

Tutorial: Using RIPEstat

MENOG 14

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Recap From the RIPEstat Presentation

- Information system for Internet number resources

- Data

- Routing data
 - Collected by RIS: <http://ris.ripe.net>
- Registration data (whois)
 - RIPE Database & other RIR databases
- MaxMind's geolocation data
- Blacklist data
- And many more: <https://stat.ripe.net/data-sources>

You are here: Home > Data & Tools > RIPEstat > AS3333

RIPEstat Search

permalink

At a Glance (4)

Routing	(9/10)
DNS	(1)
Anti Abuse	(1)
Database	(5)
Geographic	(2)
Activity	(2)

+ MyView ?

AS Overview (AS3333)

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

Showing results from 2013-08-30 00:00:00 UTC to 2013-08-30 08:00:00 UTC

source data embed code permalink info

Registry Browser (AS3333)

Last updated on 2012-04-17 at 10:12:15 UTC.

aut-num: AS3333

as-name RIPE-NCC-AS

Geoloc (AS3333)

Map Satellite Hamburg Bremen Amsterdam Net 100.000% Belgium Cologne Germany London

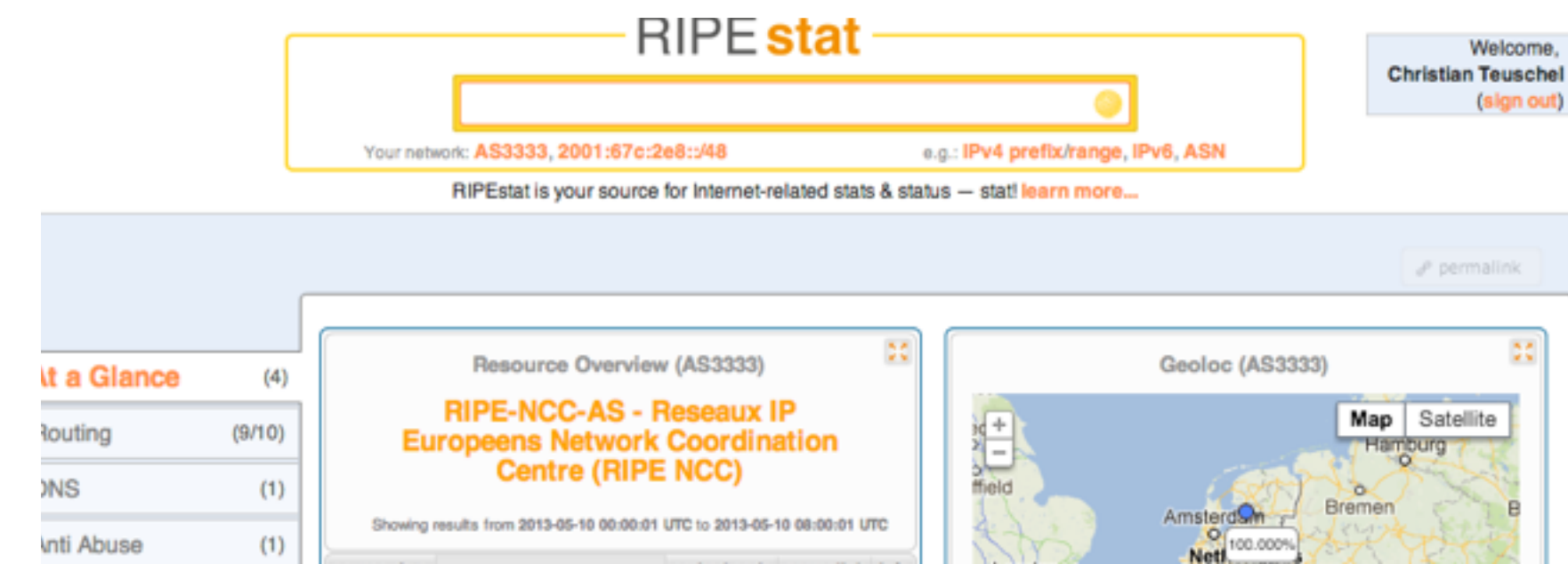
Showing results for AS3333 as of 2013-08-01 00:00:00 UTC

source data embed code permalink info

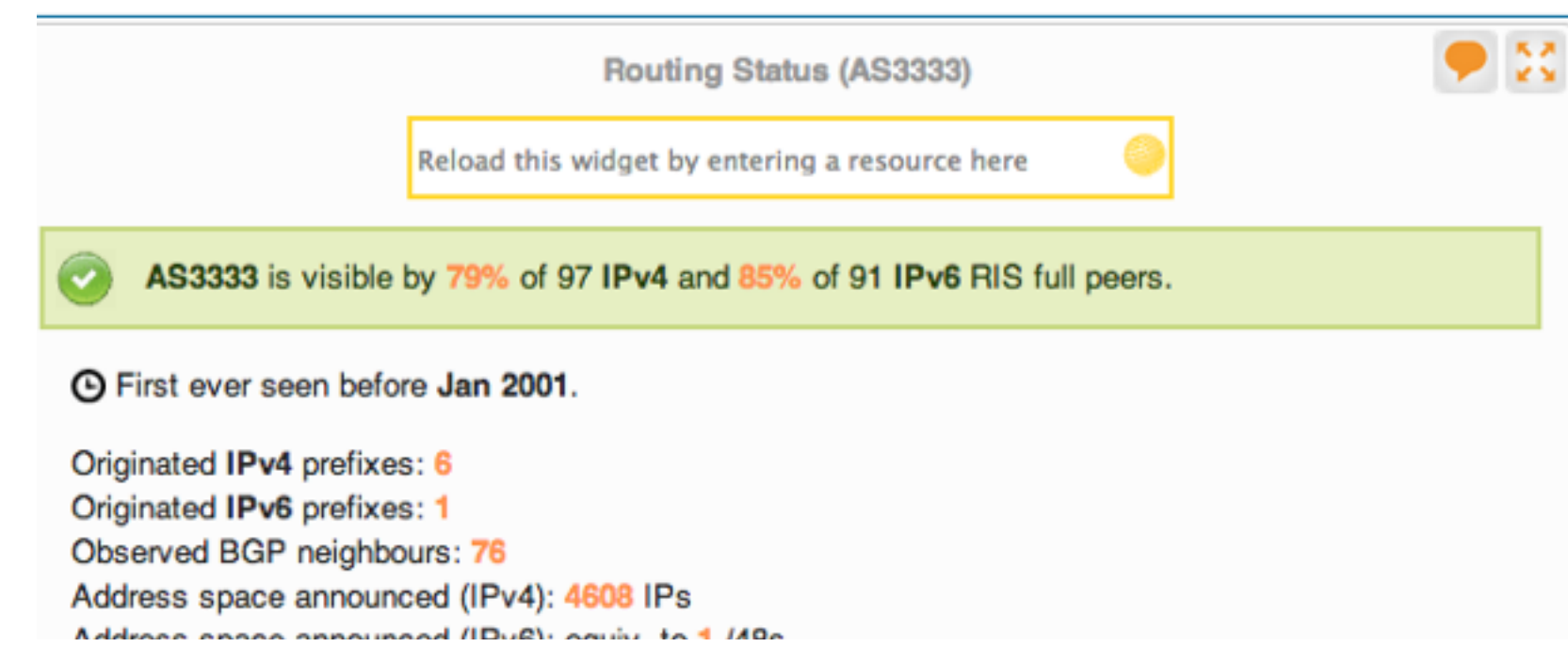
Routing Status (AS3333)

Three Interfaces of RIPEstat

RIPEstat Web Interface



RIPEstat Widget API



RIPEstat Data API / RIPEstat Text

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

RIPEstat Web Interface

- Finding Information on RIPEstat

The screenshot shows the RIPEstat web interface with several callouts:

- Search input:** A callout bubble points to the search bar in the top navigation area.
- Recent new features:** A callout bubble points to the "BGPlay is back!" banner.
- Links to most used features:** A callout bubble points to the "Quick Links" sidebar.
- RIPEstat related articles on RIPE Labs:** A callout bubble points to the "On RIPE Labs" section.

The interface includes a top navigation bar with links like "RIPEstat Home", "About RIPEstat", "Documentation", "Use Cases", and "Logout (Christian Teuschel)". Below this is a "You are here" breadcrumb and a search bar with a "Search RIPEstat" button. A "Your network" field shows "AS3333, 2001:67c:2e8::/48" and an example "e.g.: IPv4 prefix/range, IPv6, ASN".

The main content area features a "BGPlay is back!" banner with a network diagram. Below the banner are three columns of links: "About RIPEstat", "Documentation", and "Use Cases".

The right sidebar contains "System Statistics" (Query rate on RIPEstat: 29.3 k), "Quick Links" (Looking For Abuse Information, FAQ, Feedback, Documentation, Mobile Version, Widget List), and "On RIPE Labs" (Improved Routing Information Available via RIPEstat, Future of RIPE NCC Technical Services, New in RIPEstat: In-widget Comparison and Monitoring).

RIPEstat Web Interface

- Information structure on RIPEstat

The screenshot shows the RIPEstat web interface with a navigation menu at the top: [RIPEstat Home](#) • [About RIPEstat](#) • [Documentation](#) • [Use Cases](#) • [Login](#).

Below the navigation menu, there is a search bar labeled "Search RIPE" and a "Your network" field with the example "AS3333, 2001:57c:200::48".

Three callout boxes highlight key features:

- Left Callout:**
 - FAQ
 - Data Sources
 - Widget List
 - Top Queries
 - Feedback
- Middle Callout:**
 - Interfaces & APIs
 - Demos
 - Roadmap
 - Changelog
- Right Callout:**
 - Notable Network Events
 - Compare Results
 - Looking For Abuse Information
 - Global Internet Statistics

The main content area features a "BGPlay is back!" banner and a "Quick Links" sidebar with the following items:

- Looking For Abuse Information
- FAQ
- Feedback
- Documentation
- Mobile Version
- Widget List

At the bottom, there are three main sections: "About RIPEstat", "Documentation", and "Use Cases", each with a list of links.

About RIPEstat:

- FAQ
- Data Sources
- Widget List
- Top Queries

Documentation:

- Interfaces & APIs
- Demos
- Roadmap
- Changelog

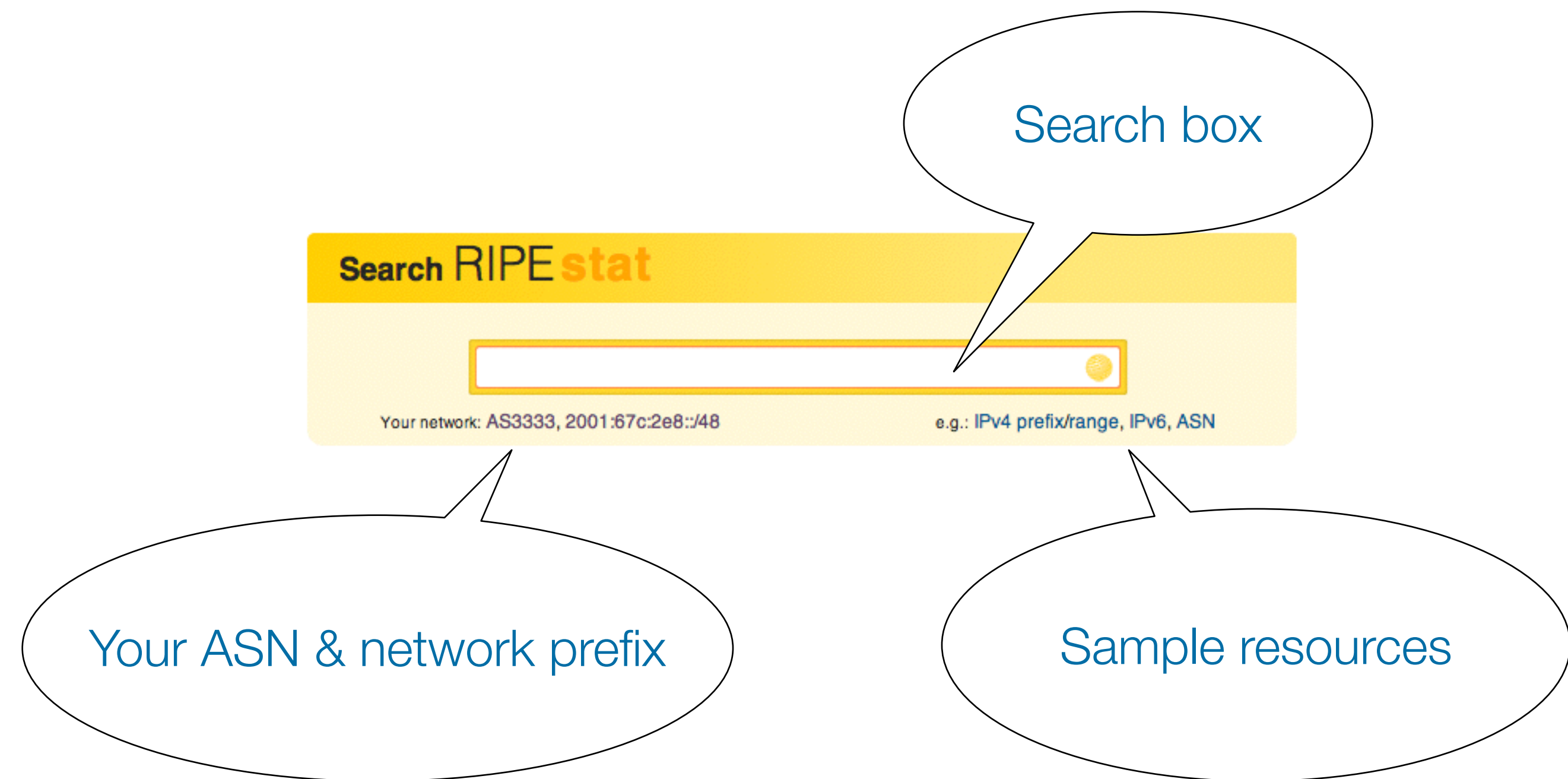
Use Cases:

- Notable Network Events
- Compare Results
- Looking for Abuse Information

At the bottom right, there is a "On RIPE Labs" section with the text "Improved Routing Information Available via RIPEstat".

1. Querying for a Resource (Web Interface)

Example: Enter “AS3333” in the search box



1. Querying for a Resource (Web Interface)

Result page

The screenshot shows the RIPEstat web interface for AS3333. At the top, there is a breadcrumb trail: "You are here: Home > Data & Tools > RIPEstat > AS3333". Below this is the RIPEstat logo and a search bar with a "Search" button. A callout bubble points to the search bar with the text "Search box".

On the left side, there is a sidebar with a "MyView" button and a list of thematic tabs: "At a Glance (4)", "Routing (9/10)", "DNS (1)", "Anti Abuse (1)", "Database (5)", "Geographic (2)", and "Activity (2)". A callout bubble points to this sidebar with the text "Widgets grouped into thematic tabs".

The main content area displays four widgets for AS3333:

- AS Overview (AS3333):** Displays "RIPE-NCC-AS - Reseaux IP Europeens Network Coordination Centre (RIPE NCC)". It shows results from 2013-08-30 00:00:00 UTC to 2013-08-30 08:00:00 UTC. It includes links for "source data", "embed code", "permalink", and "info".
- Geoloc (AS3333):** Shows a map of Europe with a callout for "Germany". It includes links for "source data", "embed code", "permalink", and "info".
- Registry Browser (AS3333):** Shows the "aut-num: AS3333" and its details:

as-name	RIPE-NCC-AS
descr	Reseaux IP Europeens Network Coordination Centre (RIPE NCC)
org	ORG-RIEN1-RIPE
admin-c	JDR-RIPE
admin-c	BRD-RIPE
tech-c	OPS4-RIPE
mnt-by	RIPE-NCC-END-MNT
mnt-by	RIPE-NCC-MNT

It shows results for AS3333 as of 2013-08-30 14:44:20 UTC. It includes links for "source data", "embed code", "permalink", and "info".
- Routing Status (AS3333):** Shows a green checkmark and text: "AS3333 is visible by 97% of 107 IPv4 and 99% of 102 IPv6 RIS full peers." It also lists: "First ever seen before Jan 2001.", "Originated IPv4 prefixes: 6", "Originated IPv6 prefixes: 1", "Observed BGP neighbours: 160", "Address space announced (IPv4): 4608 IPs", and "Address space announced (IPv6): equiv. to 1 /48s". It includes a "Compare to" dropdown set to "1 week" and "earlier". It shows results for AS3333 as of 2013-08-29 00:00:00 UTC. It includes links for "source data", "embed code", "permalink", and "info".

A callout bubble points to the routing status widget with the text "Widgets display different types of information".

1. Querying for a Resource (Web Interface)

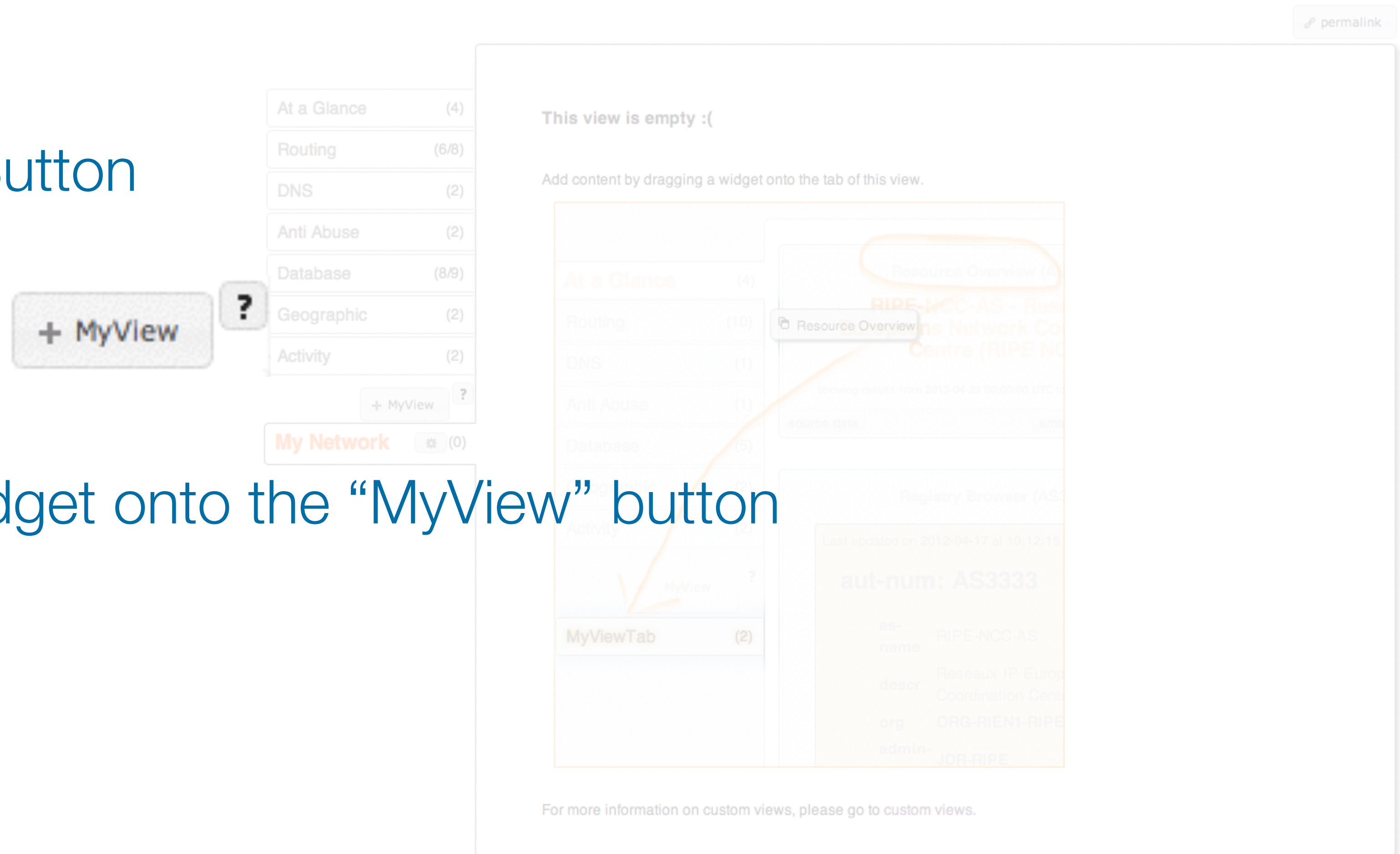
Tasks:

- What network announces 140.78.50.90?
- Is 192.3.4.2 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 by Kuwait increase over the last two years?
- How would you share interesting network events with a colleague?

2. MyViews

Create custom views:

- Click the “MyView” Button



- Drag and drop a widget onto the “MyView” button

2. MyViews

Newly created MyView

The screenshot shows the RIPEstat MyViews interface. On the left is a sidebar with a list of widgets: 'At a Glance (4)', 'Routing (6/8)', 'DNS (2)', 'Anti Abuse (2)', 'Database (8/9)', 'Geographic (2)', and 'Activity (2)'. Below these is a '+ MyView ?' button and a 'My Network * (0)' button. The main view area is titled 'This view is empty :('. Below the title is the instruction 'Add content by dragging a widget onto the tab of this view.' A 'MyViewTab (2)' is visible at the bottom of the main area. A 'Resource Overview' widget is shown in a preview state, with an orange circle around its title and an arrow pointing to the 'MyViewTab'. The preview shows details for 'RIPE-NCC-AS - Reseaux IP Europeens Network Coordination Centre (RIPE NCC)'. At the bottom of the main view area, there is a link: 'For more information on custom views, please go to custom views.'

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

2. MyViews

Customise MyViews

Re-order widgets as you like

The screenshot displays the RIPE MyViews interface. On the left is a sidebar with a list of widgets: 'At a Glance (4)', 'Routing (9/10)', 'DNS (1)', 'Anti Abuse (1)', 'Database (5)', 'Geographic (2)', and 'Activity (2)'. Below these is a '+ MyView ?' button and a 'Monitor' section with a gear icon and '(2)' items. The main area features a map widget titled 'Geoloc (AS3333)'. The map shows Europe with a red pin over the Netherlands. A legend below the map explains the symbols: a blue circle for 'country specific', a red pin for 'city specific', an orange circle for 'location unsure/special purpose', and a blue star for 'aggregation (zoom to see details)'. Below the legend is a 'Geoloc details' section with an information icon and text: 'Data is based on MaxMind's GeoLite City data set and valid for the stated query time (see below)'. At the bottom of the map widget, it says 'Showing results for AS3333 as of 2013-09-01 00:00:00 UTC' and provides links for 'source data', 'embed code', 'permalink', and 'Info'.

- Rename
- Re-order
- Control visibility
- Remove

2. MyViews

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

Create SSO Account

Tasks:

- Go to the “Login” page
- “...click here to create one.”

3. Comparing Resources (Web Interface)

- Compare results in different widgets

RIPEstat Home • About RIPEstat • Documentation • Use Cases

Go to “Use Cases” > “Compare Results”

You are here: Home > Data & Tools > RIPEstat > Use Cases > Data Comparator

Compare Results

Select up to six different widgets from the list to compare at one time. Different resources can be qu

Select a widget

+ Add [Permalink](#)

Select a widget

3. Comparing Resources (Web Interface)

- Compare results in different widgets

Compare Results

Select up to six different widgets from the list to compare at one time. Different resources can be queried for each widget.

Select a widget

and a resource Enter a resource

Prefix Size Distribution (1205)

by number of
 Prefixes Addresses

IPv4

AS Overview (1205)

JKU-LINZ-AS - University Linz

This ASN is part of 1-65535, the 16-bit ASN Block. This block contains all 16-bit ASNs, which are allocated to the RIRs according to <http://www.iana.org/assignments/as-numbers/as-numbers.xml>. See RFC 1930

Showing results from 2013-08-30 00:00:00 UTC to 2013-08-30 08:00:00 UTC

- Select the “Prefix Size Distribution” widget
- Enter “AS1205”

3. Comparing Resources (Web Interface)

In-widget comparison



3. Comparing Resources (Web Interface)

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 the UAE compare to the UK? Use in-widget comparison!

4. Finding Abuse Contacts & Reporting Abuse

Take action in an abuse case with the Abuse Contact Finder

The screenshot shows the navigation path: RIPEstat Home • About RIPEstat • Documentation • Use Cases. A callout bubble points to 'Use Cases' with the text: 'Go to "Use Cases" > "Looking For Abuse Information"'. Below this is a large downward arrow. The main interface shows the breadcrumb: 'You are here: Home > Data & Tools > RIPEstat > Use Cases > Looking For Abuse Information'. The title is 'RIPEstat Abuse Contact Finder'. Below the title is a description: '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.' There are two information boxes: the first says '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.' and the second says 'You can learn more about how the RIPEstat Abuse Contact Finder works and how to report abuse in this tutorial on RIPE Labs.' Below these is the 'Abuse Contact Finder BETA' widget, which has a text input field labeled 'Enter an IP address' and a search button. A callout bubble points to the input field with the text: 'Enter the IP address'. Another callout bubble points to the information boxes with the text: 'In-depth information about abuse'. At the bottom of the widget, there are links for 'embed code' and 'permissions'.

4. Finding Abuse Contacts & Reporting Abuse

The screenshot shows the 'Abuse Contact Finder' interface for the IP range 2001:67c:2e8::/48. It displays a contact with the email address **abuse@ripe.net** and a **Contact-Quality-Rating** of 5 stars (5/5). A callout bubble points to the stars with the text 'Rating of the contact'. Another callout bubble points to the email address with the text 'Email contact to report abuse to'. Below the contact information, there are checkboxes for 'Show Complete Details' and 'Info for Resource Holders', and a note stating 'Showing results for 2001:67c:2e8::/48 as of 2013-08-30 14:39:00 UTC'. A blue banner at the bottom indicates a beta status: 'Beta status: Please note that even highly rated contacts can be incorrect'. At the very bottom, there are links for 'source data', 'embed code', 'permalink', and 'info'.

4. Finding Abuse Contacts & 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 ↗
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
Held by:
n.a. ↗

- RIR Information

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

4. Finding Abuse Contacts & Reporting Abuse

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?

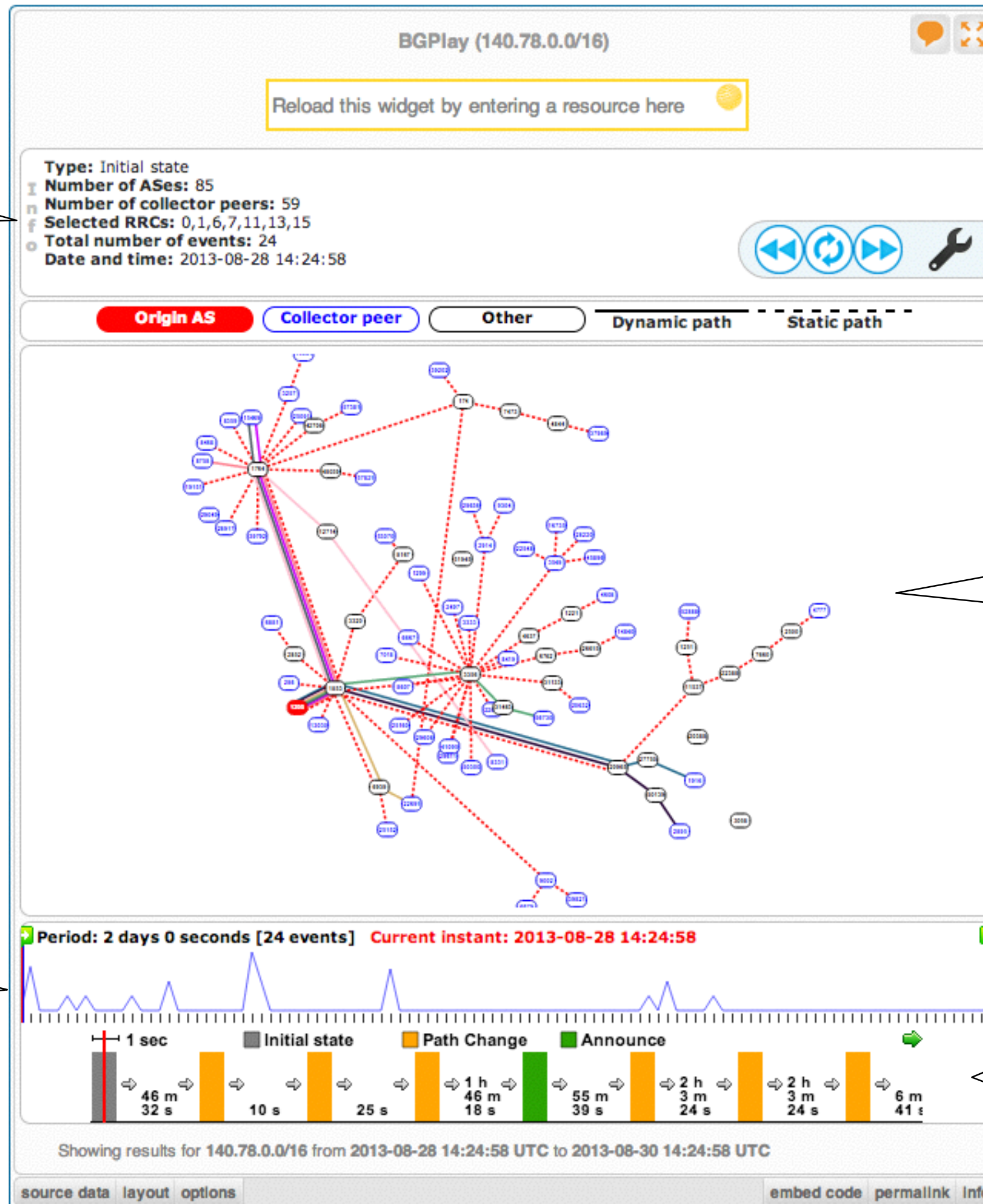
- No abuse contact found
- No response on an abuse report

5. Let's BGPlay!

- Use BGPlay to see how your network is routed
 - BGPlay is a tool that show routing history in an animated and highly-interactive manner
- Go to: <https://stat.ripe.net/widget/bgplay>

5. Let's BGPlay!

BGP event, ASN or ASN path details



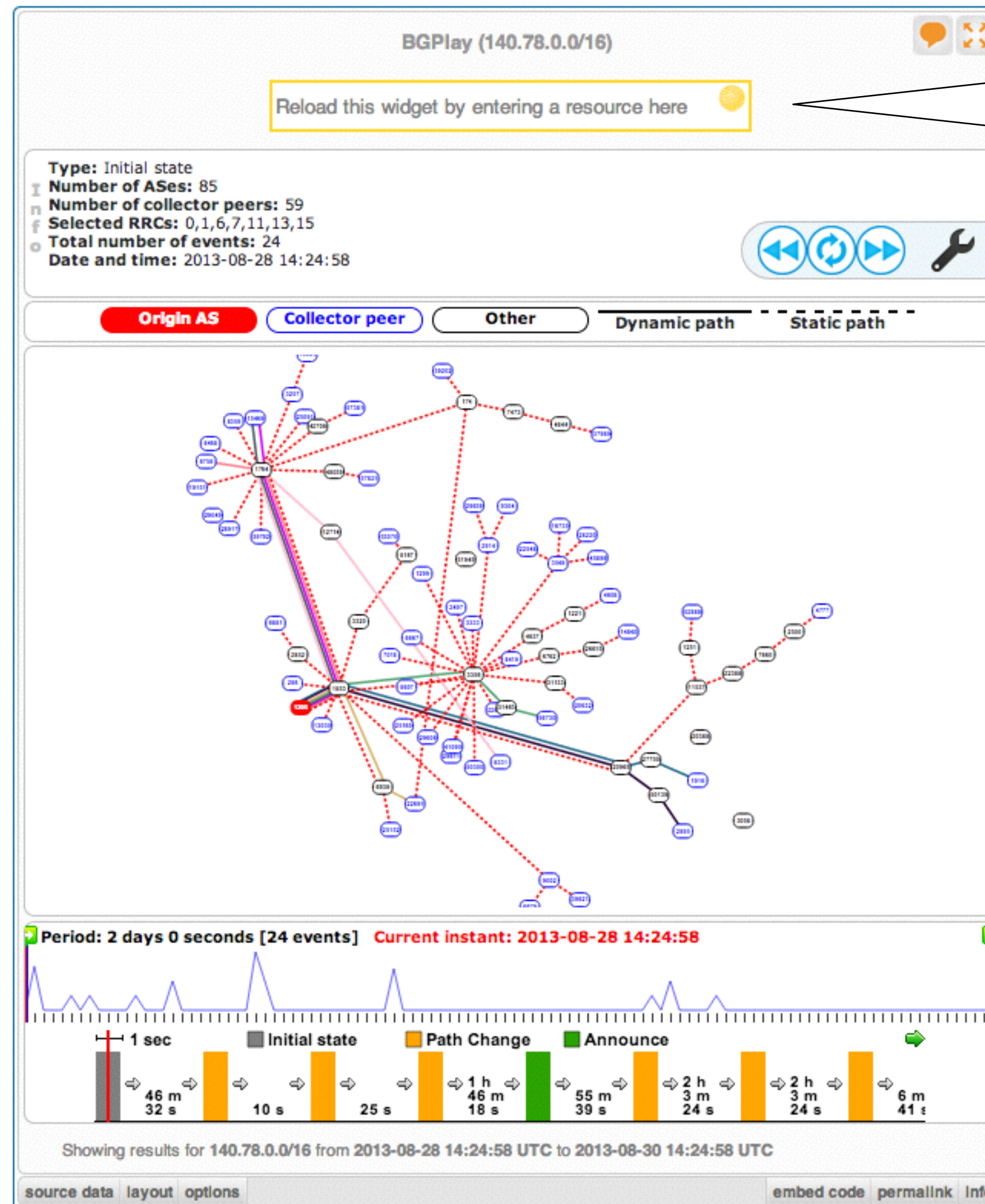
Control panel:
- Covered time period
- RRC selection

Interactive graph visualisation

Control timeline

Selection timeline

5. Let's BGPlay!



Examples:

- Prefix with announcements & withdrawals:
84.205.64.0/24
- Check IPv6 connectivity:
2001:67c:2e8::/48
- Multi-homed prefix:
199.7.80.0/24

5. Let's BGPlay!

Tasks:

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

6. Embedding Widgets On Your Own Site

Embedding widgets

- What is the concept?

Widgets are based purely on web standards and were developed with embeddability in mind. Every widget available via the RIPEstat web interface can be embedded on your own site.

- RIPEstat Widget API documentation:
https://stat.ripe.net/docs/widget_api

6. Embedding Widgets On Your Own Site

The screenshot shows the website for AS42093 (InterRacks / IceHosting network). It features a navigation menu with links: Home, Network load, Peers, Peering policy, Maintenance, and Looking glass. The main content includes a 'Welcome' section, 'Network status' (reporting no issues), 'Network Details', and a 'Prefixes' section. The 'Prefixes' section contains a line graph titled 'Prefix Count widget' showing the number of IPv4 and IPv6 prefixes over time. Below it is an 'AS Path Length' widget, a radar chart showing the average length of AS paths to various destinations.

Prefix Count widget data (approximate):

Year	Month	IPv4 Prefixes	IPv6 Prefixes
2010	Jul	1	0
2011	Jan	2	0
2011	Jul	4	0
2012	Jan	5	0
2012	Jul	6	0
2013	Jan	6	0
2013	Jul	6	1

AS Path Length widget data (approximate):

Destination	Minimum	Average	Average (no prepending)
RIPE-NOC, Maastricht, Amsterdam	1	1	1
NINJ, New York City	1	1	1
PAXI, Palo Alto	1	1	1
PTT, Sao Paulo	1	1	1
DIXIE, Tokyo	1	1	1
MIK, Milan	1	1	1
CDP, Geneva	1	1	1
WIX, Vienna	1	1	1
DE-CK, Frankfurt	1	1	1
AME-IX / NL-IX / CN-IX, Amsterdam	1	1	1
LNK, London	1	1	1
MSK-IX, Moscow	1	1	1
NETOD, Stockholm	1	1	1

This ISP embedded widgets on its page.

Prefix Count widget

AS Path Length widget

6. Embedding Widgets On Your Own Site (*Task*)

Tasks:

- Create a simple dashboard page to monitor your network
 - Create a simple HTML page
 - download the sample page:
https://stat.ripe.net/widgets/menog/widget_home.html
 - Embed three widgets of your choice
 - Make the widget smaller and remove the RIPEstat logo

7. RIPEstat Data API

Using raw data output

- What is the concept?

The RIPEstat Data API provides the lowest level of access to data. This data can be fed into custom applications or just used for scripting.

- RIPEstat Widget API documentation:

https://stat.ripe.net/docs/data_api

7. RIPEstat Data API (*Task*)

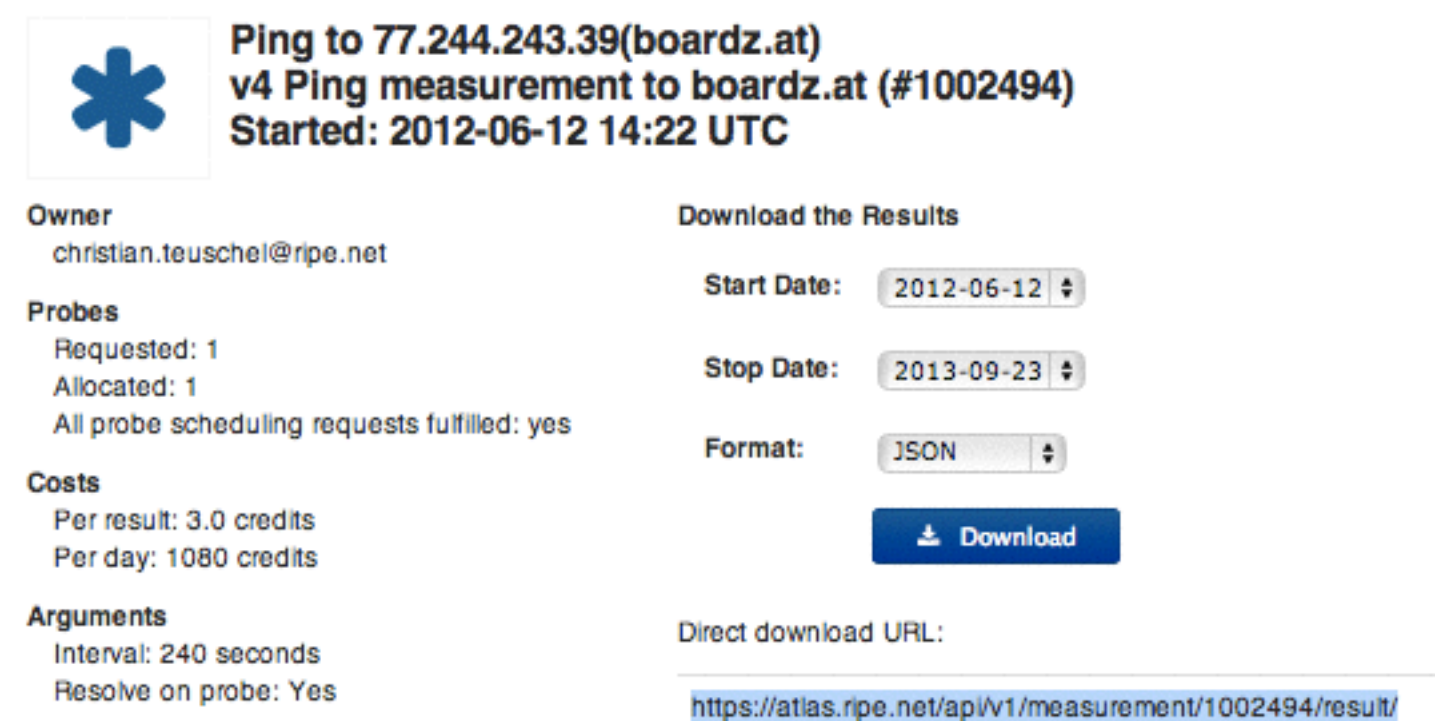
Tasks:

- Use your browser to retrieve all announced prefixes for the AS6412
- A simple check on your resource if it is seen on the Internet:
 - Create a simple script using resource-overview or routing-status

8. RIPE Atlas

Creating a user-defined measurement

– <https://atlas.ripe.net>



Ping to 77.244.243.39(boardz.at)
v4 Ping measurement to boardz.at (#1002494)
Started: 2012-06-12 14:22 UTC

Owner
christian.teuschel@ripe.net

Probes
Requested: 1
Allocated: 1
All probe scheduling requests fulfilled: yes

Costs
Per result: 3.0 credits
Per day: 1080 credits

Arguments
Interval: 240 seconds
Resolve on probe: Yes

Download the Results

Start Date: 2012-06-12

Stop Date: 2013-09-23

Format: JSON

[Download](#)

Direct download URL:
<https://atlas.ripe.net/api/v1/measurement/1002494/result/>

9. Create a Nagios check (optional)

- Create a Nagios check using the RIPEstat Data API
 - Nagios is a monitoring tool that supports the development of custom checks (like other similar tools)
- Result codes for a check show the state:

State	Result Code
Ok	0
Warning	1
Error	2

9. Create a Nagios check (optional)

Example of a Python based check:

```
if args.transit:
    transit = args.transit.split(',')
    origin = args.origin.split(',')
    nagios_status = 0
    origin_errors = 0
    transit_errors = 0
    nagios_message = ""
    url = "https://%s/data/looking-glass/data.json?resource=%s" % (args.statserver, urllib2.quote(args.prefix, ''))
    lookingglass_raw = urllib2.urlopen(url)
    lookingglass_json = json.load(lookingglass_raw)
    if lookingglass_json['data_call_status'] != "supported":
        print "WARN: %s is under maintance " % (args.statserver)
        sys.exit(1)
    for rrc in lookingglass_json['data']['rrcs']:
        for peer in lookingglass_json['data']['rrcs'][rrc]['entries']:
            aspath = peer['as_path'].split()
            details = peer['details'][0].split()
            peer_addr = details[0]
            nexthop = details[2]
            router_id = details[3]

            if len(aspath) > args.minpath:
                if aspath[-1] not in origin :
                    origin_errors += 1
                    nagios_message = nagios_message + ( "Origin mismatch %s (%s): %s; " % (rrc, peer_addr, aspath[-1]))
                if args.transit:
                    if aspath[-2] not in transit :
                        transit_errors += 1
                        nagios_message = nagios_message + ( "Transit mismatch %s (%s): %s; " % (rrc, peer_addr, aspath[-2]))

if origin_errors == 0 and transit_errors == 0:
    nagios_message = "OK: %s Origin is %s " % (args.prefix, args.origin)
    if args.transit:
        nagios_message = "%s and all transits match %s" % (nagios_message, args.transit)
elif origin_errors >= args.crit or transit_errors >= args.crit:
    nagios_status = 2
    nagios_message = "ERROR: " + nagios_message
elif origin_errors >= args.warn or transit_errors >= args.warn:
    nagios_status = 1
    nagios_message = "WARN: " + nagios_message
```

