
ICANN73 | Virtual Community Forum – RSSAC Public Session
Thursday, March 10, 2022 – 10:30 to 12:00 AST

OZAN SAHIN:

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With that, I will hand the floor over to Ken Renard, the RSSAC vice-chair.
Ken.

KEN RENARD:

Thanks, Ozan. Welcome to the public session today. We hope to fill you in on the latest work of the RSSAC and what we do, and get you guys up to speed with the latest going on in our governance and other work.

So if we go on to the agenda, this is what we'll talk about. A quick overview of what we do, some of our publications, and then get into our Root Server System Governance Evolution. That's a major thing that we're working on. And we'll touch on the Caucus as well, and invite questions. And really, this is for the ICANN community to learn about what we do and engage and get feedback. So we can go on to the next slide.

So the RSSAC is the Root Server System Advisory Committee, and we are here to advise the ICANN community and the Board on matters relating to the Root Server System, as you see “operation, administration, and security.” So this is a narrow scope. We are really narrowly focused on the Root Server System and making it stable and resilient. Next Slide.

So some of the roles and responsibilities. So we, again, communicate on matters of the Root Server System as well as the administration of the root zone. The RSSAC focuses on the root server operators. So we don't get involved with the contents of the root zone. We're really just getting that zone and publishing it.

We're always looking out for new threats, doing threat assessment and risk analysis for the root zone and making recommendations to improve the security and resiliency of the Root Server System, and interacting with advice from the ICANN Board or community.

The RSSAC itself does not involve itself and operational matters. That's somewhat a separate group of the root server operators themselves. We kind of sit in that middle between the technical operations and the policy discussed within ICANN. Next slide.

A little bit about our organization. RSSAC itself, the core group, is comprised of representatives of the root server operators—a primary and an alternate—as well as liaisons from other groups. So it's a pretty small group.

For that reason, we also have a broader membership body, the RSSAC Caucus. So the Caucus includes volunteer subject matter experts in DNS, the Root Server System, as well as many other areas. There's a process for joining the Caucus and participating in the activities, which we will discuss in a little bit. Next Slide.

There's Fred and myself. Fred is here. And I will toss it back to you when we get to the next section. Welcome, Fred. And we can go, now, on to the publications.

So there are three publications that we'll talk about in this section. They are from the RSSAC Caucus work parties. There are three other publications related to governance which we'll discuss as well. And the work party leaders from each of those documents will describe them.

I'll start off with a discussion of RSSAC056 which is the advisory on Rogue DNS Server Operators. This was an effort to look ahead towards the implementation of the Root Server System governance. This term "rogue" first appeared in RSSAC037 in the discussion of how one would remove an operator. So that word "rogue" may have come across as ominous or scary, so we wanted to really further expand on the idea and define what we were thinking about.

So the idea in this work party and document was to inform the future governance on the types of activity that might be considered rogue. The governance system will have the ability to designate and remove as RSO, so this is to inform them on what those situations might be for removal.

Determining if an RSO is rogue and requires removal is a pretty hefty judgment. And we specifically call out in this document the accidental or mistaken or temporary conditions, things that might be reasonably remediated or resolved like maybe if there's new software that may have a bug. Things like that. Those should not be considered within the realm of being rogue.

So this governance body will have a difficult task of determining intent of an action. So in this work party we're only focusing on IANA-designated root servers. So there are cases where route hijacking might take place, or other interception methods. Those are out of scope of the discussion here. We're only talking about the IANA-designated root servers.

The discussions really were grounded in the 11 guiding principles of the Root Server System which we hold near and dear. So the rogue behaviors that we identified were broken into objective and subjective behaviors.

Some of the examples for objective behaviors might be incorrect response data. For example, if the records in the response and the answer section of a response from a root server are anything different than what's in the IANA zone. So if you're returning fewer records, additional records, or wrong values, that would be incorrect response data.

Also, extra response data. Now we're looking at the authority and additional sections. Again, anything that's not in the IANA zone. We hold that IANA zone near and dear. We just serve that zone. Other things might be bad or incorrect error codes, omitting DNSSEC records when the query has requested them, or incorrect usage of the DNS protocols. For example, undefined RCODEs and things like that.

Additionally, we looked at subjective behaviors that might be considered rogue. We talked about intentionally degraded service. For example, if an RSO purposefully degrades service to queries based on the source of that query. The only time it's reasonable to deny a request based on where it's coming from is if you're under attack, which is rate limiting.

So that is the Rogue Operator Work Party. The next work party we're going to talk about is RSSAC057. And I'll hand that off to Abdulkarim. Abdulkarim. If you're talking, you're on mute.

BRAD VERD: Hey, Ken.

KEN RENARD: Yeah.

BRAD VERD: While we're waiting for Abdul, can I make a comment about the Rogue Operator Work Party?

KEN RENARD: Yes, please.

BRAD VERD: I think it's important that people understand that, one, we've never seen an operator go rogue or go do any of these things that were described or kind of explored in the work party. I think that's one very important message to get across.

And two, this was all kind of what-if scenarios on what could an operator do which would provide information to a potential governance system to make a judgment call on removing them. I think it's important. We don't want people to misunderstand that this was an ongoing concern of the Root Server System, and therefore RSSAC needed to address it.

These are all hypotheticals that came up going through the work in developing the governance system. And clearly, you need a playbook if something does go wrong, and this is just one aspect of what that playbook might be. I think that's just an important message to get out there. Thanks.

KEN RENARD:

Thanks, Brad. Yes, this is part of our efforts to always improve and monitor the risks associated with the Root Server System, theoretical or real, and wanting to get out ahead of anything and again, like Brad said, have that plan.

Abdulkarim, are you able to talk about RSSAC057?

ABDULKARIM OLOYEDE:

Yes, I can.

KEN RENARD:

Thank you.

ABDULKARIM OLOYEDE:

Okay. Thank you very much. I want to present RSSAC057 which was the document on the group for the Local Perspective on the Root Server System. It was a requirement for measurement of the Local Perspective on the Root Server System.

This working party looked to define the requirement for a tool in order for us to collect and report measurements that can determine the level of service which was provided by the RSS at a location.

This working party examined three use cases. The first one was informing the determination of under-served areas. And the second one was evaluating the third-party request to host an anycast instance. And also the third one, the last one, which was on the recursive operation. Next slide, please.

There were two major recommendations for the reports of this working party. The first recommendation deals with the RSSAC. We recommended to RSSAC that a set of tools be built based on the requirement articulated in Section 3 of our document. The tool described, also in Section 4 of the document, could also be used to build the building blocks. The tool should be made available for the Internet community.

The second recommendation we made was that we recommended that ICANN Board should identify a person or a group to collaborate with RSSAC Caucus on further development of a data repository, as described in Section 5 of our document.

And those were the two major recommendations from the report that the working party submitted. And this my presentation. Thank you.

KEN RENARD:

Thank you, Abdulkarim. The next document is a revision on RSSAC047. And Anupam is going to talk about that.

ANUPAM AGRAWAL:

Thank you, Ken. I will be presenting the report on the work party of RSSAC047 revision. And the new document is Version 2. And the original document, Version 1, was published in March 2020. And now in February 2022, we have this Version 2 released.

RSSAC047 is the RSSAC Advisory on Metrics for the DNS Root Servers and the Root Server System. RSSAC047 presents a set of measurements, metrics, and thresholds for the DNS root servers and Root Server System.

So based on the practical implementation which was done, it was felt that there has to be a revision based on the understanding and the experience. So that is what has happened in Version 2. OCTO has been implementing the measurement system, and whatever issues and some slight corner issues which were discovered, those have been discussed in the work party meeting. And those discussions have found their way into the final document.

To talk about what has essentially changed in Version 2, Section 4.1 clarifies the latency measurements. Then there was a couple of changes in Section 5.3 on [RSI] correctness which improved the descriptions for the requirements for NSEC resource records. And also, on the authority section of a positive SOA response.

And then there were a couple of corrections which were made in Section 5.4 and 6.2 on Root Server System publication latency.

And we also discussed that this kind of a living document, and it needs to be updated continuously. So there has been a recommendation added in Section 8 to review this document every two to three years. And there are some minor changes which have happened throughout the document.

And finally, the issues which were identified [until now]. Those were incorporated. The issues broadly which required some clarification where RSSAC047 was ambiguous, those were also rectified.

And finally, the work party submitted the Version 2 which has been approved by the community and now is also published.

And that is my update for this work party. Thank you.

KEN RENARD:

Thank you, Anupam. Yes, some of those additional items that were discovered during this that were tabled, not within the scope of Version 2, are kind of set aside for a future discussion on Version 3. But I think it was a good idea. We're going to try and get some more data from the prototype system and learn more about what the data might look like and have that also inform a Version 3 down the road.

So that is our work party documents, three of them. And I will hand this over now to Fred to talk about the Governance Evolution. Fred.

FRED BAKER:

Thank you, Ken, for stepping in when I was late. Input to the Root Server Government System. Do you want to show me the next slide?

The GWG, the Governance Working Group, is composed of representatives from the RSOs which is an overlapping but slightly different organization than the RSSAC, and represents kind of the operational side of that.

So the GWG is composed of representatives from the RSOs, the ccTLD Naming Support Organization, the IAB, the Registries Stakeholder Group, and the SSAC. And the deal there was that in RSSAC037, when we described that. We recognized that were looking at it from a very particular perspective and that the rest of the community had important things that they might say. And so we asked the community kind of, “What do you think about this, and would you like to comment on that?” And so the GWG was formed.

And it was given a number of tasks—committing to a timeline, working transparently and openly, and so on. And so they have not actually produced a final report, but there has been important progress made. And so we discussed that with the RSOs. Or the RSOs discussed that. Next slide, please. Oops, back one.

So we, the RSSAC, reported that to the GWG and then basically carried messages between the GWG and the RSOs for the purposes of getting it right. So now, let me go to the next slide.

Lyman, did you want to talk?

LARS-JOHAN LYMAN:

Just let me just say a few words about this. So my name is Lars-Johan Lyman, and I was the shepherd for RSSAC055 which is a document

which is an excerpt from RSSAC037. RSSAC037 is the governance platform that we developed during the series of workshops. It's been mentioned before in this meeting.

And as a small part of that rather large document, there is a series of principles guiding the operation of the public Root Server System which we arrived on during our deliberations. That is kind of merged into the document and is an important part of the document, but it's turned out that these principles guide us in many situations. And RSSAC came to the conclusion that it was a good idea to publish these guiding principles as a separate document. And that's what document RSSAC055 is.

So we have taken the principles—there are 11 of them—and we have copied and pasted them exactly as they are written in RSSAC037. But in RSSAC037 they are also a bit stand-alone principles, and we also felt that we wanted to add a bit of explanation around these guiding principles. Where do they come from? How are we supposed to look at them?

So what we have done is to add a bit of explanatory text to each principle. The principle is taken verbatim from RSSAC037, but the explanatory text is added into RSSAC055 to make it easier to understand these guiding principles and why we have them.

The last bullet here is important, too. These principles have enabled the success of the Root Server System, and we are fully convinced that they should remain core to the system as we go forward. That's it. Thank you.

FRED BAKER: Okay. So then, RSSAC58 and RSSAC059. The RSOs got together, led by Robert Carolina, and just discussed how we would determine ...

The GWG had a different model for the evolved framework than what we had considered in RSSAC037. So how would we identify which was the better approach? And that came out as the success criteria for the RSS governance structure which we published as RSSAC058 and a letter along with that in RSSAC059. So that might be considered to be additional commentary from RSSAC037. Next slide.

Ken, over to you.

KEN RENARD: Thanks, Fred. So we'll turn focus onto the RSSAC Caucus. Next slide.

And this a great time to recognize the support staff for the RSSAC and RSSAC Caucus. An amazing group of people that just do so much for our efforts. So, thank you. Is there an applause button on Zoom? I'm not sure. But, yeah, these people are really appreciated, and a thank you to them. Next slide.

So again, the Caucus consists of all RSSAC members as well as experts in the field of DNS and standards bodies, things like that. Our current RSSAC Caucus membership total is 105 people. And you see our geographic distribution. We could always do better geographically, so part of this will be a request for anybody that's interested to join the Caucus to go ahead. And we'll talk about that. Next slide.

So the Caucus works through convening work parties. So RSSAC or an idea may come in of work ,of advice that the RSSAC should give to the ICANN or ICANN community, and the Caucus can take on this work assignment through a work party.

Any member of the Caucus can join any work party, really, at any time. But we do sort of encourage the commitment to working throughout the lifetime of the work party.

So work parties usually produce a document that will usually be published as an RSSAC-numbered document. And there can be multiple work parties active at a time. Caucus members can join any or all of them, whatever they have the time to commit to.

And RSSAC work parties typically operate by doing teleconferences monthly, or sometimes even more frequently than that; as well as on a mail list. RSSAC Caucus does meet in person, back when we used to meet in person, at odd-numbered IETFs. I don't know how this is all going to fall out when we get back to in-person meetings. But a great group of people. There are some amazing people that contribute a lot of expertise to these work parties. Next slide.

This is kind of the life cycle of a work party. I won't go through this too much, but that middle section there is the core of it where the work party meets and conducts their teleconferences and work on the mail list. It starts from a proposed topic and ends with a review and a published document. Next slide.

So this is our sales pitch to join the RSSAC Caucus. Here's how you do it. Any interested individuals should fill out a Statement of Interest. These links have all of this required information, so no need to scramble to write this down. But if you're interested in joining the RSSAC Caucus, you would submit a Statement of Interest and include information like that. Next slide.

These are specific points of consideration which we look for in admitting members to the Caucus. So, DNS community experience/knowledge. We're actually looking for representation from areas of expertise beyond this. We will be updating this list soon. Please do not be discouraged and thinking that you must be an expert in all of these areas in order to apply or join the RSSAC Caucus.

There are areas of expertise which we would particularly enjoy having which would be diversity of geography, diversity of backgrounds such as regulatory or governance experience as we get more into that; as well as perspectives from maybe recursive resolver operators or TLD operators or anybody that uses or interacts with the Root Server System and that can provide useful feedback.

The big requirement is really the one at the bottom, the Commitment to Participate—the availability to participate in the teleconferences on the mail list, etc., and to participate in those working groups. Next slide.

So recently, the RSSAC started a Caucus Member Recognition Program. So annually, we'll select a Caucus member or members, specific to call out and show appreciation for their contributions over the year. You can see some of the areas that we look for—contributions and

participation in the work party as well as some Caucus members are invited to act as liaisons or special things that the RSSAC has been asked to do. If RSSAC members aren't able to do that, we may look towards the broader Caucus to represent the RSSAC in those matters.

The next slide has some good links on more information about the RSSAC itself as well as information about the Caucus. If you'd like to join the Caucus and participate in the work parties and the deliberations and discussions, we'd really appreciate hearing from you.

One more thing. As far as RSSAC Caucus membership goes, there is a membership committee that reviews and accepts members in as well as looks at the membership and will actually remove people if they are not participating. This happens not a lot, but for those folks that do not show up to meetings or maybe they've moved on and we haven't heard from them, we will actually take them off the list.

I'll send that back to you, Fred, and open up the floor, I guess, for questions.

OZAN SAHIN:

Hi, Ken. There's a question in the chat. If you would like me to read it out loud, I can do that now.

KEN RENARD:

Sure, go ahead.

OZAN SAHIN: This coming from Nabeel Yasin who is an ICANN73 Fellow. And the question is, “Is there any plans to add additional geographically equal DNS root servers all over the world? If no, then why?”

KEN RENARD: Okay. I will take this one. I think there are several others that may chime in as well. There are lots of servers all over the world. There's actually over a thousand instances of root servers throughout the world. And if someone has the chance to put in the URL for root-dashservers.org, there's a place where you can go to look geographically where all of the root server instances are.

So as far as actual, physical instances of a route server running, there's plenty out there. And we do expand. We expand to locations that are going to cover lots of users. We expand to ... Once we identify areas that are maybe under-served, those become targets of expansion as well.

And I think I will hand it over to anyone else that wants to add to that discussion.

FRED BAKER: Well, you're looking right now at root-servers.org which is publicly available. If you want to drill down into what root servers there are in your area, what I would suggest is that you look at the thing and select the dot that is located nearest you. And what you'll find is that that breaks out to show you ...

For example, if I select the dot which is in Western Africa, I pretty quickly find that there are a number of root servers located around Senegal and Liberia and Ghana, and so on. That gives me a view into what root servers there are.

And you'll find that each of the root server operators has root servers pretty much spread throughout. For example, in Lagos, Nigeria, there are root servers from D, E, F, and J. You can look at that and determine what is in your region.

Yeah, Brett Carr mentions that there are root server operators that .. And Suzanne mentions that we each make decisions about where we want to put root servers, but quite often that's based on somebody contacting us and saying, "I would like to have a root server in my data center or somewhere in my region" and suggesting a place to put it. And there will be requirements for doing so.

Okay, are there any other questions? In the absence of questions or further comments, I think we're probably done. So I'll give you maybe another minute to think of and formulate a question, finish typing. And then we'll adjourn.

So with that, I don't see any hands. I don't see additional questions. So we'll call this to a close. Thank you very much for your time today.

KEN RENARD:

Thanks, all.

OZAN SAHIN:

Thanks everyone for joining. Please stop the recording.

[END OF TRANSCRIPTION]