



**RIPE NCC**  
RIPE NETWORK COORDINATION CENTRE

# RIPE NCC::Educa Routing Security

# Overview



- RIPEstat
- RIS: Routing Information System
- Routing Insights Via RIPEstat
- Examples

# RIPEstat



- What is RIPEstat?

- “RIPEstat is a large-scale information service and the Open Data platform of the RIPE NCC.”
- One-stop-shop to 20+ backends

A screenshot of the RIPEstat website. The header features the RIPE NCC logo and navigation links like 'RIPE Database (Whois)', 'Website', and a search bar. A breadcrumb trail shows 'Home &gt; Analyse &gt; Statistics &gt; RIPEstat'. The main heading is 'RIPEstat' above a search input field with a 'Go' button. Below the search field, there are three columns: 'Twitter Feed' with '#RIPEstat', 'RIPE Labs Feed' with 'Historical Whois', and 'RIPEstat Links' with 'About RIPEstat'.

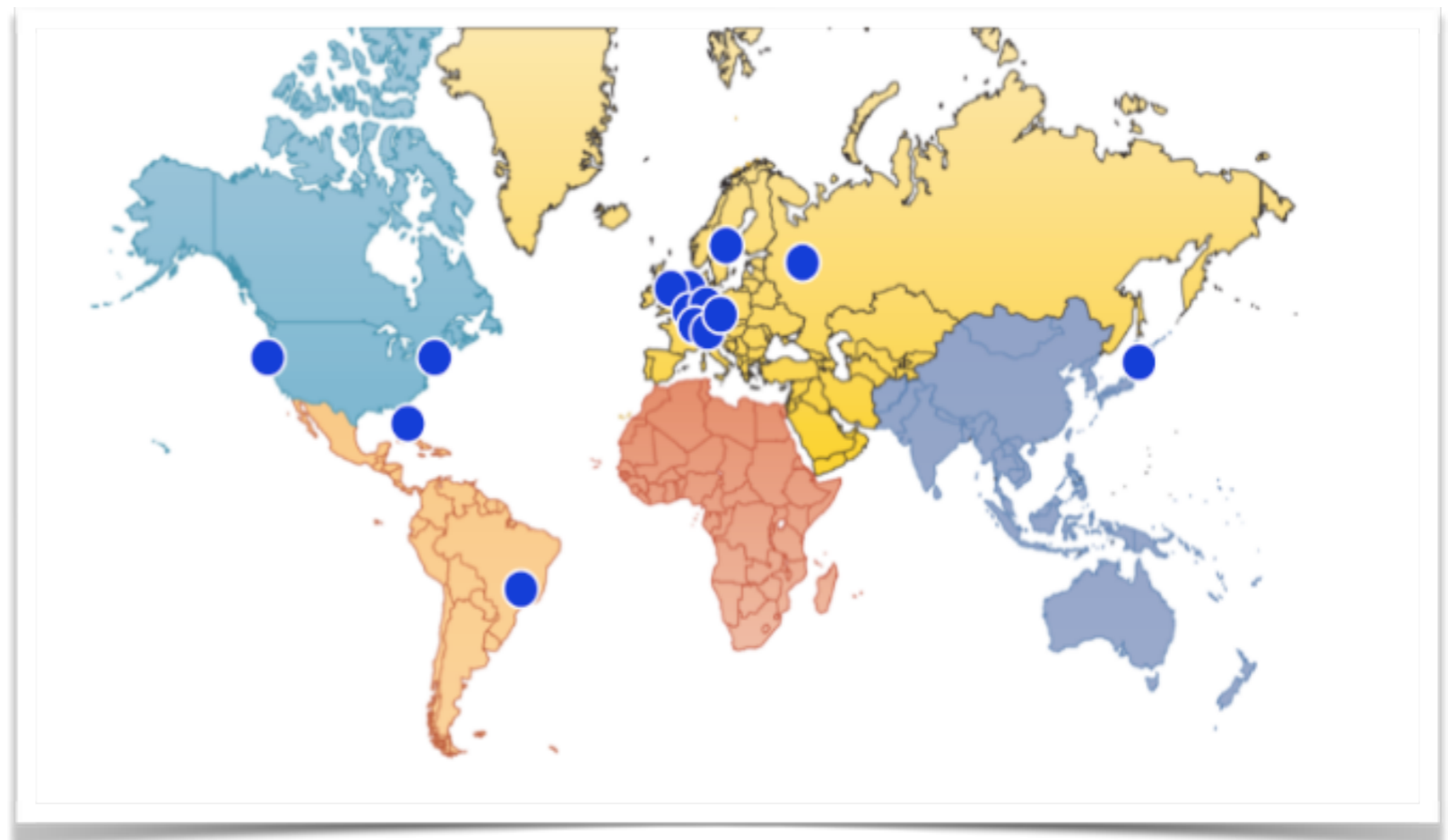
Follow examples on <https://stat.ripe.net>

# Routing Information System (RIS)



- RIS

- The RIPE NCC has been collecting BGP data since 1999
- 19 collectors and growing
- 160+ full-feed peers
- <http://ris.ripe.net>



# Routing Insights Via RIPEstat



- Routing data on RIPEstat

The screenshot displays the RIPE NCC website interface. At the top left is the RIPE NCC logo and name. To the right is a search bar for IP addresses or ASNs. Below the header is a navigation menu with options like 'Manage IPs and ASNs', 'Analyse', 'Participate', 'Get Support', 'Publications', and 'About Us'. The main content area shows a breadcrumb trail: 'You are here: Home > Analyse > Statistics > RIPEstat > 193.0.20.0/23'. A search box contains '193.0.20.0/23' with a 'Search' button. On the left side, there is a sidebar menu with categories: 'At a Glance (4)', 'Routing (9)', 'DNS (2)', 'Anti Abuse (2)', 'Database (9)', 'Geographic (2)', 'Activity (4)', and 'Suggestions (1)'. The main content area features a 'Routing Status (193.0.20.0/23)' section. It includes a green checkmark indicating that the route was 100% visible by 166 of 166 RIS full peers on 2018-04-08 08:00:00 UTC. It also notes that the route was first ever seen announced by AS3333 on 2008-03-27 00:00:00 UTC, originated by AS3333, and has no less-specific covering prefixes. A blue information box states that results exclude routes with very low visibility (less than 3 RIS full-feed peers seeing). At the bottom of the routing status section are links for 'source data', 'embed code', 'permalink', and 'Info'. Below this is a section for 'BGPlay (193.0.20.0/23)'.

# Routing Insights Via RIPEstat



- 20+ widgets related to routing data

Announced Prefixes

Prefix Size Distribution

AS Path Length

Routing History

BGPlay

Routing Status

BGP Update Activity

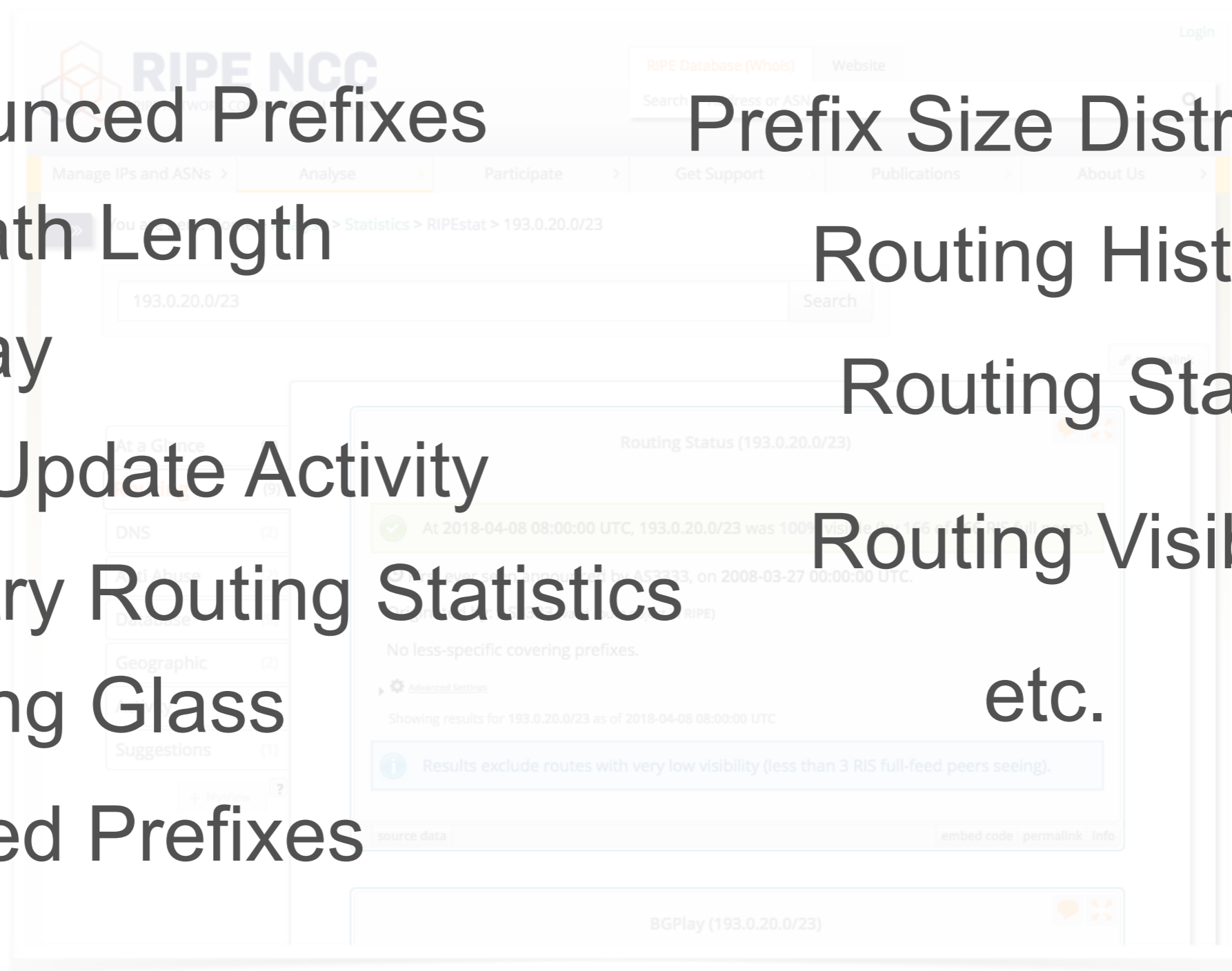
Routing Visibility

Country Routing Statistics

etc.

Looking Glass

Related Prefixes



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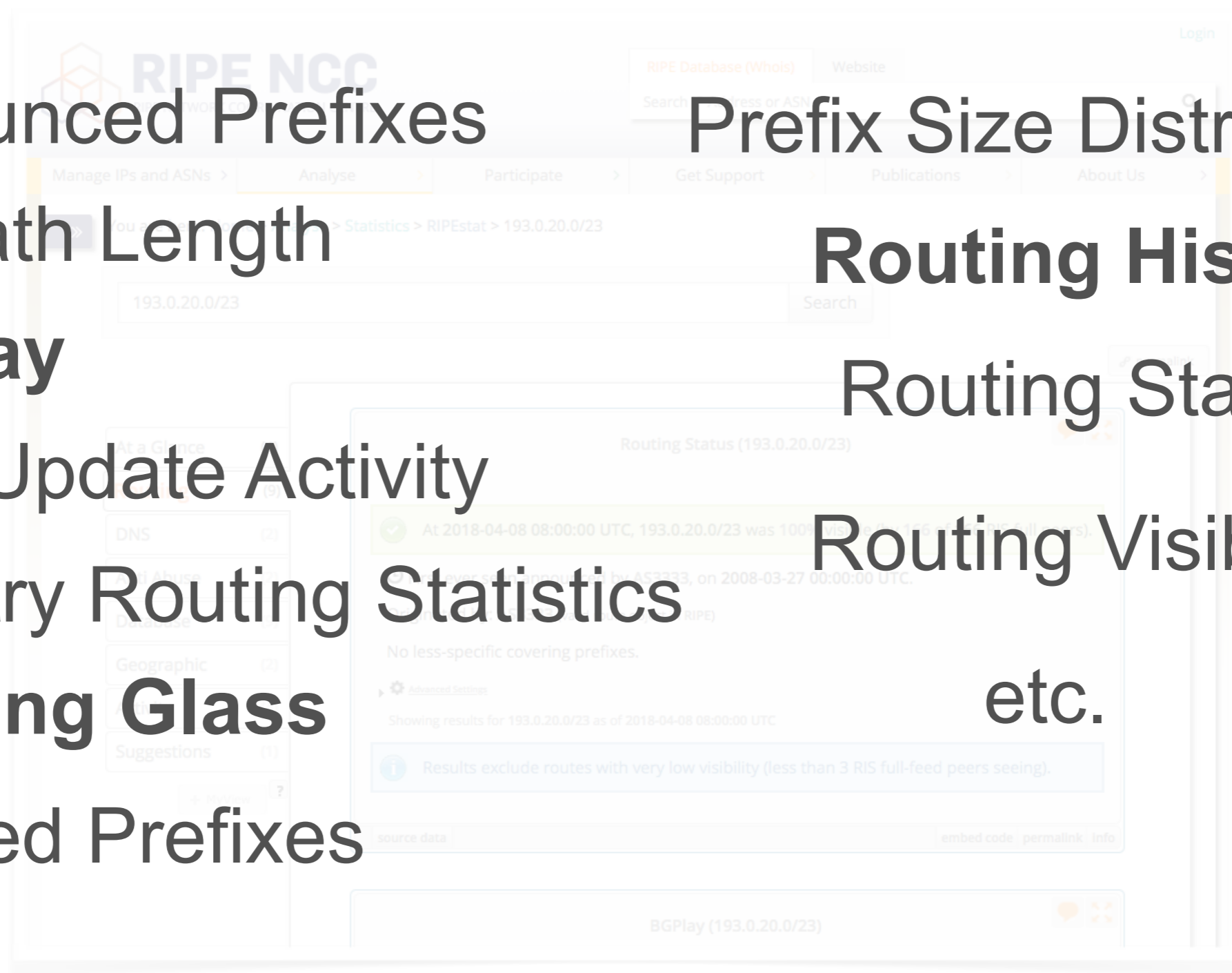
Routing Visibility

Country Routing Statistics

etc.

Looking Glass

Related Prefixes



# Routing Insights Via RIPEstat



- Looking Glass
  - Based on view from RIS peers
  - Announcing AS
  - AS paths to peers
  - Close to real-time
- Example:
  - <https://stat.ripe.net/widget/looking-glass#w.resource=193.0.20.0%2F23>



# Routing Insights Via RIPEstat



- Looking Glass

BGP Looking Glass (193.0.20.0/23)

Advanced Settings

10 RRCs see 172 peers announcing 193.0.20.0/23 originated by AS3333. [EXPAND EVERYTHING]

- ▶ RRC11 in New York City, New York, US sees 1 ASN originating 193.0.20.0/23. (AS3333)
- ▼ RRC03 in Amsterdam, Netherlands sees 1 ASN originating 193.0.20.0/23. (AS3333)
  - ▼ AS3333 is seen as the origin by 10 peers.
    - ▼ 80.249.208.34 is announcing route AS1103 AS3333.

```
Origin: IGP
Next Hop: 80.249.208.68
Peer: 80.249.208.34
Community: 1103:101
AS Path: 1103 3333
Last Updated: 2018-04-03T05:30:18
```
- ▶ RRC10 in Milan, Italy sees 1 ASN originating 193.0.20.0/23. (AS3333)
- ▶ RRC23 in Singapore, Singapore sees 1 ASN originating 193.0.20.0/23. (AS3333)
- ▶ RRC20 in Zurich, Switzerland sees 1 ASN originating 193.0.20.0/23. (AS3333)
- ▶ RRC12 in Frankfurt, Germany sees 1 ASN originating 193.0.20.0/23. (AS3333)
- ▶ RRC21 in Paris, France sees 1 ASN originating 193.0.20.0/23. (AS3333)
- ▶ RRC15 in Sao Paulo, Brazil sees 1 ASN originating 193.0.20.0/23. (AS3333)
- ▶ RRC14 in Palo Alto, California, US sees 1 ASN originating 193.0.20.0/23. (AS3333)

Showing results for 193.0.20.0/23 as of 2018-04-09 05:14:00 UTC

source data embed code permalink info

# Routing Insights Via RIPEstat



- Routing History
  - Announced prefix by AS
  - Visibility = number of peers seeing prefix/AS combination
  - Historical information
- Example:
  - <https://stat.ripe.net/widget/routing-history#w.resource=AS3333>

# Routing Insights Via RIPEstat



- Routing History



# Routing Insights Via RIPEstat

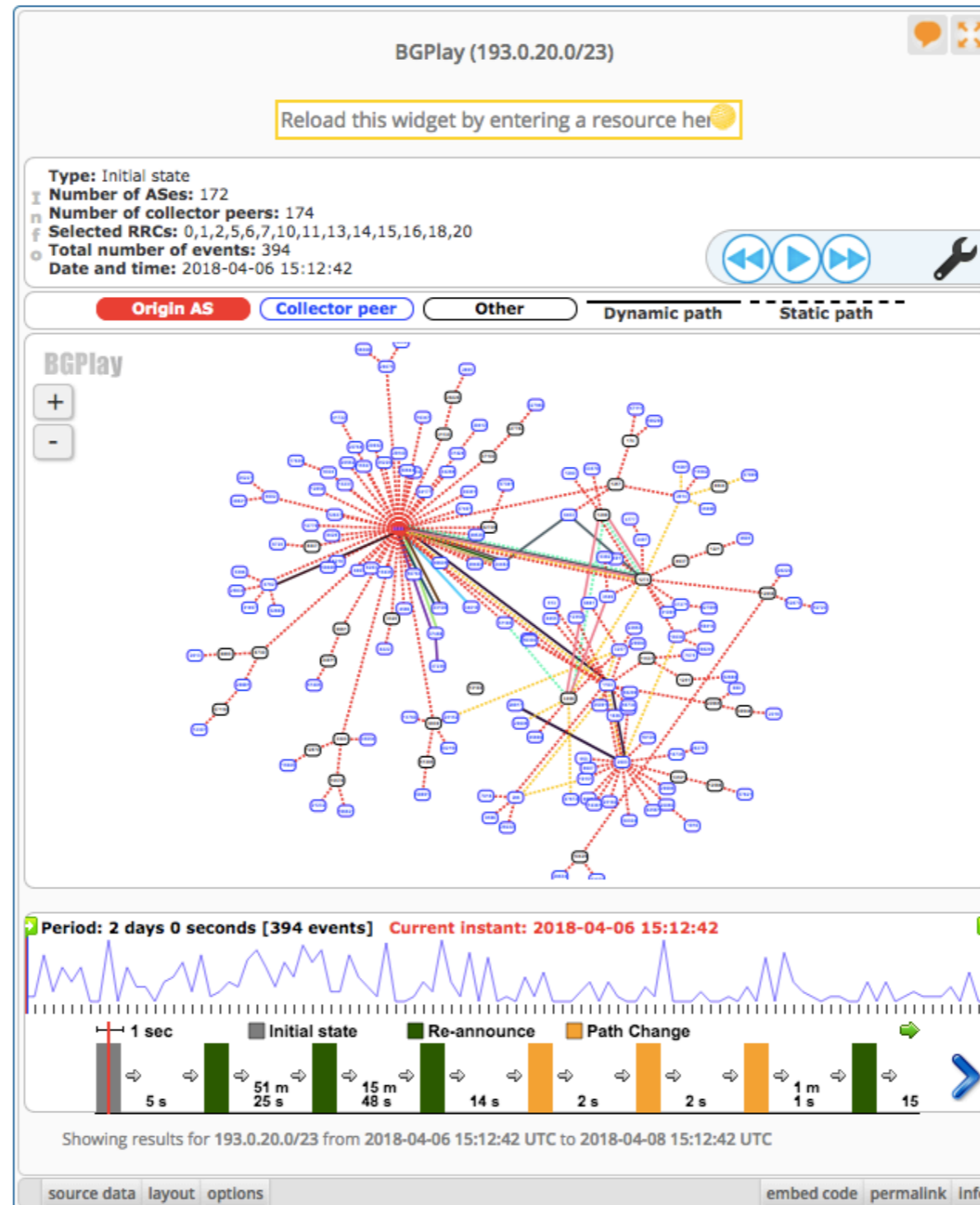


- BGPlay
  - Visual representation of routing status
  - Snapshot view of one point in time
  - Move back and forth in time
- Example
  - <https://stat.ripe.net/widget/bgplay#w.resource=193.0.20.0%2F23>

# Routing Insights Via RIPEstat



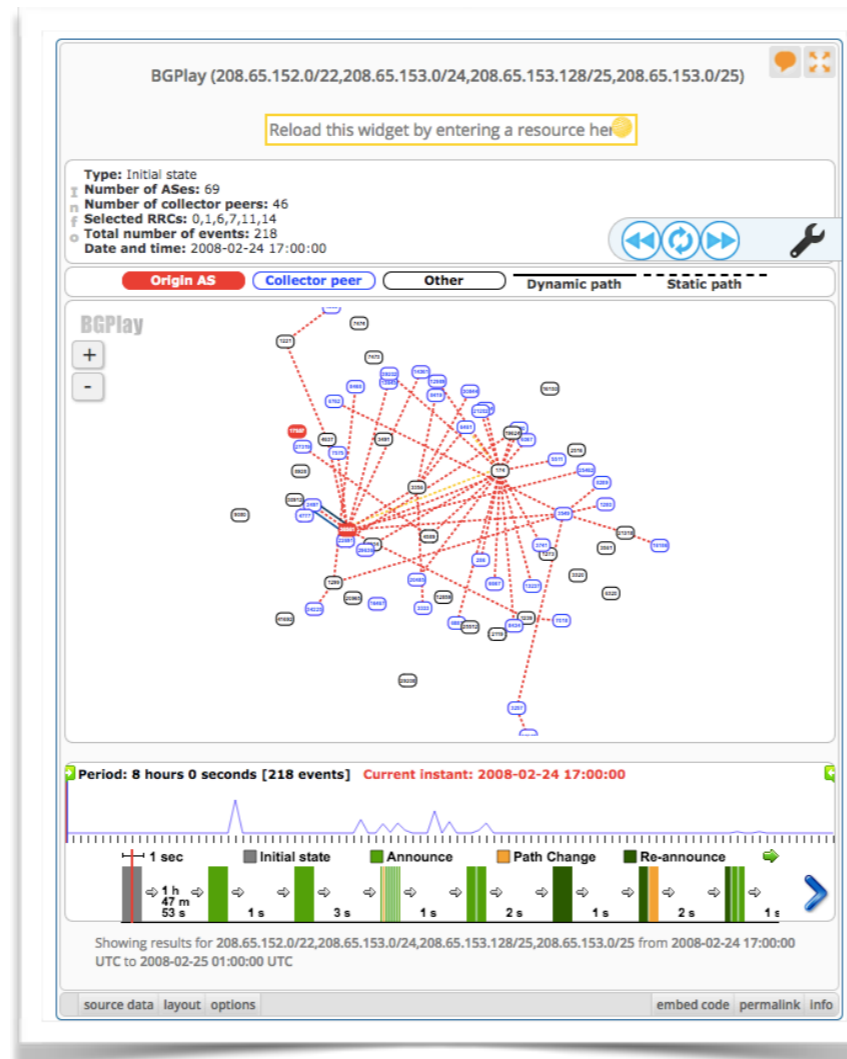
- BGPlay



# Examples in RIPEstat



- Youtube Hijack in February 2008

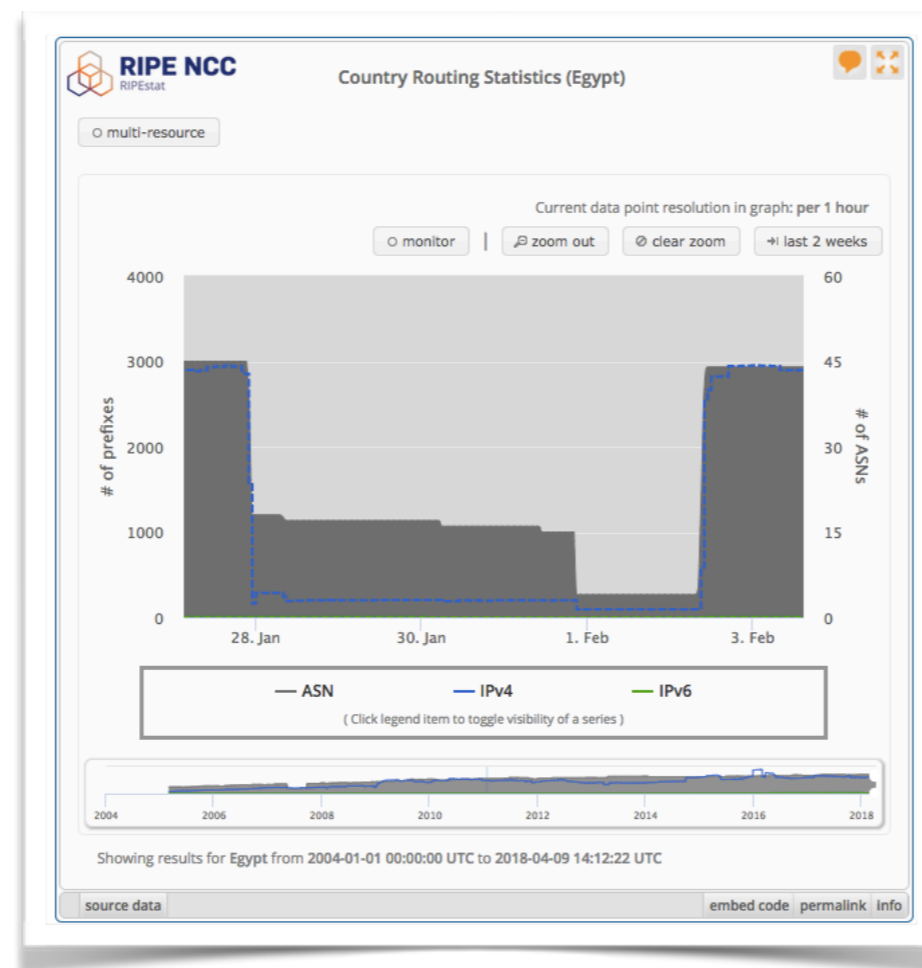


[Go to example on RIPEstat](#)

# Example in RIPEstat



- Internet Outage 2012 in Egypt

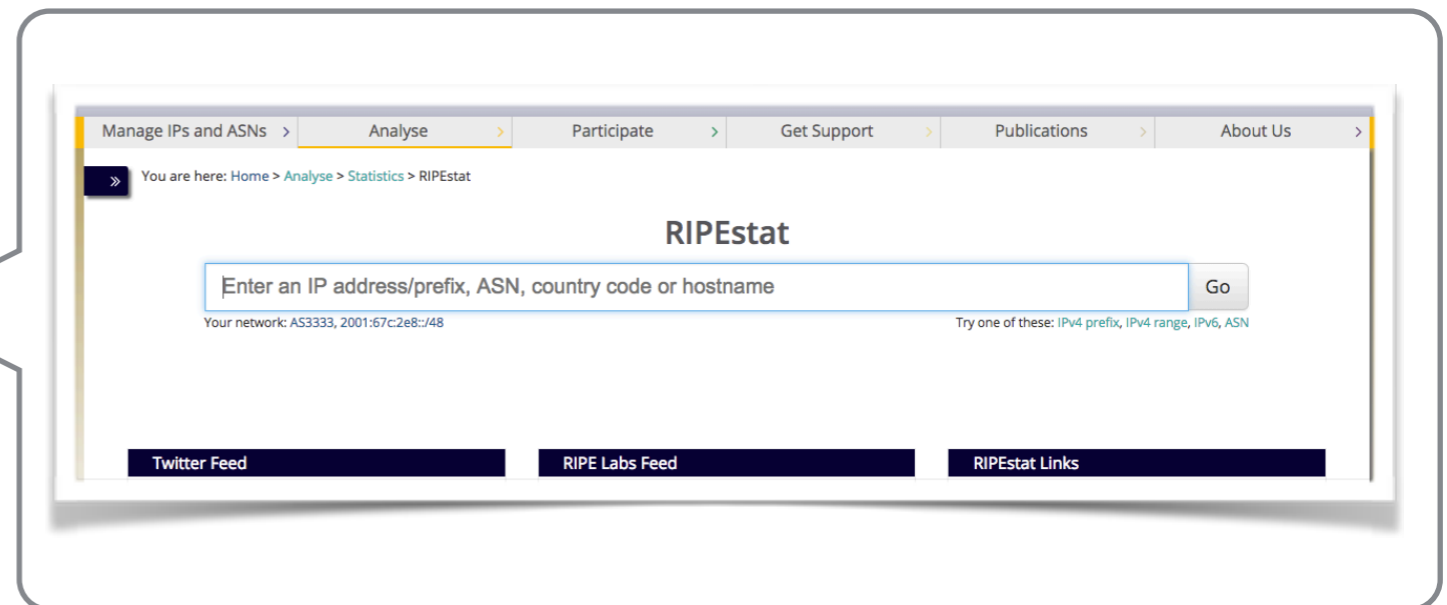


[Go to example on RIPEstat](#)

# RIPEstat - Three Interfaces



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

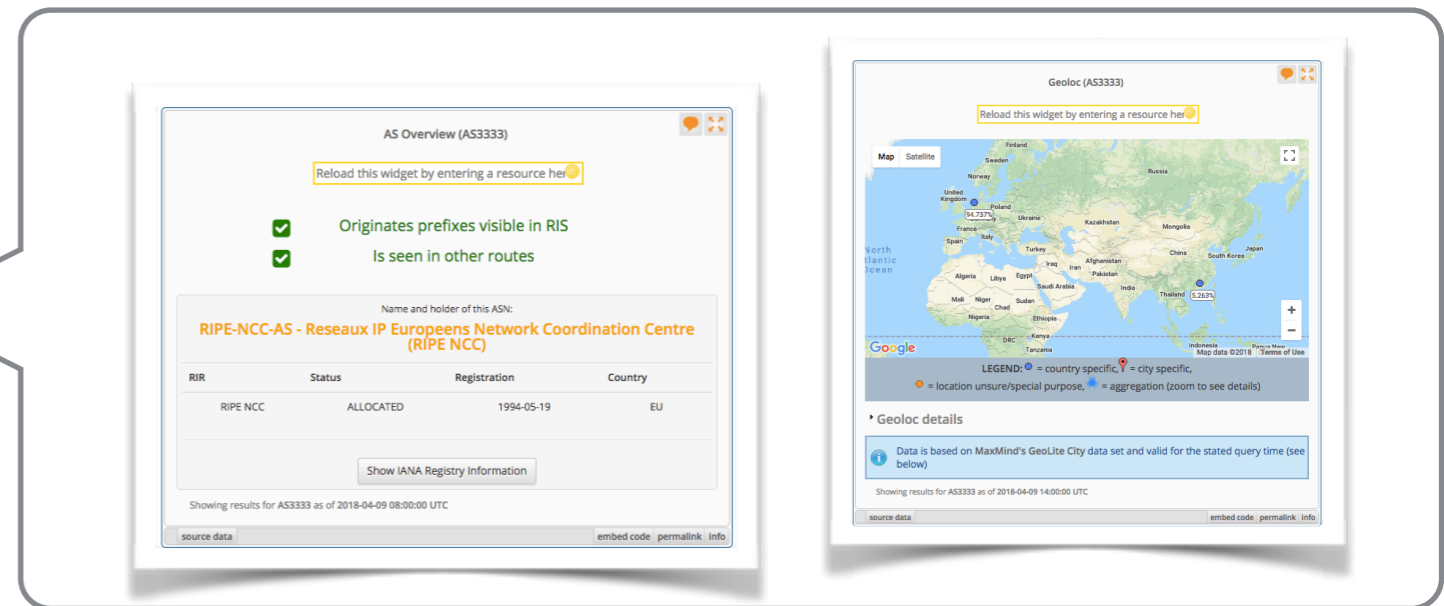




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```
time: "2018-04-09T14:35:37.098959",
messages: [ ],
data_call_status: "supported - based on 2.1",
process_time: 4,
build_version: "2018.4.6.318",
query_id: "20180409143537-3be598bc-ed43-45cb-a643-894335f051ac",
data: {
  resource: "3333",
  holder: "RIPE-NCC-AS - Reseaux IP Europeens Network Coordination Centre (RIPE NCC)",
  query_starttime: "2018-04-09T08:00:00",
  announced: true,
  query_endtime: "2018-04-09T08:00:00"
```



# RIPEstat



- <https://stat.ripe.net/index/about-ripestat>
- [https://stat.ripe.net/docs/data\\_api](https://stat.ripe.net/docs/data_api)
- [https://stat.ripe.net/docs/widget\\_api](https://stat.ripe.net/docs/widget_api)
- For updates on RIPEstat follow [@NCC\\_RIPEstat](#)





# Questions



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