



DNS Root Server Governance

What's going on?

Root Server Overview

- The DNS root servers serve data from the root zone (".").
 - Delegations of all top-level domains (TLDs).
- The root zone is administered by the Root Zone Administrator (PTI, the IANA Functions Operator) under policies set by ICANN.
- The root is the entry point to the DNS database.
 - The root servers refer clients to the servers for the TLD zones – both ccTLDs and gTLDs, without distinction.
 - They constitute a vital part of the Internet's infrastructure.
 - They are operated by 12 organizations that are separate from each other and from any common governing body.

Netnod's Root Service

- Organisation: small, efficient, and flexible.
- Owned by a foundation targeted at doing "good for the Internet".
- Site = single machine with virtual clusters of servers:
 - Root service (non-commercial service)
 - TLD service (commercial service, ~80 TLDs, all sizes)
 - Reseller Enterprise service (commercial service)
- The commercial services pay for part of the root service.
 - Win-win: they all need the root in order to function.

We operate from ~75 locations worldwide.



Root Server Governance Today

- The root server operators (RSOs) are independent and equal.
- The RSOs cooperate *very* closely on technical matters.
- The RSOs are very well synchronized with each other and with the Root Zone Administrator (IANA) and the Root Zone Maintainer (Verisign).
 - They all firmly agree that IANA is the single and true source of the root zone.
 - They all publish the root zone *exactly* as received from Verisign. DNSSEC enables validation of the data.
- No single entity has authority over all the RSOs.

RSSAC And Its Role

- The Root Server System Advisory Committee (RSSAC) is an advisory committee to the ICANN Board of Directors, and to the Internet in general. It only gives advice.
- RSSAC is one of the original parts of ICANN (est. 1999).
- RSSAC has 12 voting members (RSOs), 12 alternates, and a number of liaisons outgoing and incoming.
- RSSAC Caucus: assisting subject matter experts.

Initiating Improvements

- RSSAC saw the need for a new governance model for the root server system (RSS).
- Series of workshops over several years.
- RSSAC 037: A Proposed Governance Model for the RSS.
- RSSAC 038: Advisory to the ICANN Board to create a cross-community WG to find a final model.

RSSAC 037 – Inventory of the Problem

- *Principles* of operation
 - Also: isolated into RSSAC 055: with comments.
- Identifies *stakeholders* and relationships.
- Identifies "*necessary functions*".
 - To be defined and populated at a later stage.
- → Strawman proposal.
- Scenarios.

RSSGWG (GWG)

- The Root Server System Governance Working Group (RSSGWG) was established late in 2019, with individual members appointed by:
 - The RSOs (3 ppl),
 - The IAB/IETF (2 ppl),
 - The ICANN community (ccNSO, RySG, SSAC) (5 ppl).
- Started to develop a "final plan".
- The rest of the RSOs had some concerns about the direction of the work.

Success Criteria

- The RSOs (not RSSAC!) developed and agreed on a set of "success criteria"
 - Checks and balances that will help the GWG to assess the output of their work, to make it acceptable to the RSOs.
- Guidelines – not a definitive "yes and no" list.
- Published as RSSAC 058.
- RSSAC 059: advice to the board to send 058 to the GWG as input, and to reconstitute the GWG to take in all RSOs.

Restarting GWG

- The GWG was in hiatus waiting for the RSOs to develop the success criteria.
- Once the criteria were published, the GWG went back to work, taking the success criteria into consideration.
 - Now the document was public.
- In parallel, the BoD processed the advice from RSSAC.

GWG Right Now

- ICANN's Board has instructed the GWG to do two things:
 - Accept RSSAC 058 as guiding input.
 - Repopulate the WG by allowing every RSO to appoint one member
→ 9 new members just appointed.
- Rotation of members:
 - No conflicts, just general changing of the guards after 2 years.
 - The current chair is stepping down due to time constraints.
 - New members appointed by
 - the ccNSO (1), and
 - soon by the IAB (1).

GWG Right Now

- Status report and new time schedule delivered to the ICANN Board.
- New decision-making requirement.
 - Full consensus.
- Nominations for new chair are due this week.
- Election of new chair will happen next week.

GWG Going Forward

- Restart work. Look at:
 - Existing proposal,
 - Alternative proposals, and
 - Compare proposals with the success criteria and evaluate.
- Choose path forward.
- Develop final proposal.
- Submit final proposal in March 2023.
- Close WG.

Hosting Requirements

- 1U of rack space (single server).
- Power/cooling.
- 3 links
 - 1x connection to a local IX (or a large ISP).
 - 2x stable internet links for maintenance and data feed.
- IP addresses for the links.
- Reliable and long-term staff.
- Able to act as "importer of record" (customs term).

<https://www.netnod.se/host-an-i-root>

Links To More Information

- Netnod's Root Service
<https://www.netnod.se/i-root/i.root-servers.net/>
- Netnod's TLD Service
<https://www.netnod.se/dns/dnsnode-for-tlds/>
- RSSAC Documents
<https://www.icann.org/groups/rssac/documents>
- Root Server Operators in general
<https://root-servers.org/>



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