Hackathon results & DNS Error Reporting

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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
DNS Error Reporting

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

- Provided feedback & suggestions for version -04:
  - Reporting QTYPE is TXT (was NULL).
  - resolver must indicate support (was unsolicited EDNS0 option in response). Avoids sending error reports about error reports.
  - Moved error code to the label after the broken QNAME, so it is in a consistent place.
DNS Error Reporting

• Implementation in Unbound - Willem Toorop
• In github on the `features/error-reporting-poc` branch
• 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](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

- Tom Carpay updated develop-branch of ldns
- ldns-tesns can now easily be used to fake an Error reporting-supporting authoritative server.
DNS Error Reporting

Authors will request the Working Group chairs to consider a WG last call (on the mailing list) after version -04 is published.

Questions & suggestions
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