COPENHAGEN – Joint Meeting: RSSAC & OCTO
Tuesday, March 14, 2017 – 09:00 to 10:30 CET
ICANN58 | Copenhagen, Denmark

BRAD VERD: I don't think we need to do introductions, do we, David? All right.

                        Great. Brad Verd, co-Chair of RSSAC. We'll go this way.

DUANE WESSELS: Duane Wessels, representing Root Zone Maintainer.

TERRY MANDERSON: Terry Manderson, ICANN Root Server Operations.

JOHN CRAIN: John Crain, ICANN L-Root but also member of the OCTO team.

SUZANNE WOOLF: Suzanne Woolf, B-Root.

WARREN KUMARI: Warren Kumari, F-Root.

FRED BAKER: Fred Baker, F-Root.

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WES HARDAKER: Wes Hardaker, USC.

MATT LARSON: Matt Larson, ICANN OCTO.

ROY ARENDS: Roy Arends, ICANN OCTO.

ED LEWIS: Ed Lewis, ICANN OCTO.

ALAIN DURAND: Alain Durand, ICANN OCTO.

DANIEL MIGAULT: Daniel Migault, IAB liaison.

LARS-JOHAN LIMAN: Lars-Johan Liman, Netnod Root Operations.

DAVID CONRAD: David Conrad, OCTO.

TRIPTI SINHA: Tripti Sinha, University of Maryland and co-Chair of RSSAC.

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STEVE SUN: Steve Sun, Policy staff supporting the RSSAC.

BRAD VERD: Great. Welcome, all. And if anybody in the audience would like to come up to the table, please feel free to join us. We won't bite. Let's jump to the questions and hopefully, we'll have some dialogue there. I guess we'll start with RSSAC to OCTO first and the first question posed for those who can't read it. Is there any pattern of abuse, e.g. registration patterns, domain abuse, etc., which might be interesting for the members of RSSAC?

UNIDENTIFIED MALE: Sure, so I'll actually throw this to my Vice President of Research and Principal Research Scientist, Matt and Roy.

[ROY ARENDS]: In OCTO, we have looked at abuse data. For instance, we have looked at the past to the extent that [inaudible] is used and for abuse and we have also looked in the past for specific not-yet-delegated top-level domains or not-to-be-delegated top-level domains.

Patterns of abuse is a strong word. We know there is abuse, just as everyone knows there's abuse on root zone, but there has been some research done, yes. Thank you.

UNIDENTIFIED MALE: Don't know if that answers your question but that's what we got.

BRAD VERD: Nothing specific to the root or anything that should be made aware of to the root operators that you're aware of at this time, it sounds like. Great.

Second question. Is there anything regarding the KSK rollover outside of regular public updates that OCTO would either like to convey to RSSAC?

MATT LARSON: This might be a fast meeting.

BRAD VERD: Could be.

MATT LARSON: Because I think…

BRAD VERD: Boring is good when it comes to root operations.

MATT LARSON: From our perspective, I think the answer is no. The project's humming along. We're being pretty open about it. I think everybody's seen the updates. There's not really anything for the root operators in particular to do. The phase we're in now and will be in for the rest of the project is just communicate as widely as we can so that people running validators know what to do.

BRAD VERD: Are there any [diddle] collections or whatnot that we need to take back to the organizations to let them be prepared for or whatnot?

MATT LARSON: Well, that is a good question. I guess could we sort of collectively reminded ourselves what we decided? Because I honestly don't remember. We had talked about multiple [diddle] collections but then decided that given the level of effort we know that it takes for the root operators, we sort of scaled back from the original ambitious plan, so it would help me if we could remind ourselves where that discussion left off.

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UNIDENTIFIED MALE: So, my recollection is that we had actually sort of tentatively planned on two or three separate collections around interesting dates and events. And I think DNS-OARC is tooled up and ready for something like that. And based on when we did the ZSK change last year, we got decent participation from the root operators, not all, of course, but so I think it's reasonable to assume that you can get 8-10 participants, again, for the, maybe even more because this is the KSK.

MATT LARSON: All right, well I think the logical places to do that would be around the time that the new key is introduced on July 11th when the size goes up to a historical maximum at that point for the size of the root DNS key response, and then the rollover itself. So I think those would be the two obvious places to do collections, so I guess my question would be is that something that RSSAC thinks the root operators would be willing to undertake, too?

Because there's also the regular [diddle] collection coming up that I remember has been announced but I don't recall when it is, so this would be two other collections, unless we asked OARC if OARC would be willing to move the regular collection to coincide with, say, the July date. I guess my question is we're

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looking at potentially two or up to three collections in the next six months.

BRAD VERD: Practice is good, but Liman, go ahead.

LARS-JOHAN LIMAN: Yes. Lars Liman from Netnod. I think that we should not move the regular [diddle] collection because if I remember correctly, it's happened roughly around the same time of the year every year. If we want to look at long time trends, in the future, historic data should be kind of from the same time part of the year, so that's one thing, and I don't know. I can speak for Netnod and say that we are quite willing to do a couple of extra [diddles] on the order of magnitude that you're speaking of. That works for us.

But I would also like to ask a question. Have you been playing around with the different settings for MTU, NTP settings and stuff to see if there are any effects on responses when you trim that, so to speak? Is that something where we can learn something?

MATT LARSON: That's a good question. Ed's done some looking at some TCP or, excuse me, IPv6 responses in particular related to MTU. Do you want to talk about that, Ed?

ED LEWIS: Sure. Sorry. In the last couple of weeks, I did some informal poking and, basically, I was looking at the TLD operators because they have large DNS keysets in there to see what would happen, and this is informal since it went to my house, not to a constellation of probes and all this, and I found that there seems to be evidence of problems with IPv6 and UDP above 1600 bytes.

Below that, generally, not a problem. TCP always seems to get through to my house and just the typical household, IPv6. So, we had the question two years ago about the MTU settings for all that. It's probably worth looking into. From when I did my little dabbling, I think that we're in the safe zone because I don't see problems with TLDs at that size. And again, it's factoring in potentially operator. Not just the DNS operators involved here but the routing and prefixes and whatnot, and I haven't been able to, I haven't had time yet to go dive into all that.

But I think it's something that we, I remember asking about during the design team report in 2015, and I don't think we had, I don't think we, the design team members, got a complete set of the parameters from all the operators. I'm not sure. I never saw

them. They may have gone to some people, so I'm unclear if everyone had responded to that.

But it seems, yeah, the question is going to be whether or not. It'd be interesting to know if the operator by operator, the root servers, where they decided to truncate on outbound for v6 and whether going back to TCP is going to be a good fallback or not right now.

I still need to put together a better question on this and this is just stuff I've done the last week or two, but I've seen that I honestly, I haven't seen problems of distress in TLDs because TCP always works in the cases I've seen, but at the root level it is open, I think it's not been tasked yet so it's an open question that way.

BRAD VERD: Roy.

ROY ARENDS: I would like to add something to that question. If we have looked at this data, are the root server operators planning to change the MTU in MTU outs and/or the EDNS0 setting for the next couple of months? This is related to the question we asked a couple of ICANN meetings ago where we got the statistics from you guys.

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BRAD VERD: I think RSSAC is happy to take that question back to the root operator organizations. I can't address it right now but I'm happy to take that question back if that's a request from OCTO. Matt.

MATT LARSON: Why don't we settle the [diddle] dates before we move too far? So –

BRAD VERD: Agreed. I'd like to come back to that, so I'd like to make a comment, but if I could, unless you have something to add.

MATT LARSON: Well, I was just going to say I'll send – okay, so let's figure out how to informally what I think we need is a collection around July 11 and a collection around October 11. So, the question would be formally how to have that happen. Should I send a request on behalf of the project to RSSAC and OARC?

BRAD VERD: If you could send it to RSSAC, Tripti, and myself, we can take that back to the root operators in the coming weeks and, hopefully, get an answer for you very shortly. I think given that people are

getting geared up for the upcoming [diddle], the regularly scheduled [diddle], I think that would be a good sign that people would have the tooling in place to support the request around the ZSK. That's my assumption but we need to ask.

MATT LARSON: Okay, so when does OARC get involved and who involves OARC?

UNIDENTIFIED MALE: I think you should CC OARC when you send to RSSAC.

UNIDENTIFIED MALE: That would be my suggestion. Okay. Is anyone taking minutes? So, that's an action for Matt, please, to request the two [diddle] dates from RSSAC and OARC.

UNIDENTIFIED MALE: Okay, I just want to clarify. July 11th is not the correct date that you want. So for the minutes, we don't get confused by July. Actually, the new high is on June 20th. We can work at that later, but I just don't want. In the roll, we put [in] for ZSK, we take it out with the new ZSK is so we don't have a new high on July 11th.

UNIDENTIFIED MALE: [inaudible].

UNIDENTIFIED MALE: Let's just make sure that the date July 11th is set too firmly into the request right now. We can talk about it later.

UNIDENTIFIED MALE: Okay. I need to look at the ZSK and KSK interaction to try to remind myself, but I'll take your word for it.

UNIDENTIFIED MALE: Yeah. Just for the [inaudible] just make sure July 11th is not the cement. It's not the date but there's a date close to that.

UNIDENTIFIED MALE: Yeah. We'll make up the appropriate date. One thing I do want to clarify, the RSSAC did provide to OCTO response to the MTU question back on September 9, 2016, and it has all the values for v4 ingress, v4 egress, v6 ingress, and v6 egress with the exception of H, who didn't, weren't able to provide the v4 and v6 egress MTUs.

BRAD VERD: Thank you for that and, Matt, if that request, not to put any pressure on you, but the sooner we get it, the sooner we can share it with the roots, the more time they have to plan and

whatnot, especially with the upcoming Root Ops meeting, it would be helpful to have it for that.

MATT LARSON: Sure. I mean, I can turn that around very quickly. It's a one-paragraph email, so sure.

BRAD VERD: Thank you.

UNIDENTIFIED MALE: Matt and Roy, when we did the ZSK change last year, we asked the operators to do this sort of long-term data collection also. Do you remember that?

MATT LARSON: I do. I remember there wasn't tremendous enthusiasm for it, but.

UNIDENTIFIED MALE: So yeah. I was wondering if you were planning on doing that, also, or not. This was the thing built around like a DNS cap or plugin.

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MATT LARSON: Well, I think within reason, more data is better than less. I guess we can take that back and think about it and we can always request and see what the willingness of the operators to collect is.

BRAD VERD: Yeah. Please incorporate that in your request and any, if I recall correctly, any scripts or tools that go around that so that they can implemented in time.

MATT LARSON: I think in the interest of time, since I know we know we want the [diddles], maybe I'll ask for that for sure and then just take a couple of days to or more to figure out on the other collection. So, I don't want to necessarily link to because I want to give you as much notice as possible about the [diddles].

BRAD VERD: Maybe just leave an opening there that maybe you're coming back with further stuff so that people can keep that in their minds so they don't think they're done, so to speak.

MATT LARSON: So they can stay excited.

BRAD VERD: Exactly.

UNIDENTIFIED MALE: So, my only advice to that would be that the [diddle] collection is, to me, it's useful as sort of an after-the-facts thing to look at it. It's not going to give you the real-time data as the change is actually happening, so I think the other data collection is a little bit better if you want immediate feedback on how things are going.

BRAD VERD: Can you expand on how you were able to use that during the ZSK roll and maybe share that with the group to share the benefit?

UNIDENTIFIED MALE: Yeah, so the way that worked is it was built around this software called DNSCAP and we had this DNSCAP plugin running at, I think, seven or eight operators and every minute it would tally its metrics and send a little, it would post the results to a server that we hosted at Verisign, and then from there, we had these graphs that we could look at and they were updated in real time and I think a number of us found those comforting and interesting to look at and actually, not even only for the ZSK change but just kind of in general.

We've turned it off since then but I think it was very useful to be able to watch and to see things happen very quickly.

[MATT LARSON]: I know you sent the information and I've got it in email about what you were collecting, but I should go back and let maybe exactly what you were doing without modification would be fine for this change, as well.

UNIDENTIFIED MALE: Yeah, so as part of that, we were looking for things like number of truncated messages, number of ICMP unreachable messages, and things would indicate problems with larger responses, so yeah. Happy to send it to you again.

[MATT LARSON]: Well, that would save a little digging through email but sure. We don't have a joint mailing list for this group, do we? How we've been communicating? I guess just by individual. All right, well I guess send it to me, please, and I can relay to the OCTO team. Thank you.

BRAD VERD: Liman, did you [inaudible]?

LARS-JOHAN LIMAN:	I was just going to suggest that you send it to all of us and that could be two mailing list subgroups so that it reaches all of us.
BRAD VERD:	Great. The last part of this question was is there anything additional the RSOs or RSSAC can do to facilitate the rollover? Which I think we've touched on it.
UNIDENTIFIED MALE:	Yeah. Just one thing that I might add is if you have an opportunity to mention the rollover in the context of meetings or conferences, that which network operators attend, that would always be useful. One of the key things to ensure that the rollover goes smoothly is that people are aware that the rollover is happening, so any additional sort of awareness raising would be helpful.
	We can, my coms team has toolkit, I believe, that we can provide to anyone who's interested. We have some slides and that sort of stuff. But just raising the awareness would be helpful.
BRAD VERD:	Absolutely. All right. Anything further on the KSK? Nothing here. Okay.

We'll go to the third question, which was a late added question is, does the Office of the CTO have any specific research planned around the RSSAC 002 data?

UNIDENTIFIED MALE: So, go ahead, Roy.

ROY ARENDS: We don't have specific research plans but that data is used all the time, almost continuously, and, for instance, we use it to find some ground truth if we have collection of [PCAPs], for instance, to see if… because we noticed that the RSSAC 002 data is not just collected by [PCAP] but also, for instance, [inaudible] interface of the name servers, if that makes any sense.

So, we often use this ground truth to see that we have truly have all the packets and not maybe 10% or 20% off. Thank you.

BRAD VERD: Wes.

WES HARDAKER: So Roy, I hope you're aware that the RSSAC Caucus is spinning up a tools sort of collection of repository and I think that it sounds like you have code that if ICANN is willing, it would be very nice to contribute to that as we'll be discussing in further in

the RSSAC Caucus meeting in Chicago in two weeks, too. We greatly love your code to be dumped into the collection.

ROY ARENDS: That's good to hear. I'll be in Chicago and maybe I can talk about it there.

BRAD VERD: David?

DAVID CONRAD: Yeah. I believe Ed and Alain also have some interests in the RSSAC 002 data.

UNIDENTIFIED MALE: Yes. Thank you, David. So, we have a project called ITHI for Identifier Technology Health Indicators [inaudible] participate in one of our work session last ICANN meeting in Hyderabad. So, finalizing the stage of defining the problem that we have and the next step for us is to go and define metrics and when finding indicators that relate to those metrics, highly suspect that we're going to use some of this data as part of this project. But it's too early yet to say exactly which data we are going to use from this.

UNIDENTIFIED MALE: Okay, so the specific reason why I was aware that the data wasn't fully published was I was trying to do a specific task, which was to figure out essentially the [inaudible] market share of the operators not for that purpose of market sharing but I want to know whether that one piece of data was statistically significant. Like, we have L-root data and what percentage of that is everything? Do we need more data?

So, I was trying to see, basically, across the board what was the percentage that any one set of data was representative of. Beyond that, in terms of not-so-specific plans, but I would like to be able to build a dashboard of the DNS servers for the root zone so we have an idea of what's going on across the board at a longer-term view of this.

BRAD VERD: I think if you're building a dashboard, I think the members of RSSAC and I think, certainly, the root operators would like to understand what that dashboard would represent and what it would look like, so they'd like to give feedback if you're willing to accept it or work with them on it.

UNIDENTIFIED MALE: I would say right now, it's not – I don't have a specific plans for the dashboard but that's given time, that's what I would want to build for the purpose of the root zone registry.

BRAD VERD: All right. It seems like we've jumped into the last question, also. Seems like maybe these two have blended together a bit, which is a question from OCTO, which is it seems that not all the root servers are published in RSSAC 002 data. Is there an ETA that they will publish that data?

I think the answer is all the roots are collecting RSSAC 002 data. There is, I believe, one that is not currently publishing the 002 data.

UNIDENTIFIED MALE: That's correct. We're in the process of testing our data this week with the intention of starting publishing next week, so that's F-root.

BRAD VERD: Yeah. I think they're auditing the data to ensure that it is accurate and correct before they go back and publish. The lead-in or kind of the follow-on question to that is that was there, and Ed, you kind of answered this, is there something going on that

requires data from all the roots or do you have enough statistical data from the root you have to answer the question you're asking?

ED LEWIS: Yeah, and the one thing I was looking at was traffic volume, the gross traffic volume from each of the server operators out there, and there's two that don't report that. F is one of them right now and then G-root has, they have some RSSAC 002 but they have at least one thing in 002 published but they don't have the traffic volume out there, and that's what was missing from what I was [inaudible].

BRAD VERD: I know this topic is on the agenda for the upcoming Root Ops meeting and I will raise it with them again. Come back with you. Anything further around RSSAC 002 data? Matt?

MATT LARSON: Yeah. I guess just to request that to get that it would be really helpful for the interest of not just OCTO research but anybody looking at the root server system to have all the roots publishing all the RSSAC 002 data in as timely fashion as possible. Just a general request just so that everybody can get visibility in the system. I guess I'll leave it at that. Yeah.

BRAD VERD: Yes. I will, as the Chairs, we will take that back to the root operators group and share that sentiment with them.

UNIDENTIFIED MALE: Yeah, and not just timely but also consistency, right? Because we want to compare apples to apples, more or less.

BRAD VERD: Understood. Great. So, that brings the RSSAC 002 questions to a close. Is there any other business that we want to cover? Should cover? Need to cover?

UNIDENTIFIED MALE: I guess, one question that I would ask to RSSAC in general is what can OCTO do to make your lives easier? Because we're all about help.

BRAD VERD: Well, I think Wes brought up the tools effort that is underway. Obviously, there is – how shall I say it? There's always a need for instrumentation and tooling and that would be of great value, I believe. Anything else people want to add? Lars.

LARS-JOHAN LIMAN: I think I would like to add. If you see or feel that there are policy or political tension or friction somewhere and you think that we don't know about it, then I think it would be helpful if you let us know. Bottom line is exchange of information, when you see things that you think could change root zones, let us know and, of course, that goes the other way around for us, as well.

DAVID CONRAD: Actually, I might be able to add to. I'm sure you all have noticed that the Chinese government put out a cyber or infrastructure thing that actually specifically mentions the root servers. My understanding is that that is actually not a change of position with the U.S. government. I said U.S., wow. Chinese government but rather is a reiteration and clarification of a previous stated position that they believe that root servers are critical in global infrastructure, with the Internet, so while it's, obviously, something that the root server operators would probably be interested in observing, it's not necessarily a significant change in position from the government of China.

BRAD VERD: Tripti.

TRIPTI SINHA:
So David, to answer your question about how you could help. As you know, the RSSAC is engaged in some intense work regarding Next Generation and evolution of DNS root services. So, at some point in the near future, as our work progresses, we will likely engage them, engage you to see how you could assist. In particular, you are doing some assessment of the data that you're collecting in aggregate, so we will certainly reach out and see how we can leverage your expertise.

BRAD VERD:
Duane?

DUANE WESSELS:
Also, David, to answer your question, I think almost all of the OCTO team are members of the RSSAC Caucus and I would like to encourage them to participate in RSSAC's work parties.

DAVID CONRAD:
In their copious spare team.

DUANE WESSELS:
Yes.

BRAD VERD:
I'll echo that. That would be tremendously helpful. Thank you.

All right. Well, I believe without any other business, that brings our agenda to a close. All right. Well, thank you for your time and we will adjourn this meeting. Thank you.

UNIDENTIFIED MALE: Thank you.

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