



ZONEMASTER

by **IIS** and *afnic*

DNS delegation verification tool

Mats Dufberg
IIS

Sandoche Balakrichenan
AFNIC

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

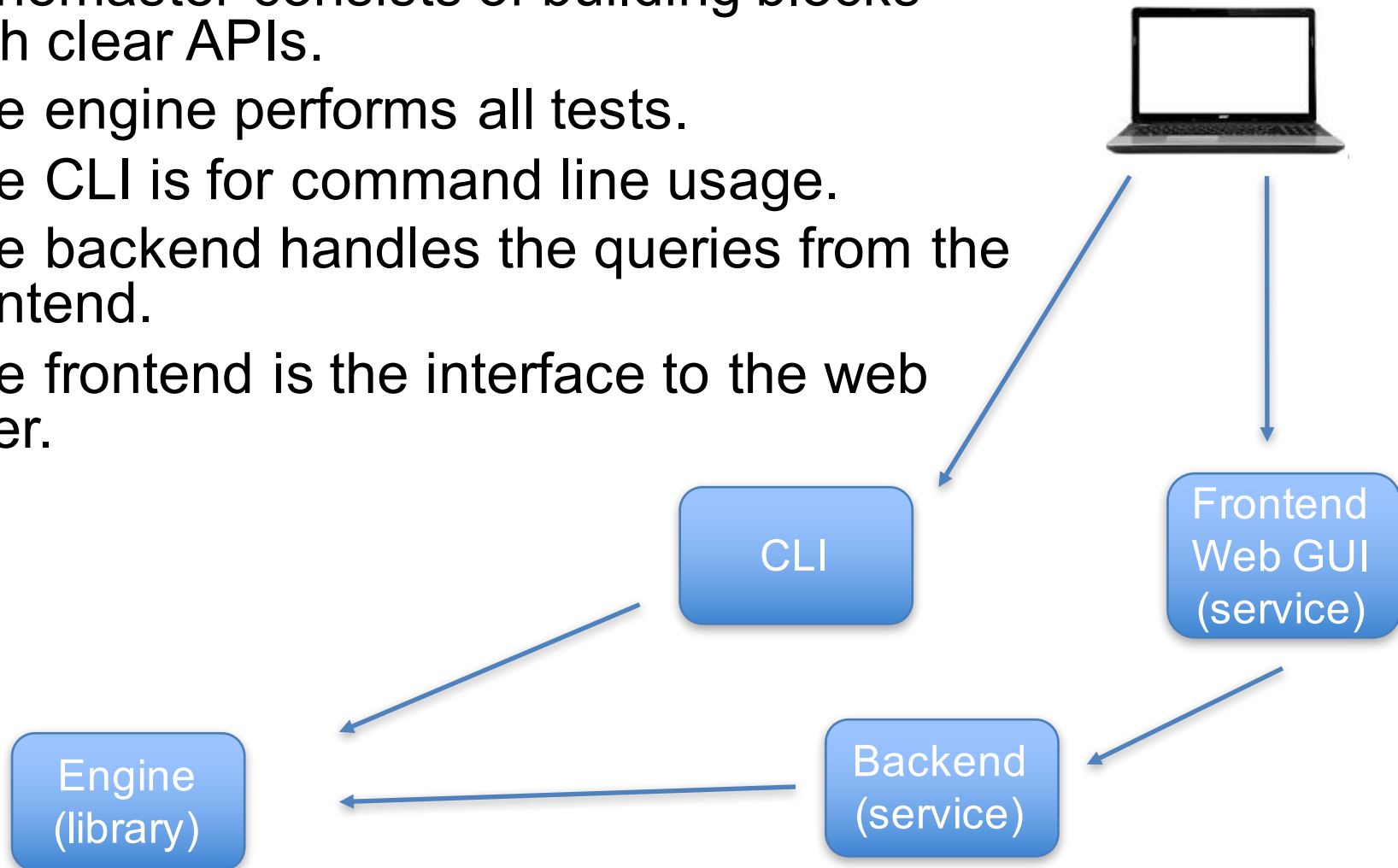
- A Centr WG has created common requirements on DNS delegations based on input from the Zonemaster work.
- An Internet draft of the Centr work is available.
- Is based on documented test specifications that are publically available.
- What Zonemaster does is not hidden in the code.

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/>
- Draft: <https://tools.ietf.org/html/draft-wallstrom-dnsop-dns-delegation-requirements-00>
- Test specifications: <https://github.com/dotse/zonemaster/tree/master/docs/specifications/tests>

- Questions and comments?