DNS delegation verification tool

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DNS validation tool

• It is a DNS validation tool and it reports on errors in delegation.
• It can also test planned delegation before it is delegated (pre-delegation test).
• All Zonemaster tests are based on DNS standards and DNS best current practice.
• It comes with a complete web GUI and CLI.
Zonemaster roots

• Project started in October 2013.
• Joint effort of IIS and AFNIC.
• Zonemaster replaces the IIS DNSCheck and the AFNIC Zonecheck.
• It is stable and publicly released in February 2015.
Zonemaster in brief

• Open source program written in Perl (+javascript) and open documentation.
• Multiple tests are run on tested domain.
• Provides FAIL/WARNING/NOTE/OK output.
• Outputs in English, French, Swedish and other translations are welcome.
Open requirements and specifications

• A Centr WG has created common requirements on DNS delegations based on input from the Zonemaster work.
• An Internet draft of the Centr work is available.
• Is based on documented test specifications that are publically available.
• What Zonemaster does is not hidden in the code.
Categories

• The 60 tests specifications are split into categories:
  – Basic
  – Address
  – Connectivity
  – Consistency
  – Delegation
  – DNSSEC
  – Name Server
  – Syntax
  – Zone

• Any error, warning or informational message will point back to the specification that it came from.
Program architecture

- Zonemaster consists of building blocks with clear APIs.
- The engine performs all tests.
- The CLI is for command line usage.
- The backend handles the queries from the frontend.
- The frontend is the interface to the web user.
Zonemaster Engine

• The engine is a Perl module found at CPAN.
• All translation to other languages is done in the engine. The CLI and backend select available languages via API.
• The modular structure makes it fairly easy to add new tests.
• The engine can be used in your own program.
Zonemaster Backend

• The backend handles the queries that comes from the web user via the frontend.
• It is a service (daemon) that accepts queries and send them to the engine.
• The backend has a database that stores the completed queries and they can be retrieved by the frontend.
• The API to the frontend uses JSON over HTTP.
• The backend can be called by your own application.
Zonemaster Frontend

- The frontend is the web GUI for the users.
- The frontend is a service (daemon).
- The frontend can run on a different server from the backend.
- The frontend can be viewed and tested at zonemaster.net.
- You can modify your own installation of the GUI for your own look-and-feel.
Configurable

• The test profile can be adapted to your requirements by disabling tests.
• The test policy can be adapted to your requirements by increasing or decreasing the severity of a deviation.
• A filter feature from next release adds a fine-grained control of the policy per name server.
Installations and the future

• CIRA has an installation for .ca.
• IIS works on an installation for .se and .nu.
• RIPE NCC works on an installation.
• More installations to come.
• IIS and AFNIC are dedicated to support Zonemaster.
• Users and contributors are welcome!
References

- Try out Zonemaster at https://zonemaster.net/
- Everything is found at https://github.com/dotse/zonemaster/
- Test specifications: https://github.com/dotse/zonemaster/tree/master/docs/specifications/tests
• Questions and comments?