



RIPE NCC
RIPE NETWORK COORDINATION CENTRE

Introduction to DNS Hackathon 2025

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Starting with gratitude



- Big thanks to:
 - Co-hosts: RIPE NCC, NETNOD, DNS-OARC
 - Organising Committee
 - Programme Committee
- ... and of course **ALL OF YOU:
THE PARTICIPANTS!!!**
 - and to your families who are giving you support to prepare, work, have fun, travel & recover :)

- **Organising committee**
 - Johanna Eriksson, Netnod
 - Denesh Bhabuta, DNS-OARC
 - Vesna Manojlovic, RIPE NCC
- **Programme Committee**
 - Arife Vural-Butcher, Freelancer
 - Lars-Johan Liman, NETNOD
 - Samaneh Tajalizadehkhoob, ICANN

What is a Hackathon?



- Hack-a-thon = hacking marathon

hacker: n.

[originally, someone who makes furniture with an axe]

1. A person who enjoys exploring the details of programmable systems and how to stretch their capabilities, as opposed to most users, who prefer to learn only the minimum necessary. RFC1392, the *Internet Users' Glossary*, usefully amplifies this as: A person who delights in having an intimate understanding of the internal workings of a system, computers and computer networks in particular.

- “Ours” are different from the “usual”; we are:
 - Cooperative, collaborative, non-competitive
 - Non-commercial: no monetary rewards
 - Producing & using **FLOSS** (free/libre open source software)



RIPE ATLAS HACKATHON:



**MOST FUN I HAD AT RIPE
SINCE CANALS FROZE**

memes.com



RIPE NCC HACKATHONS



SO SHARING, VERY FUN, WOW

makeameme.org

Previous RIPE NCC Hackathons



- RIPE Atlas DataViz (March 2015, Amsterdam)
- RIPE Atlas Tools for Operators (October 2015, Bucharest)
- RIPE Atlas Interfaces (April 2016, Copenhagen)
- IXP Tools (October 2016, Madrid)
- IXP Tools Code-Sprint (April 2017, Amsterdam)
- DNS Measurements (April 2017, Amsterdam)
- Version6 (November 2017, Copenhagen)
- Network Operators Tools (June 2018, Dublin)
- (first) Quantum Internet Hackathon (October 2018, Amsterdam)
- RPKI Deployathon (March 2019, Amsterdam)
- IoT Hackathon (October 2019, Rotterdam)
- Pan-European Quantum Internet (2019)
- Virtual Hackathon (March - May 2020)
- RIPE Atlas SW Probes Deployathon (2020)
- Quantum Internet Hackathon 2022
- DNS Hackathon (2023, Rotterdam)
 - <https://labs.ripe.net/author/becha/connected-to-port-53-a-report-from-the-dns-hackathon-2023/>
- Green Tech Hackathon (2024, Amsterdam)
 - <https://labs.ripe.net/author/becha/celebrating-green-tech-hackathon-results/>

General Goals for Our Hackathons



- Since 2014:
 - Bringing together network operators, students, researchers, designers, software developers hackers...
 - Combining creative skills
 - Getting feedback about services
 - Contributing useful tools for the community
 - Making new connections
 - Having fun!
- <https://labs.ripe.net/author/becha/hackathons-are-awesome/>
- Aligned with Strategic Goals:
 - *“Support the innovation and evolution of the Internet”*
 - *“Support an open, inclusive & engaged RIPE Community”*
 - *“Be a centre of excellence for data, measurements and tools that provide insight on the Internet and its operations.”*
 - *“Increase adoption of routing security best practices”*

Cooperation, not Competition!



- Showcasing & celebrating **all achievements** at the closing session
- All results will be promoted at next events & at RIPE Labs
- Several projects will be awarded symbolic prizes for:
 - "Most Innovative Solution" / "Best Team Work" / "Most Complete Presentation" / "Potential to Develop Further after the Hackathon" / "Best Song & Dance" ?!

Desired Outcomes



- Not only new software tools!
 - Also: patches / bug fixes for existing tools; “greening”; adding documentation
- Data analysis, research papers, IETF drafts, BCP documents...
- Non-product oriented:
 - Partnerships, Mentoring, Cross-Connections
 - Facilitating access to funding
 - Opportunities for presenting the projects at future events



Hackathon Content

Specific DNS Hackathon Criteria



- <https://labs.ripe.net/author/becha/join-the-dns-hackathon-2025/>
- This time, we will be focusing on these aspects of DNS:
 - Sustainability
 - Privacy vs Performance
 - IoT

Some of the Proposed Projects



- Use Catalog Zones to automate configuration of DNS Secondaries
- Exploring the centralization of web services (hosting), CDNs and DNS
- Implementing a stub resolver with local dnssec validation
- Continue work on extended DNS error codes (EDE), from the DNS hackathon R'dam
- Implementing the rate limiting combination with anomaly detection
- Add DNS-over-HTTP/3 and DNS-over-QUIC to dnsperf
- Improve the performance of the DoHoT project by configuring the tor client
- Interoperability testing of various implementations of the DELEG IETF project

Communication Channels



- Chat Room
 - <https://chat.dns-oarc.net/community/channels/dns-hackathon-2025>
- Document Store:
 - GitHub : <https://github.com/DNS-Hackathon>

Content



Available Data Sources

- RIPE Atlas data
 - <https://atlas.ripe.net/docs/apis/rest-api-manual/>
- RIPE Atlas credits - vouchers
 - To be revealed on Chat & in person
- More?



Hackathon Work Format

Projects Pitches = Numbers Game!



- There is ~42 participants
- There is 10-15 proposed project **ideas**
- Recommended team size is 3-8 people (5-6 on average)
- Recommended number of **chosen projects**: <8
- Each project presentation will be 5 minutes max
 - 8x5minutes ~==~ 42 minutes :)

Team Work



- Form teams of 3-8 people
- Choose interdisciplinary team members / most diverse possible
 - Choose one (or more) spokesperson(s), for the standup& for the final presentation
 - Divide roles: a time-keeper, a coder, a researcher, a documentation writer, an illustrator...
- Practically:
 - Take one of the available desks / rooms
 - Make up a **name** for the team and/or project
 - Make a time-plan for the work on the project; consider available time!
 - Divide the tasks into modules that can be parallelized

Practical Outcomes and Process



- Project / Team Outcome:
 - Presentation-ready “result” by 4PM on Day Two!
 - For your SW project: working prototype (no need to have the beta or alfa release)
- Upload results / slides to GitHub
- Prepare final presentation / demo
 - not longer then 5 minutes!

Presentation : 5 slides, 5 minutes!



- What
 - project name
 - results (document, code, visuals?)
- Why
 - what did you want to achieve / solve
- How
 - what did you learn? what went well?
- Who
 - team members
- Where next?

Best Behaviour



- Cooperation & Team-Work
 - get to know each other; be constructive; cooperate
 - the goal is to contribute, not to compete nor to win

- Code of Conduct (ripe.net/coc)
 - be tolerant & respectful; encourage exchange of ideas
 - do NOT be demeaning, intimidating or harming
 - if you feel hurt or offended, speak to organisers
 - respect wishes for privacy while taking photos (**GDPR!**)

Continuity is Crucial



- Paradox: Most hackathon work is done **outside** hackathons!
 - Results will be published on GitHub, to make it available for the community
 - ... there will be more hackathons & other events (IETF = 3 times/year!)
- In the meantime
 - Join: the mailing list: <https://www.ripe.net/meetings/hackathons/> or forum.ripe.net
 - You can contribute further code improvements on [GitHub](#)
 - You can keep informed on RIPE Labs: labs.ripe.net/hackathons
 - Mastodon: [@ripenncc@mastodon.social](https://mstdn.social/@ripenncc)
- Join us at other events

Next RIPE NCC Events



- SEE-13 meeting, 7-8 April, Sofia : ripe.net/see-13
- [RIPE90.ripe.net](https://ripe.net) , May, Lisbon
- RIPE91, October, Bucharest

- RIPE NCC is supporting newcomers through:
 - Academic Cooperation: ripe.net/raci
 - Fellowship programme: ripe.net/fellowship



Questions

