



RIPE NCC
RIPE NETWORK COORDINATION CENTER

Operational Update RIPE Database

RIPE NCC Database Team

Meet Our Team



**Mahesh
Aggarwal**



**Ivana
Svonja**



**Miguel
Herrán**



**Firdavs
Murodov**



**Edward
Shryane**



Progress since RIPE 89



- Whois 1.115 (January)
 - Added API Key authentication
 - NRTMv4 client
 - Extend Maximum Length of an Email Address to 320 characters (per RFC 5321)
- Whois 1.115.1 (February)
 - Fixed bug parsing API key details
- Whois 1.116 (March)
 - RDAP [rir-search](#) draft RFC “relation searches”
 - Warn if “mbrs-by-ref” on set is changed (can break ASN with “member-of”)
- Whois 1.117 (April)
 - Updated inetnum status hierarchy validation
 - RDAP improvements
 - NRTMv4 improvements

Updated inetnum status hierarchy validation



- We periodically review the inetnum and inet6num “status:” hierarchies
- Validation rule changes to align with [RIPE-826](#) policy text
 - Only one level AGGREGATED-BY-LIR
 - Do not allow LIR-PARTITIONED PA under SUB-ALLOCATED PA
 - Do not allow LIR-PARTITIONED PA under ASSIGNED PA
- Affects a handful of existing objects (follow-up by Registry team)
- Important that the Whois implementation complies with the RIPE policy text!
- Please let us know if you notice an inconsistency (via db-wg or ripe-dbm@ripe.net)



- ["Mailupdates were not applied to the RIPE database"](#) (March)
 - During a MariaDB upgrade, some mail messages were dropped.
 - Replacing command-line *maildrop(1)* script with integrated SMTP handling
- ["Something wrong?"](#) (February, DB-WG)
 - Caused by increase in domain updates with long-running DNS tests
 - Doubled worker pool in Zonemaster backend
 - Make web application read timeout longer than Whois request timeout
 - Wait 10 minutes for Zonemaster test to complete
 - Investigating further improvements
- [Database Primary Switchover](#)
 - We perform monthly database switchovers to patch servers
 - Whois updates unavailable due to planned switchover for 5 minutes on March 12th

Whois Feature Statistics



945 inetnums with "ALLOCATED-ASSIGNED PA" status (NWI-4)
(including 473 out of 12K /24 allocations)



84K abuse-c addresses, 73K to be validated this year (NWI-7 / RIPE-705)



2,036 (10%) LIR Organisations Synchronise LIR Portal users to
Default Maintainer (NWI-8)



48K objects in NONAUTH database (-11% in past year) (NWI-5)



108 inetnums with "AGGREGATED-BY-LIR" status ([RIPE-822](#) was 2023-04)
• "... reduce LIR efforts in registration and maintenance"



5K undeliverable email addresses (was 7K)
• Removed unreferenced emails and soft bounces

Acceptable Use Policy (AUP)




- [Discussion on the DB-WG](#) about the AUP and how the daily limit is implemented
- Changes adopted at [183rd RIPE NCC Executive Board Meeting](#) in March
 - For “IP Address” the clarification was added : *“With regards to the AUP, the RIPE NCC accounts by prefix, the size of which is determined by the RIPE NCC.”*
 - The text *“The number of queries accepted from the temporarily blocked IP address or SSO Account will recover exponentially over time”* was replaced with *“... will recover at the end of the calendar day.”*
 - Removed *“This will allow a slower query rate for some time.”*
 - Added *“At our sole discretion, on a case-by-case basis, we may lift a permanent block of a User from querying the RIPE Database upon request.”*
 - “SSO Account” changed to “RIPE NCC Access Account”
- Updated AUP text published in late April
 - [DIFF](#) available in the documentation repository

Feedback Questionnaire



New banner on query page to measure our performance and gather feedback about the database service.

Would you like to provide feedback to help us improve the RIPE Database?

If you agree, we will show feedback form provided by Typeform. Displaying this content may result in Typform processing your personal data and/or placing cookies on your computer or other device. Further information is available [here](#) .

No, thanks

Give feedback

Currently only shown to logged-in users. Feedback is anonymous.
Scores will be counted and reported. Feedback will be used to improve the service.



- API Keys authentication available since January
 - Login to DB web application with RIPE NCC Access account
 - Click on [API Keys](#) on left-hand menu
 - Create a new Database key
 - List Database keys
 - Revoke keys
- Authenticate RIPE database updates using API keys
 - Linked to a maintainer using an auth: SSO attribute
 - HTTP Basic Authentication or username & password
 - Can only be used in the environment they were created
- Notify RIPE NCC Access account by email before and after key expires
- Documentation
 - [RIPE Labs article](#)
 - [Database documentation](#)
 - [RIPE NCC Academy Microlearning](#)



Upcoming Changes



- We [plan](#) to remove support for MD5 hashed passwords by end of 2025
- Inactive Passwords (Q2)
 - About 17,000 maintainers affected, will process in 4 batches (from next week)
 - About 2,000 of these have no alternative authentication method
 - Improved Forgot Maintainer Password (2/3 automated, aim to reduce load on RS)
- Active Passwords (Q3-Q4)
 - Email maintainers with active passwords immediately after RIPE 90
 - About 2,000 maintainers are actively using password authentication
- Related Changes
 - Q2: TEST, TRAINING, RC web application will no longer ask for a password
 - Q4: Remove password support from mailupdates (only allow PGP or X.509 signing)
 - Q4: Drop HTTP support from syncupdates



Authentication Methods in Use (2025)

	January	February	March	April
Password	38%	42%	37%	36%
PGP	28%	30%	26%	26%
RIPE NCC Access (SSO)	33%	20%	16%	17%
API Key	< 1%	< 1%	< 1%	< 1%
Client Certificate	< 1%	8%	21%	22%

OAuth 2.0 Support



- Integrating support for OAuth 2.0 into Whois



- Completed RIR Search “Relative Search”
- Plan to complete RIR Search “Reverse Search” (separate RFC, extend to ip and asn)
- Bulk RDAP
- Transparency Report progress
 - Internet Routing Registry (IRR) object types not supported by RDAP
 - Investigating with other RIRs how to close gaps between RDAP and Whois
- Administrative Status
 - For lookups of in-region but not allocated space (i.e. “reserved”) then return the [parent IANA allocation](#) with status: “administrative” rather than 404 Not Found.
 - These resources appear as “reserved” in the extended delegated stats.
 - Resolves an [open issue](#) with our RDAP implementation
- You may still get (temporarily) a 404 Not Found for a resource transferred out of region until the delegated stats are updated
 - Whois will check for updated RIR delegated stats hourly (not daily)



- Progress since RIPE 89
 - Whois server implementation is **feature complete**
 - Running in production since late 2023 (with updates from lessons learned)
 - Implemented Whois client
 - Completed Implementation Report for IETF ([draft RFC](#) in last call)
- **Plan to add CDN support**
- Upcoming IRRD 4.5 will add support for NRTMv4
 - Mirroring must be configured manually

Do not apply daily limit to a maintainer's own objects



- A user should not be accounted for their own personal data
- Must be logged in to RIPE NCC Access, or use an API key
 - (you must use an authenticated query so we can identify you)
- Supported by REST API, RDAP and DB query page
- Does **not** apply to port 43 (>90% of all queries)



RIPE Database commitments for 2025 (Section 2.3)

- Remove MD5 hashed passwords from the RIPE Database
- Improve the resilience of the RIPE Database Query and Update service
- Modernise deployment and management of DB applications
- Implement standards and improve compliance
 - RDAP
 - NRTMv4
 - ISO 27001 compliance



RIPE-NONAUTH Proposal

Should the RIPE-NONAUTH Database be Retired?



- The RIPE-NONAUTH database consists of **non-authoritative data**, created in 2018 as part of NWI-5 to separate out-of-region aut-num, as-set, route, route6 objects.
- **No new** objects can be added
- Very few **updates** per year (<100)
- The RIPE-NONAUTH database has **slowly decreased** in size (~57K to 48K now), due to:
 - RIPE-731 NONAUTH Route Object Cleanup
 - NONAUTH route(6) objects using unregistered space cleanup
 - Deleted by maintainer
- Does anyone still depend on RIPE-NONAUTH data?
 - RIPE-NONAUTH objects **are** returned by Whois queries by default (but ~0.006%)
 - daily database dump and split files
 - NRTM source
- ARIN [retired](#) their NONAUTH database in 2022. Is it time to retire RIPE-NONAUTH?



UTF-8 Proposal



Thanks for your Feedback during RIPE 89 Session

- “What do you mean by **UTF-8**?”
- “What do you do by **normalisation**?”
 - “look at is ICANN and the TLD normalisation and the label generation systems.”
- “UTF-8 ... might pose some difficulties in **human interoperability**”
- “**APNIC** is the one that sticks to Latin 1”
 - Latin-1 was the mysql default (same as RIPE NCC implementation)
 - Concern about impact to registry operations
 - Low demand for UTF-8
- “... how difficult it is to actually find out who is running services on the Internet”
 - When you put information into another character set, **can be more difficult**
- “Normalisation is important”
- “maybe we should perhaps **shrink the current options** to not fully support it”

As Mentioned Previously...



- ["Internationalization of Resource Registry" - RIPE 61](#) (November 2010)
- ["Internationalisation of the RIPE Database Content"](#) (April 2012)
- ["Proposal to allow UTF8"](#) (May 2015)
- ["RPSL utf8/whitespace"](#) (July 2015)
- [NWI-11 Internationalised Domain Names](#) (June 2020)
- ["Regarding non-ASCII org-name"](#) (July 2020)
- [Impact Analysis for UTF-8 in the RIPE Database](#) (May 2022)
- [Allow non-ASCII characters in "org-name:", "person:" and "role:" attributes](#) (November 2023)
- ["UTF-8 in the RIPE Database"](#) (October 2024)

Allow UTF-8 in “descr:” and “remarks:” Attributes



- What is a **minimum viable change** that allows for UTF-8 to be introduced?
 - We want to minimise scope and impact
 - Deliver something of value to our users
- Proposal to support UTF-8 **only** in free text attributes
 - Only “descr:” and “remarks:” attributes
 - Allows operators to add localised messages for their region
 - Allows community and RIPE NCC to gain experience with UTF-8
- Names and addresses NOT affected
 - Not intended to internationalise personal data!
 - We do not want impact on RIPE NCC operations
 - We do not expect an impact on database functionality
- Publish **problem statement** to DB-WG and include impact analysis for discussion
- Future work to support other data types (attributes)



Questions & Comments



eshryane@ripe.net



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THANK YOU!