



**RIPE NCC**

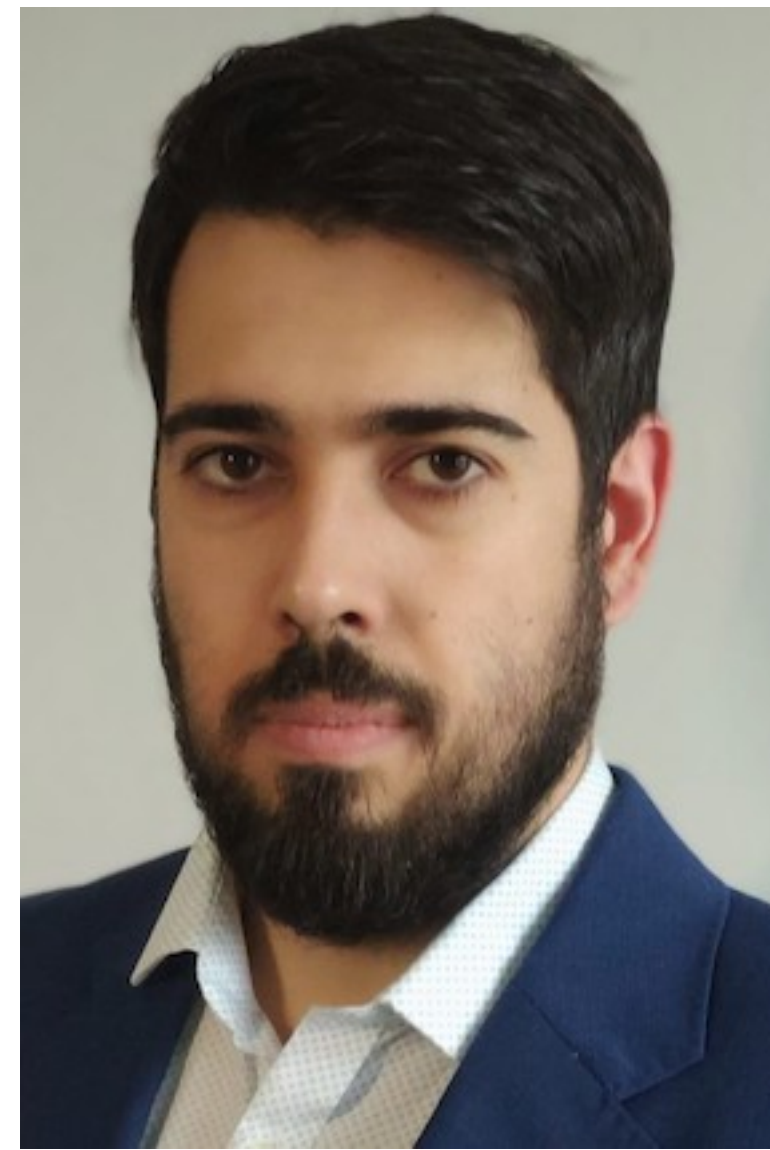
RIPE NETWORK COORDINATION CENTRE

# Operational Update RIPE Database

RIPE NCC Database Team

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# The RIPE NCC Database Team





# **Progress Since RIPE 87**

# Whois Releases



- Whois 1.109.1 (December)
  - Organisation RDAP Object is Assumed to be an IP on Country Attribute (#1362)
- Whois 1.110 (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.)



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

# Whois Releases (cont.)



- Whois 1.112 (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](https://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 (Draft)

# NWI-12: NRTMv4



- Key rollover
- Signature race condition
- Documentation
- Client implementation

# Cleanup Remarks Attributes (cntd)



- ERX Transfer (2002): remove LEGACY ERX remarks: and/or try to fix the data?
- References by names (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 [RIPE Labs article](#)
  - 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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