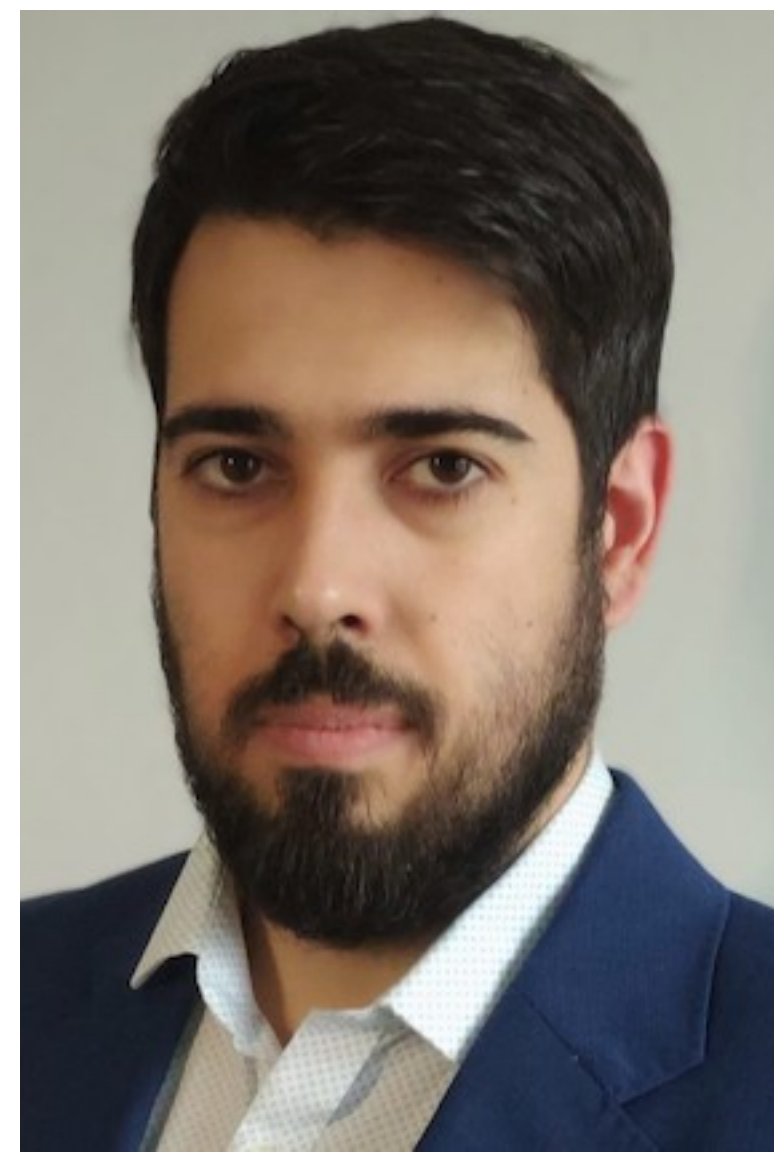# Operational Update RIPE Database

RIPE NCC Database Team

Ed Shryane | RIPE 88 | 23 May 2024

The RIPE NCC Database Team

Progress Since RIPE 87

Whois Releases

- <u>Whois 1.109.1</u> (December)

  - Organisation RDAP Object is Assumed to be an IP on Country Attribute (#1362)

- <u>Whois 1.110</u> (March)

  - RDAP Extension for Geofeed Data (#1366)

  - RDAP RIR Search - Basic Search Features (#1379)

  - Enable e-mail in RDAP entity responses (in top level vcard) (#1384)

  - Improve RDAP documentation (#1373, #1388)

  - Document inet6num assignment-size maximum prefix (#1375)

    - *(As raised in address-policy WG, the maximum prefix is /128)*

Whois Releases (cont.)

- <u>Whois 1.111</u> (March)
  - Don't send email to undeliverable addresses (#1404)
  - Add email unsubscribe support (#1404)

Whois Releases (cont.)

- <u>Whois 1.112</u> (May)

    - NWI-4: Add ALLOCATED-ASSIGNED PA inetnum status (#1432)

    - Set Charset Flag (e.g. "UTF-8") on Port 43 (#1450)

    - Allow inverse query for sponsoring-org from all addresses (#1431)

    - Don't allow "mnt-lower" on PI assignments (#1452)

    - Fixed Syncupdates HELP Bug (#1453)

    - RDAP Link Title is a String not List (#1445)

    - Improved undeliverable mail processing (#1418, #1417, #1423, #1411)

    - Return 404 on invalid NRTMv4 notification file path (#1422)

    - Route ROA checker (#1416)

Whois Outages

- RIPE Database Updates Issue
  - From approximately 07:03 to 07:24 UTC on April 12, 2024, RIPE Database updates failed due to a master database **switchover**. RIPE database queries were unaffected.

Whois Features - Statistics

- NWI-14: Extended "mnt-ref:" attribute

  - **192** person / role / mntner / irt objects

- NWI-7: Abuse-c Validation

  - **93K** abuse-c addresses, **27K** to be validated (>1 year)

- Geofeed attribute

  - **19K** geofeed: attribute, **7K** remarks: geofeed

- NONAUTH cleanups

  - **359** deleted, **55K** remaining

- NWI-8: Synchronise LIR Portal users to Default Maintainer

  - **1,764** LIR organisations

Mail Sender Requirements

- How many distinct e-mail addresses are there? 884K

- How many addresses are undeliverable? ~1100

- How many addresses are unsubscribed? ~0

- How was outgoing volume affected by these changes?

  - No significant drop since the change (average of 30K outgoing mail / day)

- Remaining work?

  - Do we need alternative notification methods?

  - Should we re-try sending to undeliverable addresses?

Operational Work

- Client Certificate Authentication

  - Moved service to a separate name: rest-cert.db.ripe.net

  - Documented example

- Server Consolidation

  - Every server is now identical (runs all services) which is easier to maintain

  - Removing old metal servers (in progress) to reduce data centre footprint

  - Containerisation (in progress), easier to test, deploy and operate

RIPE Database Documentation

- Created separate service name for documentation

- https://docs.db.ripe.net/

RDAP

- Implemented RIR Search - Basic Search Features

- Implemented Geofeed draft

- Return "e-mail" in entity responses (daily limit applies)

- Improved README.RDAP.md

    - Added more details on differences with RDAP RFCs and other RIRs

Numbered Work Items

- NWI-4: multi-valued status

    - Implemented new "ALLOCATED-ASSIGNED PA" status

    - Allows LIRs to register a single assignment the same size as the allocation

    - RIPE-822 to be updated separately

- NWI-12: NRTMv4

    - Return 404 instead of 400 on invalid NRTMv4 notification file path

Upcoming Changes

Authentication (Phase Out MD5)

- MD5-PW Authentication is a security risk

  - Risk of leaking MD5 password hashes (either by data breach or a bug)

  - Passwords can be transmitted insecurely (e.g. mailupdates)

  - Passwords are anonymous (the maintainer can be shared)

- More secure authentication methods

  - Client certificate authentication

  - Public key signed updates

  - OAUTH 2.0 Authorisation Code Flow (SSO account)

  - Application passwords (API keys) (SSO account)

- We will publish an impact analysis and ask for your feedback

AGGREGATED-BY-LIR

- Add AGGREGATED-BY-LIR status for IPv4 PA assignments
  - "…option to register contiguous IPv4 PA assignments under a single INETNUM object with the status AGGREGATED-BY-LIR when these assignments have identical purpose and contact details."
  - Accepted policy proposal 2023-04 now ripe-822

- Implementation in progress
  - Similar to status used for IPv6 assignments
  - "assignment-size:" attribute will be optional

- Planning for deployment in late June

RDAP

- Objects with "administrative" status are not returned

- RIR Search: Relation Searches

- Bulk RDAP (<u>Draft</u>)

NWI-12: NRTMv4

- Key rollover

- Signature race condition

- Documentation

- Client implementation

Cleanup Remarks Attributes (cntd)

- <u>ERX Transfer (2002)</u>: remove LEGACY ERX remarks: and/or try to fix the data?

- <u>References by names</u> (2003)

Implement Support For UTF-8

- Phase 1: Add a flag for character set (port 43) - DONE

- Phase 2: Convert the database schema to UTF-8

  - Convert index tables to UTF-8 but RPSL objects are still stored as Latin-1

  - No change in application functionality (port 43, 4444, db dumps)

- Phase 3: Store RPSL objects as UTF-8

  - Both index tables and RPSL objects are UTF-8

  - No change in application functionality

- Future decision by DB-WG to allow non-latin1 characters

  - In which attributes to allow UTF-8 and which characters?

  - Does the default charset change? (port 43, dump files, NRTM etc.)

Warn if RPKI is in conflict with IRR

- 3 different scenarios

  - A route(6) object conflicts with an overlapping RPKI ROA with a **different origin** ASN

  - A route(6) object conflicts with an overlapping RPKI ROA with a **less specific prefix**

  - A route(6) object conflicts with an overlapping RPKI ROA with a **less specific prefix and different origin ASN**

- Implemented for single ROAs

- Overlapping ROAs in progress (next Whois release)

Missing History

- (RIPE84) Approximately 0.3% of existing objects are missing some history (23K / 9M objects)

- Generally only the first (oldest) version is missing (created between 2001 - 2004)

- Affects:
  - Version history queries (internal and external)
  - Whois code and database structure

- Full history in update logs and internal resource registry

Retiring ns.ripe.net

- RIPE NCC are retiring the "ns.ripe.net" service

  - Secondary DNS service for LIRs with a /16 IPv4 allocation or /32 IPv6 allocation

  - Details in a <u>RIPE Labs article</u>

  - Also announced during the DNS WG session yesterday

- Share feedback on DNS WG

Using the Cloud

Using the Cloud

- Cloud Consultation Proposal is Stopped

  - Take RIPE community feedback into account

  - Also negative reaction to SIDN AWS proposal

- We will focus on improving our on-premise environment

  - RIPE database will remain on-premise

- Cloud may be useful in future

  - Ex. NRTMv4 has large daily snapshots (cloud or CDN)

  - Ex. RDAP returns large JSON responses (runs on cloud in APNIC)

Questions ?

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