“Everything you ever wanted to know about caching resolvers but were afraid to ask”

- DnsThought

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Goals

Provide insight into caching resolver's availability and capabilities
A hackathon quality DNS server written in Go

- Get the "exit resolver" A/AAAA (aka whoami)
  $ dig ripe-hackathon.nlnetlabs.nl ANY

- Check that it re-queries over TCP
  $ dig tc.ripe-hackathon.nlnetlabs.nl

- Check that it can lookup an IPv6 only delegated domain
  $ dig ripe-hackathon6.nlnetlabs.nl AAAA

https://github.com/DNS-OARC/ripe-hackathon-dns-caching
Output

- A domain to test DNSSEC validation against
  - $ dig secure.ripe-hackathon2.nlnetlabs.nl A
  - $ dig bogus.ripe-hackathon2.nlnetlabs.nl A
- A domain to test NXDOMAIN hijacking
  - $ dig nxdomain.ripe-hackathon2.nlnetlabs.nl A
Output

• New Atlas measurements:
  – https://atlas.ripe.net/measurements/8310237/ (google 'whoami')
  – https://atlas.ripe.net/measurements/8310245/ (akamai 'whoami')
  – https://atlas.ripe.net/measurements/8310250/ (qname minimisation test)
  – https://atlas.ripe.net/measurements/8310360/ (TCP IPv4 capability)
  – https://atlas.ripe.net/measurements/8310364/ (TCP IPv6 capability)
  – https://atlas.ripe.net/measurements/8310366/ (IPv6 capability)
  – https://atlas.ripe.net/measurements/8311760/ (DNSSEC reference)
  – https://atlas.ripe.net/measurements/8311763/ (DNSSEC bogus)
  – https://atlas.ripe.net/measurements/8311777/ (NXDOMAIN hijacking)
Output

- Awesome bug-free code to crunch all the data
  - Using measurement and streaming APIs
  - Merged all the different measurement sources
  - Extract information about the last N hours of availability of the local DNS resolvers
  - Create a Top 20 resolver list
  - Produce JSON to feed to other tool

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Output

- Atlas Feature Requests
  i.e. Generate work for RIPE NCC
  - Get ripe atlas anchors to do a whoami.akamai.net type service
  - Ability to set QR bit / EDNS1 / EDNS2
  - Are probe resolvers statically configured or not?
  ...
  ...
A DASHBOARD TO SHOW IT ALL!

-“Who said 'demo time'?"