The ASO is a supporting organization of ICANN

Number Resource Policy Development Activities

Louie Lee
Chair, ICANN ASO Address Council
ICANN 40
San Francisco
16 March 2011
1. About the ASO: MoU, Global Policy, Address Council
2. Policy Development Process
   - RIR PDP: Principles, Roles, Basic Steps
   - Global PDP
3. IANA Update
4. NRO Update
5. Impact of IANA’s IPv4 Free Pool Exhaustion
6. Regional Activities: AfriNIC, APNIC, ARIN, LACNIC, RIPE
7. Global Number Policy and Global Proposals
8. Closing: Questions and Answers, How to Participate

Please ask questions at the end of each section.
About the ASO: ASO MoU

ASO MoU (dated 21 October 2004)

- Agreement between ICANN and the Numbering Resource Organization (NRO)
- NRO fulfills the role of the ASO
- The NRO Number Council fulfills the role of the ASO

Address Council

- Defines the Global Policy Development Process (PDP) as a 15-step process
  - From proposal through adoption by the ICANN Board
  - Based on the RIR’s PDPs... “…the global policy proposal [will] be placed on the agenda for next open policy meeting in each region, in accordance with the applicable policy process…”
Global Policy

- “Global policies are defined within the scope of this agreement as Internet number resource policies that have the agreement of all RIRs [Regional Internet Registries] according to their policy development processes and ICANN, and require specific actions or outcomes on the part of IANA or any other external ICANN-related body in order to be implemented.”*

- For the most part, global proposals/global policies determine number allocation policy for requests from the RIRs to the IANA (RIRs receive their number resources from IANA)

*Defined in the ASO MoU (dated 21 October 2004)
About the ASO: The Address Council

Comprised of 15 elected and appointed individuals from all 5 regions

Independent body separate from RIR management and board to:

1. Oversee global policy development
2. Appoint 2 ICANN Board of Directors
3. Serve on ICANN bodies: NomCom, AoC Review Teams
4. Advise ICANN Board on number resource matters
Open Forum
- Open Policy Mailing List
- Open Policy Meetings

Transparent
- PDP documented
- Policies documented
- Meetings documented

Bottom Up
- Consensus-based
- RIRs do not dictate policy, they implement
Community
- Submit policy proposals
- Discuss policy proposals (in favor or not?)

Consensus Evaluator
- Determine consensus

Board
- Provide fiduciary and process oversight
- Ratify policy

Staff
- Conducts assessments of proposal impacts
- Implement ratified policy
1. Community individuals and groups submit a proposal

2. Community discusses the proposal on the mailing list

3. Community discusses the proposal at an open policy meeting

4. Consensus evaluation

5. Last Call

6. Adoption

7. Implementation
Global proposal discussed/presented at all 5 RIRs per their PDPs
- ASO AC members follow and participate in discussions

After adoption by all 5 RIRs proposal forwarded to the ASO AC
Global Process: Overview (cont.)

ASO AC Proposal Review
- Process (RIR PDP) review
- Common agreement among RIRs on common text
- Adequate consideration of viewpoints

ASO AC forwards proposal to ICANN Board for adoption

ICANN Board adopts, and IANA implements
9 Global Proposals (since 2001)
- Adopted and implemented as policy = 6
- Under discussion = 2
- Did not become a global policy = 1

Details of these policies/proposals in later presentation

http://nro.net/policy/index.html#regional
Global Process: Globally Coordinated Proposal

Review

- Global Proposal
  - Policy about IANA and RIRs
- RIR Proposal
  - Policy about RIRs and their customers

Globally coordinated proposal

- Same proposal discussed/presented at each of the RIRs
- Normally the goal is to have the same policy worldwide
  - Processed as normal RIR proposals without triggering action by IANA
  - Examples include original IPv6 allocation policy and transition policy to 4-byte AS numbers
IANA Status Update
(see next presentation)
NRO report

John Curran
Secretariat
NRO Executive Council
What is the NRO?

• Number Resource Organisation
  – Vehicle for RIR cooperation and representation

• Formed for the purposes of:
  – protecting the unallocated Number Resource pool
  – promoting and protecting the bottom-up policy development process
  – acting as a focal point for Internet community input into the RIR system

• Established the ASO within ICANN framework
  – By MoU signed on 21 October 2004
NRO 2011

• Current office holders
  – Chairman: Raúl Echeberría, LACNIC
  – Secretary: John Curran, ARIN
  – Treasurer: Paul Wilson, APNIC

• NRO Coordination Groups
  – Engineering Coordination Group (ECG): Chair - Arturo Servin, LACNIC
  – Communications Coordination Group (CCG): Chair - Ernesto Majó, LACNIC
  – Registration Services Managers (RSM): Chair - Leslie Nobile, ARIN
ICANN / ASO

• NRO expenses distribution 2010
  – Weighted formula based on revenue and resources held

  AfriNIC       3.50 %
  APNIC        32.40 %
  ARIN         24.70 %
  LACNIC       4.70 %
  RIPE NCC     34.60 %

• NRO contribution to ICANN
  – We have renewed our agreement
  – The NRO remains committed to a yearly contribution of $823,000.
• Nairobi, Kenya, 7-12 March 2010
  • Continued efforts to address ITU IPv6 distribution concerns

• Brussels, Belgium, 20-25 June 2010
  • Meeting with ICANN/IANA Vice President, Elise Gerich
  • NRO Retreat
  • Resulted in NRO participation in Accountability and Transparency Review Committees through the ASO AC

• Cartegena de Indias, Columbia, 5-10 December 2010
  • ASO AC Update to Community, ICANN Board and Government Advisory Committee (GAC)
NRO has actively participated in all the previous IGF events

NRO is represented in the Multistakeholder Advisory Group (MAG) - Raúl Echeberría and Cathy Handley

NRO is represented in the Commission on Science and Technology for Development (CSTD) Working Group - Sam Dickinson and Oscar Robles.

Last Meeting
- 14-17 September in Vilnius, Lithuania
  - Meeting with UN Assistant Secretary General Jomo
  - NRO Booth run by RIR staff
  - Workshop Coordination & Participation
  - Financial contribution to the IGF Secretariat
  - NRO Press Release regarding IPv6
  - Updated NRO Brochure on Continuing Cooperation
International cooperation

• ITU
  – Continued efforts to promote self governance model
  – Meeting with ITU to discuss and understand their issue(s) with IPv6 address management and distribution.
  – Participation in Plenipotentiary, 4-22 October 2010, Guadalajara, Mexico

• OECD
  – The NRO is a founding member of the Internet Technical Advisory Committee (ITAC), continues its participation advising on issues of critical Internet resources in forums including the Working Party on Communications Infrastructure and Service Policy (CISP)
Ongoing activities in 2010/11

• Engineering Coordination
  – Focus on Resource Certification (RPKI) implementation coordination

• Communications / Outreach
  – Message development regarding IPv4 and IPv6
  – Develop Secure Internet through Resource Certification (RPKI) messaging
  – Preparations for ITU IPv6 (March) and IGF (September)

• NRO workshop in 3-8 February, Miami Florida
  – Hosted by ARIN
  – Concurrent with ICANN/IANA distribution of last 5 /8s
  – Met with ICANN, ISOC, IAB & IETF Executives
Workshop outcome

- Continue working towards a single Resource Certification (RPKI) Trust Anchor
- Review of 2011 CCG Work Plan
- Preparation of items to review with ISOC and ICANN executives
- Letter to ICANN regarding IANA NOI
- ITU IPv6 Working Group coordination
- IGF continuing support and participation
Thank You

http://www.nro.net
Impact of IANA’s Free Pool Exhaustion

Louie Lee
Chair, ICANN ASO Address Council
IPv4 Address Space Utilization

*as of 3 February 2011*
Available IPv4 Space in /8s

<table>
<thead>
<tr>
<th>Year</th>
<th>Mar</th>
<th>Jun</th>
<th>Sep</th>
<th>Dec</th>
<th>Mar</th>
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Note: The values represent the available IPv4 space in /8s for each year and month, with the year ending at 2011.
Each RIR received its last /8 from IANA on 3 February 2011.

The IANA free pool of IPv4 addresses has reached 0%.

While each RIR currently has IPv4 addresses to allocate, it is impossible to predict when each RIR will run out.
IPv4 & IPv6 - The Bottom Line

We’re running out of IPv4 address space.

IPv6 must be adopted for continued Internet growth.

IPv6 is not backwards compatible with IPv4.

We must maintain IPv4 and IPv6 simultaneously for many years.

IPv6 deployment has begun.
RIRs have been allocating IPv6 address space since 1999.

Thousands of organizations have received an IPv6 allocation to date.

The RIRs have IPv6 distribution policies for service providers and end-user organizations.
Today, the Internet is predominantly based on IPv4.

For the foreseeable future, the Internet must run both IP versions (IPv4 & IPv6) at the same time. (When done on a single device, this is called the “dual-stack” approach.)

Deployment is already underway. Today, there are organizations attempting to reach your mail, web, and application servers via IPv6...
Currently, most of the Internet-facing services are not IPv6-enabled.

If this doesn’t change prior to deployment of the first IPv6-only networks, then there will be a gap between the IPv6-only Internet and the IPv4-only Internet.

The best solution is to deploy IPv6 in a dual-stack fashion.

If dual-stack doesn’t happen, then networks must use transition/translation technology to enable IPv6.
Action Plans

What does this mean for:

- Broadband Access Providers?
- Internet Service Providers?
- Internet Content Providers?
- Enterprise Customers?
- Equipment Vendors?
- Government Organizations?
Call to Action

Customers want access to the entire Internet, and this means IPv4 and IPv6 websites. Offering full access requires running IPv4/IPv6 transition services and is a significant engineering project.

Multiple transition technologies are available, and each provider needs to make its own architectural decisions.
Call to Action

Plan out how to connect businesses via IPv6-only and IPv4/IPv6 in addition to IPv4-only.

Businesses are beginning to ask for IPv6 over their existing Internet connections and for their co-located servers.

Communicate with your peers and vendors about IPv6, and confirm their timelines for production IPv6 services.
Call to Action

Content must be reachable to newer Internet customers.

Content served only via IPv4 will be accessed by IPv6 customers via transition solutions run by access providers.

Plan on serving content via IPv6 in addition to IPv4 as soon as possible.
Call to Action

Mail, web, and application servers must be reachable via IPv6 in addition to IPv4.

Open a dialogue with your Internet Service Provider about providing IPv6 services.

Each organization must decide on timelines, and investment level will vary.
Call to Action

There was probably limited demand for IPv6 in the past.

Demand for IPv6 support will become mandatory very, very quickly.

Introduce IPv6 support into your product cycle as soon as possible.
Call to Action

Coordinate with industry to support and promote awareness and educational activities.

Adopt regulatory and economic incentives to encourage IPv6 adoption.

Require IPv6 compatibility in procurement procedures.

Officially adopt IPv6 within your government agencies.
IPv6 Adoption Needs

IPv6 address space

IPv6 connectivity (native or tunneled)

Operating systems, software, and network management tool upgrades

Router, firewall, and other hardware upgrades

IT staff and customer service training
IPv4 activities

• Transfer policies
  • Between organizations within a region
  • Between RIRs

• Soft landing policies
  • Setting aside special-use address blocks for transition mechanisms (e.g. NAT, infrastructure)
  • Reducing maximum size address blocks to be allocated

• Return to and redistribution by IANA – Global policy
  • Allows IANA to receive address space from the RIRs
  • Allows IANA to allocate space back to the RIRs
Mitigating the Effects of IPv4 Exhaustion

IPv6 activities

• Remove certain requirements for obtaining space directly from RIRs
• Add alternate means of justification
• IPv6 education and outreach

Overall education and outreach

• In-person outreach: industry conferences, conventions, ISOC events, etc.
• Online education: “how-to”s, compatibility lists, etc.
Resources

NRO IPv4 | IPv6 FAQ

http://www.nro.org/ipv6/nro_depletion_deployment_faq

http://www.youtube.com/v/XGZ0Cao_o_E&hl=en&fs=1&

AfriNIC IPv6 Virtual Lab
http://www.afrinic.net/projects/cvl.htm

APNIC IPv6 Program
http://www.apnic.net/community/ipv6-program

ARIN IPv6 Wiki
http://www.getipv6.info/

LACNIC IPv6 Portal
http://portalipv6.lacnic.net/en/

IPv6 Act Now
http://www.ipv6actnow.org/
Global Number Policy and Global Proposals

Louie Lee
Chair, ICANN ASO Address Council
Criteria for Establishment of New Regional Internet Registries (ICP-2* “Internet Coordination Policy”)
- Adopted by ICANN Board per ASO AC recommendation on 4 June 2001
- October 2002 LACNIC was recognized by ICANN as an RIR
- April 2005 AfriNIC was recognized by ICANN as an RIR

Global policy on IANA Allocation of IPv4 address space to the Regional Internet Registries
- IPv4 allocations from IANA to the RIRs (unit is /8s, 18-month needs)
- Adopted by ICANN Board per ASO AC recommendation on 8 April 2005

Global Policy for Allocation of IPv6 Address Space
- IPv6 allocations from IANA to the RIRs (unit is /12s, 18-month needs)
- Adopted by ICANN Board per ASO AC recommendation 7 September 2006

*ICP-1 and ICP-3 are DNS policies
Existing Global Policy (cont)

**Global Policy for Allocation of ASN Blocks to Regional Internet Registries**
- Autonomous System Numbers allocations from IANA to the RIRs (unit is blocks of 1024 AS numbers)
- Adopted by the ICANN Board per ASO AC recommendation 31 July 2008

**Global Policy for the Allocation of the Remaining IPv4 Address Space**
- The last five /8s are reserved, one /8 per RIR from the IANA at the end
- Adopted by the ICANN Board per ASO AC recommendation on 6 March 2009

**Global IANA Policy for Allocation of ASN Blocks to RIRs**
- Modified the global ASN policy to allow IANA to process separate 2-byte and 4-byte requests through 2010.
- Adopted by the ICANN Board per ASO AC recommendation on 22 July 2010
Global Policy for Allocation of IPv4 Blocks to RIRs (2009/2010 timeframe)

- Passed in 5 RIRs, but passed in one with revised text
- Does not meet the criteria to be advanced by the NRO EC to the ASO AC in its current state
- Abandoned
Global Policy for IPv4 Allocations by the IANA Post Exhaustion

- Allows IANA to receive address space from the RIRs
- Allows IANA to allocate space back to the RIRs
- Status:
  - AfriNIC – Discussed/presented and sent back to the list for more discussion
  - APNIC – Abandoned
  - ARIN – Adopted
  - LACNIC – Discussed/presented and sent back to the list for more discussion
  - RIPE – Withdrawn
Global Policy for post exhaustion IPv4 allocation mechanisms by the IANA

- Allows IANA to receive address space from the RIRs
- Allows IANA to allocate space back to the RIRs
- Status:
  - AfriNIC – To be submitted
  - APNIC – Discussed-going to last call
  - ARIN – Recently proposed
  - LACNIC – To be submitted
  - RIPE – To be submitted
Regional Policy Proposals

Louie Lee
Chair, ICANN ASO Address Council
Recent Regional Policy Proposal Activities (Spring 2011)

Global IPv4 policies (8)
- AfriNIC (2), APNIC (2), ARIN (2), LACNIC (1), RIPE (1)

Other IPv4 policies: allocation, reclamation, transfer (28)
- AfriNIC (4), APNIC (7), ARIN (9), LACNIC (6), RIPE (2)

IPv6 address allocation policies (4)
- APNIC (2), ARIN (1), LACNIC (1)

WHOIS changes policies (7)
- AfriNIC (2), ARIN (2), LACNIC (1), RIPE (2)

Total: 47 regional policies
AfriNIC Policies and Proposals

Fiona Asonga
AfriNIC representative, ICANN ASO Address Council
Impact of IANA's IPv4 free pool exhaustion
- Status of IP address assignments: IPv4 & IPv6
- Status of AS number assignments
Summary of recent and active policy proposals: global & regional
Update on outreach and education activities
Like other Resources, Internet Number Resources are finite ...(4,294,967,296 possible IPv4 addresses in total and thus exhaustible.

Are becoming more scarce as more of the world comes online.

Thus..

Internet number resources must be managed judiciously as a common resource.

Public policies ensure proper management that serves the broad interests of all stakeholders.
IP Address Assignments

IPv4 Addresses By Type

- Allocation (120.5K)
- PI Assignment (21.1K)
IP Address Assignments

IPv6 Addresses

Years

/32s

1984 87 90 93 96 99 02 05 08 2011

0 7 14 21 28 35 42 49 56 63 70
Status of AS Number Assignment

![Graph showing the status of AS Number Assignment](image-url)
The AfriNIC policy development process

• --The set of steps by which the African Internet community proposes, deliberates and adopts the policies that guide the use of number resources in the AfriNIC service region--
Principles of the Process

- **Open**: Anyone can propose and discuss policies.
- **Transparent**: All proposals, their discussion and related presentations are documented and available on our website.
- **Bottom-up**: Policies are proposed, discussed and approved by the community, not by AfriNIC, the Board, ICANN/IANA or any government.
How to take part in the PDP

1. Subscribe to the resource policies discussion mailing list (send a mail to rpd-request@afrinic.net, with the word “subscribe” in the subject field)

2. Submit and discuss policy proposals on mailing list.

3. Attend AfriNIC public policy meetings to discuss and deliberate on policy proposals.

4. Nominate people (even yourself) to serve on the PDP moderators group and NRO-NC
About Global Internet Policies

Most policies are regional - apply only Africa.
Other policies are global - must be ratified in all RIRs before they can be implemented.
Proposals Currently Under Discussion

- **Abuse Contact Information in the AfriNIC service region** (AFPUB-2010-GEN-006)
  
  Proposal to consolidate abuse contact information in a single object in the whois database.
  
  Reach consensus during AfriNIC-13

- **Addition of Real Contact Email into ASN Whois Bulk Data** (AFPUB-2010-GEN-007)
  
  Changing the way email addresses are published
  
  Failed to reach consensus during AfriNIC-13
Proposals Currently Under Discussion

• IPv4 Soft Landing Proposal (AFPUB-2010-v4-005)
  - To facilitate gradual transition from IPV4 to IPv6.
  - Reach consensus during AfriNIC-13

• Global Policy for IPv4 Allocations by the IANA Post Exhaustion Proposal (AFPUB-2010-v4-006)
  - All Pv4 inventory be returned and reallocated fairly and equitably by the IANA post-runout.
  - Shall be considered for discussion during AfriNIC-14
### Outreach and Education Activities

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<tr>
<th>DATES</th>
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<tr>
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<td>Togo</td>
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<td>18-20 May 2011</td>
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<tr>
<td>15-17 June 2011</td>
<td>Kenya</td>
<td>English</td>
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</tr>
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</table>
Why Should You Get Involved?

- It is one way to participate in Internet Governance.
- Propose policies that ensure fair and effective use of Internet number resources.
- Balance the discussion by representing the interests of various stakeholders of the Internet.

- The Internet is fast becoming the platform on which many aspects of life run ...it is smart to pay attention to how its most critical resource is managed.
Further Details

• For full details about the Policy Development Process:
  
  http://www.afrinic.net/docs/policies/AFPUB-2010-GEN-005.htm

  To subscribe to the policy discussions mailing list:

  Send a mail to rpd-request@afrinic.net, with the word “subscribe” in the subject field.

• For a full list of implemented policies
  
  http://www.afrinic.net/policy.htm

• For a searchable archive of all policy discussions
  
  https://lists.afrinic.net/pipermail/rpd/
Thank you

Fiona Asonga
AfriNIC representative, ICANN ASO Address Council
## Recently Implemented Policies

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Title</th>
<th>Overview</th>
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<tbody>
<tr>
<td>Prop-079</td>
<td>Abuse contact information</td>
<td>This is a proposal to introduce a mandatory abuse contact field for objects in the APNIC Whois Database to provide a more efficient way for abuse reports to reach the correct network contact.</td>
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<td>Prop-080</td>
<td>Removal of IPv4 prefix exchange policy</td>
<td>This is a proposal to remove the policy that currently permits resource holders to return three or more noncontiguous IPv4 address blocks and have the prefixes replaced with a single, larger, contiguous block.</td>
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<td>Prop-082</td>
<td>Removing aggregation criteria for IPv6 initial</td>
<td>This is a proposal to remove the aggregation requirement from the IPv6 initial allocation policy.</td>
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<tr>
<td></td>
<td>allocations</td>
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### Reached Consensus at APNIC 31

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Title</th>
<th>Overview</th>
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</thead>
<tbody>
<tr>
<td>IPv6 Policy</td>
<td><strong>prop-083</strong> Alternative criteria for subsequent IPv6 allocations</td>
<td>Permits current APNIC account holders with networks in multiple locations but without a connecting infrastructure to obtain IPv6 resources for each location.</td>
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<tr>
<td>IPv4 Transfer Policy</td>
<td><strong>prop-095</strong> Inter-RIR IPv4 address transfer proposal</td>
<td>This is a proposal to allow and define a mechanism for the transfer of IPv4 address space between APNIC account holders and organizations in other RIR region(s), providing that the counterpart RIR has a policy that allows transfers of address space with APNIC account holders.</td>
</tr>
<tr>
<td>Global Policy</td>
<td><strong>prop-097</strong> Global policy for post exhaustion IPv4 allocation mechanisms by the IANA</td>
<td>This proposal describes the process that IANA will follow to allocate IPv4 resources to Regional Internet Registries (RIRs) after the central pool of addresses is exhausted. The processes for how IPv4 space may be placed in the IANA Recovered IPv4 Pool is out of the scope of this proposal.</td>
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[http://www.apnic.net/policy/proposals](http://www.apnic.net/policy/proposals)
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<tr>
<td>prop-088</td>
<td>Distribution of IPv4 addresses once the final /8 period starts</td>
<td>This is a proposal to handle any IPv4 address space received by APNIC after the final /8 policy is implemented as being part of the final /8 pool and to redistribute these resources according to the final /8 policies.</td>
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<td>prop-093</td>
<td>Reducing the minimum delegation size for the final /8 policy</td>
<td>This is a proposal to change the minimum size of IPv4 delegations to a /24 when the final /8 policy is activated.</td>
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<td>prop-094</td>
<td>Removing renumbering requirement from final /8 policy</td>
<td>This is a proposal to add an alternative criteria to the requirement for organizations receiving their initial allocation from APNIC to renumber out of their previously deployed space when they are allocated addresses under the final /8 policy.</td>
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Under discussion on the Policy SIG mailing list

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<th>Overview</th>
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<td>prop-084</td>
<td>Frequent whois information update request</td>
<td>This is a proposal for APNIC to regularly contact all APNIC current account holders with resources in the APNIC Whois Database to ask them to actively check that all their details in whois are up to date.</td>
</tr>
<tr>
<td>prop-089</td>
<td>Additional criterion for final /8 allocations (and assignments)</td>
<td>This proposal seeks to restrict the availability of IPv4 allocations and assignments from the final /8 to those members who are responsibly working to ease the transition period to IPv6 as we reach the final stages of IPv4 exhaustion.</td>
</tr>
<tr>
<td>prop-096</td>
<td>Maintaining demonstrated needs requirement in transfer policy after the final /8 phase</td>
<td>This is a proposal to maintain the requirement for recipients of IPv4 transfers to justify their need for address space beyond the current allocation phase and into the final /8 phase.</td>
</tr>
</tbody>
</table>

http://www.apnic.net/policy/proposals
Next APNIC Meeting

- Policy Discussion Mailing lists
  sig-policy@apnic.net
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Thank you

Tomohiro Fujisaki
APNIC representative, ICANN ASO Address Council
The ASO is a supporting organization of ICANN

ARIN Policy and Proposals

Jason Schiller
ARIN representative, ICANN ASO Address Council
Participation in Policy Discussion at ARIN

• Official forums for ARIN policy participation
  – Mailing List (arin-ppml@arin.net)
    • Open to anyone
  – Public Policy Meetings (Spring and Fall)
    • Open to anyone
    • Remote participation available

• How to participate
  – Review Public Policy Meeting agenda and/or archive of policy proposals (https://www.arin.net/policy/proposals/)
  – Review mailing list discussion (arin-ppml@arin.net)
  – Post opinion to list as we lead up to a meeting and/or attend the meeting in person or remotely (upcoming meeting is week of 11 April 2011)
  – Post to last calls following the meetings
Recently Implemented Policy

ARIN-2010-1: Waiting List for Unmet IPv4 Requests
- “ARIN will make each allocation and assignment as a single continuous range of addresses”
- Unused space must be returned to ARIN

ARIN-2010-12: IPv6 Subsequent Allocation
- “Subsequent allocations will also be considered for deployments that cannot be accommodated by, nor were accounted for, under the initial allocation.”
Soon to be Implemented

ARIN-2010-8: Rework of IPv6 assignment criteria
- Nibble boundary assignments based on site counts. Starts with /48 for one to twelve sites, then /44 for 13-192 sites, etc.
- “A site is a discrete location that is part of an organization’s network.”

ARIN-2010-14: Standardize IP Reassignment Registration Requirements
- Expands “cable IPv4 allocation policy” to all ISPs with residential/DHCP-type customers (lowers utilization threshold, increases utilization information requirements).
- Requires SWIP for /64 and larger static reassignments.
Draft Policy Discussions

**ARIN-2011-1: Globally Coordinated Transfer Policy**
- Allows transfers to/from ARIN region

**ARIN-2011-2: Protecting Number Resources**
- Directs ARIN to go after abandoned/fraudulently obtained resources

**ARIN-2011-3: Better IPv6 Allocations for ISPs**
- Makes it easier to get larger blocks of IPv6 space
ARIN-2011-4: **Reserved Pool for Critical Infrastructure**
- Reserves a v4 /16 for critical infrastructure

ARIN-2011-5: **Shared Transition Space for IPv4 Address Extension**
- Allocates a v4 /10 for ISPs to share (e.g. NAT444)

ARIN-2011-6: **Returned IPv4 Addresses**
- “…addresses returned to, recovered, or revoked by ARIN will be made available for allocation or assignment in the ARIN region as quickly as practicable.”
New Policy Proposals

ARIN-prop-126 Compliance Requirement
- Directs ARIN to remove DNS services from ISPs that do not properly register reassignment information

ARIN-prop-132 ISP Sub-assignments Do Not Require Specific Customer Relationships
- Regarding reassignments... “An ISP is solely responsible for determining whether an organization is a customer…”

ARIN-prop-133 No Volunteer Services on Behalf of Unaffiliated Address Blocks
- “Except in the specific circumstances described by this policy, ARIN will not provide any services for any organization and/or address block. This includes without limitation all directory services, reverse mapping services, and future services that may be provided to the community.”
New Policy Proposals (cont.)

ARIN-prop-134 Identification of Legitimate Address Holders
- Establishes criteria for determining whether an organization is the legitimate address holder for a given IP address block.

ARIN-prop-136 Services Opt-out Allowed for Unaffiliated Address Blocks
- “Except in the specific circumstances described by this policy, ARIN will not provide any services for any organization and/or address block. This includes without limitation all directory services, reverse mapping services, and future services that may be provided to the community.

ARIN-prop-137 Global Policy for post exhaustion IPv4 allocation mechanisms by the IANA
- New global proposal. 1/5th of pool twice a year to all 5 RIRs (/24 minimum)
ARIN Meetings

10-13 Apr 2011 San Juan, Puerto Rico

12-14 Oct 2011 Philadelphia
Thank you

Jason Schiller
ARIN representative, ICANN ASO Address Council
LACNIC Policy and Proposals

Sebastian Bellagamba
LACNIC representative, ICANN ASO Address Council
Policies – LACNIC XIII

• LAC-2007-01 Modifications to the IPv6 Prefix Initial Allocation Policy
• The proposal consists of eliminating the requirement of announcing an IPv6 without the possibility of disaggregation.
• Approved and ratified by the board.
Policies (cont...)

- LAC-2009-04 Transfers of IPv4 Blocks within the LACNIC Region
- This proposal enables and defines the rules for performing IPv4 address block transfers between ISPs or end users within the LACNIC region.
- Approved and ratified by the board.
Policies (cont...)

• LAC-2009-09 Modification: 2.3.3.3. Direct Allocations to Internet Service Providers
• To allow ISPs to obtain blocks of their own in those cases that require establishing interconnections with other providers.
• Didn't reach consensus. Was presented again at LACNIC XIV.
Policies (cont...)

- LAC-2010-01 One Public Policy Forum Chair per linguistic community
- That the Public Policy Forum be moderated by three chairs, each belonging to one of the linguistic communities corresponding to LACNIC's three working languages: Spanish, Portuguese and English.
- Didn't reach consensus. Was abandoned by the proposer.
Policies (cont...)

- LAC-2010-02 Election of Chairs through electronic mechanisms
- To change the process for electing Public Policy Forum Chairs so that they are elected by electronic means and later ratified by those in attendance at the Public Policy Forum.
- Approved and ratified by the board.
Policies – LACNIC XIV

• LAC-2009-09 Modification: 2.3.3.3. Direct Allocations to Internet Service Providers
• LAC-2010-05 Initial allocation and assignment of IPv4 addresses for ISPs
• LAC-2010-06 Assignment to End Users with need of interconnection
• To update the “Multihoming” requirement with a more flexible one like “Interconnection Needs”.
• Consensus reached
Policies (cont...)

- LAC-2010-03 Inclusion of ASN in the whois when available
- Inclusion of origin ASN (provided that it is available) in the information of WHOIS of all the LACNIC’s received prefixes.
- Consensus reached
Policies (cont ...)

• LAC-2010-04 Global Policy for IPv4 Allocation by the IANA post exhaustion
• This is a proposal to create a policy allowing for the allocation of IPv4 address space after the depletion of the IANA IPv4 address pool.
• Returned to discussion by Policy Forum chairs. Requires more discussion
How to participate?

• There is an e-mail public list where policies are discussed: https://mail.lacnic.net/mailman/listinfo/politicas

• This list is totally open

• To submit a policy it is required to be a list member in advance

• Policy proposal must be sent using the web form: http://lacnic.net/cgi-bin/formpoliticas/sp/formpoliticas.cgi
Thank you

Sebastian Bellagamba
LACNIC representative, ICANN ASO Address Council
RIPE Policies and Proposals

Hans Petter Holen
RIPE representative, ICANN ASO Address Council
Principles of RIPE Policy Development Process

Open

- Anyone can participate:
  - Mailing lists and policy meetings

Transparent

- Mailing list archived and meetings are scribed

Bottom-up development

- By the Internet community...you

Documented

- Formal policy documents
- More information available at

http://ripe.net/ripe/docs/ripe-500.html
RIPE IPv4 Policy Implemented in 2011

Run Out Fairly (2009-03)

- IPv4 address space will be allocated/assigned based on a decreasing allocation/assignment period:
  - 9 months (in 2010)
  - 6 months (from Jan 2011)
  - 3 months (from July 2011)

Allocations from the Last /8 (2010-02)

- Defines the distribution of IPv4 address space from the final /8
- Implemented in Jan. 2011, will be triggered when allocations are made from last /8
Other RIPE Policies Implemented in 2011

Direct Assignment to End User from the RIPE NCC (2007-01)

• Defines mandatory contractual relationship for IPv4 assignments between End Users and IR (LRs or RIPE NCC)
• Phase 3 to start this week

Registration Requirements for IPv6 End User Assignments (2010-06)

• Creates an improved and structured registration in the RIPE Database for multiple IPv6 sub-allocations
• Accepted and implemented in February 2011
RIPE Proposal Highlights in 2010

Temporary Internet Number Assignment Policies (2010-01)

- Collects all rules for temporary assignments under one policy section
- Last Call ended, now being reviewed by WG chair collective

Global Policy for IPv4 Allocations by the IANA Post-Exhaustion (2010-05)

- Some changes to the text were presented at RIPE 61
- The new text was published in December 2010
- Available to the RIPE community in extended Discussion Phase
Abuse Contact Information (2010-8)

• Defines rules to improve the registration and the availability of the abuse contact data in the RIPE Database
• Discussed at RIPE 61, collaborating with the author for a new proposal text
RIPE Policy Development Process Online

- [http://ripe.net/ripe/policies/index.html](http://ripe.net/ripe/policies/index.html)
- [http://ripe.net/ripe/policies/proposals/index.html](http://ripe.net/ripe/policies/proposals/index.html)
- [http://twitter.com/PDO_RIPE_NCC](http://twitter.com/PDO_RIPE_NCC)
- pdo@ripe.net
Thank you

Hans Petter Holen
RIPE representative, ICANN ASO Address Council
Closing: Questions and Answers

Louie Lee
Chair, ICANN ASO Address Council
How to Participate

Watch the ASO AC site for news about new global proposals
- [http://aso.icann.org/](http://aso.icann.org/)

Participate in the Policy Discussions in your RIR region
- Global proposals are discussed on the RIR’s policy mailing lists and at open policy meetings
- Subscribe and participate on the appropriate list and attend open public policy meetings (remote participation enabled)
  - Open, no membership requirements
  - State your opinion
The ASO is a supporting organization of ICANN

Participation is Easy!

Subscribe to the RIR policy list(s)
- No membership requirements

Attend RIR meetings
- In person (open, nominal fee)
- Remote (free)
Thank you. Questions?

Louie Lee
louie@louie.net
Chair, ICANN ASO Address Council