Developing a Testbed For Interactions Between Resolvers and the Root

Paul Hoffman
DNS-OARC 30, Bangkok
Overview

• Genesis of this testbed
• What it can test
• Open development
RSSAC asked the Caucus

- Studying Modern Resolver Behaviours Work Party
- WP information [here](#)
- Analyze DNS resolver and authoritative server code bases and perform (ideally repeatable) simulations to further extract a model of how modern resolvers implement caching and priming of the root name servers.
Testbed overview

• Under active development
• Done as VMs running under VirtualBox in order to make it easy for others to set up
  – Tested resolvers running on one VM (but later will be able to test resolvers not running in a VM)
  – Gateway in another VM (to capture pcaps)
  – Bespoke root server running in another VM (to allow tests such as changing latency, DNSKEY sizes, and so on)
Tests

- First tests aimed at priming repriming (based on a very short TTL for the root SOA and NS and DNSKEY)
- Other tests to follow soon
  - Would love to see others run their own tests
  - Ideas desired
Development

• [https://github.com/icann/resolver-testbed](https://github.com/icann/resolver-testbed)
• Has a technical plan and setup guide
• Initiated by the RSSAC Caucus, but being developed for the long term
  – You don’t have to be in the Caucus to contribute to the testbed