Results from project DNS

IETF 115
5-6 November 2022
London, United Kingdom

DNS Error Reporting

- draft-ietf-dnsop-dns-error-reporting
- Builds upon Extended DNS Errors [RFC8914], but reports to operator instead of querier
  - Authoritative sends *report receiving agent* in EDNS0 option
  - Resolver sends errors to *report receiving agent* formatted as DNS query

DNS Error Reporting

- Provided feedback & suggestions to Roy Arends (draft author) for version -04
  - Reporting query QTYPE is now TXT (was NULL).
  - Moved error code to the label after the broken QNAME, so it is in a consistent place.
  - Mnemonic for the option DRC
  - No more “wildcard” language.
  - Better language overall.

DNS Error Reporting

- Implementation in Unbound - Willem Toorop
- In github on the *features/error-reporting-poc* branch
  - https://github.com/NLnetLabs/unbound/tree/features/error-reporting-poc
- Public (open) “testing” resolver at:
  - 185.49.141.28
  - 2a04:b900:0:100::28
- Authoritative side in eBPF:
  https://github.com/NLnetLabs/XDPeriments/tree/master/opt-extend

DNS Error Reporting

- Implementation in Drink – Stéphane Bortzmeyer
  Drink is an authoritative server. Great for experimentations.
  https://framagit.org/bortzmeyer/drink/

Both the EDNS signaling and the report processing.

DNS Error Reporting

- Implementation in Trex  – Shane Kerr
  - NS1's proprietary authoritative server.
- Straightforward on authoritative side.
- Configure unique report receiving agent per server.

DNS Error Reporting

- Mark Andrews submitted ticket for BIND9
- https://gitlab.isc.org/isc-projects/bind9/-/issues/3659

Net::DNS::Resolver::Unbound

- Dick Franks and Willem Toorop
- Extends Net::DNS to use libunbound
- ub_send() and ub_send_async() for libunbound
- send and receive raw packets with libunbound

Encrypted Client Hello

- Implementation in Connect by Name – Philip Homburg
- Setup sessions Async, Happy Eyeballs, DANE, etc.
- Do SVCB and HTTPS and use the ech= parameter to setup connection to:
  - defol.io

What we learned

- We had a really good time
- The food was **amazing!!!**
- DNS Error reporting Rocks!

Wrap Up

Team members:

- Willem Toorop
- Dick Franks
- Roy Arends
- Shane Kerr
- Stéphane Bortzmeyer
- Philip Homburg
- Mark Andrews