ASO/NRO Public Session

ICANN 56, 27 June 2016, Helsinki

ASO/NRO Public Session - Agenda

1. What is policy for Numbers Community and how it is developed? - Filiz Yilmaz

2. Recent developments from Number Community
   2.1 ARIN - Jason Schiller
   2.2 AfriNIC - ASO AC Member
   2.3 APNIC - Tomohiro Fujisaki
   2.4 LACNIC - Ricardo Parata
   2.5 RIPE - Nurani Nimpuno

3. Implementation Aspects and NRO Update – Oscar A. Robles-Garay

4. Reflections from ICANN Board member on Numbers Community - Lousewies Van Der Laan

5. Any Other Business

What is policy for Numbers Community and how it is developed?

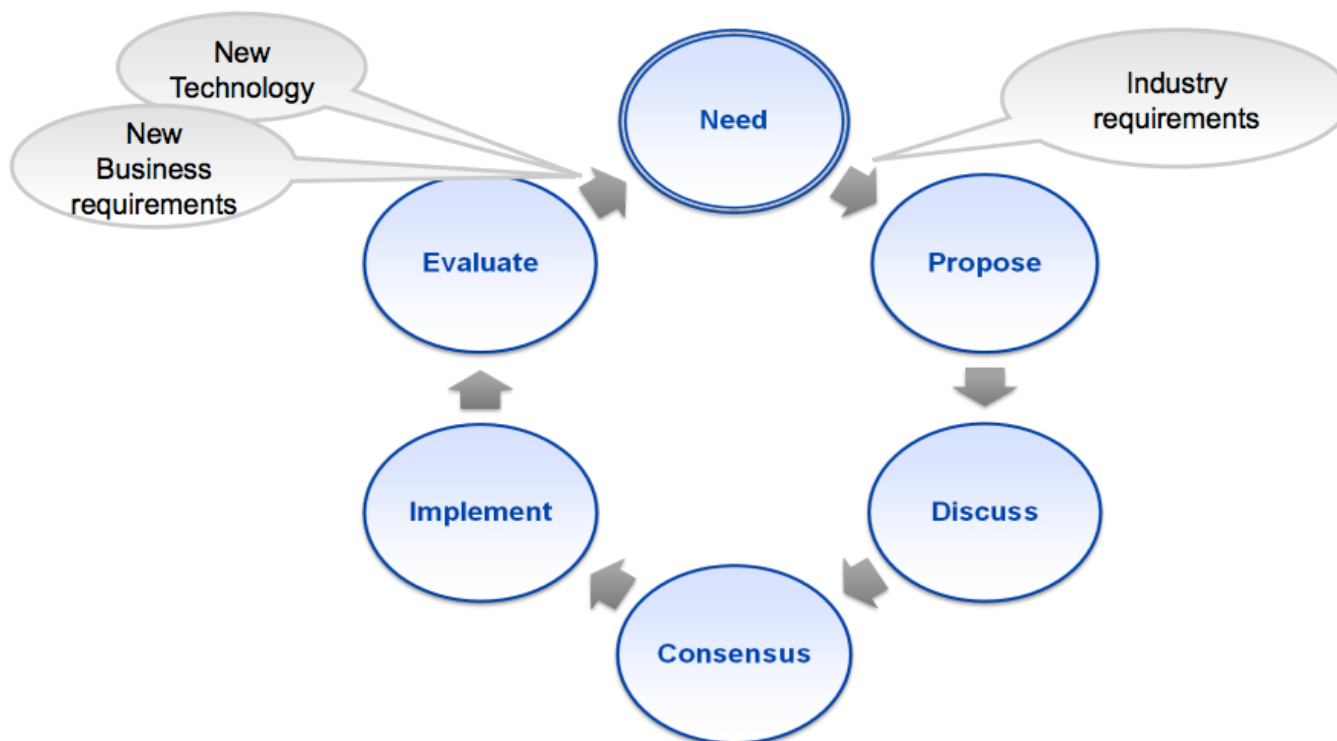Filiz Yilmaz, ASO AC Vice Chair, RIPE Representative to the AC

Who is this Numbers Community?
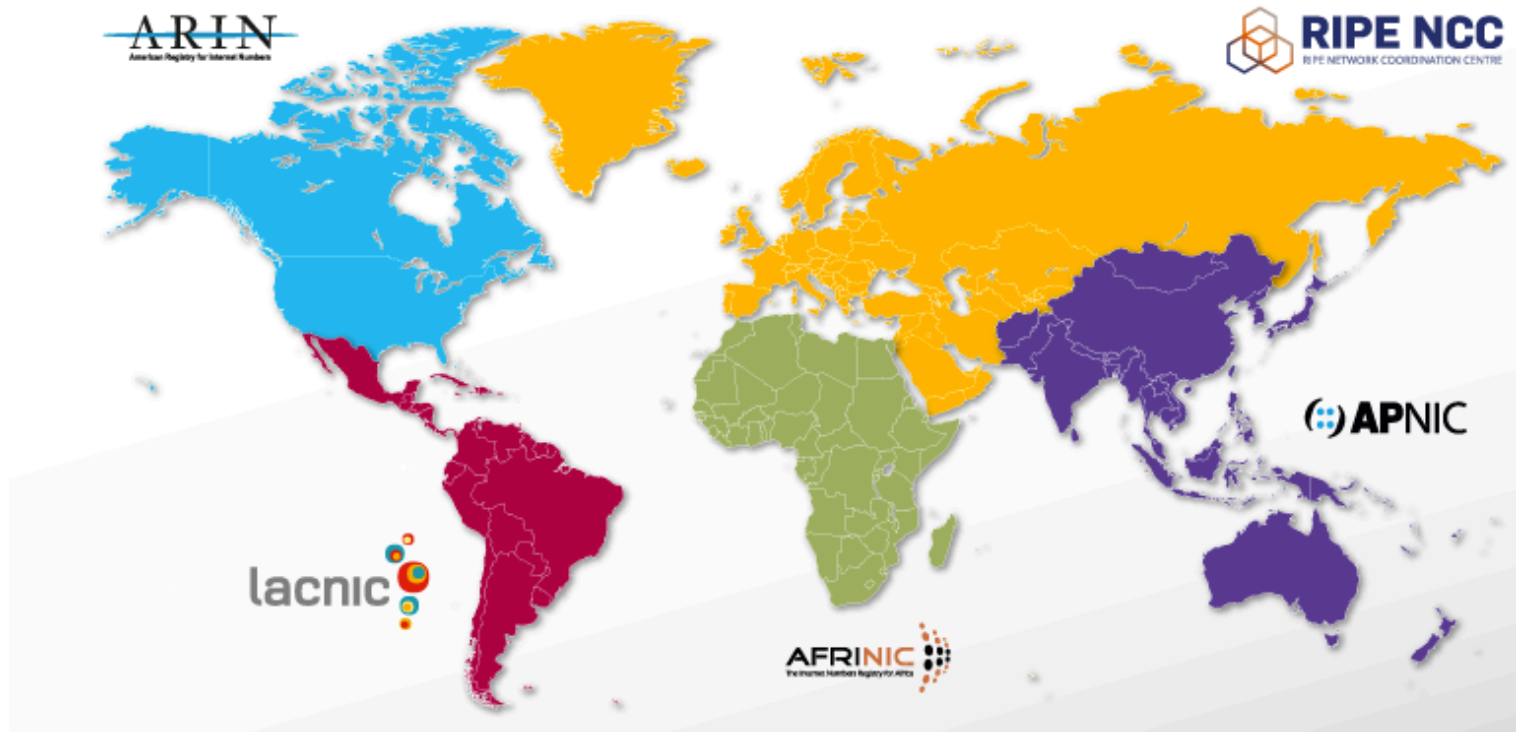
Regional Policy Development

Allocation of Internet Protocol and Autonomous System Numbers and registration

Stems from regional specific needs, grass-root practices

Based on shared **Principles**

Community discussions and decision-making processes are **open** for everyone to participate

All community processes are **transparent**

All community processes are driven in a **bottom-up** fashion, meaning that policy changes are the result of concerns or initiatives from members of the community

Decision making is based on rough **consensus**

So then what are **Global Policies**?

https://aso.icann.org/global-policies/global-policies-2/
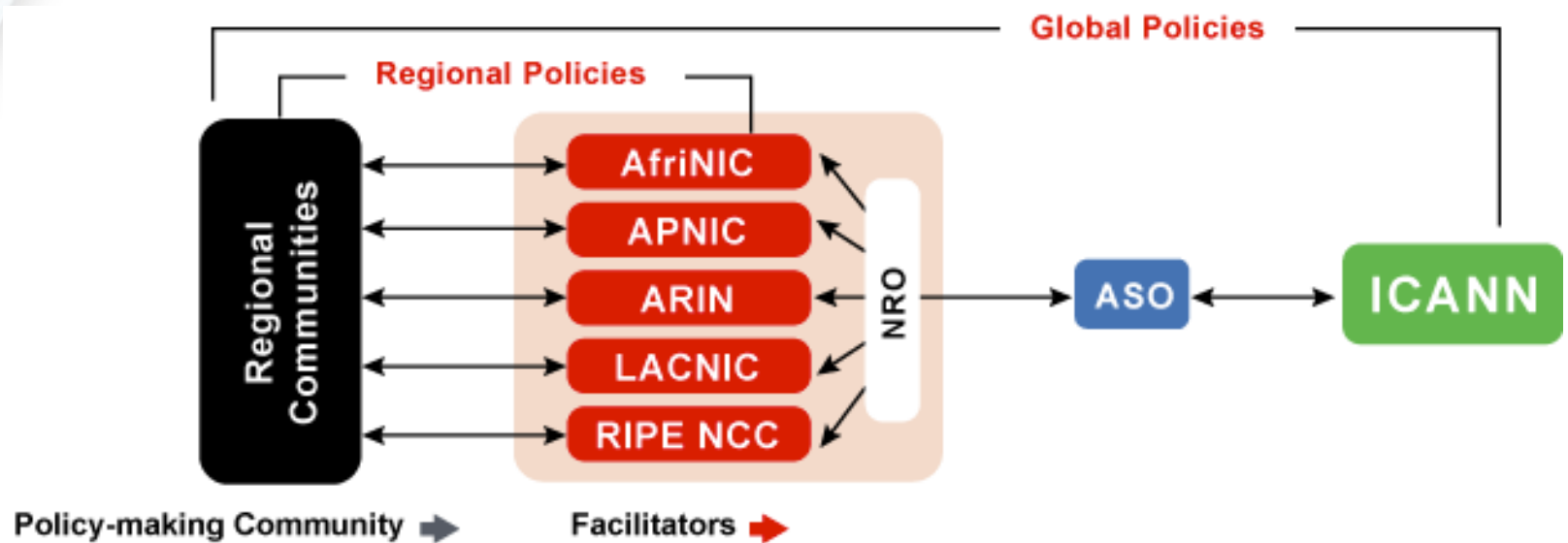
Who is ASO Address Council

15 people from 5 regions: 3 selected members from each region

https://aso.icann.org/advisory-council/address-council-members/

Coordination of the global policy development process

Selection of individuals to serve on ICANN Board seats 9 and 10

Advice to the ICANN Board on number resource allocation policy, in conjunction with the RIRs.

Thank you.
Questions/Comments/Feedback?

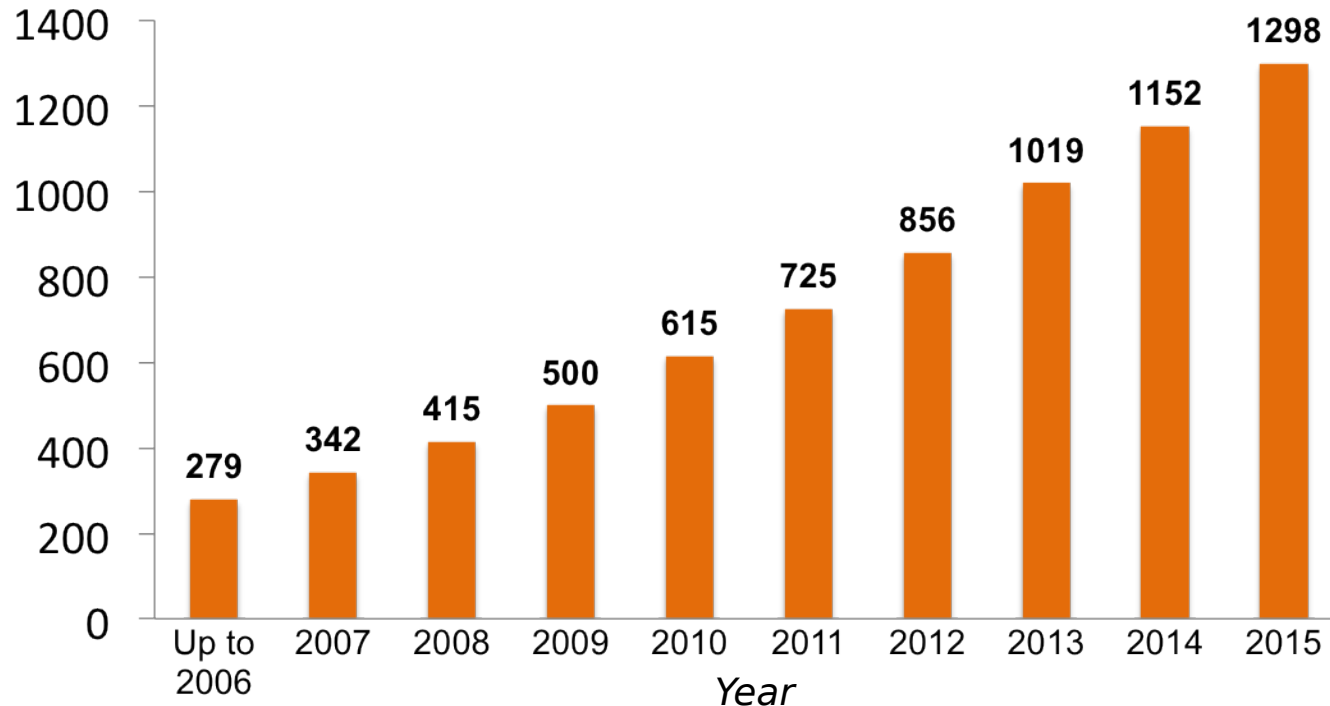# AFRINIC Update

ICANN 56|June 2016

www.afrinic.net   blog.afrinic.net   /afrinic

- **48** new members so far in 2016.
- **150** new members in 2015.
- **1,342** total members to date.

2016:

- **6.4 million** IPv4 addresses allocated so far (**0.38 /8**).
- **17** /32s and 8 /48s of IPv6 address space allocated.
- **49** Autonomous System Numbers (ASNs) assigned.
- **37%** of the membership has an IPv6 allocation.

2015:

- **16 million** IPv4 addresses (approx. 1 **/8**) allocated.
- **4,416** /32s and **27** /48s of IPv6 address space allocated.

The highest annual allocations since 2006!

- **159** ASNs assigned.

1,342 Resource Members:
- Total IPv4 space held by members: **95,133,696** /32s (**5.27** /8s).
- Total IPv6 space held by members: **9,016** /32s.

351 Legacy Space Holders:
- Total IPv4 (legacy) space held by legacy space holders: **8,458,752** /32s (**0.5** /8).

Legacy space holders are organisations that are not AFRINIC members.

AFRINIC is now the only one of the five RIRs that can still allocate IPv4 address space according to traditional policies.

- **1.7** /8s remaining in AFRINIC's IPv4 inventory.
- "Soft landing" policy will take effect when only 1 **/8** remains.

- Focus on getting IPv6 deployed throughout the region:
  - ➢ Free training on IPv6 Deployment: www.learn.afrinic.net.
  - ➢ Use of IPv6 test bed.
  - ➢ Knowledge share and information exchange.

AFPUB-2015-GEN-001-DRAFT-01: Number Resources Transfer Policy.

This proposal calls for IPv4 address transfers to be facilitated in the AFRINIC region so that African network operators can benefit from an open IPv4 address market when AFRINIC's IPv4 inventory is finally exhausted.

- Discussions during AFRINIC (23 & 24) included:
  - The feeling that the proposal stands to benefit regions other than Africa.

- Status: *Under Discussion*.

Two competing proposals to change IPv4 "Soft Landing" policy. Current policy is AFPUB-2010-v4-005:

AFPUB-2016-V4-001-DRAFT-02: IPv4 Soft Landing BIS.

AFPUB-2016-V4-002-DRAFT01: Soft Landing Overhaul.

AFPUB-2016-V4-001-DRAFT-02: IPv4 Soft Landing BIS.

- This proposal is an update to the current IPv4 Soft Landing Policy and describes how AFRINIC will manage allocations/assignments from the last IANA allocated /8 by defining two distinct exhaustion phases:
  - ➢ Phase 1: When only 1 **/8** remains: Sets the maximum allocation/assignment at a **/15** instead of a **/10**.
  - ➢ Phase 2: When only 1 **/10** remains: Sets the maximum to a **/22** and the minimum to a **/24**.
  - ➢ Allocation period changes to **8 months**.
  - ➢ Reserves a **/16** for critical Internet infrastructure and a **/13** for unforeseen circumstances.
- Status: *Under Discussion*.

AFPUB-2016-V4-002-DRAFT01: Soft Landing Overhaul.

- This proposal completely replaces the original and current IPv4 Soft Landing Policy, AFPUB-2010-v4-005.

- New proposal:
  - ➢ Abolishes existing Soft Landing policy.
  - ➢ Intends to create a new category of resource requestors called "new entrants".
  - ➢ Proposes setting aside a **/13** IPv4 block reserved for these "new entrants".
  - ➢ "New entrants" will get no more than a **/22** of IPv4 space each.

- Status: *Under Discussion*.

AFPUB-2016-GEN-001-DRAFT01: Internet Number Resources Audit.

- Proposal authorizes AFRINIC to do regular audits of resource utilisation in order to allow recovery of any type of resource where usage is not in compliance with RSA.
  - ➤ Audits are based on compliance with terms outlined in RSA and Allocation/Assignment Policies.
  - ➤ All resource types are affected by audits, not just IPv4.
  - ➤ Audits can be "random", "selected" (where audit is triggered by an internal non-compliance issue), or "reported" (say by a whistle-blower).

- Status: *Under Discussion*.

AFPUB-2016-v4-003-DRAFT01: Ipv4 Resource Transfers within the AFRINIC region

- Proposal caters to those needing IPv4 space after exhaustion of IPv4 pool, or when IPv4 needs of such requester can no longer be satisfied by AFRINIC.
  - Both source and recipient must be AFRINIC members.
  - Source org not eligible to subsequent v4 block for a period of 12 months after a transfer.
  - Source must not have received a v4 transfer, allocation, or assignment 12 months prior to approval of a transfer request.
  - Recipient must justify the need for the space.

- Status: *Under Discussion*.

AFPUB-2016-GEN-002-DRAFT01: Inbound Transfer Policy

- Proposal caters to inbound transfer of all IP resources, including ASN, IPv4 space and IPv6 space from other RIRs to AFRINIC.
  - ➤ Recipient of v4 or v6 must provide a plan to AfriNIC for the use of ~ 50% of the transferred resource within the next 5 years..
  - ➤ Space received via transfers shall be included in any evaluation done for further resource allocation by AFRINIC.

- Status: *Under Discussion*.
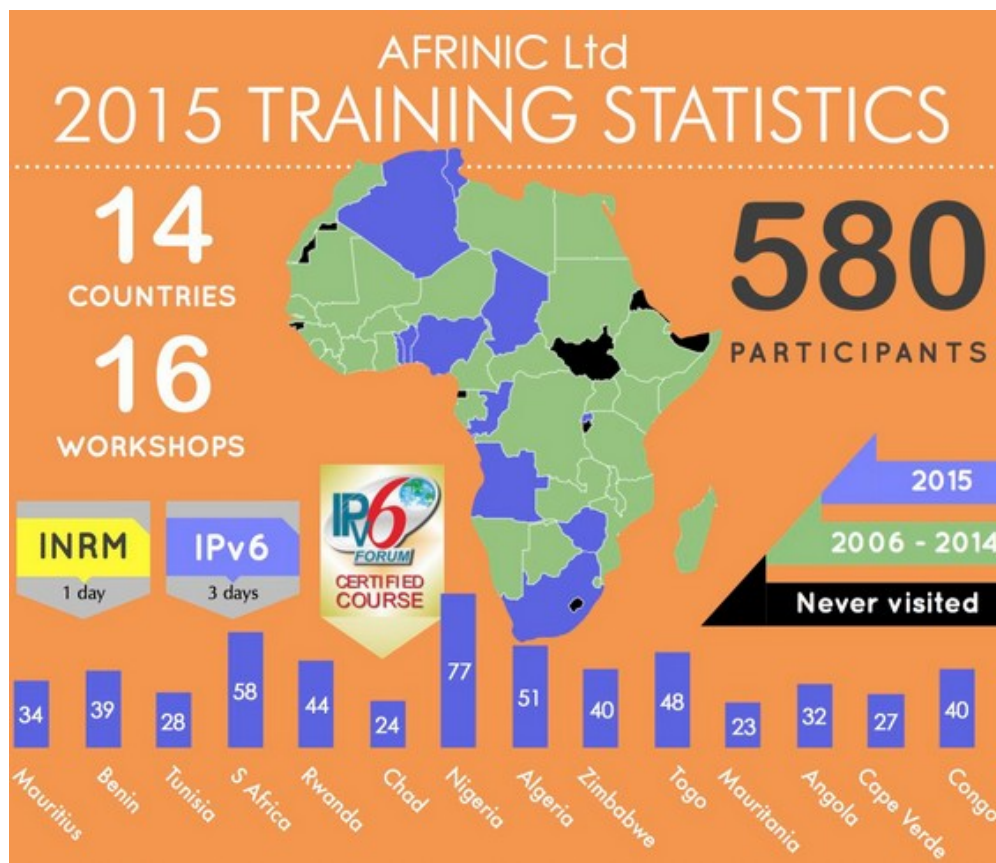
> ➤ Courses so far in 2016: April: Nairobi, Kenya, May: Ethiopia, June: Botswana

- IPv6 Forum Certified (Gold & Silver).
- **520** questions in the test bank (and growing).
  - Covers all key IPv6 topics.
  - Covers all 6 levels of Bloom's Taxonomy: Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation.

- Delivered online in an invigilated environment.
- Seeking partners to administer the exam globally:
  - NOGs.
  - Local Internet Society Chapters.
  - Local IT training organisations.

More information: www.certi6.io | registrar@certi6.io | @IPv6Cert

AFRINIC-25

➢ Mauritius: 25 – 30 November 2016.
➢ Main meeting 28 – 30 November 2016

Thank you for your Attention

Questions?

twitter.com/ **afrinic**

flickr.com/ **afrinic**

facebook.com/ **afrinic**

linkedin.com/company/ **afrinic**

youtube.com/ **afrinic** media

www. **afrinic** .net

Recent developments in Number Community: APNIC

Tomohiro Fujisaki

ASO/AC from APNIC region

Resource policy discussion

- APNIC has two meetings in a year
- Address policies are discussed in policy SIG
- Policies discussed recently:
  - prop-115 - Registration of detailed assignment information in whois DB (withdrawn by authors)
  - prop-114 - Modification in the ASN eligibility criteria (implemented)
  - prop-113 - Modification in the IPv4 eligibility criteria (implemented)

Policies implemented

- Two policies implemented recently
  - prop-114 - Modification in the ASN eligibility criteria
    - Modified the eligibility criteria for Autonomous System Numbers
      - the absolute requirement to multihome is removed.
        » an organization is eligible for an ASN assignment if it is planning to use it within next 6 months.
  - prop-113 - Modification in the IPv4 eligibility criteria
    - Extend the criteria for end-site IPv4 delegation
      - currently multi-homed, or inter-connected with provider (ISP)-based addresses, or demonstrates a plan to advertise the prefixes within 6 months.

Policy consultation

- Not concrete policy proposals but potential policy change discussion
  - Improving APNIC Whois Data Quality (APNIC41)
  - IP-based Geolocation issues (APNIC41)
  - IP addressing and IoT/M2M services (APNIC40)

Facilitating participation to policy discussion

- Unfortunately, policy discussion in APNIC region is not so active now
  - Some activates to increase interest are ongoing
    - Policy Champions program
      - Policy Champions are individuals who volunteer to engage with their community about APNIC Policy Development
    - Policy development process & current policy proposal report session in local language

All presentation slides, recordings can be referred from:

https://conference.apnic.net

Recent Policy Developments in the ARIN Region

Agenda

1. What is policy for the numbers community and how it is developed?
2. Recent developments from the numbers community
   a. ARIN
   b. AFRINIC
   c. APNIC
   d. LACNIC
   e. RIPE
3. Implementation aspects and NRO update
4. Reflections from ICANN Board member on the numbers community
5. Any other business

Recent Developments from the ARIN Region

Two main topics of discussion in the ARIN region

- Justified need vs open market
- Policy simplification

Justified Need Over Open Market: Various Arguments

- ## The RIRs provide a stewardship role
  - Internet numbers are a shared resource
  - Internet number resources should be conserved, and used efficiently
  - Internet number resources should be equally available to those who need them
- ## Internet number resources have always been given out fairly on a justified needs basis
- ## Now that the ARIN free pool is depleted
  - Resources are scarce
  - Stewardship is more critical than it has ever been
  - An open market would concentrate IP addresses
    - The companies with the deepest pockets
    - The services that generate the most revenue per IP address
    - Competition for a given service in a given market could be stifled if one player has more IPv4 addresses than the rest and wide spread IPv6 adoption has not occurred

Open Market Over Justified Need: Various Arguments

- An open market will most efficiently distribute IP addresses
  - Only those who need IP addresses will pay for them
  - Supply / demand will set the price appropriately
  - Internet number resources will continue to be available for those who are willing to pay the market rate
- It is not possible to corner the market or manipulate pricing for gain
- Justified need only makes sense when ARIN was giving out addresses
  - ARIN free pool is empty, ARIN allocations / assignments are virtually done
- People are completing transfers outside of ARIN policy
  - IP futures
  - IP leases
  - IP transfer not recognized by ARIN
- ARIN provides value in ensuring uniqueness and an accurate registry
  - Removal of justified need will allow whois to be accurate

Policy Simplification

- Separation of transfer policy from ARIN allocation / assignment policy
  - Transfer policy references ARIN allocation / assignment policy rules
- Simplify transfer policy
  - Make the process easier to understand and navigate
  - Make the process more predictable
  - Loosen / remove justified need
- Remove ARIN allocation / assignment policy
  - ARIN is virtually no longer provide IPv4 addresses
  - Remove all the ARIN allocation and assignment policy

ARIN Policy Developments

Current policies under development

https://www.arin.net/policy/proposals/

ARIN 37 policy report

https://www.arin.net/vault/participate/meetings/reports/ARIN_37/ppm.html

Current ARIN Recommended Draft Policies

- ARIN-2015-2: Modify 8.4 (Inter-RIR Transfers to Specified Recipients)
  - Allow transfers with no restriction to hold addresses for one year if the source and receiving companies are under common control or one controls the other
- ARIN-2016-1: Reserved Pool Transfer Policy
  - IP addresses from reserved pools are not permitted to be transferred

Current ARIN Draft Policies

- ARIN-2015-7: Simplified requirements for demonstrated need for IPv4 transfers
  - Split ARIN allocation / assignment policy from transfer policy
  - Show a plan for 50% utilization of current + requested resources within 2 years for transfers
- ARIN-2016-2: Change timeframes for IPv4 requests to 24 months
  - Re-align time horizon for ARIN allocation / assignments to match transfer time horizon
- ARIN-2016-3: Alternative simplified criteria for justifying small IPv4 transfers
  - Show 80% utilization of current holdings then double (up to a /12) for transfers
- ARIN-2016-4: Transfers for new entrants
  - ISP with no IPs can get up to a /21 transfer
  - End-users with no IPs can get a /24 transfer
- ARIN-2016-5: Post-IPv4-Free-Pool-Depletion Transfer Policy
  - No utilization requirements for M&A transfers
  - Show 50% utilization of current holdings for transfers
  - Show a plan to use 50% of requested transfer within 2 years
  - Organization with no IPv4 addresses can get a /24 transfer

Recent ARIN Policy Developments (Pending Implementation)

- ARIN-2015-3: Remove 30 day utilization requirement in end-user IPv4 policy
  - Remove 25% utilization in 30 days for end-users
- ARIN-2015-5: Out of region use
  - ARIN resources can be used outside the ARIN service region
    - Requires a substantial connection to the region
      - Conducts business / has customers / has staff / holds meetings / has investors in the ARIN service region
    - Requires a minimum used in region
      - /22 IPv4, /44 IPv6, 1 ASN
- ARIN-2015-11: Remove transfer language which only applied pre-exhaustion
  - Remove requirement that a source entity cannot receive ARIN allocation or assignment for one year after being a source of a transfer
- Editorial Change for M&A Transfers
  - Clarify that return of underutilized address space that is voluntary

Recent developments from LACNIC region

Ricardo Patara
ASO/AC from LACNIC region

Policy Development process

Policy discussions take place in the mailing list (open and public)

Any proposal presented in the mailing list 4 weeks befor public forum are considered for discussion in the forum

LACNIC holds 2 Policy Public Forum per year
- Next one to be holden in San José/CR Sept 26 to 30

Recent discussions

Very much focused in IPv6 and IPv4 transfers and "termination phase"

Showing mature IPv6 deployment in the region

Concerns with IPv4 depletion
- LACNIC free pool ended Jul 2014
- Termination policies in place since then
  - 2 reserved IPv4 pools
    - /22 each 6 months
    - /22 for new members only

Recent approved policies

LAC-2016-6 Remove maximum size for IPv6 assignments to end users, which is currently set to /32.

LAC-2016-4 Remove some of the documentation requirements in order to justify initial IPv6 allocation, like for instance detailed routing plan and subnet planning.

Proposals in discussion

LAC-2016-5 For IPv6 allocations to have additional organization category which would be governamental ISP. As per author view, currently they could not justify larger allocation.

LAC-2016-3 To remove multi-homed verification when of initial allocation to ISPs. Regions with fewer or just one option for upstream provider would block ISPs to apply for the initial allocation.

Proposals in discussion

LAC-2016-2 To create a new and exclusive IPv4 for termination phase for Critical infrastructure operators.

Other topics

IPv4 reserved pool had it size incremented from original /11 to /10 (new /11 added). This due to the large amount of recovered IPv4 being received.

IPv4 intra-RIR transfer implemented last March. Policy was already in the text but inactive.
Also related to this, there was a policy proposal to limit the period a new IPv4 allocation could be then transferred to 3 years.

Thank you.
Questions?

RIPE Policy update

Nurani Nimpuno, ASO AC
ICANN56, Helsinki, Finland

What is the RIPE NCC?

- Secretariat for the RIPE Community

- One of five Regional Internet Registries (RIRs)
  - Serves Europe, Middle East and parts of Central Asia

- Allocates IPv4, IPv6 and AS Numbers
  - Maintains RIPE database

- Open, transparent, neutral, impartial

RIPE Policy

- Policies guide the RIPE NCC and everyone in the service region on use of IPv4, IPv6 and ASNs
  - Policies constantly evolve
- Policy development in RIPE is done via working groups — following an open, bottom-up, consensus-based approach
- Anyone can participate

Current Policy Discussions (IPv4)

- **2015-04, "RIPE Resource Transfer Policies"**

  – Single transfer policy for all transfer of Internet number resources

- **2015-05, "Revision of Last /8 Allocation Criteria"**

  – Allows LIRs to request an additional /22 IPv4 allocation from the RIPE NCC every 18 months (WITHDRAWN)

- **2016-03, "Locking Down the Final /8 Policy"**

 – Limits IPv4 from the remaining address pool to one /22 allocation per LIR (regardless of how it was received)

Current Policy Discussions (Other)

- **2016-01, "Include Legacy Internet Resource Holders in the Abuse-c Policy"**

    – Requires an abuse contact for legacy Internet resource holders in the RIPE Database

- **2016-02, "Resource Authentication Key (RAK) code for third party authentication"**

    – Allows all number resources to be authenticated via an API key

2015 PDP Participation by Country
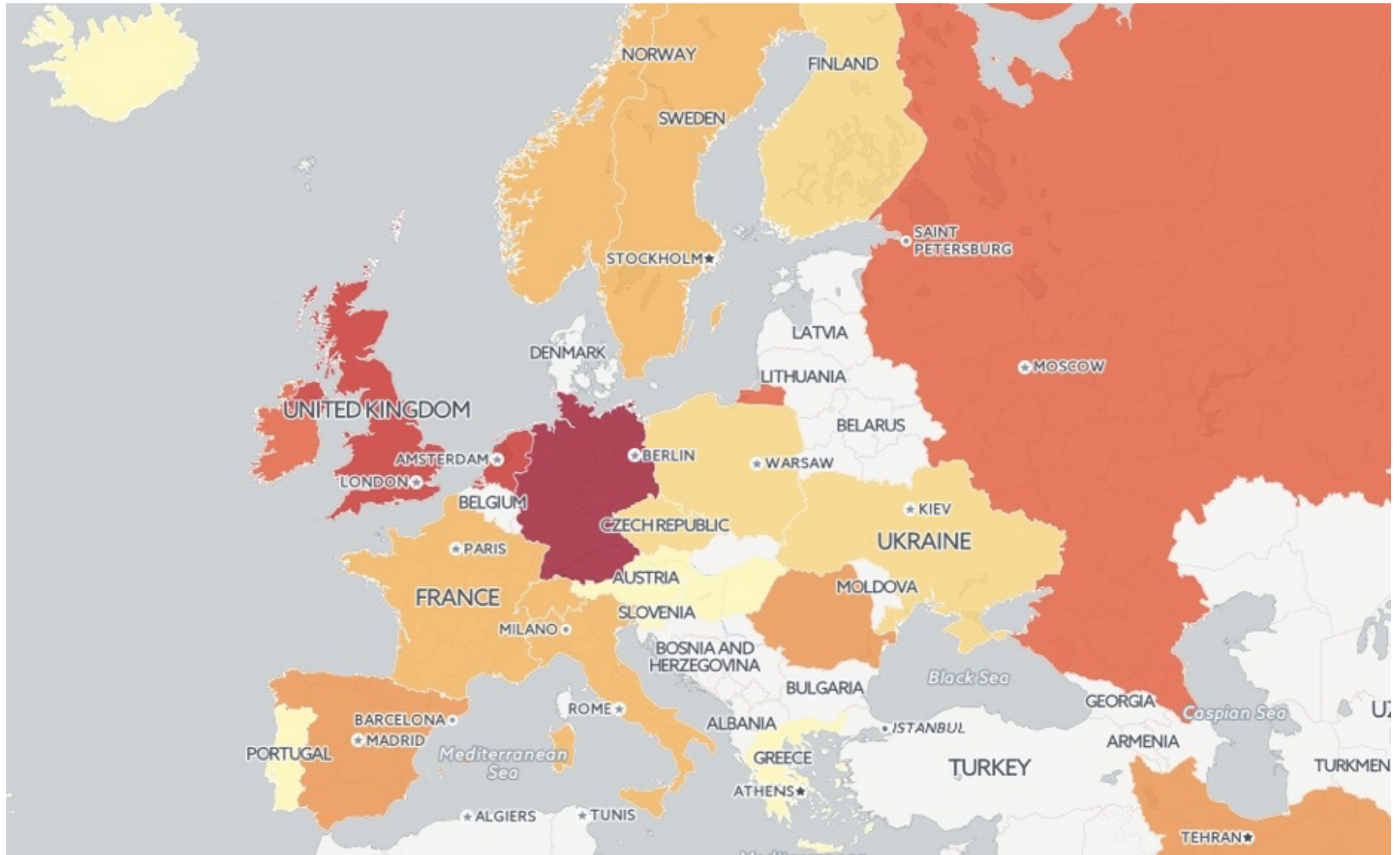
RIPE Forum

- Web-based interface to RIPE community mailing lists

- Modern way to interact

- A post creates an email and vice versa

- Everything happens on your browser, no emails to your inbox (if you wish)

- No impact for current mailing list subscribers

RIPE Forum

Address Policy Working Group

Collapse Off

Threaded ON

[address-policy-wg] opposition to 2015-04

Remco van Mook

2016-05-25 09:52:55 CET

Share

```
Dear all,

as just mentioned during the address policy session, I'm withdrawing my
objection to 2015-04. While I do think a discussion about policy structure
still needs to be held, I don't think it should hold up this proposal any
longer. This can be fixed after adoption - as long as we're aware.

I do maintain my suggestion to put references in place where chapters about
transfers are removed from other sections of policy.

Kind regards,

Remco
```

Reply

Aleksey Bulgakov

2016-05-25 09:57:23 CET

Share

```
Please, go to https://ripe72.ripe.net/live/main/ . There is discussion
about IPv4 proposals now.

2016-05-25 10:52 GMT+03:00 Remco van Mook <remco.vanmook _at_ gmail _dot_
com>:
>
> Dear all,
```

RIPE

Useful Information

- Current RIPE Policy Proposals:
  - http://ripe.net/pdp/proposals

- Map Address Policy Engagement
  - http://bit.ly/APWGML15

- RIPE Forum
  - https://www.ripe.net/participate/mail/forum/

- Follow
  - @PDO_RIPE_NCC

RIPE

Thank you

Nurani Nimpuno

NRO update

To be the flagship and global leader for collaborative Internet number resource management as a central element of an open, stable and secure Internet

Presentation Summary

- **NRO Introduction**
  - What is the NRO
  - Key Focus Areas
  - NRO in 2015 & Finance
- **NRO Activities**
  - NRO Global Information
  - RIR Accountability
  - IANA Stewardship Transition
  - NRO Participation

Number Resource Organization

What is the NRO?

- **Number Resource Organization**
  - NRO MoU, 24 Oct 2003.
  - Lightweight, unincorporated association.

- **Mission**
  - Provide and promote a **coordinated Internet number registry system**;
  - Promote the **multi-stakeholder** model and **bottom-up** policy development process in Internet governance;
  - Coordinate and support **joint activities** of the RIRs;
  - Act as a **focal point** for input into the RIR system;
  - Fulfill the role of the ICANN Address Supporting Organisation (ASO).

NRO Key Focus Areas

- Support RIR coordination.
- Global collaboration and governance coordination.
- Monitor an contribute to global Internet governance discussions.

NRO in 2016

- **Executive committee**
  - Oscar Robles(Chair) – LACNIC
  - John Curran (Secretary) – ARIN
  - Paul Wilson (Treasurer) – APNIC
  - Alan Barrett- AFRINIC
  - Axel Pawlik – RIPE NCC
- **Secretariat**
  - Hosted by ARIN
  - Executive Secretary: German Valdez (since April 2013)
- **Coordination Groups**
  - CCG, ECG, RSCG.

NRO Finances

- **Expenses**
  - Travel (ASO AC Chair and Executive Sec).
  - Communications (Webex), NRO CG coordination (Meeting room) and outreach.
  - IGF Contribution
  - Contribution to ICANN.
    - Remains at $823,000 per annum (SLA included)
  - Staff cost (Executive Secretary)
- **Budget**
  - Shared proportionally based on registration services revenue.
- **Joint RIR Stability Fund**
  - to help ensure reliable operation of the Internet's IP address management system globally in case of disruptions or emergencies.
  - Pledges for over 2.1 million US Dollars
  - https://www.nro.net/joint-rir-stability-fund

NRO Global Information

- **Internet Number Status Report**
  - Updated quarterly.
  - Global stats on IPv4, IPv6, ASN
  - https://www.nro.net/statistics

- **Comparative Policy Overview**
  - Updated quarterly
  - New information on RIRs membership policy (access to delegation and registration services)
  - https://www.nro.net/comparative-policy

RIRs Accountability

- ## Governance Matrix
  - Overview of the governance frameworks of the RIRs.
  - Information on Bylaws, Regional PDP, Dispute Resolutions, Use of Whois, Privacy issues, Budget, Activity planning etc.
  - https://www.nro.net/governance-matrix
  - Ongoing process to improve RIR accountability mechanisms

- ## RIR Accountability Q&A
  - https://www.nro.net/rir-accountability

- ## Joint RIR Independent Accountability Review
  - Independent review currently in process in all RIRs.
  - Results will be made public

IANA Stewardship Transition

- ## IANA Stewardship Transition – CRISP Proposal
  - Support of Consolidated RIR IANA Stewardship Proposal (CRISP) Team to drive Internet Number Community consultation process
  - Meetings records, charter, members
    - http://www.nro.net/crisp-team
  - Community Proposal submitted to ICG
    - http://www.nro.net/crisp-final-proposal
  - IANA Numbering Services ReviewCommittee Charter
    - https://www.nro.net/review-committee-charter-v1

- ## RIR - IANA Service Level Agreement
  - Fully based and in compliance with CRISP proposal.
  - SLA final document to be signed during ICANN Meeting in Helsinki
    - http://www.nro.net/sla

NRO Participation

- **Participation in the 10th IGF in Brazil.**
  - NRO supports annually to the IGF - 100K USD.
  - NRO Booth
  - Two NRO Workshops (including IPv6 deployment) and RIR Open Forum
  - Support of IPv6 Best Practice Forum
- **OECD Ministerial on Digital Economy 2016 in Mexico**
  - ITAC IPv6 session
  - Internet of Things Panel
- **Preparations for the 11th IGF in Mexico.**

Thank You

- http://www.nro.net