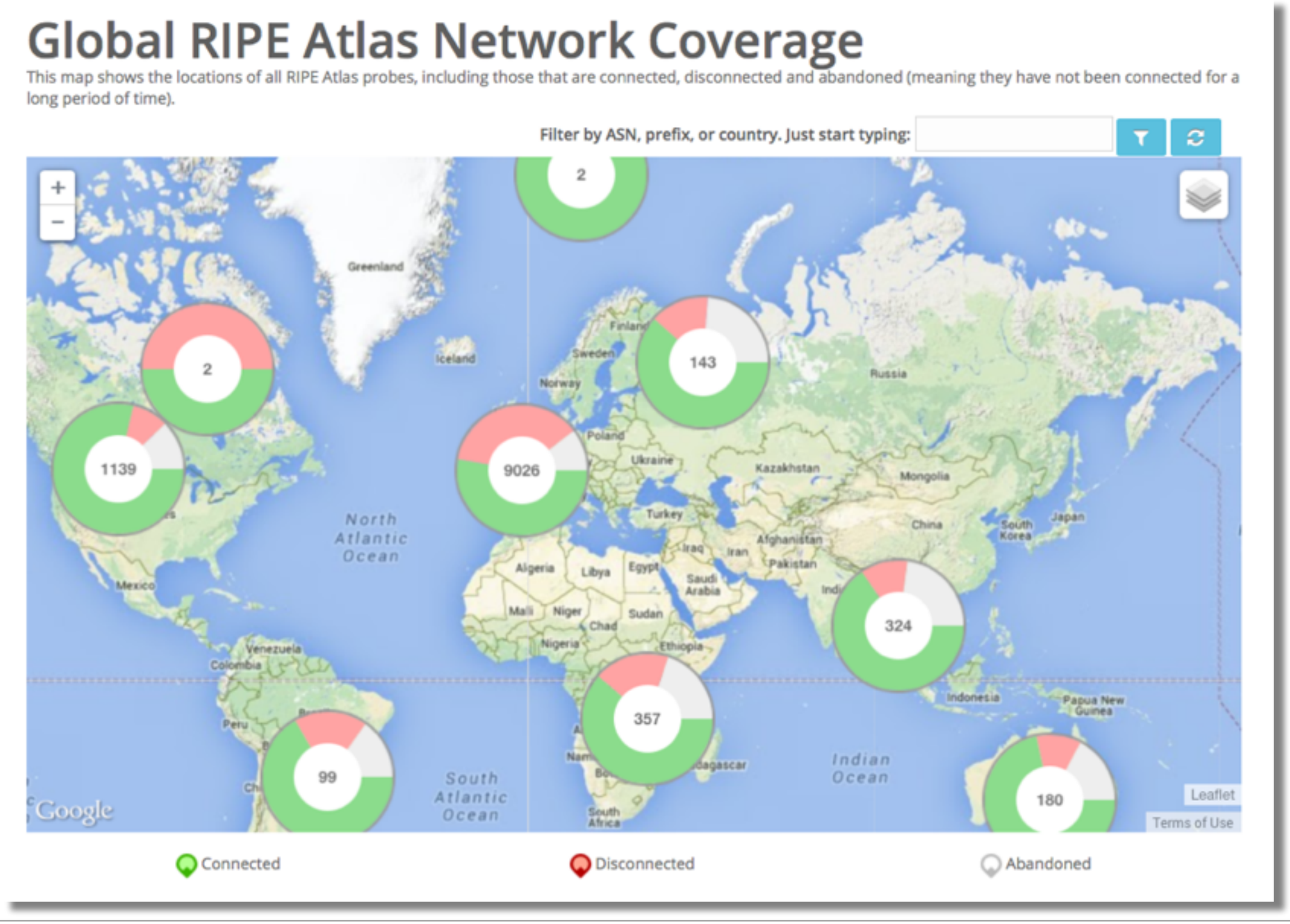
# RIPE Atlas coverage





# RIPE Atlas coverage








RIPE NCC

# Measurement 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



# Probes photos






# RIPE Atlas in numbers: August 2014



- 7,300+ probes connected
- 4,500+ active users this year
- 1,000+ built-in measurements daily
- 5,000+ user-defined measurements daily
  - Available to hosts and members
  - ping, traceroute, DNS, SSL
- Goal by end 2014:
  - 10000 connected probes

| Country | Probes |
|---|---|
| United States | 749 |
| Germany | 723 |
| France | 616 |
| United Kingdom | 518 |
| Russia | 400 |
| Nederland | 385 |
| Ukraine | 171 |
| Czech Republic | 157 |
| Belgium | 156 |
| Italy | 136 |

# Contacting RIPE Atlas



- https://atlas.ripe.net
- Users mailing list: ripe-atlas@ripe.net
- Articles & updates on RIPE Labs:
  https://labs.ripe.net/atlas
- Questions and bugs: atlas@ripe.net

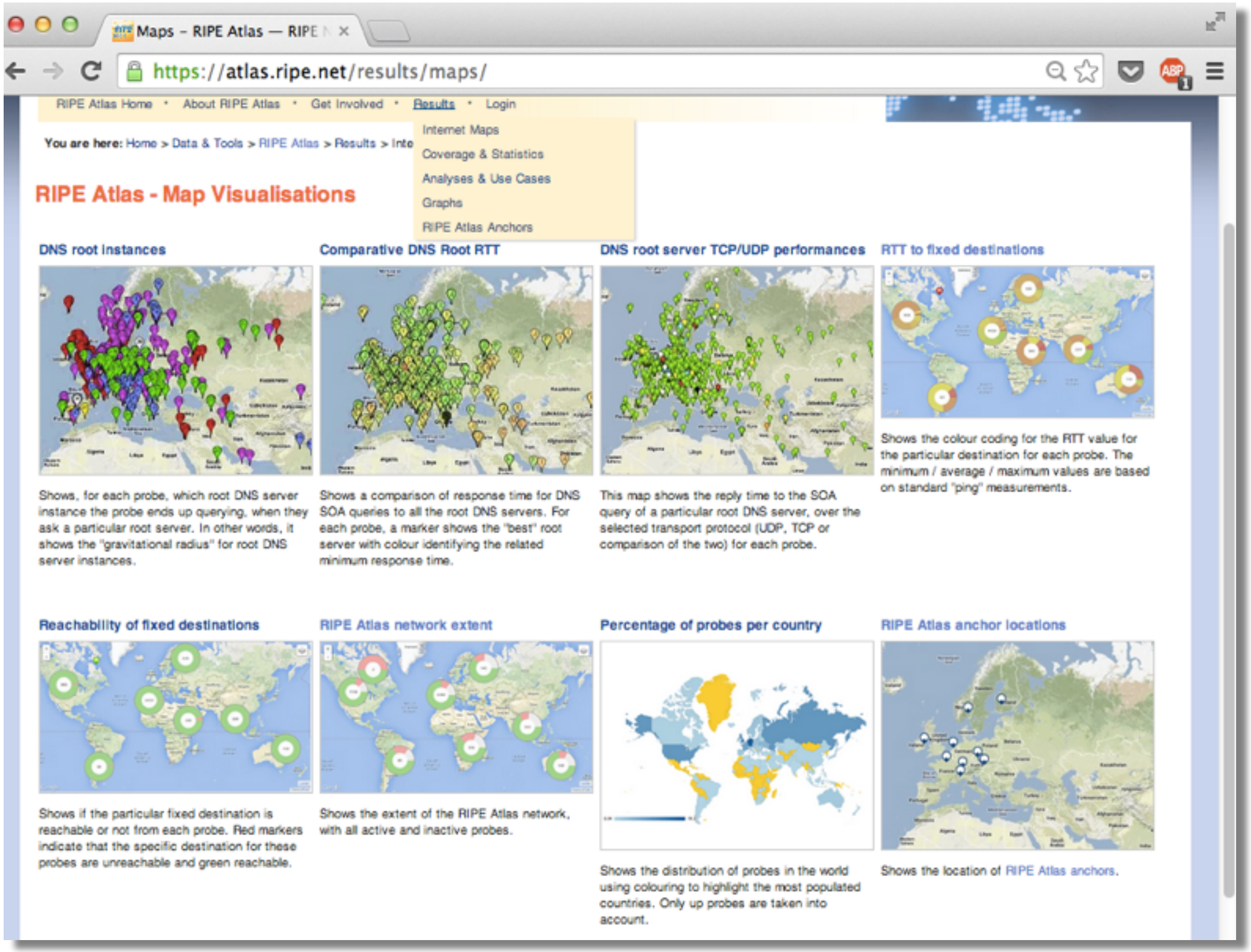

# What you can get from RIPE Atlas as a visitor

## Section 10

RIPE NCC

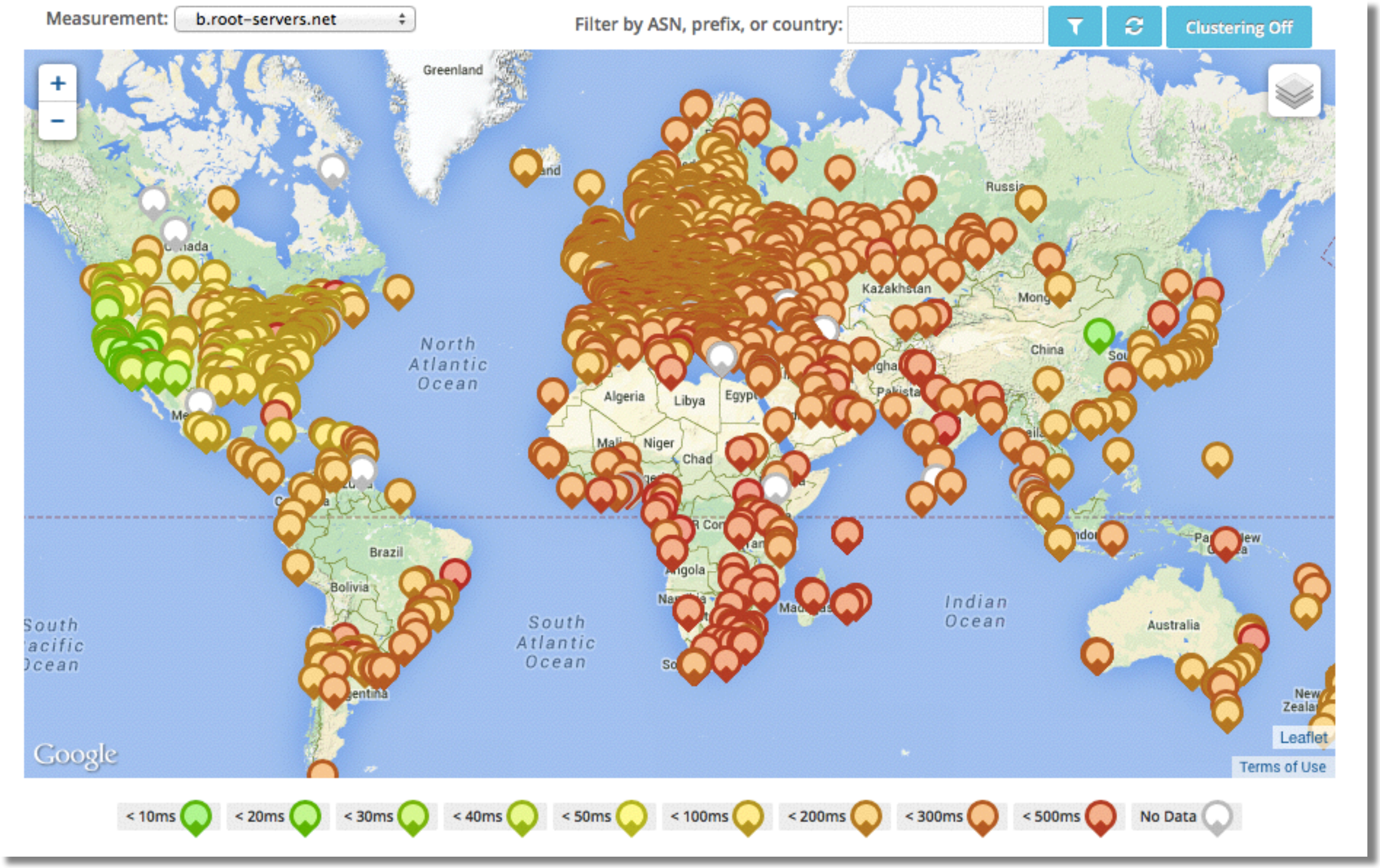
# Internet traffic maps





# Where is B-root?





# Probes per ASN (in RIPEstat)

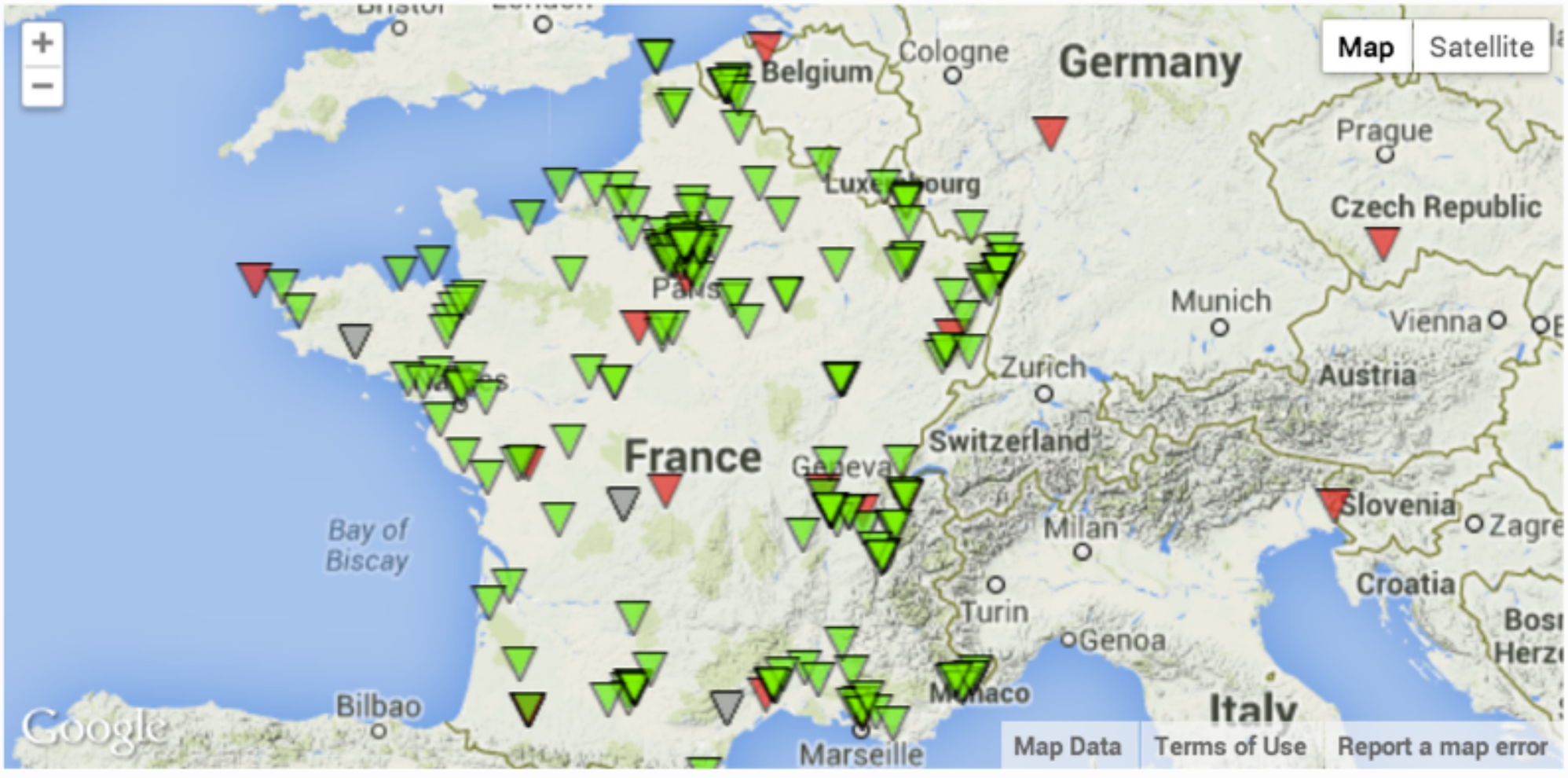


RIPE Atlas Probes (AS12322)

Switch to table view

Found 255 RIPE Atlas probes in this network:

Disconnected (27) Connected (215) Abandoned (13)

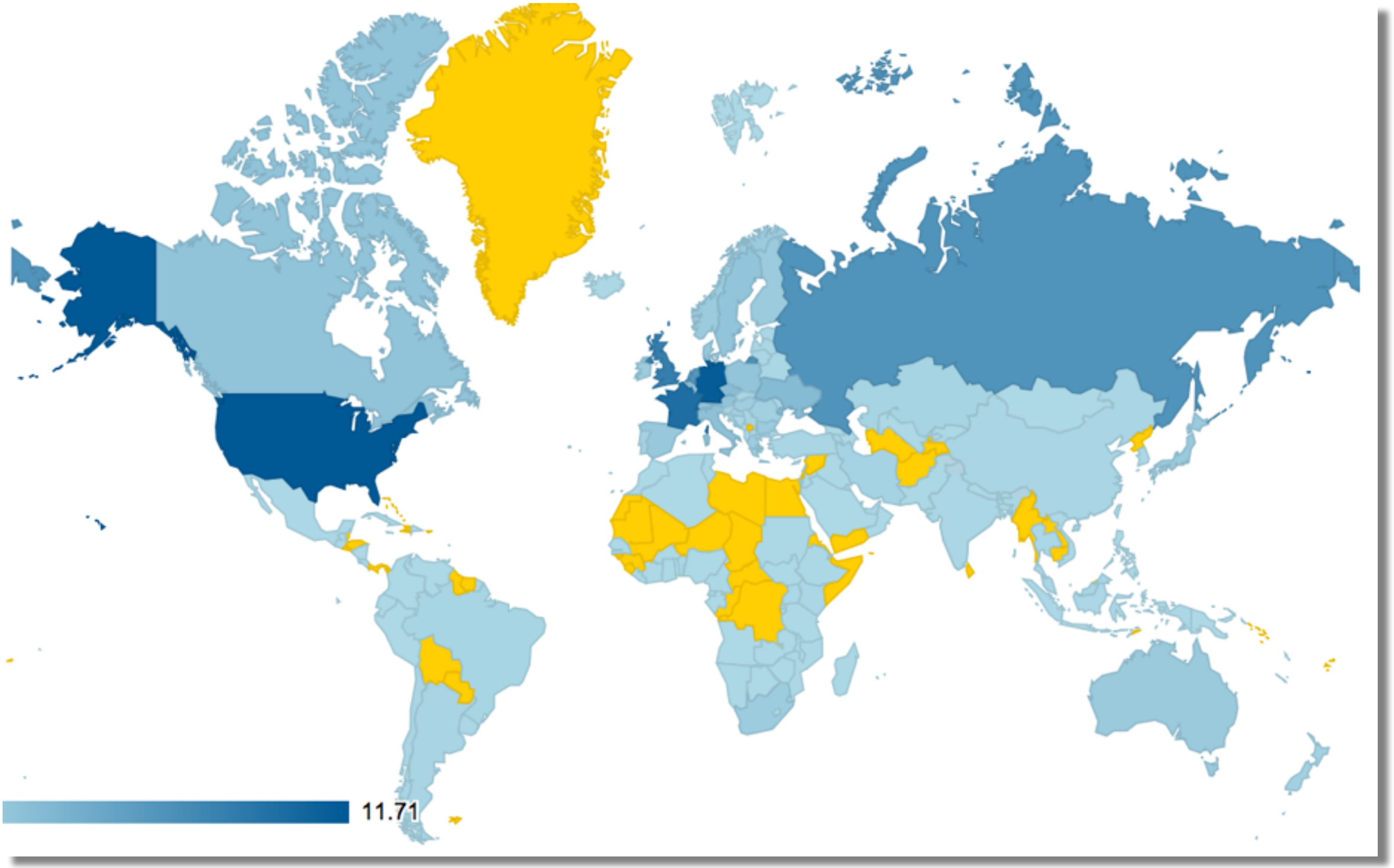



Showing results for **AS12322** as of **2014-08-25 10:35:20 UTC**

source data | embed code | permalink | info

# Where we want to place probes





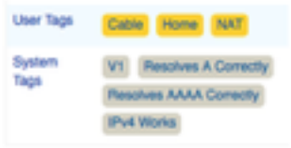
# Articles, papers, use cases, experiences



0 comments

## RIPE Atlas: Measurements With Tagged Probes Coming So

Suzanne Taylor Muzzin — Sep 12, 2014 12:05 PM




We've been busy working on a number of developments, and we're really exc particular that will be ready soon: creating customised measurements using ta Learn more about it - along with some other recent additions - and let us know

Tags: atlas, measurements, tools

0 comments

## Time Warner Cable Outage

Emile Aben — Aug 28, 2014 04:50 PM

The Time Warner Cable network suffered an outage on 27 August 2014 betwe approximately 9:40 and 10:55 UTC. We looked at some interesting details of t RIS and RIPE Atlas.

Tags: atlas, routing

0 comments

## RIPE Atlas Midsummer Update 2014

Fatemah Mafi — Jul 24, 2014 05:30 PM

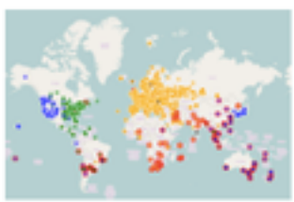
Since RIPE 68 in Warsaw, the RIPE NCC has developed and released new featu Atlas. We would like to inform the community of what we've been working on and benefit from the RIPE Atlas service.

Tags: atlas, statistics

0 comments

## How RIPE Atlas Helped Wikipedia Users

Emile Aben — Jul 09, 2014 12:25 PM



Engineers from the Wikimedia Foundation and the RIPE NCC recently collaborat project to measure the latency of Wikimedia sites for users worldwide. Together, ways to decrease latency and improve performance for users around the world.


# Looking up public probes

## Section 11

# Logging-in



- Create an RIPE NCC Access account
  - Same for LIR Portal, RIPE Atlas, RIPEstat, RIPE Labs...
- Advanced
- ‘LIR contact’: additional benefits!
  - Membership benefits for RIPE Atlas
  - Share probe management with LIR colleagues
  - Historical RIPE Database view in RIPEstat
- Add yourself as ‘contact’ in LIR Portal

# Searching for Probes

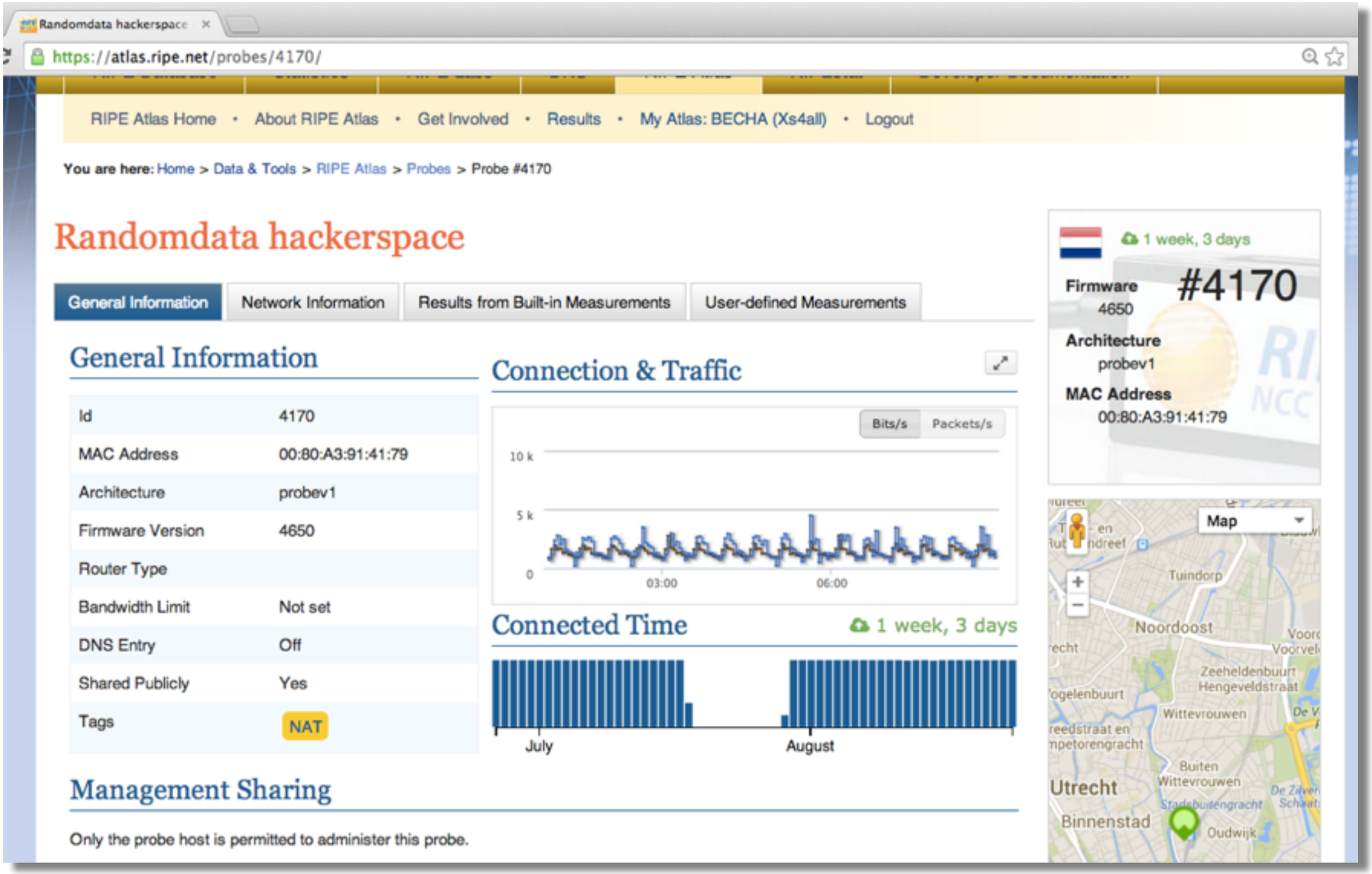





RIPE NCC

# Probe page - live demo

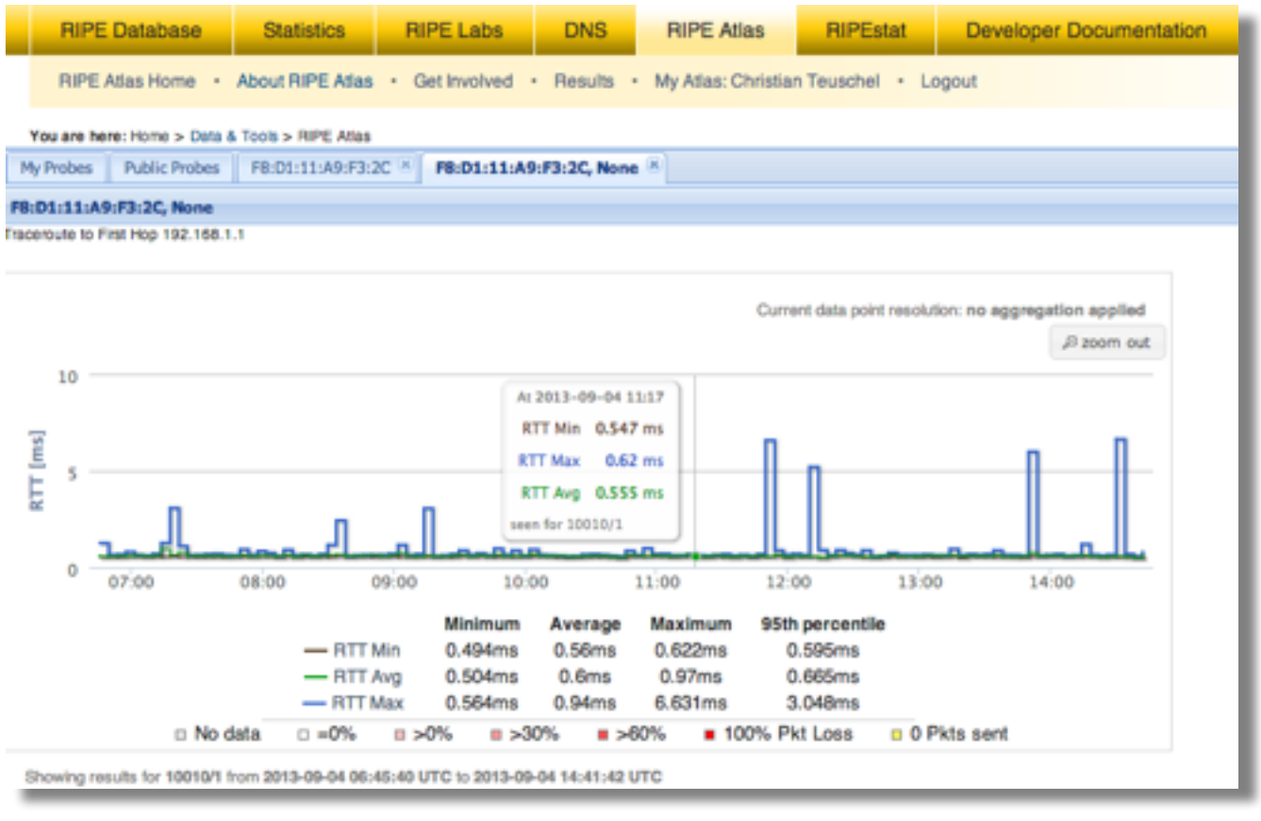




# Zoomable ping graph



- Replace multiple RRDs 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 12

RIPE NCC

# Looking up measurement results



- Log in to atlas.ripe.net
- Go to “My Atlas” > “Measurements”
- Tip: fast-forward to the last page ;-)

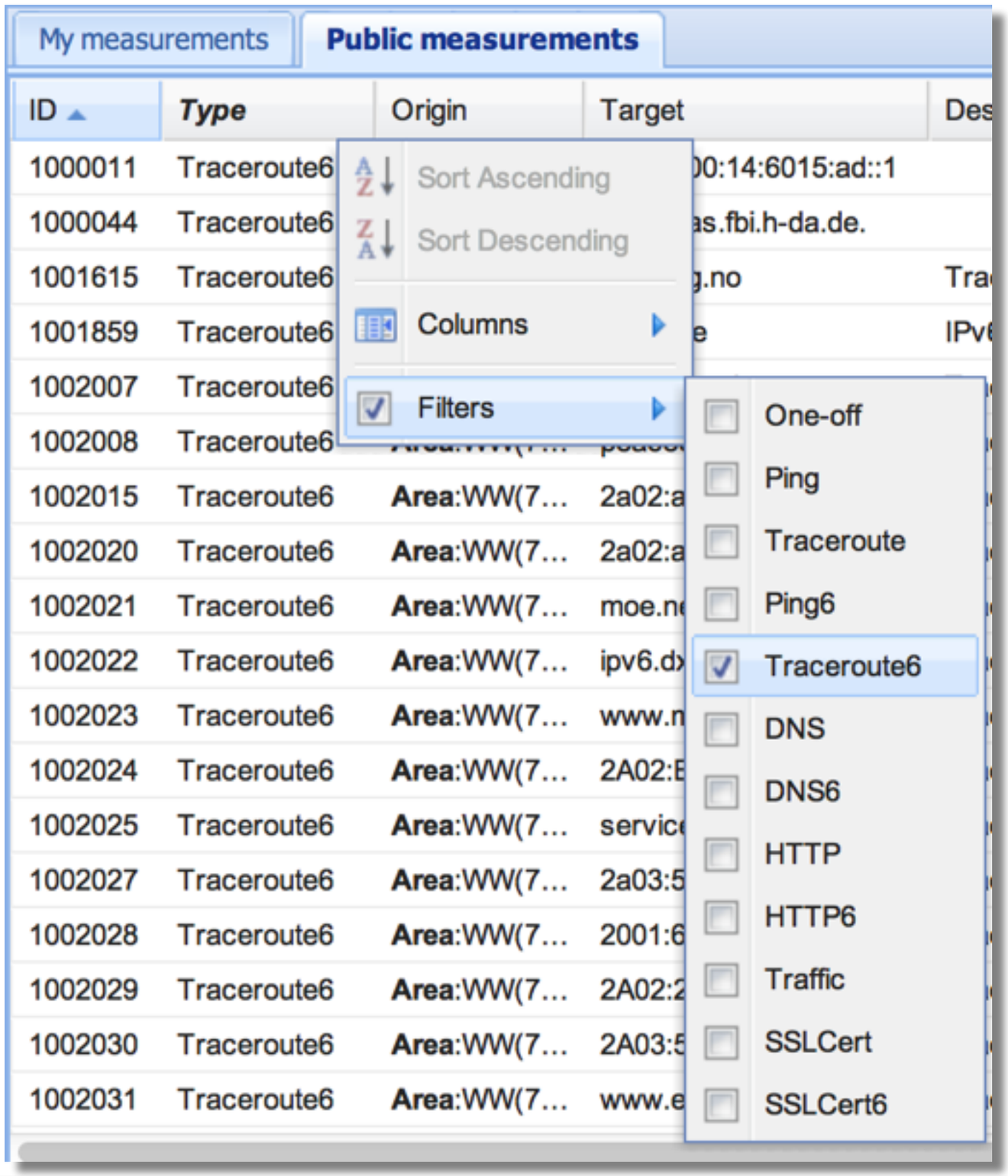
My measurements | **Public measurements**

| ID | Type | Origin | Target | Descript... | #Probes (req/low/cur) | Status | Start Time c. (UTC) | End Time c. (UTC) |
|---|---|---|---|---|---|---|---|---|
| 1000002 | Ping | **Area**:EU(10) | atlas.ripe.net | | 10 / 5 / 7 | Ongoing | 2011-10-27 10:15 | Never |
| 1000005 | Traceroute | **Area**:WW(10) | furmint.kistel.hu | | 10 / 5 / 0 | Stopped | 2011-11-16 10:33 | 2012-10-24 08:22 |
| 1000010 | Ping6 | **Area**:WW(8) | 2001:500:14:6015:ad::1 | | 8 / 4 / 0 | Stopped | 2011-11-18 10:00 | 2011-11-23 10:00 |
| 1000011 | Traceroute6 | **Area**:WW(8) | 2001:500:14:6015:ad::1 | | 8 / 4 / 0 | Stopped | 2011-11-18 10:01 | 2011-11-23 11:00 |
| 1000017 | Ping | **Area**:WW(1) | 64.147.85.24 | | 1 / 1 / 0 | Stopped | 2011-11-18 16:43 | 2011-11-23 16:17 |
| 1000018 | Ping | **Area**:WW(1) | 64.147.85.24 | | 1 / 1 / 0 | Stopped | 2011-11-18 16:45 | 2011-11-23 16:17 |
| 1000019 | Ping | **Area**:WW(5) | 91.199.39.2 | | 5 / 1 / 0 | Stopped | 2011-11-18 17:01 | 2011-11-29 08:00 |
| 1000020 | Ping6 | **Area**:WW(10) | 2001:500:14:6049:ad::1 | | 10 / 5 / 0 | Stopped | 2011-11-18 17:10 | 2011-11-29 11:49 |
| 1000021 | Ping | **Area**:WW(10) | houser.karrenberg.net | | 10 / 9 / 0 | Stopped | 2011-11-20 12:22 | 2011-11-21 13:00 |
| 1000022 | Ping | **Area**:WW(10) | kbg.karrenberg.net | | 10 / 5 / 0 | Stopped | 2011-11-20 12:22 | 2012-08-02 19:52 |
| 1000023 | Ping6 | **Area**:WW(10) | 2001:980:3500:1:220:... | | 10 / 5 / 0 | Stopped | 2011-11-20 13:00 | 2011-11-21 14:00 |
| 1000024 | Ping | **Area**:WW(1) | 84.205.72.1 | | 1 / 1 / 0 | Stopped | 2011-11-20 17:37 | 2011-11-23 18:00 |
| 1000025 | Ping6 | **Area**:WW(1) | 2001:7fb:fd02::1 | | 1 / 1 / 0 | Stopped | 2011-11-20 17:43 | 2011-11-23 18:00 |
| 1000035 | Ping | **Area**:WW(10) | 94.100.125.129 | | 10 / 5 / 0 | Stopped | 2011-11-22 15:59 | 2013-04-29 10:26 |
| 1000036 | Ping | **Area**:WW(10) | 94.100.126.15 | | 10 / 5 / 0 | Stopped | 2011-11-22 16:00 | 2013-04-29 10:25 |
| 1000037 | Ping | **Area**:WW(10) | 94.100.112.1 | | 10 / 5 / 0 | Stopped | 2011-11-22 16:02 | 2013-04-29 10:25 |

Page 1 of 221 | Clear Filters | Measurements 1 - 30 of 6621

# Searching for msm by type





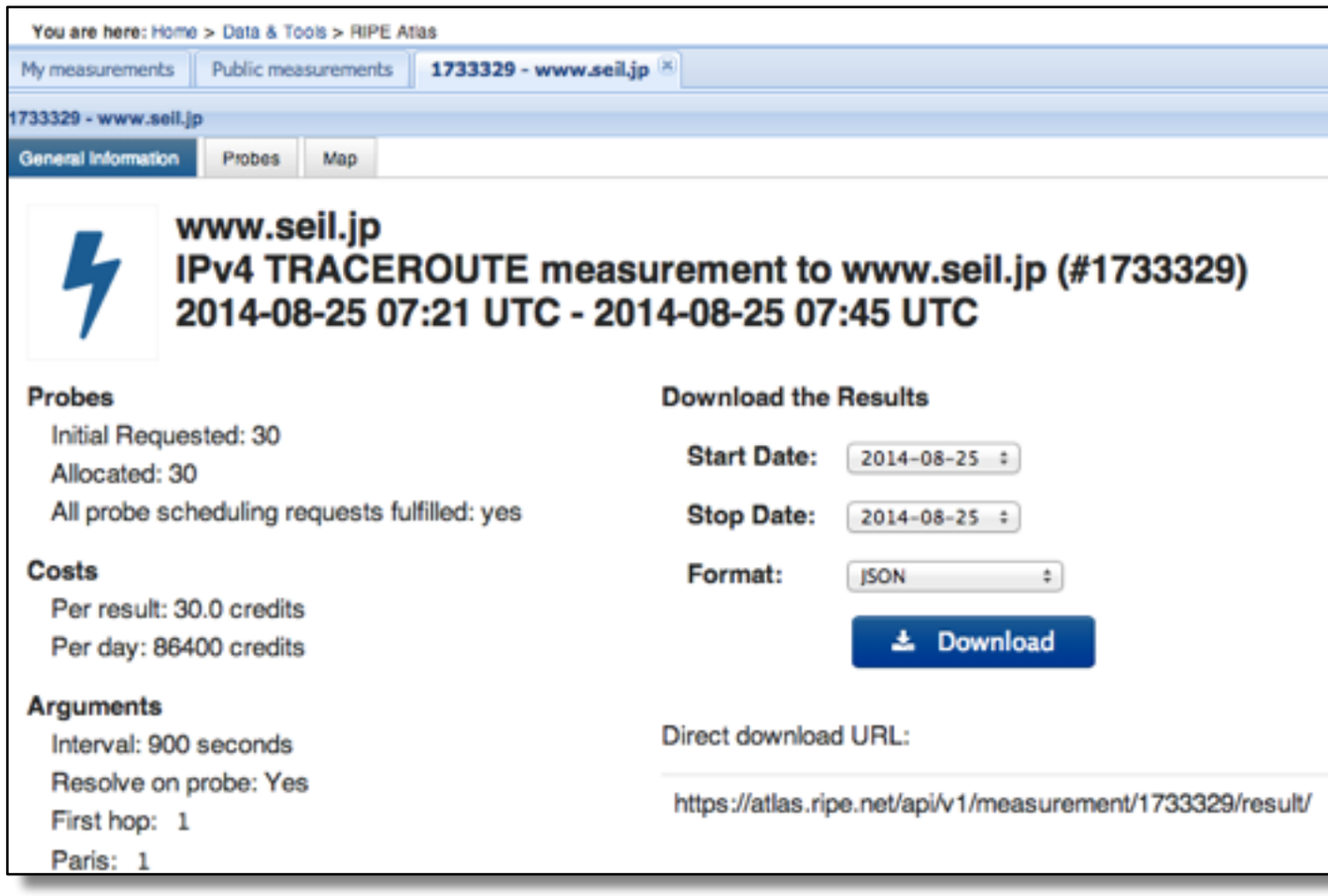



RIPE NCC

# Downloading measurement results



- Click on msm, then “Download”
- Or go to URL
- Or use the API
- Results in JSON
- Libraries for parsing available on gitHub




- https://github.com/RIPE-NCC/ripe.atlas.sagan
- https://github.com/RIPE-Atlas-Community/

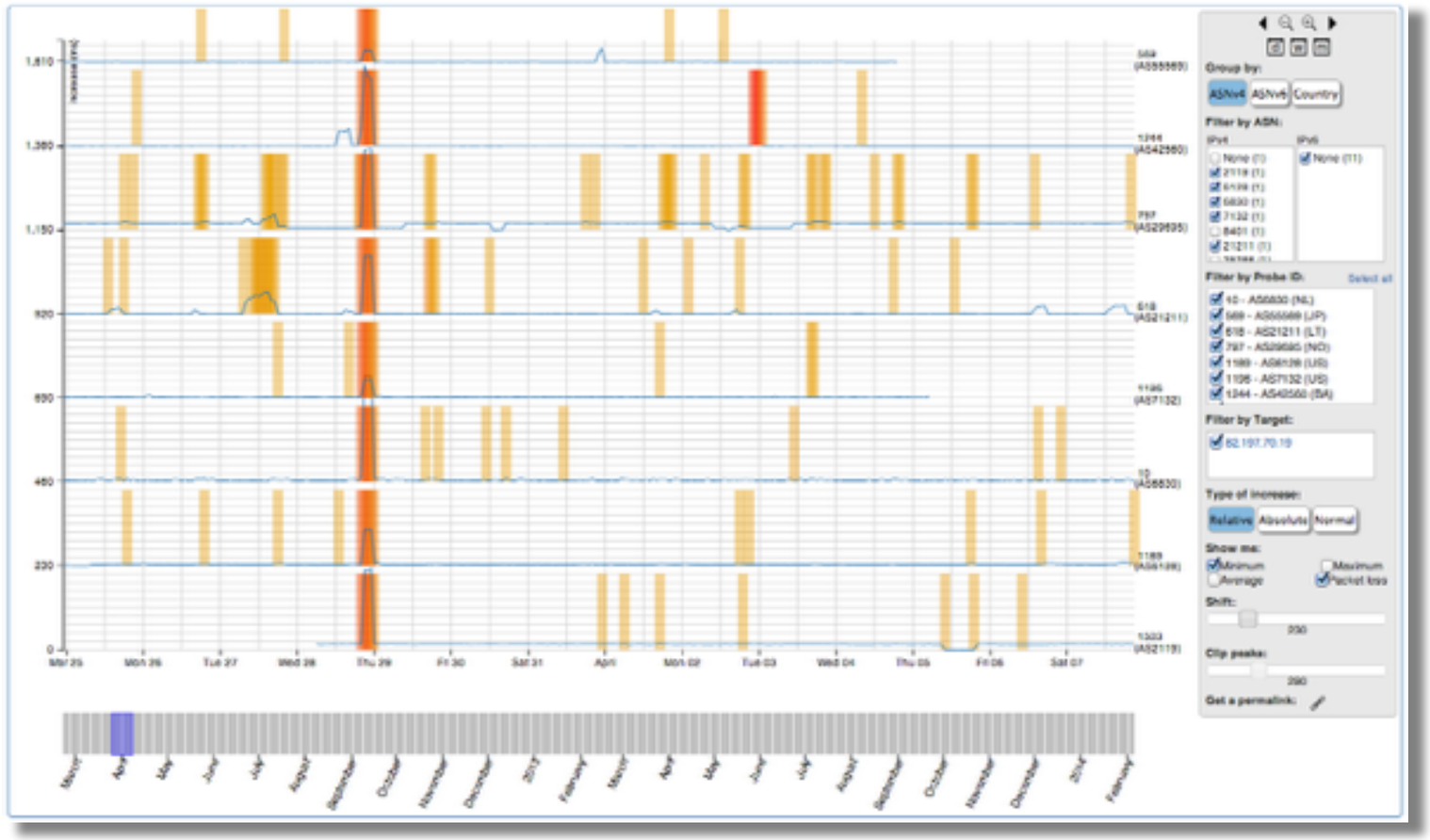
# Anchors mesh visualisation



- Multiple ping measurements in one view
- Stacked chart and interactive control panel

- Go to Results > Anchors > choose one from the list > ping

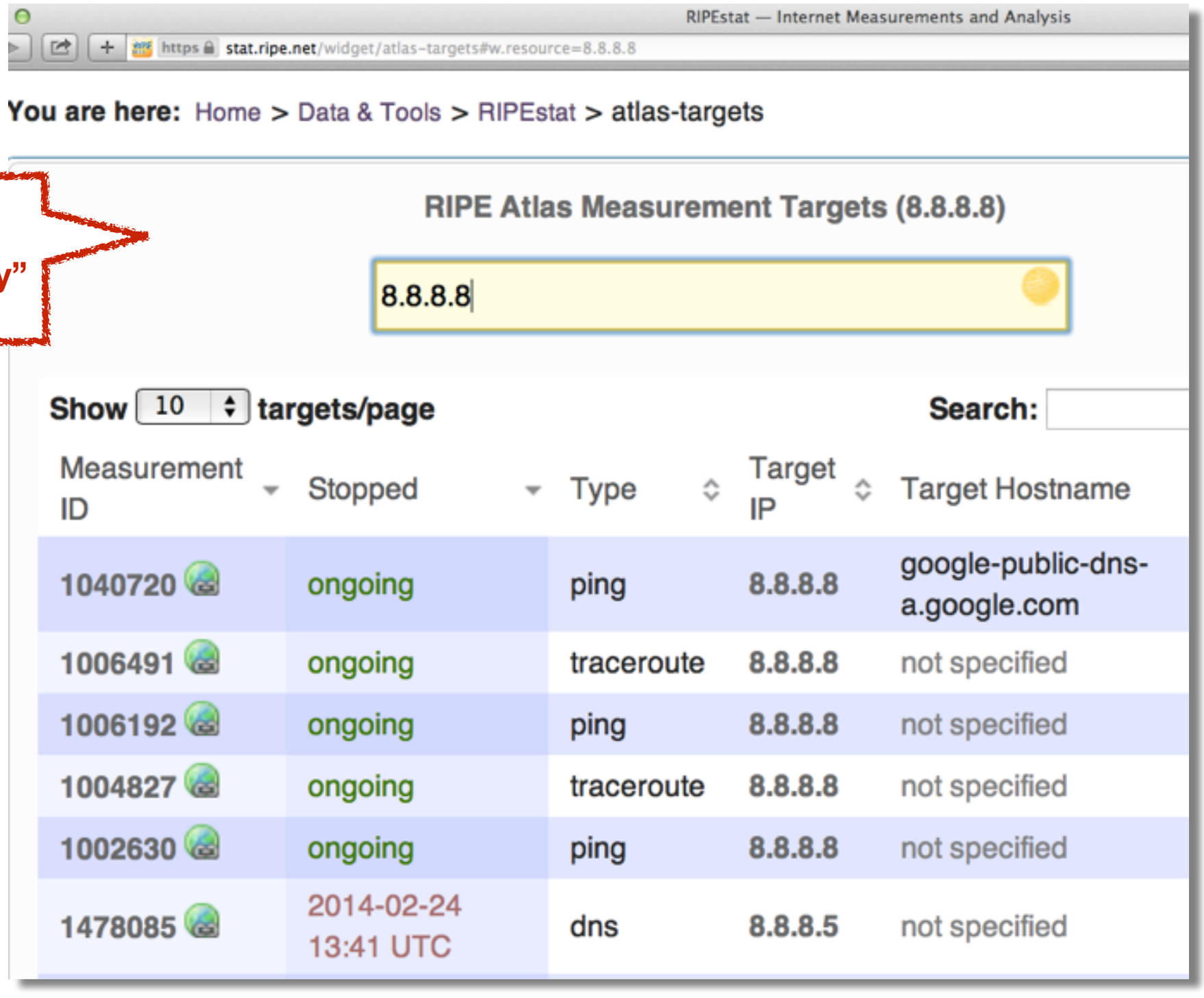
https://labs.ripe.net/Members/massimo_candela/seismograph-user-guide



# Search for msm by target in RIPEstat



Go to “RIPEstat > “RIPE Atlas Activity”



# Use existing measurements!



- There are many measurements already running!
- Search for existing public measurements first
- …Only then schedule your own measurement if you don’t find what you’re looking for

# Exercise: Analyse Measurements Results

## Exercise G

Refer to the exercise booklet

RIPE NCC

# Creating a Measurement

## Section 13

# Scheduling a measurement



- Log in to atlas.ripe.net
- “My Atlas” > “Measurements”
- “New Measurement” or “One-off”
  - Most are periodic and last a long time
  - Choose type, target, frequency, # of probes, region...
  - You will spend credits
- https://atlas.ripe.net/doc/udm
- Or use the API:
  - https://atlas.ripe.net/docs/measurement-creation-api/

# Credit system



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

https://atlas.ripe.net/doc/credits

# Credits overview



My Atlas / Credits

Give credits to someone

RIPE Atlas Home • About RIPE Atlas • Get Involved • Results • My Atlas: Vesna Manojlovi… • Staff Pages • Logout

You are here: Home > Data & Tools > RIPE Atlas > My Atlas > My Credits

- Probes
- Measurements
- Credits
- …PI Keys
- Anchors
- Sponsorships
- Ambassador Probes
- Claim 1 Million Credits
- IPv6 Connectivity Test
- Quick Look
- Settings

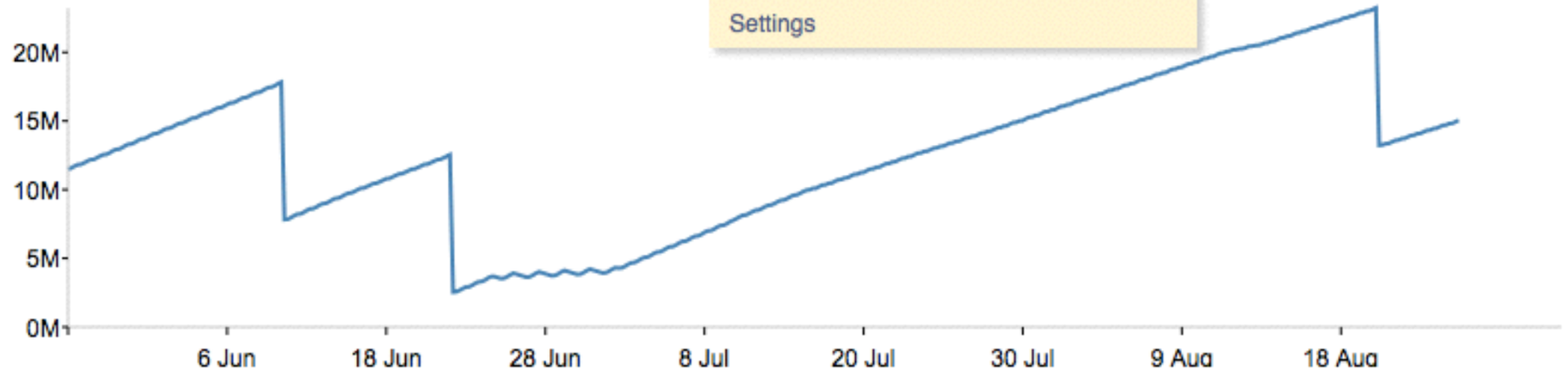
## Account Information

…6,963.17

14,825.52 credits / hour

History | Charts & Archives | Transfer

### History




Download Credit Archives | Format | Download

### Current Consumption

# Exercise:
# Create a Measurement

## Exercise H

**Refer to the exercise booklet**

# Network Monitoring

## Section 14

# Network monitoring



- Network operators use tools for monitoring network health
  - Nagios & Icinga
- Tools receive input from RIPE Atlas via the API
- Benefits:
  - pings from 500 out of 6000+ probes around the world
  - See your network from the outside
  - Plug into your existing practices

1. Create a RIPE Atlas ping measurement

2. Go to “Status Checks” URL

3. Add your alerts in Icinga or Nagios

# Creating Status Checks



- Status Checks work via RIPE Atlas' RESTful API
  - https://atlas.ripe.net/api/v1/status-checks/MEASUREMENT_ID/
- You define the alert parameters, for example:
  - Threshold for the percentage of probes that successfully received a reply
  - How many most recent measurements to base it on
- What is the maximum packet loss acceptable
- Documentation:
  - https://atlas.ripe.net/docs/status-checks/

# Icinga examples



- Community of operators contributed configuration code!
  - Making use of the built-in “check_http” plugin
- GitHub repo examples:
  - https://github.com/RIPE-Atlas-Community/ripe-atlas-community-contrib/blob/master/scripts_for_nagios_icinga_alerts
- Post on Icinga blog:
  - https://www.icinga.org/2014/03/05/monitoring-ripe-atlas-status-with-icinga-2/

# Exercise: Setting up “Status Checks”

## Exercise I

Refer to the exercise booklet

# More RIPE Atlas Features

## Section 15

RIPE NCC

# Latest results API



- https://atlas.ripe.net/docs/measurement-latest-api/
  - Widget monitoring value in real time (100 probes pinging websites worldwide)
  - Alert based on average measurements per hour
  - Big network event, e.g. Internet outage in a region
  - DNS domain monitoring; configurable measurements using 10 RIPE Atlas anchors
- https://labs.ripe.net/Members/suzanne_taylor_muzzin/ripe-atlas-latest-results-api-and-parsing-library

# Secure creation & sharing of measurements



- 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
- Reported vulnerabilities:
  - https://atlas.ripe.net/docs/security/

# Additional membership benefits



- RIPE Atlas:
  - Guaranteed probe application
  - Do NOT have to host a probe in order to perform customised measurements
  - 1,000,000 extra credits monthly via LIR Portal
  - “Quick Look” measurements via LIR Portal
  - IPv6 reachability testing (free - no credits needed)
  - Sharing probe management with LIR colleagues
- RIPEstat:
  - Historical view of RIPE DB objects

# How to Host a Probe

## Section 16

# Hosting a probe



1. Create a RIPE NCC Access account
2. Go to https://atlas.ripe.net/apply
3. You will receive a probe by post
4. Register your probe
4. 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!

# Questions?



The End!

Край

Y Diwedd

Fí

النهاية

Соңы

Finis

Վերջ

Liðugt

Ende

Finvezh

Kінець

Konec

Kraj

Ënn

Fund

پایان

Lõpp

Beigas

Vége

Son

Kpaj

An Críoch

הסוף

Endir

Sfârşit

Fine

Fin

Τέλος

Einde

Канец

Конец

Slut

Slutt

დასასრული

Pabaiga

Tmiem

Fim

Amaia

Loppu

Koniec