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SINGAPORE - RSSAC Advisories Update  
Wednesday, February 11, 2015 – 14:00 to 15:00  
ICANN – Singapore, Singapore

CARLOS REYES: This is the RSSAC Advisories Update in the Padang Ballroom on February 11<sup>th</sup>, 2015 from 14:00 to 15:00.

LARS-JOHAN LIMAN: Ladies and gentlemen, most welcome to this RSSAC activities update from the Root Server System Advisory Committee. My name is Lars-Johan Liman and I am one of the two co-chairs for the Root Server System Advisory Committee. Here to my right is Tripti Sinha who is the other co-chair. With me on stage I also have Terry Manderson and Jim Martin; and also Kaveh Ranjbar.

We'll give you first a very brief introduction to the RSSAC for those of you who haven't been in contact with us before, and then we'll do a quick update on what we've been doing. So I'll go to that slide.

We've recently released two documents. We'll do a quick overview of these two documents. I will look at what's the highlight of this meeting, the IANA stewardship transition and we'll also go into a bit how we interact with the community through our RSSAC caucus.

So I'll begin with a quick overview and introduction. So what is the Root Server System Advisory Committee? It has a very narrow scope. It's a very small committee. We advise the ICANN community and board on matters relating to the operation, administration, security and integrity

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of the Internet's root server system. The root servers, as you probably know, sit the level above the top level domains.

So this is a group of servers that hand out delegations to clients that tell the clients where the various top level domains are located on the network. So this is a very narrow scope. We don't deal with policy in any way. We are not a policy setting body. So we're only interested in the technical aspects of the operations here. So this is a very technically focused committee.

RSSAC consists of 12 representatives, one from each of the organizations that operate root servers. There are 13 server clusters, but 12 organizations that operate them. Each appointed member has an alternate or the option to have an alternate who can step in in case the regular representative cannot make a meeting or has some kind of a problem participating. We also have a group of liaisons, too, to other bodies which I'll speak of in a minute.

In addition to the formal committee RSSAC, we have designed a group of volunteer subject matter experts that we call the RSSAC caucus. Since we're such a small committee, we need extra hands to do the actual work of doing investigations and creating documents. So, therefore we have called on a number of volunteer people to help us do that. This group is appointed by RSSAC.

The liaisons we have are to the IANA functions operator and this is the ICANN/IANA department to the root zone maintainer, that's Verisign and to the IANA functions administrator, which is the Department of Commerce, the NTIA part of that. We also have liaisons to the Internet



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Architecture Board on the technical side to ICANN's Security and Stability Advisory Committee which we cooperate a lot with because they have a wider scope and we often find overlapping areas where we have discussions and dialogue with them. Of course we have interaction with the ICANN board through a liaison and also the ICANN NomCom.

So the caucus, the purpose of the caucus is to have a pool of experts who can help us produce documents and who can be the expertise and the critical mass to widen the expertise that we have among the 12 of us. We don't have all the expertise we need in the security and network operation and registry operation and client side DNS operation and protocol specification and so on. So we have a wide variety of experts in this group.

Depending on the work task at hand, we invite different subsets of members to help us create the documents. We do that by calling for volunteers. This is a very important way to increase the transparency of the advisory committee. So this is where the interaction with the wider community happens. There's also transparency in those who participate. The caucus is a very open group. So far it hasn't turned down anyone who has shown interest to help us by working there.

Those who are members have to state their affiliation in the statement of interests and that is published on the web and also all documents are, so to speak, signed by the authors who have participated in generating the documents. You can actually see or you have an accountability track there. You can see who was part of making this document and what affiliation do they have and what type of connection does that create.



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This caucus is the framework for getting the work done and it works to produce results. For each task that we involve the caucus in, we create a work party leader. We create a work party and then a work party leader and we set deadlines and so on. So we have an ongoing machinery therefore for the work.

The caucus members, all members of the formal committee are also members of the caucus and then a much larger set of other people who are appointed by RSSAC. I think we went through that.

We try to identify clearly scoped work items and we create the term I always forget – work specifications –, kind of a problem statement where we specify what we expect the work party to produce as a result. So they know the scope of the work they're undertaking, and then we designate a work party leader who leads the work with that subgroup in the caucus to produce the document.

It's very important also to state that the documents may well include dissenting opinions. So if there are various opinions within the group that does this research, that should be put on the table so that we can all see it and we can all react to that properly.

The caucus is fairly new thing, but we are planning now for a kickoff meeting at the upcoming IETF meeting in Dallas. RSSAC usually meets at the ICANN meeting as most of the other advisory committees and organizations within ICANN. This wasn't the case until just two years ago. We used to meet at the IETF meetings because the old form of RSSAC and the caucus still today is mostly comprised of technical



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experts who typically don't attend ICANN meetings. So it was much more likely to find these people at the IETF meetings.

Now we've changed that so that the formal committee meets here at ICANN meetings to be able to interact with the ICANN community better and be more visible and more approachable. We want it to be easy for all members of the community to come and talk to us and interact with us. That wasn't quite possible when we were at the IETF and you were here.

So we changed that, but still the technical members are the IETF. So the caucus will have its initial meeting at the upcoming meeting in Dallas. We will invite all the caucus members to participate and have a dialogue on work procedures and do some brainstorming about current and future work items and invite new ideas from the caucus members. If you happen to be interested in helping us to work in the caucus, please send a message to the mail address here, [rssac-membership@icann.org](mailto:rssac-membership@icann.org).

As I mentioned, RSSAC has recently produced two publications in our newly created RSSAC numbered series of documents. The very, very first one, RSSAC 000, is the procedures document that describes the working procedures, but that's a bit back in time now. So the most recent ones are 001 and 002 that speak to service expectations of root servers and advisory on measurements of the root server system. We also recently issued a statement on increase of the DNSSEC signature [validation] period of the DNS root zone, which speaks to a very detailed technical problem regarding DNSSEC signature validities.



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I am going to ask Terry to speak a bit about RSSACC 001. You know how to click it, Terry?

TERRY MANDERSON:

Thank you Liman. Let me see if I can make this go forward. There we go. RSSAC 001, the service expectations of root service, really is an evolution document and it sets the posture of informing the entire interested stakeholder community about the services and service commitment for the 13 root servers operated by the organizations that do in fact run them. Those expectations are really focused on what the stakeholders of the root server system might reasonably expect to know.

The document is currently, as Liman has already mentioned, in lock-step with the IETF for full publication. There are reasons for this, namely the companion document, which is RFC 2870, is being updated to match the direction of RSSAC 001, which concerns itself with the operational aspects, and then the successor to 2870 or RFC 2870, is going to be focused on the protocol side of servers.

The 18 expectations from 001 provide statements on infrastructure, diversity, monitoring, measurement, capacity, stability, accuracy, documentation and communication, essentially all those things that we see that the community wants to know about the operation of root service.

The key RSSAC recommendations from this is that each root server operator will respond to the expectations and publish those to the Internet community.



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Secondly, each root server operator will then notify RSSAC where those responses are published, and further notify RSSAC of any revisions to either the location or the content of that publication. That in a nutshell is 001.

LARS-JOHAN LIMAN: Thanks, Terry. I'll now ask Jim to speak about the RSSAC 002 document a bit.

JIM MARTIN: Hi, I'm Jim Martin from ISC. RSSAC 002 is a measurement document. The idea behind this document is to define measurements that are requested from all the roots of our operators to provide a baseline of information so that we can understand how the root system is evolving, how the changes in what's going into the root zone are impacting the overall root server system. The idea is that from this some decisions can be made on how future changes are made within the root system.

Specifically, there are a number of data points that are being requested in this document. The first is latency in publishing the available data. This is measuring how long it takes from when the root zone is generated until it makes it all the way out to the publishing servers. This is made a little more complicated because of course these are all Anycast clouds and not all of the nodes are going to be up at any time. So we are measuring from the time that we are notified through 95% of the devices are aware.



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The size of the overall root zone. This is somewhat of a humorous one in that it certainly should be the exact same number from all of the roots. If we don't, then there's a problem, but this is meant to ensure that this data is kept alongside with all of the other data that's being collected.

The number of queries. These are broken down by protocol type, V4, V6, UDP, TCP, but the number of queries that are coming in that reiterate, the distribution of the query sizes both in and out and again broken down by protocol and that sort of thing. The response codes, how much of it are not found, errors, [nx] domain, that sort of thing.

Then the last one is actually a little bit interesting. It's the number of unique sources for queries. Because of the nature of the system and all of the distributed servers, it's actually relatively complex to correlate this all and ensure that you've got a unique number of sources being identified. Because of that, the document specifies that this is optional for the first three years.

Our recommendations are that each of the root server operators implement the measurements. This isn't being sprung on anyone. All of the roots server operators are represented on RSSAC and all of the RSSAC are on the caucus and it's the caucus who actually developed this work. No one is surprised by this. It's something that will be rolled out over time.

RSSAC is going to be monitoring how that progresses, and relatively importantly, the measurements are always going to be reviewed. We've got a two-year cycle where we go back and make sure that the data that we are collecting is worthwhile so that we are not impacting the system





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for data we don't really need, or to establish that there's new data that would be very helpful to have. That will happen on an ongoing basis. That's the overview of RSSAC 002.

LARS-JOHAN LIMAN:

Thank you. The IANA stewardship transition is the thing that seems to be on everyone's mind these times and RSSAC are involved in that, although not as deeply as it is in many other parts of the organization. RSSAC finds that this proposed transition is a very important thing. We definitely support the work that's going on. We do it for instance by having two people on the ICG that participate there. I am one of them. The other one is Daniel Karrenberg who is I believe not in the room right now.

We observe this process very carefully and we follow it. We do not actively take part in the CWG names working group at the moment because we don't see at the moment that there are things being discussed that pertain to the root servers. If we don't see any need to intervene there, we only disturb the process if we start to add stuff in there. There is no need for comments from the RSSAC to that process right now, but we continue to observe it. We continue to follow what's going on through the ICG, through the various members of the RSSAC who participate in other places in ICANN. We are quite well aware of what's going on and we will take action if we see the need to do that, but right now we don't see that. Tripti?



TRIPTI SINHA:

Thank you, Liman. The RSSAC has now identified the next sets of work for the caucus. This will culminate in a document that we call RSSAC 003. The root zone TTLs haven't changed in many years. We have made an observation under certain circumstances where the Anycast instance of the root server is not updated for say 24 hours, there could be a situation where the resolver is told the TTLs for the NS records are good and the signature has expired.

We've put together a work party of eight people, a crackerjack team that's going to look into this and come back with some recommendations and perhaps a recommendation to reduce the TTL. This work has just started. It was assembled as I speak and we hope to conclude this sometime in this calendar year.

Moving on to . . . Actually, this is our concluding slide. We'd like some interaction from you, the community. I'd like to put two questions out there. There is an effort underway amongst the ICANN community to see how easy it is to get information from the ICANN website. In particular, we would be curious to know how easily are you able to locate information on the RSSAC, including the documents that we are publishing, what the RSSAC is about, the membership of the RSSAC. I'd be curious to hear that from you during Q&A.

I'd also like to share with you the four different ways you can actually interact with the RSSAC. One is right now we do have these presentations at the ICANN meetings. As Liman just said, we have assembled a caucus which is a pool of experts in DNS, security and operations. If you have skillsets and experience in that area, by all means please contact us and join the membership.

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We do also have joint meetings with supporting organizations and other advisory committees. For instance, just yesterday we had a joint meeting with the SSAC. We would welcome any other group that would like to meet with us. We are very happy to do that and there's no substitute for stopping us in the hallway and reaching out to us. By all means, feel free to do that. I'd like to now open the floor for questions.

[audio break]

Any other questions? Any last comments here on the panel?

LARS-JOHAN LIMAN:

Yeah, I would like to make one last comment. Thank you, Tripti and thanks to all of you. I would like to make a final remark regarding the TTL work. We said we've identified the situation where you run into problems. The previous statement that I mentioned on the very early webpages spoke of a change of the signature of validity time. That is a remedy to the problem that we've identified. That makes the risk very much lower that something is going to happen, but we still want to do the proper thing by looking at the TTL values.

We've already taken a long step to minimize the risk that something is going to happen and that's already put in place in operations. We want to do a more thorough investigation of what the problems actually are and what possible solutions we can find and come to a conclusion about the entire [problem sphere] here. That's why we are launching this web party.



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With that, I would like to thank you all who came to listen to us. See you next time. We welcome you to come and talk to us in the hallways. We are always there.

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