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
• Tom Carpay
DNS Error Reporting

• [draft-ietf-dnsop-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
  – 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](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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