DANE Roadblock Avoidance

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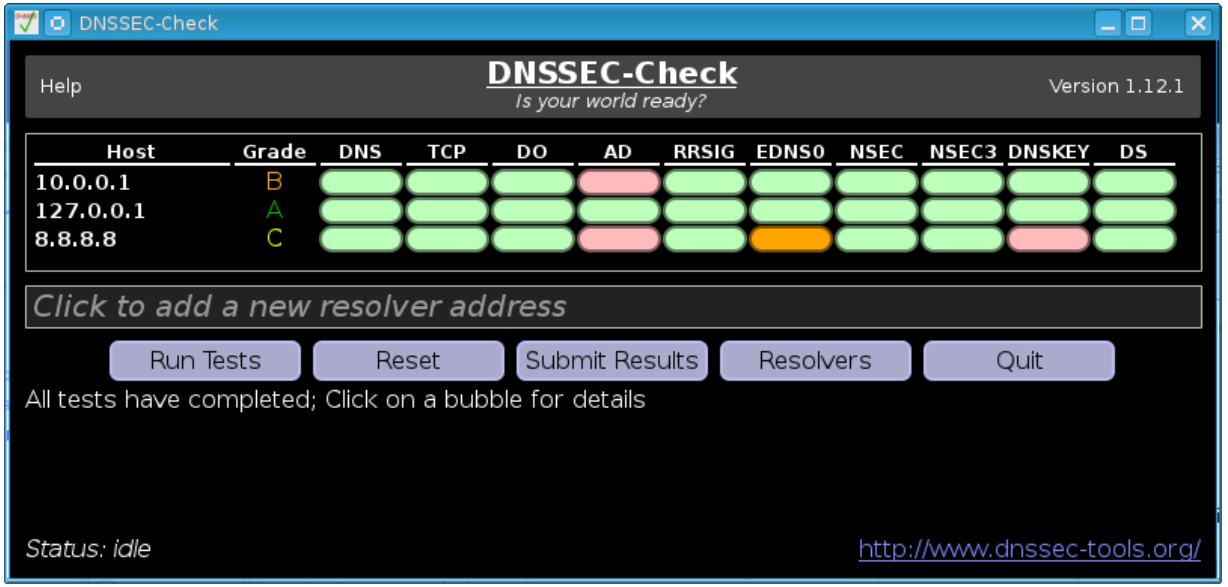
Motivation

- DNSSEC Validation is not always possible
  - Network links cause problems
    - (size constraints, filtering, etc)
  - Middle boxes
  - Upstream resolvers that aren't DNSSEC aware
  - Time synchronization issues
  - Changes to Trust Anchors
- How does a DNSSEC Validator:
  - Check if it can validate?
  - Work around problems it finds

Purpose of this draft: Testing

- Define a set of tests
  - Test neighboring resolvers for DNSSEC awareness
  - Test network infrastructure for DNSSEC usability
- Aggregate these results into “support levels”
  - Not DNSSEC capable
  - DNSSEC Aware
  - Validator



Purpose of this draft: Options

- Define “work around options”
  - What to do when a resolver isn't DNSSEC-aware
  - What to when middle boxes are in the way
  - etc

Next Steps

- Continue gathering material
  - From libraries
  - From network Managers
  - From Applications
  - etc
- Publish within DNSOP?
  - Useful
  - BCP/Informational?

Questions?

Extra Slides

- (if time permits or for downloaders)

Experience: In-library Intelligence

- Libval and libunbound:
  - Try to do intelligent fallbacks
  - Have policies to help distinguish minimum requirements

Experience: Network Managers

DNSSEC Trigger

- This is a host validator that attempts to use network configured resolvers for resolution
  - Performs number of checks and falls back on
    - Full recursion if possible
    - DNS over HTTP or
    - DNS over HTTPS
- DNSSEC validation does not work all the time, what should it do?
  - FAIL all queries, Silently disable DNSSEC, ask User?

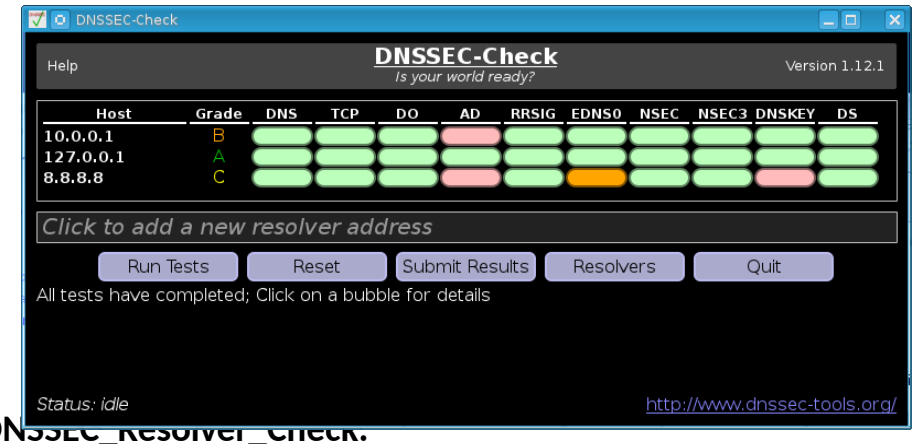
Experience: Unbound on home router

- If resolver is configured to start in validator mode, box will not work
  - Router has no battery backup for clock, time at boot is 1970/jan/1
  - NTP needs DNS to work
  - Signatures are wrong until NTP succeeds
- Resolvers SHOULD check before enabling DNSSEC validation

Experience: Testers

Testers that assess upstream resolvers

- **DNSSEC-check:** http://www.dnssec-tools.org/download/



- **DNSSEC_Resolver_Check:**
  - **https://github.com/ogud/DNSSEC-resolver-check**
  - <pic>

Contents:

- Aggregations can be augmented by a extra information:
  - Partial and add one or more failures to it
  - NSEC3, NoBig, SlowBig, TCP, DNAME, Unknown, Permissive
    - Example: Partial Validator[DNAME]