DNS Delegation Requirements

draft-wallstrom-dnsop-dns-delegation-requirements

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Background (Legacy tools)

• Former tools that reach their limits.
• Zonecheck
  – AFNIC (French domain name registry: .fr, .re,..., .paris, .bzh, ...)
  – Legacy code
  – Is no longer supported by AFNIC
• DNSCheck
  – IIS (Swedish domain name registry: .si, .nu)
  – Does not provide deterministic results
• Both AFNIC and IIS wanted a new better tool to check delegations
Background (Zonemaster roots)

• Zonemaster
  – Aim to create a state-of-the-art checking tool for internet domain names.
  – Project started in october 2013.
  – Joint IIS/AFNIC-labs Team (requirements, specs, implementation, ...).
  – First release in december 2014.
  – Stable and publicly announced released in february 2015.
  – CENTR « Tests Requirements Task Force » (TRTF) created just after the first release.
Background (Zonemaster in 1 slide)

- **Opensource** ([GitHub](https://github.com/dotse/zonemaster)) project written in **Perl** (+javascript)
- Can check delegated and undelegated zones
- Process hundreds of tests
- Provides **CLI/Web/API** interfaces
  - Can be used by non technicians on our website (WEB)
  - Can be used on local servers by technicians (CLI)
  - Can be used and integrated in your own systems (API)
- Provides High/medium/low levels of output
  - Web/Text output/JSON output
- Outputs in **English, French, Swedish**
- Can be tailored for your needs
- But also provide a public interface: [https://zonemaster.net/](https://zonemaster.net/)
- **IS BASED ON COMMON/DISCUSSED/PUBLIC/DOCUMENTED TEST SPECIFICATIONS**
  - [https://github.com/dotse/zonemaster/tree/master/docs/specifications/tests](https://github.com/dotse/zonemaster/tree/master/docs/specifications/tests)
Background (IANA Requirements)

• IANA Technical requirements for authoritative name servers.
  – Set of conformance criteria evaluated by ICANN for changes to delegations in IANA managed zones.
  – Check NS reachability, DNSKEY/DS matching...
  – Reference many DNS RFCs
  – [https://www.iana.org/help/nameserver-requirements](https://www.iana.org/help/nameserver-requirements)

• Processing time, in case of issue in delegation configuration, can be long.
  – It might be better to check conformance before sending a change request to IANA.
Background (ICANN PDT)

• IIS, new gTLD Pre-Delegation Testing (PDT) Service Provider for ICANN.
  – PDT addresses **DNS**, Whois, EPP, IDN, Data Escrow, Documentation.

• Self-Test Tools
  – For DNS, DNScheck is the reference

• If PDT fails, gTLD is not delegated to applicant.
The draft

• Zonemaster requirements -> TRTF -> draft-wallstrom-dnsop-dns-delegation-requirements-00.txt (february 2016)
• First intention was « informative document » about operational considerations.
• Purposes :
  – Requirements to set up a fully functional DNS delegation for a domain name.
  – Create a set of test specifications for how to test a DNS delegation.
• Reach consensus on:
  – Organization of the document.
  – Categories of requirements (remove/add ?).
  – RFC level of compliance (rephrase requirements as many as necessary).
The draft (organization of document)

• 8 categories
  – Basic
    • Valid domain name, working parent domain, ...
  – Address
    • Globally routable NS address, ...
  – Connectivity
    • TCP/UDP, port 53.
  – Consistency
    • SOA RR content, NS RRset, ...
The draft (organization of document)

• 8 categories
  – Delegation
    • Name servers (redundancy, localisation, reachability, …)
    • Referal size, authoritativity of all name servers, …
  – DNSSEC
    • DS/DNSKEY validity checks
    • Chain of trust must be valid,
    • RRSIG validity period, …
  – Name Server
    • Missing in this revision, will be added in -01
  – Syntax
    • Domain name, name servers
    • SOA content
The draft (enhancements)

• Add new requirements
  – About TTL values?
• Soften language
  – Limit MUST/SHOULD usage
• Controversal requirements
  – Domain names vs host names
  – Way to check networks/Asns...
The draft

• Adoption?
  – Best as informational document?
  – Would dnsop work on this to get it to a BCP? (as suggested in ML)

• Please, read the draft and send comments/remarks/issues on ML or on our issue tracker:
  https://github.com/CENTRccTLDs/TRTF/issues