Do we still need the IRR ?

An analysis and comparison of IRR data across databases

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Introduction

- There are about 30 IRRs
  - With various degrees of trust

- The most known ones are RIR-run

- Then we have RADB, ALTDB, NTTCOM

Building prefix lists

- Operators use the IRRs as data source
  - Tools leverage it as well (bgpq4, irrtools)

- These are used to build prefix-lists and to filter appropriately on peerings or transits

- But…

Can we trust the IRRs and their data ?

IRRs sometimes apply very light checks…

This is how you end up with this

```
route6:          2a0e:5040::/29
origin:          AS58280
mnt-by:          STUCCHI-MNT
created:         2019-08-16T08:04:09Z
last-modified:   2019-08-16T08:04:09Z
source:          RIPE
```

```
route6:      2a0e:5040::/32
descr:       Vultr Customer Route
origin:      AS58280
notify:      network@choopa.com
mnt-by:      MAINT-AS20473
changed:     network@choopa.com 20210817  #12:37:45Z
source:      RADB
```

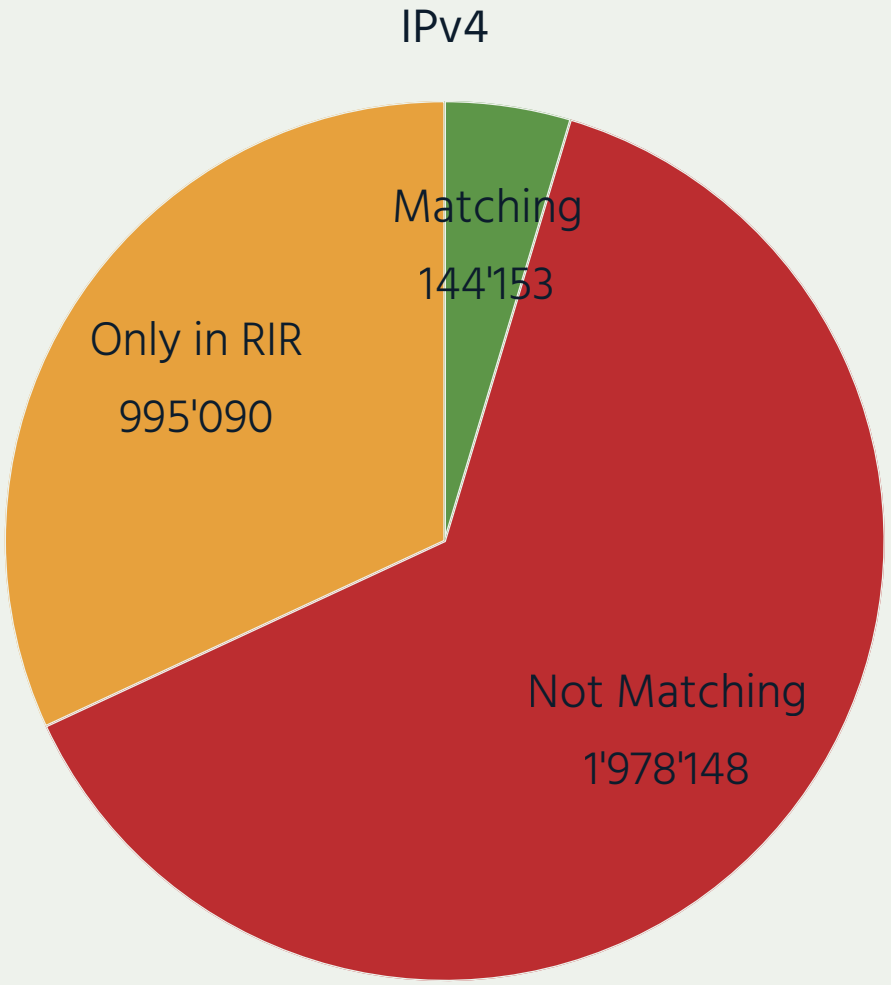
Let’s compare

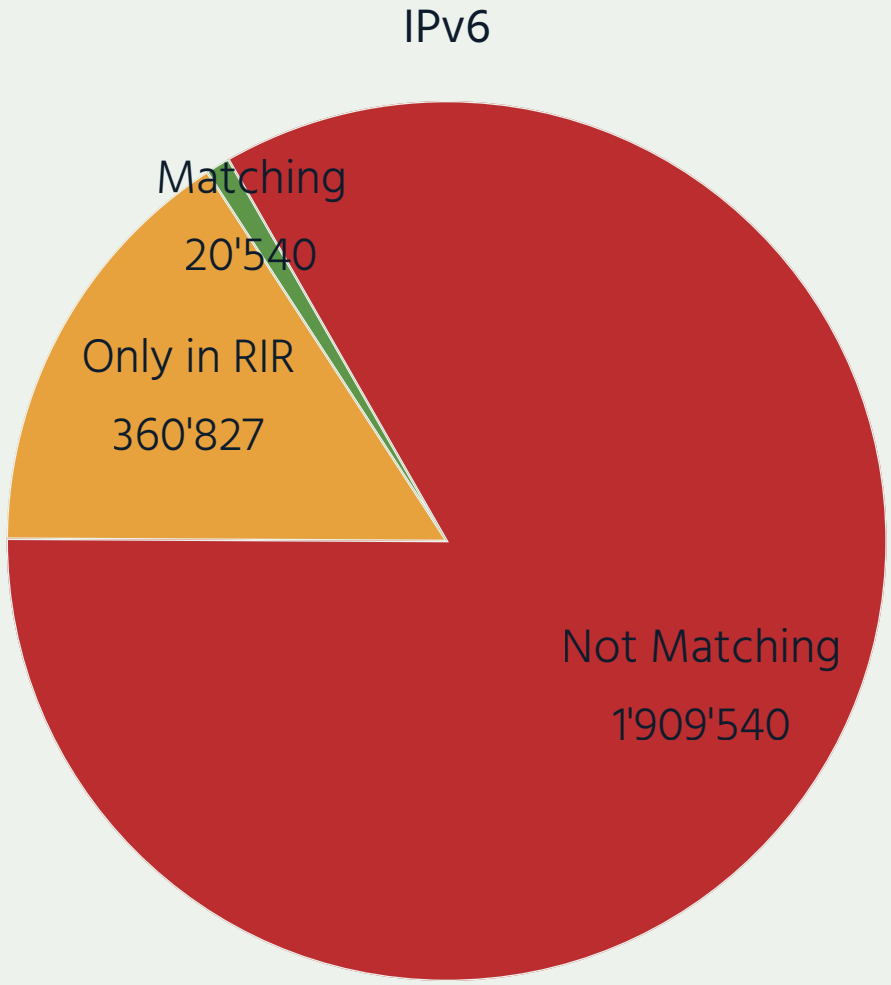
- What is in RADB, ALTDB with what is in the RIRs
  - We talk about route and route6 objects

- And see if they match, or if they differ in the “origin”
  - And then check what’s in BGP to define who is right and who is wrong

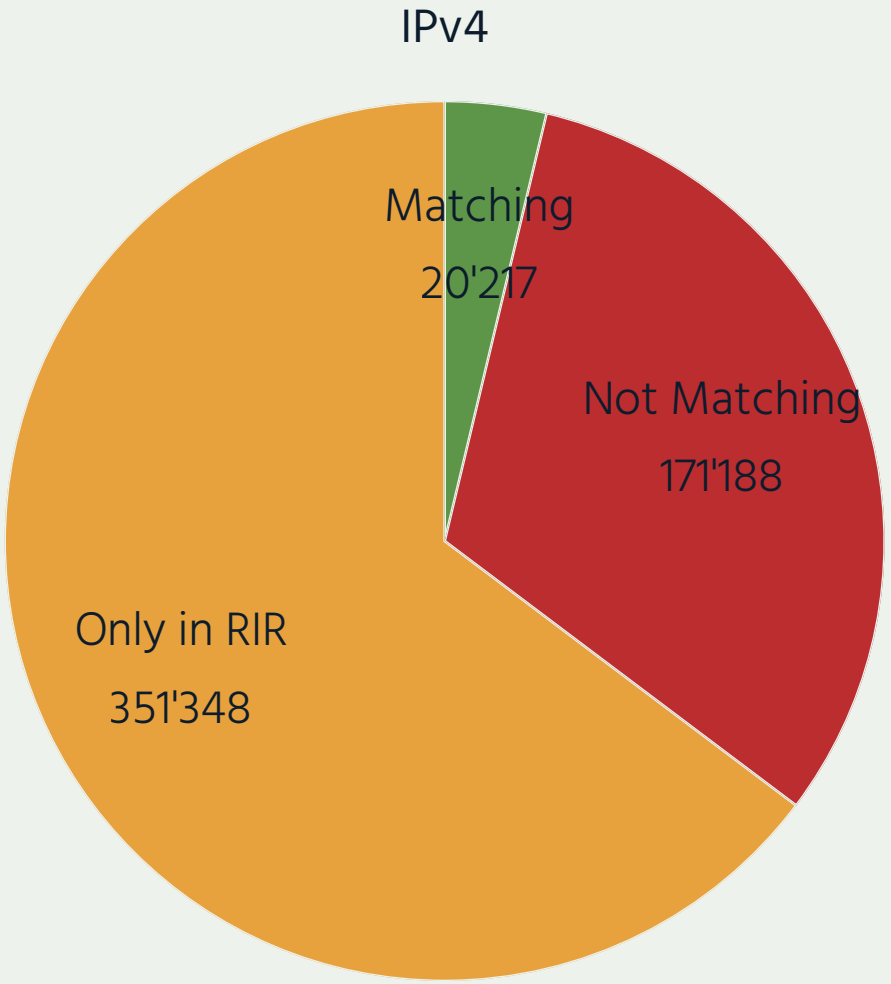
Preliminary data

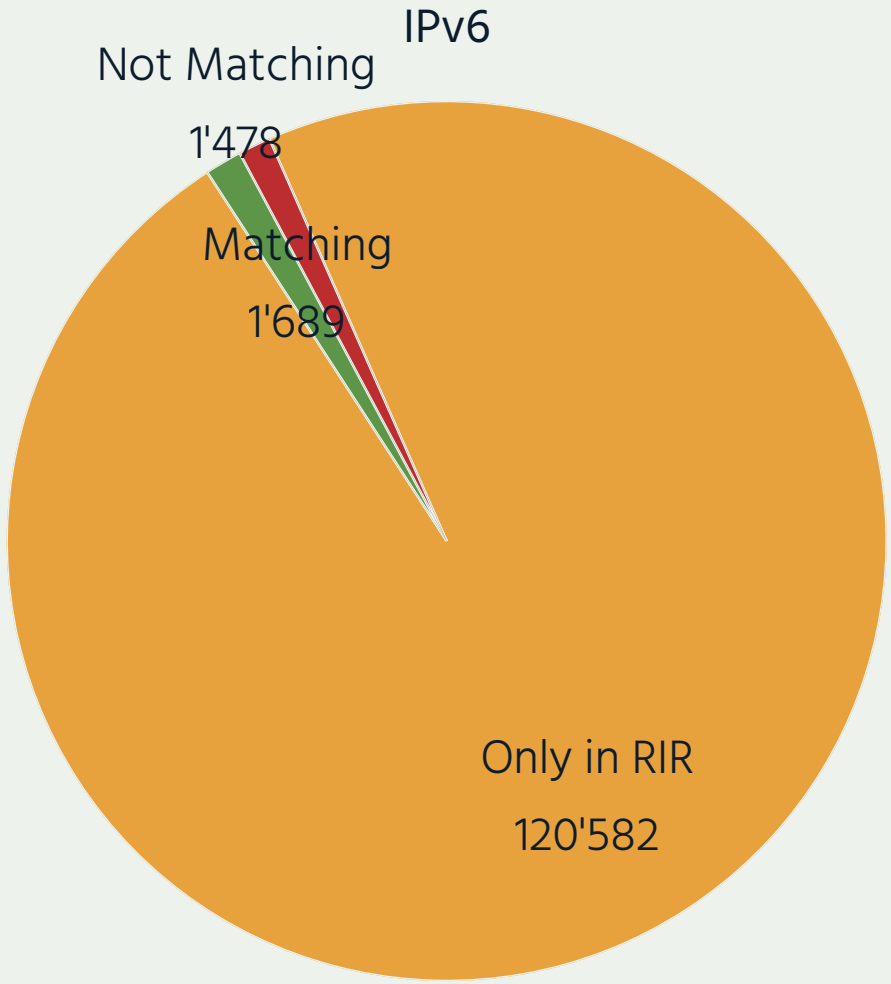
RIRs compared to RADB - Global stats



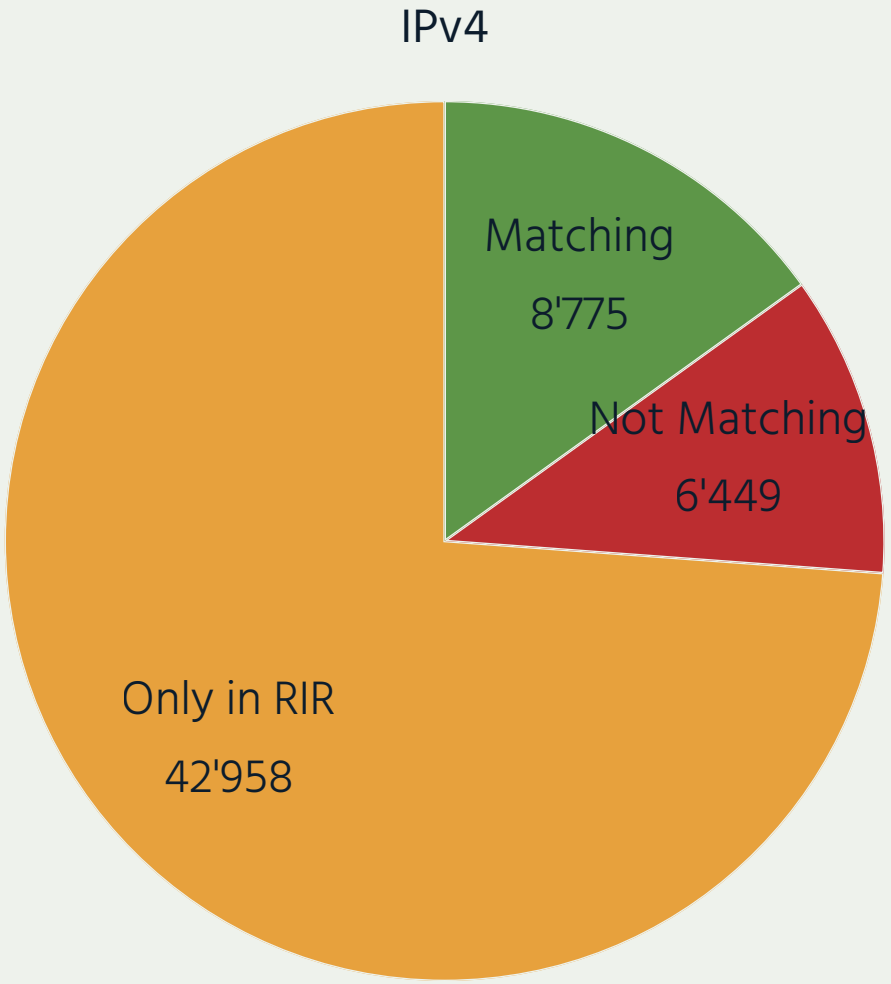


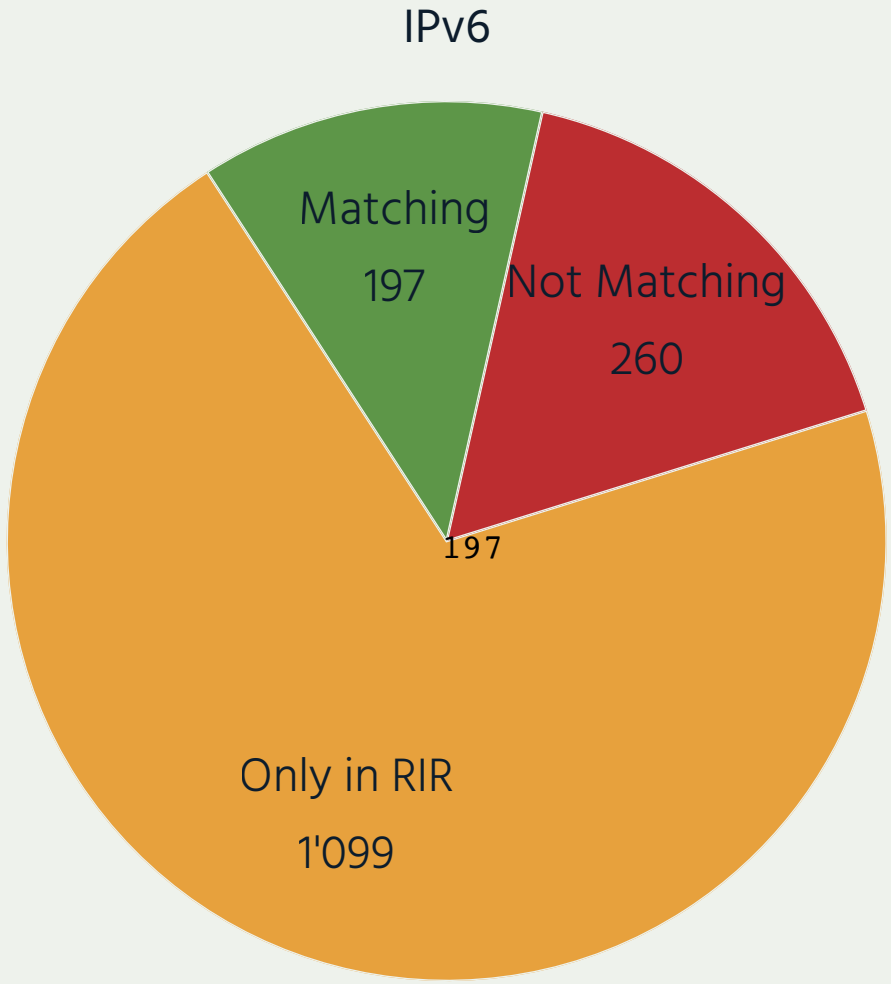
RIRs compared to RADB - RIPE Region only



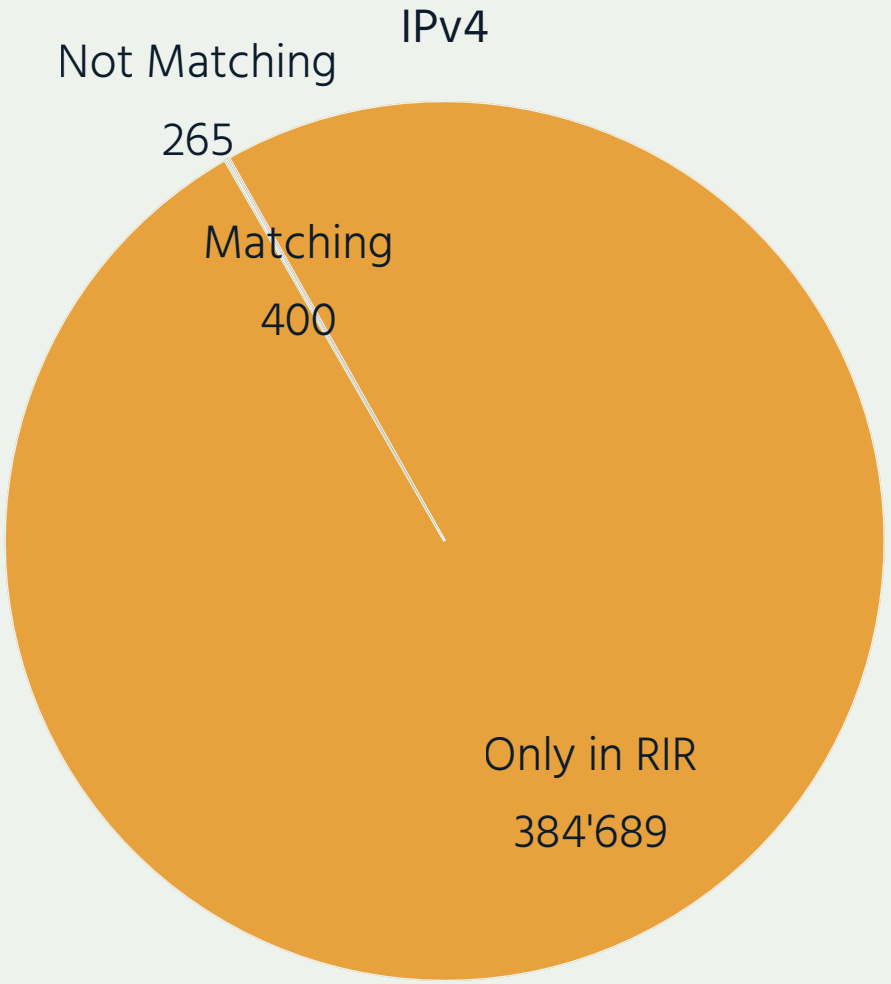


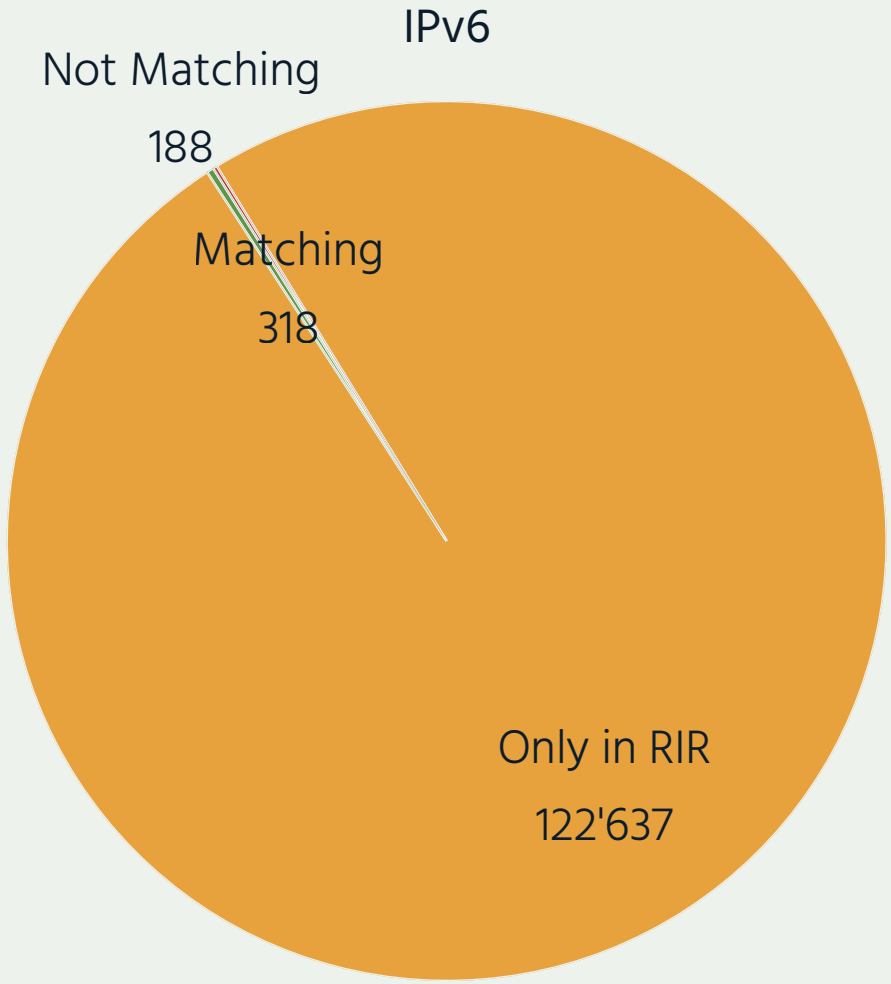
RIRs compared to RADB - RIPE-NONAUTH only





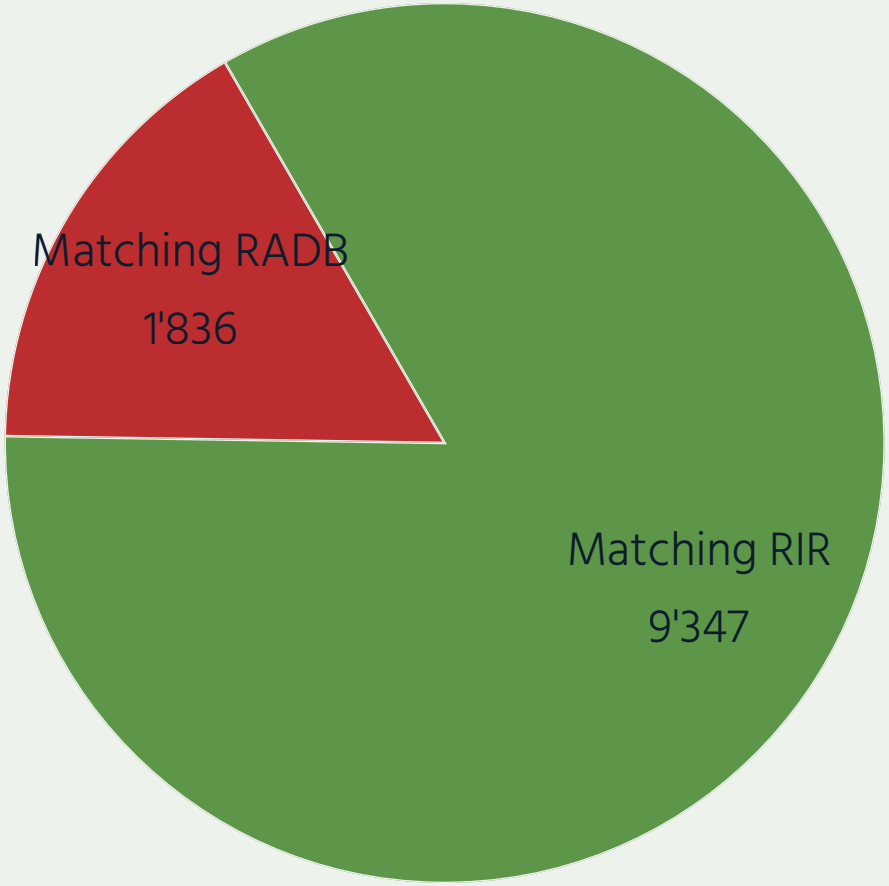
RIRs compared to ALTDB - RIPE Region only



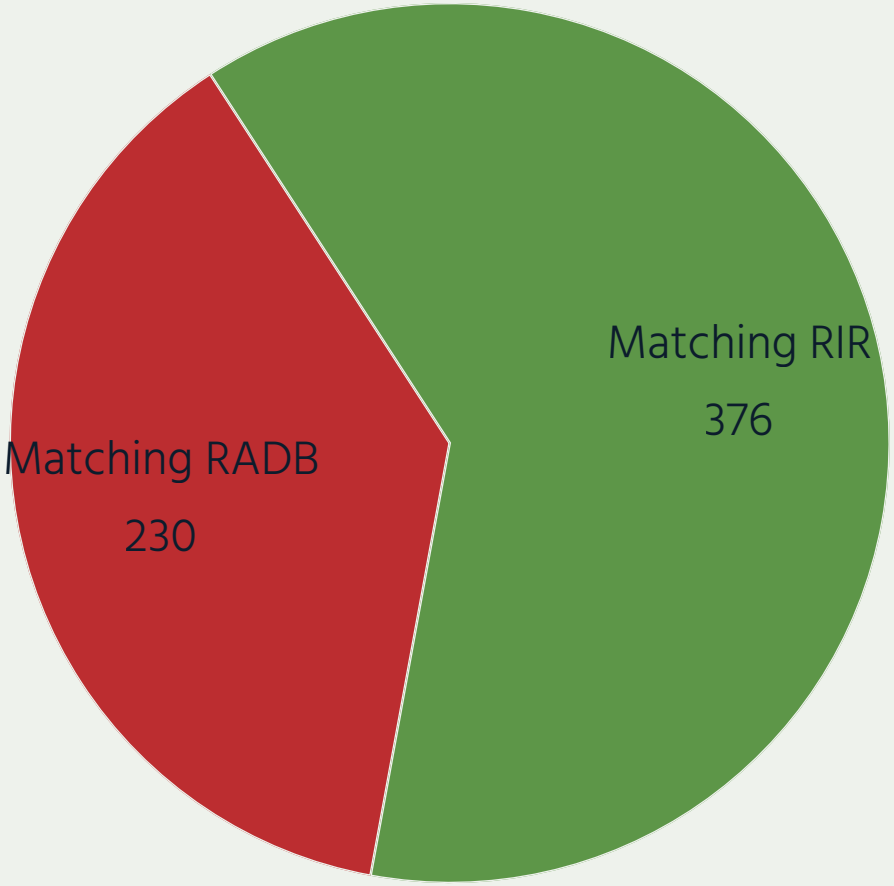


Comparison with Routing Table - RIPE

IPv4



IPv6



This is done comparing the “not matching” entries with an entry in BGP

Next Steps

- Further analyse the data we have available
  - Per-ASN, per-country, etc…
- Compare with RPKI
- (Maybe) Analyse AS-Sets

Recommendations

- It’s better to rely on RIR data
- Encourage the use of RPKI
- Legacy space holders should be allowed to use RIR services and RPKI

Data is available

- We provide this data to everyone
- All in JSON
- It is generated every 1st and 15th day of the month
- http://103.162.143.30/route-check/data/

Questions ?

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