(Proposal)
A common policy for the use of IRR DB by IXP Route Servers

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Background info

- There are 5 official whois directories established by the 5 RIRs:
  - RIPE DB, ARIN DB, APNIC DB, AFRINIC DB, LACNIC DB
  - Operate as a source of truth for resource ownership
  - Express the public information in human readable form (RPSL)

- However, several private DBs appeared in the past for reasons:
  - To cover the lack of official RIR Database (e.g. LACNIC)
  - Mirror the data of the official IRR databases to provide shorter response times.
  - Operate as a local authoritative IRR DB, publishing RPSL objects for their own and their customers' policies.

The problem(s) nowadays 1/2

- A network has allocated resources from its RIR (e.g. RIPE)
  - Based on IANA we know in which DB we shall check for info

    (https://www.iana.org/assignments/as-numbers/as-numbers.xhtml)
  - However, network owner publishes its policy to a private DB
  - Thus, resolution from others results in an empty list

The problem(s) nowadays 2/2

- Network owner publishes its policy + objects
  - Both in a Public and Private DB
  - Is this a scalable approach?
  - What if the network owner misses to update one of them?
  - Can result in “object conflict”

Definition of “object conflict”

- We define an object conflict as the situation where an RPSL object for a network resource (i.e., usually an aut-num, as-set, route or route6 object) exists in different versions in two or more databases

- For example
  - Object “AS-MYCUSTOMERS” in RIPE-DB with last-modified: **2020-02**-11T13:08:05Z (5.000 prefixes)
  - Object “AS-MYCUSTOMERS” in RADB with last-modified: **2023-04**-14T20:10:46Z (10.000 prefixes)

Questions and concerns

- In a case of an object conflict: which one should I trust for resolution?
- What if we rely on a private IRR DB to resolve objects and the database cease operations (e.g. ROGERS, BELL, etc.) ?
- Is customer's policy adopted correctly across all IXPs and peering networks for consistent view and stability?
- Do private DBs inherit upcoming security policies (e.g. hierarchical AS-SETs)

Disclaimer

- This proposal is NOT trying to fix RPSL (or invent RPSL v3)
- This proposal is NOT against RPKI either
- Target is to answer the previous questions and all other relevant concerns.

Policy proposal

- IXP operator must trust and use only the following IRR databases for building and maintaining Route Server filters:
  - AFRINIC DB
  - APNIC DB
  - ARIN DB
  - LACNIC DB
  - RIPE DB

Game rules

- In case an IXP member has registered their policies in a different IRR database, the IXP operator has no obligations to deviate from this policy and comply with customer’s demands to use other IRRs.

- On the other hand, it is mandatory for IXP operators to use all the listed databases to generate their filters.

- This policy should take effect as of 01/01/2024

Grace Period 1/2

- The authors understand that the adoption of this policy will probably result in a massive transfer of RPSL objects from non-supported databases to the supported ones.
- Therefore, the policy introduces a grace period of 12 months in which the list of allowed databases is supplemented by these:
- RADB
- RIPE-NONAUTH
- NTT
- LEVEL3

Grace Period 2/2

- At the end of the grace period, IXP operators must stop supporting these additional IRRs and operate filter generation tools that will only query the 5 RIR databases.

- During the grade period, IXPs will make multiple best effort attempts to warn their members relying on these IRRs about the need to replicate their policies in the appropriate RIR IRR.

Thank you

Questions?

Let the discussion begin

URL for the Document:

https://amsix-my.sharepoint.com/:b:/g/personal/stavros_konstantaras_ams-ix_net/Ea9mk8Gc7SVNgTpVjVZ5VzcBrnbtFT9QtStZeEnCOtFYIw?e=8CPC1m