

# Report: Open Forum on Regional Internet Registries

*Monday, 18 December, 2017 | 12:15 (CET) | ROOM XI-A*

The Open Forum on Regional Internet Registries (RIRs) took the format of an interactive panel session and was led by APNIC Director General Paul Wilson, supported by Alan Barrett (AFRINIC CEO), Oscar Robles (LACNIC CEO) and Axel Pawlik (RIPE NCC CEO). The session focused on the RIRs' collective role in managing critical Internet resources and was broken into the following segments:

## **About the RIRs**

A brief introduction about the five RIRs was given. Paul Wilson explained that the RIR system was introduced in the 1990s to manage the distribution and registration of IP address space and ASNs on a regional basis. While each RIR operates independently, all five are membership-based, not-for-profit organisations and follow a bottom-up, community driven mode of governance. The five RIRs act collectively on matters of global importance as the Number Resource Organization (NRO).

## **ICANN and the Independent ASO Review**

Paul Wilson explained that the RIRs collectively perform the function of the Address Supporting Organization (ASO), one of the Supporting Organizations (SOs) called for in the ICANN Bylaws. Every five years, an independent party assess how each SO is performing and whether it is fulfilling its mission within the ICANN community. In 2017, the second ASO Review was conducted. An overview of the findings was given:

- It is clear that the ASO has a continuing purpose.
- The ASO operates in a manner that is accountable to the Number community.
- The ASO is one of the lesser-known SOs but one of the better organized ones.
- There is misunderstanding about the scope and separate roles of the ASO and the NRO.
- Certain aspects of the ASO MoU need to be updated.
- The reviewers documented 18 recommendations that should be put into place by the RIRs (acting collectively as the NRO), by ICANN and/or by the ASO Address Council (AC).

It was noted that the NRO/ASO had accepted all 18 of the recommendations and was working on an implementation plan. Paul Wilson explained that one, Recommendation 18, suggests that the RIRs hold public consultations across their communities to discuss whether any changes to the future structure of the ASO are necessary. This will be addressed by each RIR individually over the course of 2018. There was some discussion on this, with participants interested in the methodology used for gathering the data used in the review.

## **IPv6 Deployment and IPv4 Exhaustion**

An overview of IPv4 exhaustion and IPv6 deployment was given. Paul Wilson explained that the pool of 4.3 billion IPv4 addresses is reaching exhaustion due to the massive increase in the number of devices connected to the Internet. As of 2017, only around 20 million IPv4 addresses remain available for allocation. The pool of IPv6, which was developed by the Internet Engineering Task Force (IETF) in the early 1990s, greatly expands the number of available IP addresses, ensuring that addressing needs will be met for decades to come. He pointed out that IPv4 exhaustion did not mean that the Internet would stop working: Without IPv6, though, the Internet would not be able to expand.

He noted that IPv6 deployment had been extremely slow, mainly due to the financial investment required by operators. However, in recent years, as the pool of available IPv4 address space has dwindled, there has been an increase in IPv6 deployment.

The session continued with statistics on IPv6 deployment, availability and capability from around the world. It was noted that within the last few years, deployment has grown from less than 2% to over 15% in 2017.

There was discussion on IPv4 transfers, which enables holders of IPv4 resources to transfer them to another party. All five RIRs now have policies that enable IPv4 transfers. Alan Barrett noted that, in the AFRINIC region, transfers have only been possible since the beginning of 2017, and are permitted only within the region.

There was also a comment on Carrier Grade NAT, which allows operators to use a limited amount of IPv4 space to connect many devices to the Internet. This has implications for Law Enforcement Agencies (LEAs) in terms of identifying users of specific IP addresses during criminal investigations.

A participant, noting the increase in IPv6 availability, asked if the RIRs' IPv4 distribution policies, which all limit the amount of space given to members, should be amended now that IPv6 is increasingly common. Paul Wilson explained that it is each RIR's community that determine such policies and not the RIR staff: anyone who wishes to change the IPv4 distribution policy should submit a proposal to the relevant RIR community.

## **Community Participation**

An overview was given on how the RIRs serve their communities. Policies on IPv4, IPv6 and Autonomous System Number (ASN) distribution are developed by each RIR community through an open and transparent policy development process (PDP) and the RIRs perform the registration and distribution function according to these policies. Anyone may take part in policy development irrespective of whether they have a financial relationship with an RIR or not. Policy discussions take place on mailing lists and during public policy meetings, which each RIR holds in their respective region twice a year. Paul Wilson noted that, while each RIR has a separate PDP, a comparative policy matrix is compiled and published regularly on the NRO website, offering an overview of how IP address space is managed in different parts of the world.

## **Cooperation with Law Enforcement Agencies (LEAs)**

Each of the five RIRs operates a publicly available database containing registry data, known as WHOIS, which shows where and how IP address space is being used. Paul Wilson explained that LEAs and security/public safety experts are increasingly using this registry data in the fight against cybercrime and attacks, mainly in attribution of online activity to individuals. In each region, as well as globally, the RIRs are engaged with LEAs and form part of the incident response chain. It was noted that LEAs are also becoming increasingly involved in policy development, and in the accuracy of WHOIS data. The RIRs provide training on how to use the WHOIS databases effectively, and what the data can and can't show.

**Video:** <https://www.youtube.com/watch?v=y5k-8xbqwJE>

**Transcript:** <https://www.intgovforum.org/multilingual/es/content/igf-2017-day-1-room-xi-a-regional-internet-registries-raw>

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