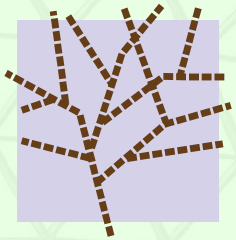


DNS-OARC

ARIN | Community Grant Program

# RPKI origin validation visibility for Check My DNS

Keith Mitchell
DNS-OARC

# OARC's Mission

*The Domain Name System Operations Analysis and Research Center (DNS-OARC) is a non-profit, membership organization that seeks to improve the security, stability, and understanding of the Internet's DNS infrastructure*.*

*DNS-OARC's mission is to:*

- *promote and conduct research with operational relevance through data collection and analysis*
- *offer useful services and tools*
- *build relationships among its community of members*
- *facilitate an environment where information can be shared responsibly*
- *enable knowledge transfer by organizing open workshops*
- *increase public awareness of the DNS's significance*

* including in-addr.arpa !

ARIN Community Grant Program

**OARC's**
**117 Members**

DNS-OARC
Domain Name System Operations Analysis and Research Center

# Software Projects

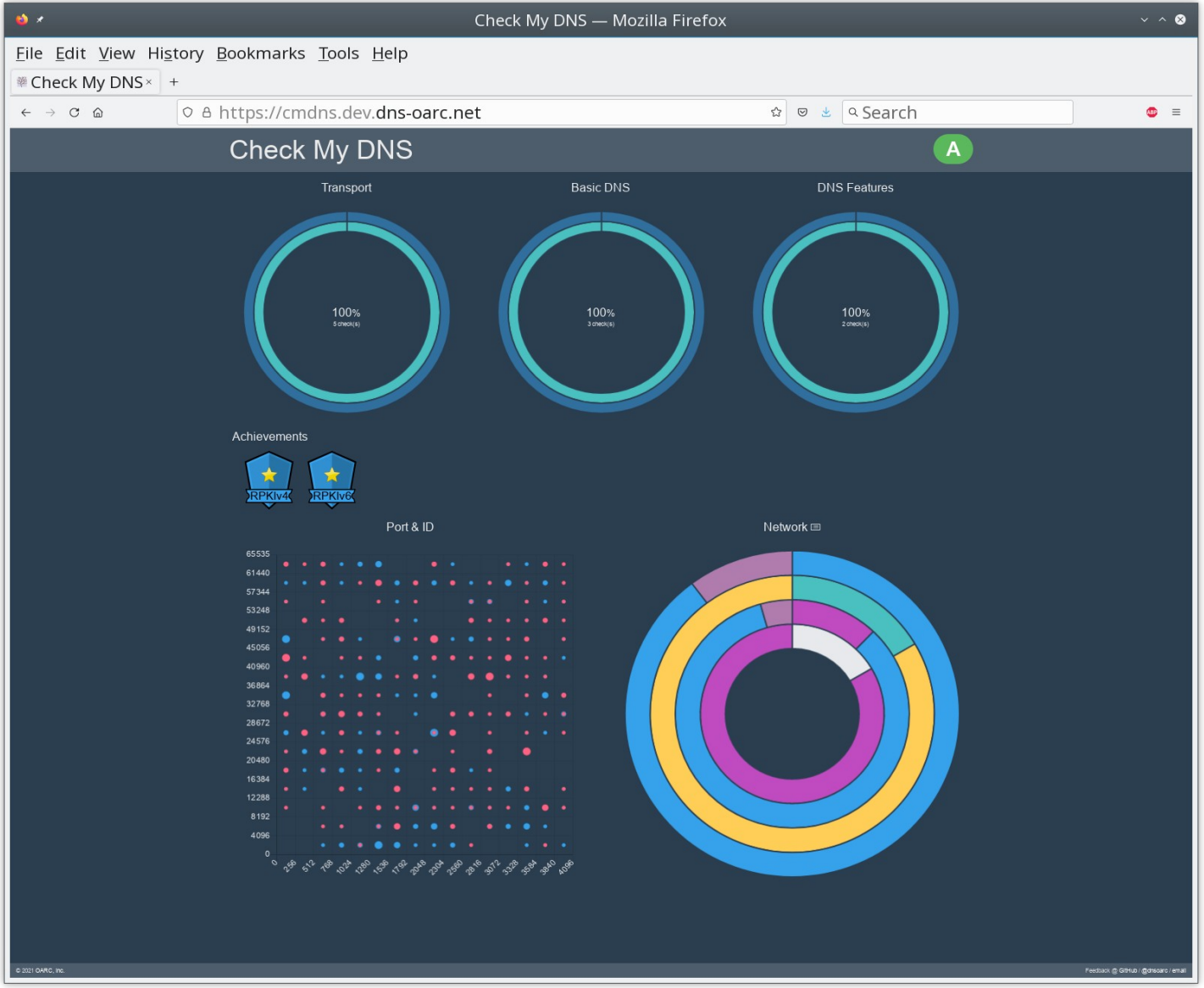
- 2019 ARIN grant funded the development and maintenance of many of our open-source DNS tools
- 2020 ARIN grant funded the development of an RPKI Origin Validation visibility test to our existing “CheckMyDNS” tool
  - allows Internet end-users to verify if the DNS resolver they are using is in IP address space which is RPKI validated
  - https://www.arin.net/resources/manage/rpki/

ARIN Community Grant Program

# Check My DNS

- https://cmdns.dev.dns-oarc.net/
- Framework for many types of test that can be performed between end-user and OARC custom test nameserver
- Run from user's browser, gives graphical summary with drill-down results of various tests
  - e.g. transport support, source port randomization, protocol features
  - "Achievements" badges for RPKI v4 and v6 support

ARIN Community Grant Program


Check My DNS — Mozilla Firefox
File Edit View History Bookmarks Tools Help
Check My DNS
https://cmdns.dev.dns-oarc.net
Search
Check My DNS
A
Transport
100%
5 check(s)
Basic DNS
100%
3 check(s)
DNS Features
100%
2 check(s)
Achievements
RPKIv4
RPKIv6
Port & ID
65535
61440
57344
53248
49152
45056
40960
36864
32768
28672
24576
20480
16384
12288
8192
4096
0
0
256
512
768
1024
1280
1536
1792
2048
2304
2560
2816
3072
3328
3584
3840
4096
Network
© 2021 OARC, Inc.
Feedback @ GitHub | @dnsoarc | email

# Why RPKI Validation ?

- The Internet needs both secure routing and stable DNS to operate robustly
  - RPKI is part of this
- This is where ARIN and OARC's public benefit missions have common cause ☺
- Aim was to make RPKI Origin Validation check as visible as possible in a user-friendly way
  - built on existing command-line prototype
- Raise awareness of value of RPKI, and help with infrastructure testing/diagnosis/debugging

ARIN Community Grant Program

# RoA Beacons

- RPKI tester relies on presence of these to perform validation
- Originally set-up on voluntary basis by Job Snijders while at NTT
- These are now provided by RIPE NCC, thanks to some help from Willem Toorop at NLnet Labs
- It would be great if other (e.g. RIRs) could also operate RoA Beacons

ARIN Community Grant Program

# More Information

https://www.dns-oarc.net/oarc/software

- https://medium.com/@dnsoarc/rpki-origin-validation-for-resolvers-c4463f1cb9a6
- Funding development, licensing policy, links to GitHub project pages and mailing lists
- Contact: Jerry Lundstrom, OARC's Software Engineer, jerry@dns-oarc.net

ARIN Community Grant Program