

RSSAC025: RSSAC October 2016 Workshop Report

4 November 2016

The RSSAC conducted its third workshop from October 11 to 13, 2016, graciously hosted by the University of Maryland and enthusiastically supported by ICANN. Eleven Root Server Operators (RSO) and all RSSAC liaisons attended the workshop.

The outcomes of the first two workshops¹ produced what the RSSAC labels as a mind map.² The components of this mind map speak to the high-level topics of evolution, continuity and accountability of the root server system. Some concepts in this mind map are rigidly defined, while others are more approximate. The approach that the RSSAC took in delving into this complex topic is commonly referred to as “peeling the onion, layer by layer”, starting at an abstracted “50,000-foot level”. The goal was to look at the topics from all angles and depths before the RSSAC issues its advice.

At the workshop, the RSSAC took the mind map constructed during the previous workshops and broke it into affinity groupings of subject matter. Each grouping was then further deliberated upon and mind mapped itself. What follows is a high-level outline of the work conducted under each grouping during the three days of effort.

Lexicon

During previous RSSAC workshops and meeting deliberations, the RSSAC realized it is critical that all participants speak the same technical language with no semantic ambiguity. In support of this, this workshop commenced with the creation of a lexicon containing 54 terms and their definitions. This lexicon, developed in the context of the DNS root name service, is expected to be a living document with continuous refinement and growth. The RSSAC has established a work party, and work is currently underway to refine the lexicon and send it to the RSSAC Caucus for further work and consideration.

The 50,000-foot Mind Map

The RSSAC began its deliberations by first revisiting and refining the mind map from the outcome of the May 2016 Workshop. This mind map served as the foundation for the affinity groupings. Subsequent discussions centered on each of these groupings and were iterated on as the discussions progressed.

Empowerment

The initial topic the group tackled in depth was how to characterize what parties are enabled or empowered by the RSSAC, Root Server Operators (RSOs), and Root Server System (RSS), and who empowers the RSSAC, RSOs and the RSS—in other words, who are the stakeholders? The discussion determined a need to document, in diagrams and text, three characteristics: who those entities are (including TLD operators, resolver operators, and possibly other parties such as

¹ See workshop 1 and 2 reports at: <https://www.icann.org/en/system/files/files/rssac-workshop-07jan16-en.pdf> and <https://www.icann.org/en/system/files/files/rssac-workshop-26jun16-en.pdf>

² https://en.wikipedia.org/wiki/Mind_map

governments, the general ICANN community and the Internet users); mechanisms currently in place for interacting with those various entities, such as the process for writing documents and the system of liaisons with other groups; and any gaps in the ability to interact with those who the RSOs empowers and those who empower the RSOs.

Finance

The RSSAC had a broad discussion on the cost of operating DNS root services and looked at the topic from multiple angles. The RSSAC agreed that financial stability is as important as technical skills for any root operator, and having proper means to support a stable operation is key to running a smooth service. The RSSAC concluded that adding financial accountability and audit to the responsibilities of any auditing bodies is imperative.

Designation/Removal

There was in-depth discussion on the function of designating new and removing existing Root Server Operators. The points of consensus are: the function is necessary; the RSSAC and RSO should not create or solely perform the function; and the function implements policies that are developed by activities external to this function. A number of other areas were discussed that did not result in consensus. The RSSAC did agree that ongoing discussions are necessary to more fully define this function.

Audit and Accountability

There was agreement that an accountability function should exist and auditing should be an activity of that function. Audits are commissioned by the accountability function, should be conducted by an independent entity, and the audit results should be reported back to the accountability function. There should be a clear understanding of the audit criteria so that operators and other stakeholders will have clear expectations, and these criteria should be quantitative. The accountability function evaluation should include financial and corporate governance elements that are also auditable. Criteria, such as the requirements list, needs to be created as a prerequisite in order to hold operators accountable.

Technical Elements

Under this topic, there was discussion of the requirements and expectations of an RSO. These are the standards to which operators will be held accountable. After the previous workshop, a work party was formed to create the “Key Technical Elements of Potential Root Operators” document. This document provides RSSAC advice into the yet-to-be determined process for evaluating candidate root server operators, and is near completion. With respect to existing operators, “RSSAC001: Service Expectations of Root Servers” already describes a number of requirements. However, RSSAC001 sets a relatively low bar. There was consensus to revise and strengthen this service expectations document. The RSSAC noted that there is a need to also keep non-technical requirements in mind. This includes ensuring that operators work well with others, have good communication skills, be financially sound, maintain accountability and ethical standards, and participate in relevant communities such as the IETF, operations forums, DNS-OARC, etc.

Root Server Association

A targeted discussion occurred which focused on the extant roles within the RSS and whether there were gaps within those roles and what, if any, new organizations are required to fulfill those gaps. An observation which reached consensus was that it is currently premature to suggest, or recommend, the creation of new RSO related structures. The rationale of this is centered on the desire to identify the functions, as opposed to roles, that are needed for RSOs and the RSS before trying to make a decision on any changes to organizational structures. The RSSAC made a decision to investigate other organizational relationships that may have similar modes of operation which could be informative.

RSSAC and Root Server System Transparency

The RSSAC is further developing the transparency strategy for the RSS. The first step of the ongoing transparency strategy process was to document the specific actions that have helped the RSSAC and each RSO become more transparent. The RSSAC intends to publish this transparency information on its webpage. The RSSAC also identified the need for an educational outreach program that can help the RSSAC and each RSO better inform the community about the purpose, function and operation of the RSSAC, RSOs and RSS. As part of this effort, the RSSAC suggests that the RSO community update their webpages to note that technical questions about the RSS should be sent to the RSSAC.

Conclusion

Discussions on the evolution, continuity and accountability of the DNS root server system reached an inflection point at the RSSAC October 2016 Workshop, yielding tremendous content on a future evolutionary model for global DNS root service operations and its governance. The RSSAC believes there is still much work to be done and more “mind mapping” in order to establish cogent advice on this critical subject to the community.

The RSSAC would like to express its gratitude to ICANN for supporting the workshop, to University of Maryland for hosting it, and to all individuals involved in their tireless efforts in making it a success.