
ICANN82 | CF – How it Works: The RIRs
Sunday, March 09, 2025 – 09:00 to 10:00 PST

DAVID HUBERMAN

All right. The session will now begin. Please start the recording. Hi, good morning, everybody and welcome. Here we go. Hello, everybody. And welcome to this how it works session on the RIRs. My name is David Huberman, and I am the participation manager for this session.

Please note, this session is being recorded, and is governed by ICANN's Expected Standards for Behavior and the ICANN Community Anti-harassment Policy. During this session, for those online or in the room, please type questions or comments into the chat, and I'll read them aloud during any question and answer portions of our session.

If you would like to speak, if you're here in the room, go ahead and get my attention, and I'll recognize you, and you can open up your microphone and speak. If you are online, please raise your hand in Zoom, and when called upon, unmute your microphone to speak. When speaking, please state your name for the record, and please speak at a reasonable pace.

All right, here we go. We'll begin. I will now hand the floor over to German Valdez, resource organization.

Note: The following is the output resulting from transcribing an audio file into a word/text document. Although the transcription is largely accurate, in some cases may be incomplete or inaccurate due to inaudible passages and grammatical corrections. It is posted as an aid to the original audio file, but should not be treated as an authoritative record.

GERMAN VALDEZ

Thank you very much, David. Thank you for joining us this Sunday morning on this how it works session as [inaudible]. I'm here with my friend and colleagues. Could you introduce, Hollis?

HOLLIS KARA

Hello. My name is Hollis Kara, and I'm—

GERMAN VALDEZ

So, this how it works sessions are designed to be introductory information for ICANN participants. This will give you information about the Regional Internet Registry System, which are the second N of the ICANN acronym. We are the numbers people. We are a small group of people, but still relevant for ICANN's mission. So, we agreed with ICANN staff to organize this session for the benefit of people that's on this in a little bit where we stand regarding the numbers resources. So, this is done. Next.

So, we have an agenda for this session. Hollis and I will share the load for this morning. I will talk about the overview of the Regional Internet Registry System. We'll talk about the policy development that we follow in the RIR world. We'll talk a bit about the internet number resources, routing, and we'll end the presentation with some noteworthy developments and RIR services and tools.

So, who we are? What we do? In very short, the RIR manages the allocation and administration and registration of the internet

numbers resources globally. That's the main and simple description of what we are. Next slide.

We are five organizations that perform this responsibility. We are distributed globally, and we deliver services at continental level. The first RIR that was established is RIPE NCC. We service Europe, Middle East, and Central Asia. Then was followed by the establishment of APNIC, which covers the Asia Pacific region. RIPE NCC is based on Amsterdam. APNIC is based on Brisbane, Australia. Then ARIN covers the North America region and parts of the Caribbean. They are in Virginia, United States. Then LACNIC was created in 2002. They are based on Montevideo, Uruguay. They service, the Latin American and the part of the Caribbean that ARIN is not covering. So they share that region. And then our youngest brother is AFRINIC. They are established in Mauritius and they service the African continent.

We have some functions that we perform for the benefit of our communities. As I mentioned before, we manage this and distribute the Internet Number Resources. Those are the IPv4, IPv6, the autonomous system [inaudible]. One of the core services that we provide is that we maintain directory services. So, we provide information of where those allocations of internet numbers are placed, what organization are holding those resources, and we try to do this service as accurate as possible.

Provide also reverse DNS, so we can obtain from IP addresses a domain name which is the reverse process that the normal DNS works. And we support the internet infrastructure through

technical coordination with other technical organizations. I will talk more about our policy development process, but we offer a platform for our community to develop policy. And also, we have very ambitious training and capacity building programs that we deliver in our service of regions.

So, before we develop more, I'd like to talk a little more history. During the '80s and the '90s, the administration of all names, numbers and protocol were contracted by the Department of Defense of the United States to the University of Southern California, specifically to this person in the picture, Jon Postel. So, he was in charge of having that directory services for domain names. And eventually, well, the internet explore it. The U.S. government separated the commerce and military internet. And we require some regulations where at this point, the RIRs started to emerge.

But before the establishment of RIRs, there were some early registration as I mentioned with the administration of the early '80s and '90s [inaudible] the existence of the RIRs. So, in those days, internet numbers were allocated freely. Organizations were not required to sign any contract. And these were so limited, and they required some level of administration. So, that's where the RIRs started to deliver their services. Those early registrations they are described as legacy space.

So, with the creation of the RIRs, each RIR shares three factors regarding governance. Each RIR community sets the policies by what each RIR it's registered. So, it depends upon the community

to establish those policies. Each RIR also depends on a national legal framework. Before I mentioned where those RIRs are established, and they work with that legal framework in the specific country they are based. And the five RIRs also fulfill a specific function for global internet governance system on the technical aspects. We are focused on technical aspect strictly.

We share some characteristics in our functions. All RIRs are not-for-profit, member-based organizations. We manage and distribute the internet number resources that are allocated to us from IANA. We support the infrastructure through technical coordination, and we facilitate [inaudible]. We are independent, non-profit, member-based and community-regulated.

One important aspect that we offer to our community is our policy development. And this policy development is open for any participants, any sector, private sector, technical community, academia, civil society, internet users or governments and national/international organization can participate of our policy development process. It's open, it's equal footing, and one important characteristic, you don't need to be a member of RIR in order to participate in policy discussions.

Like all policy processes, it serves a cycle. We are inclusive. As I mentioned before, anyone can participate. All the old policy that we implemented and we follow start with the community. Each RIR have a specific policy development process, but all the three share these characteristics. Eventually, we'll have a body that will decide implementation or not. A specific discussion of a policy, but started

with the community. That's a bottom-up process. And as part of the responsibilities of the RIRs, we offer open and transparency, a process where we document and offer possible media participation for anyone who is interested to get involved with our policy discussions.

So, the NRO, the Number Resource Organization is the coordinated body for the five RIRs. Through the NRO, we promote coordinated effort to guide the Internet Number Registry System as a whole. We are a voice in defending the multistakeholder model and the bottom-up policy process in internet governance discussions. And also, it serves as a coordination body for the five RIRs, technical project, political project, and that's the main functions of the NRO.

Through the NRO, also, we offer some publications. We have a global statistics quarterly, statistics about the distribution of IPv4, across IPv6, ASN across the globe. Also, we start to provide information about RPKI. We'll talk more about that later on in the presentation. Also, we provide a narrative policy document that we also update quarterly. This is a comparison of documents regarding different policies across the five RIRs. All this documentation is accessible in the NRO website.

So where do we start to feed the number community in the ICANN structure? Well, ICANN has different groups. They have a technical liaison group. They have advisory councils, and they have support organizations. We are part of the support organization structure. We are the other support organization. We provide ICANN with

input regarding global policy on internet numbers. We also appoint representatives to different bodies inside the ICANN.

So, the Address Council is made of representative from the five RIRs. It's composed of 50 members, three from each region. Two of these are elected by the community, and one is appointed by the RIR. The term of office differs from RIR to RIR. Some has one year, two years or three years is the maximum. And the main responsibilities of the Address Council is to advise ICANN board on internet numbers matters. Oversee the global policy development process. There is a global policy that applies from IANA to the five RIRs. And appoint two members to the ICANN board, seat 9th and 10th. And as I mentioned before, they are also representative to different bodies as part of the ICANN structure. The most relevant one, I think, is the ICANN NomCom with one representative.

As I mentioned, we are collaborating with ICANN with the Global Policy Development Process, distribution of internet numbers, follow a global policy that has been approved by ICANN and the five RIR communities. If there is a need of a new global policy, the same document must be discussed in the five regions, and it needs to follow a specific process that needs to be approved eventually by the ICANN board. What the policy process does is basically how the IANA distribute the internet number resources to the five RIRs.

All right, let's talk about numbers in specific. So, part of the resources that the RIRs administer, we have IPv4s and IPv6. And the next slide. And the autonomous system numbers. Those are the three identifiers that we keep a record of the distribution among

different entities and regions around the globe. The autonomous system numbers, well, it identifies a group of networks. It's essential for the exchange of routed information about different internet service providers. So, it must be a unique identifier for an ISP.

So, the IP addresses are needed for every device that is connected to the internet. They must be unique for that specific device. They are different of domain names. That's why we are organizing as a different community inside the ICANN policy. Domain names policy is developed inside ICANN. IP address policy is followed and developed in each RIR community.

So, how these IP addresses are issued? Well, IANA has five customers. These are the five RIRs. They allocate resources to the five RIRs, which eventually will follow their policies to distribute these inside the regions. Could be for an end-user or could be to an internet service provider that eventually they distribute those resources to their own customers or through other ISPs. [inaudible] distribution process. And routing [inaudible]. Oh, yes. Next slide, please.

So, as I mentioned, we have this black cloud, this is the internet, and we need to use the internet number identifiers to allow the routing to happen.

So, in the next slide, we'll show an example of the different type of networks that exist. Mobile network, wireless network, traditional

copper fiber network. And all of these will require to connect devices. Next slide.

Each device will require a unique identifier, an IPv4 or an IPv6 address. And each of those devices are connected to a network. Each network will need to have a unique identifier, which is the autonomous system numbers that will be used to exchange routing information with other organizations.

So, it's important that we keep a record of where all those resources are allocated to avoid duplications, to avoid problems with the routing. And we work very hard to keep those information accurate. And also, to work in parallel projects, technical projects to secure routing and improve routing processes around the world. And with that, I'll pass this to Hollis.

HOLLIS KARA

All right. It's my turn. So, surprisingly, this slide is still a part of this presentation because it is still a pivotal and influencing moment in where we are as our RIRs received their last /8 from IANA. And that meant that the free pool at IANA was basically depleted. And so, we do still [inaudible] movement toward IPv6 does remain steady and slow. At some point, we're going to be able to speed up the video, and it's going to be one of those cool little [inaudible]. However, there's still a very high demand for IPv4. All the RIRs are receiving significant numbers of requests. Customers have been [inaudible] just demonstrates, and all of these slides of data, data points on

resource distributions from the RIRs are part of that global—all of the RIRs are allocating IPv6. Good morning.

Interestingly enough, [inaudible] we could allow it to just become a black market with no real registry interaction. And that second option was really a non-starter because as RIRs [inaudible] the communities have all decided and have implemented at different points market transfer policies. And they allow IPv4 holders to transfer RIRs. Role in this remains to ensure that the recipients of transferred space and those transfers are happening in compliance with policy. We are in no way involved. It is, I think, basically remarkably steady across each region independently with a few exceptions and those happen.

All of the RIRs, WHOIS registry is publicly accessible. I think that's the noteworthy point there. And that data includes, yeah, [inaudible] that kind of lays on top of or next to or is squishing WHOIS as it exists previously, and that is registration data access protocol. All five of the RIRs through the NRO are collaborating on across RIR project that I will talk about in just a moment.

But moving on, why that's on RPKI adoption across the RIRs. So, that is a place to be looking for updates as progress continues. The goal is to provide a consistent and uniformly secure and resilient RPKI service. This is important because while RPKI is a standard—

DAVID HUBERMAN

Hollis, and thank you, German. We're now at the question and answer period for this session. We do have quite a bit of time. For

those online, we have a question and answer pod you can ask questions in. You can raise your hand. And those in the room can raise your hand as well. We do have a question online. Yazid Akanho asks, do the NRO daily stats of resource allocation take into account intra and inter RIR resource transfers or not?

GERMAN VALDEZ

Intra, I don't think that is part of the NRO stats. It's inter change of resources among RIRs is part of the global stats that we provide.

DAVID HUBERMAN

German and Hollis, all the RIRs, thank you very much. Thank you all for joining today. And this session has now concluded.

HOLLIS KARA

Thanks, everybody.

GERMAN VALDEZ

Thank you.

[END OF TRANSCRIPTION]