Measuring CNAME + DNAME

IETF103 Hackathon project results

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Measuring CNAME + DNAME

• draft-sury-dnsop-cname-plus-dname

• second level domains aliases:
  กรุงเทพมหานคร.th → bangkok.th
  www.กรุงเทพมหานคร.th → www.bangkok.th
Measuring CNAME + DNAME

• Previously used `cname-plus-dname.rocks` completely broken with google now

• `delegation.cdname2.nlnetlabs.nl 3600 CNAME (insecure.nlnetlabs.nl)`
  `delegation.cdname2.nlnetlabs.nl 3600 DNAME (insecure.nlnetlabs.nl)`

• To test for impact of caching:
  – Query first CNAME (apex) then DNAME (www.)
  – Query first DNAME (www.) then CNAME (apex)
CNAME + DNAME – Results

Worst case

CNAME Query

DNAME Query

17009 resolvers on 9577 probes

17020 resolvers on 9572 probes
CNAME + DNAME – Results

Happy path

DNAME Query

17008 resolvers on 9572 probes

99.55% 0.45%

99.89% 0.11%

CNAME Query

16973 resolvers on 9551 probes

99.68% 0.32%

99.82% 0.18%
CNAME + DNAME - Results

- Worst case 2.31% SERVFAILs
  
  1.56% of Atlas probes cannot do it

- No resolvers need to be updated

- Only authoritatives at TLDs need to support it
  
  (NSD already does as slave)

- Incrementally deployable (at TLDs) solution that works right now