

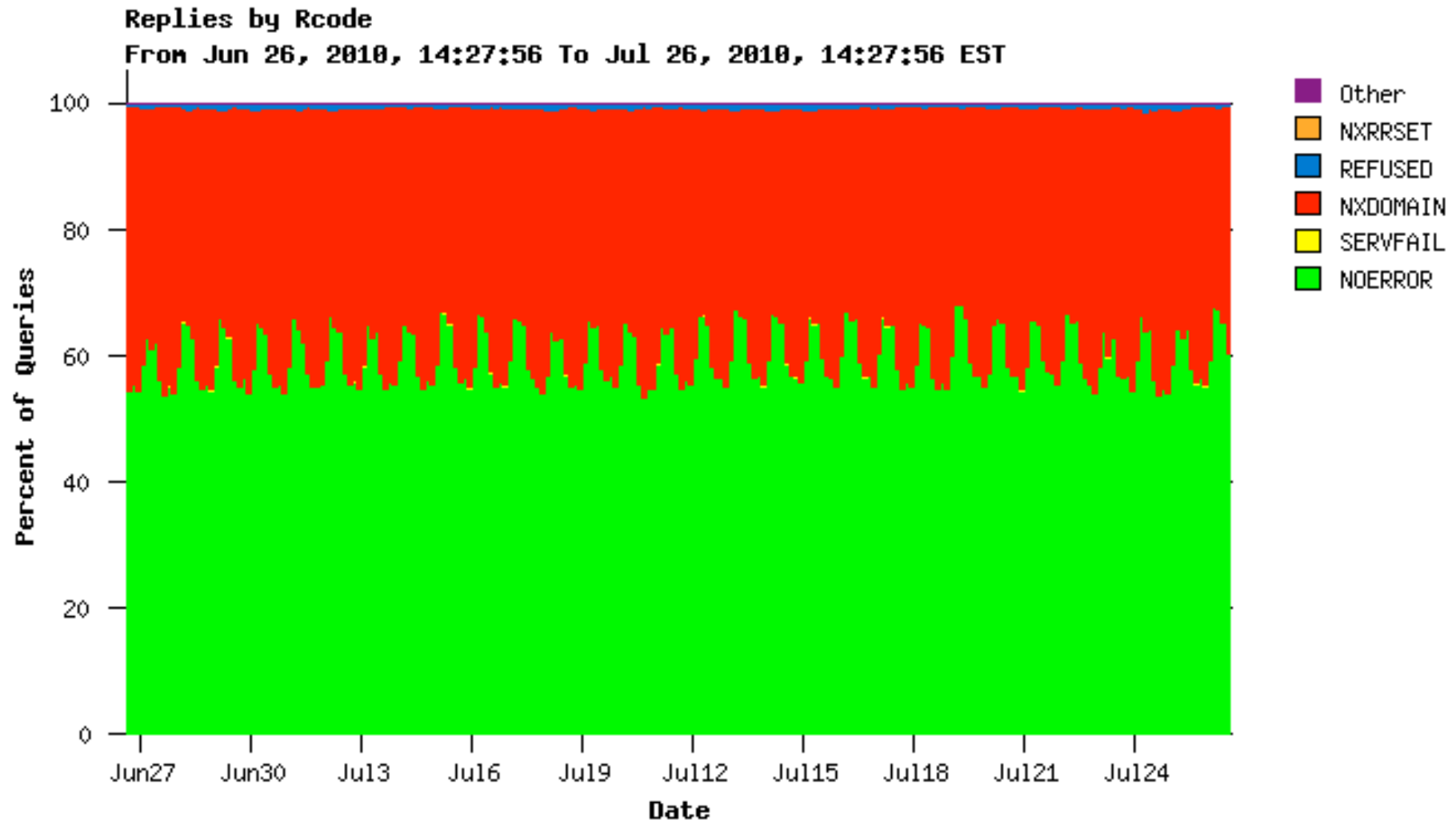
DNSSEC means more traffic

APNIC deployed DNSSEC in 2010

- March/April timeframe
- 1 week deployment over our in-addr and ip6 reverse zones
- Secure64 platform for key management/signing
- Monitored via dnscap, DSC

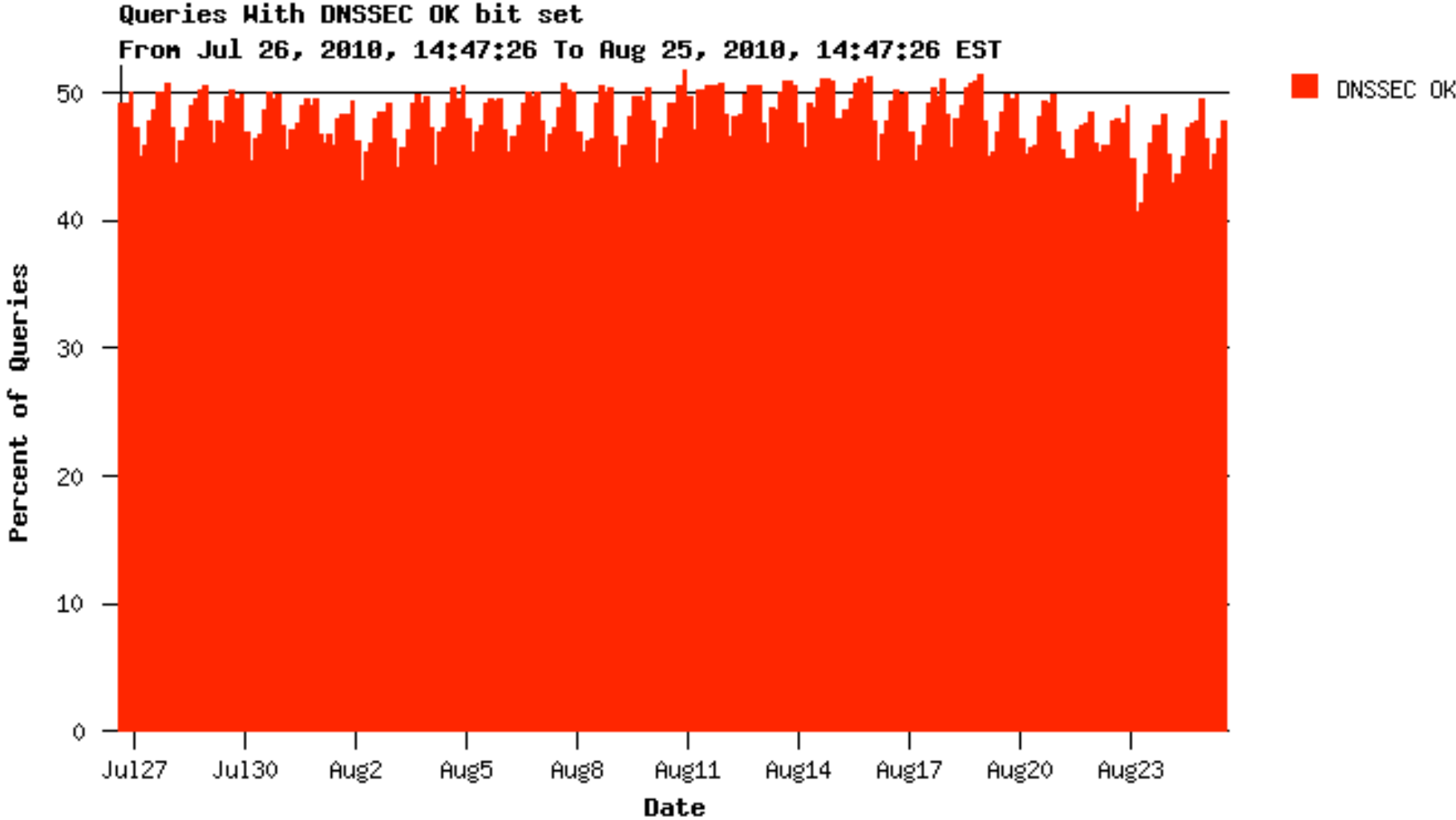
NXDOMAIN at 40%

NXDOMAIN at 40%



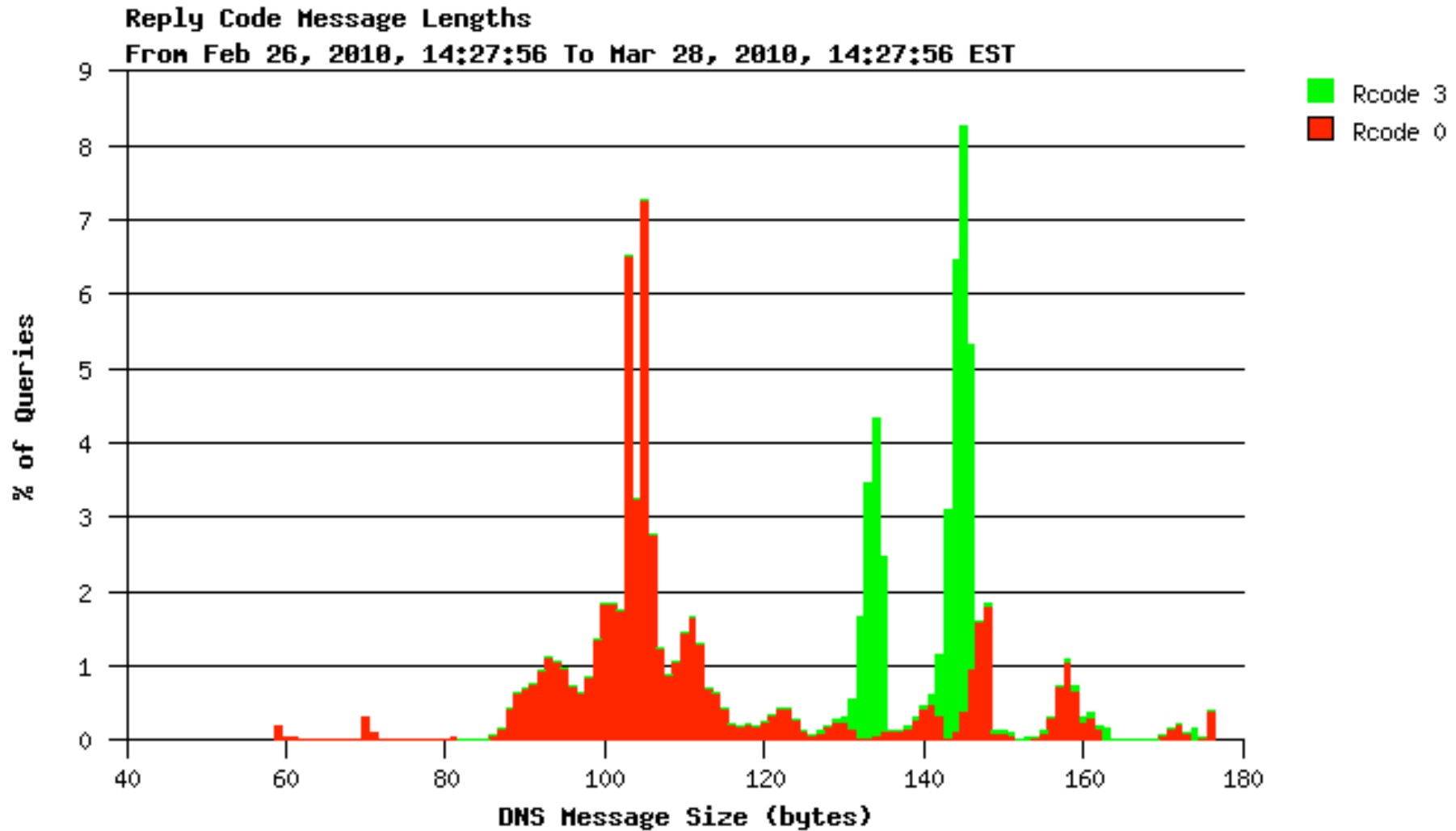
DO bit at 40%

DO bit at 40-50%



Reply Size pre-DNSSEC

Reply Size pre-DNSSEC



Short responses

- RCODE 0 (ok)
- RCODE 3 (nxdomain)
 - Pretty much the same size
 - 40 byte difference in the peak size

Reply Size post-DNSSEC

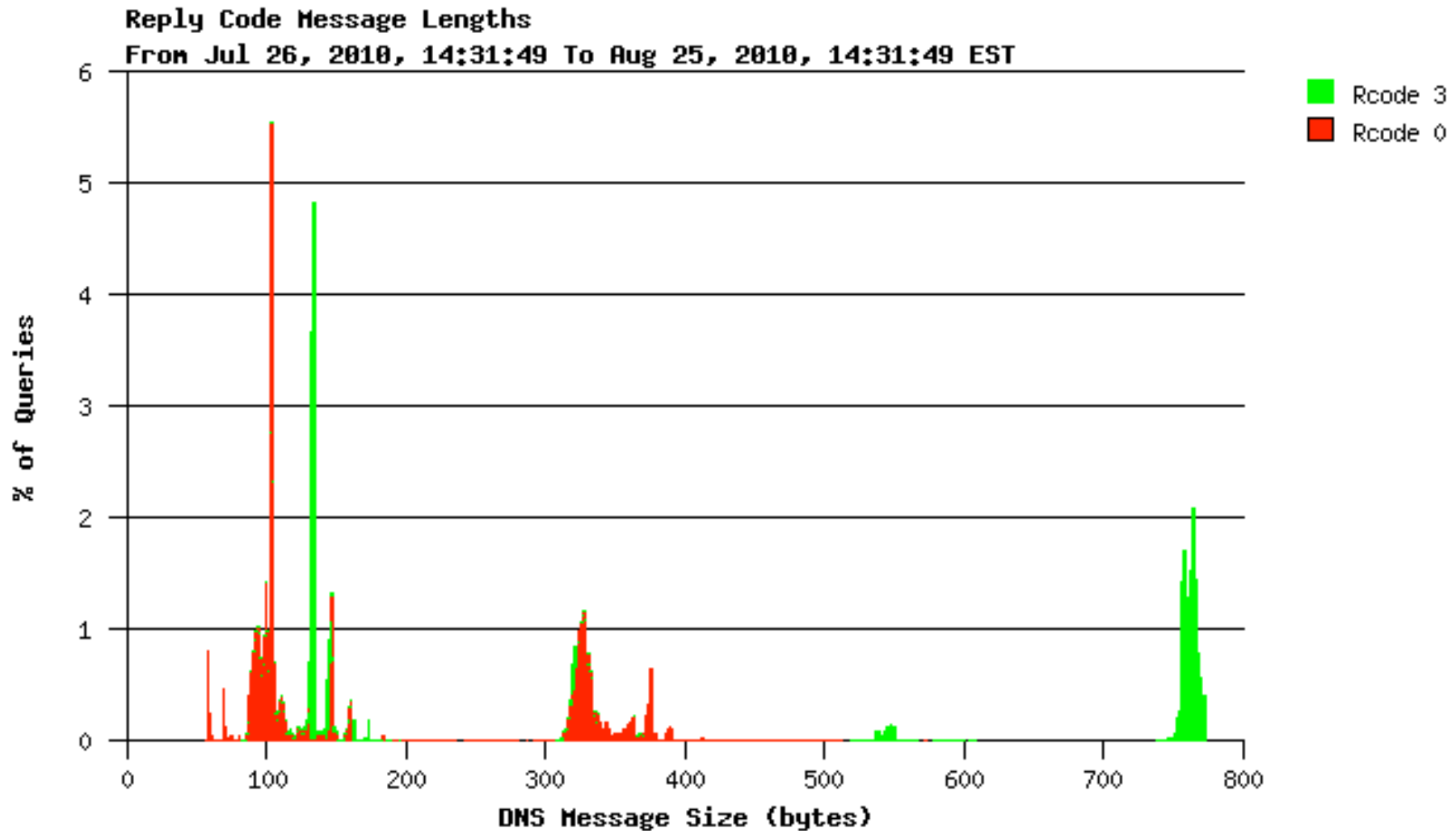
Reply Size post-DNSSEC

- Remember all those DO bit set..

Reply Size post-DNSSEC

- Remember all those DO bit set..
- They need DS/RRSIG data
 - Which is extra payload in the answer

Reply Size post-DNSSEC



Range of response sizes

- Still 40 byte diff for most OK/NXDOMAIN
- Some OK responses now 300-400 bytes
- Some NXDOMAIN responses now ~ 800 bytes
 - NXDOMAIN needs “extra” extra data.
- Outcome: 2-3x bandwidth outbound, same query rate
 - Additional section acquires RRSIG/NXT/DS
 - NXDOMAIN needs more of this additional hence bigger

PLAN AHEAD

- Make sure your link monitoring is active across the DNSSEC deployment for your zone
- Make sure you have 2-3x headroom outbound
- Check your NXDOMAIN frequency
- Check server config
 - (we had additional data, dnssec glue, adding to it)
- Tools:
 - DSC: <http://dns.measurement-factory.com/tools/dsc/>
 - DNSCAP: <https://www.dns-oarc.net/tools/dnscap>