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.

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

  - <u>Based on the RIR's PDPs</u>... "...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)

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

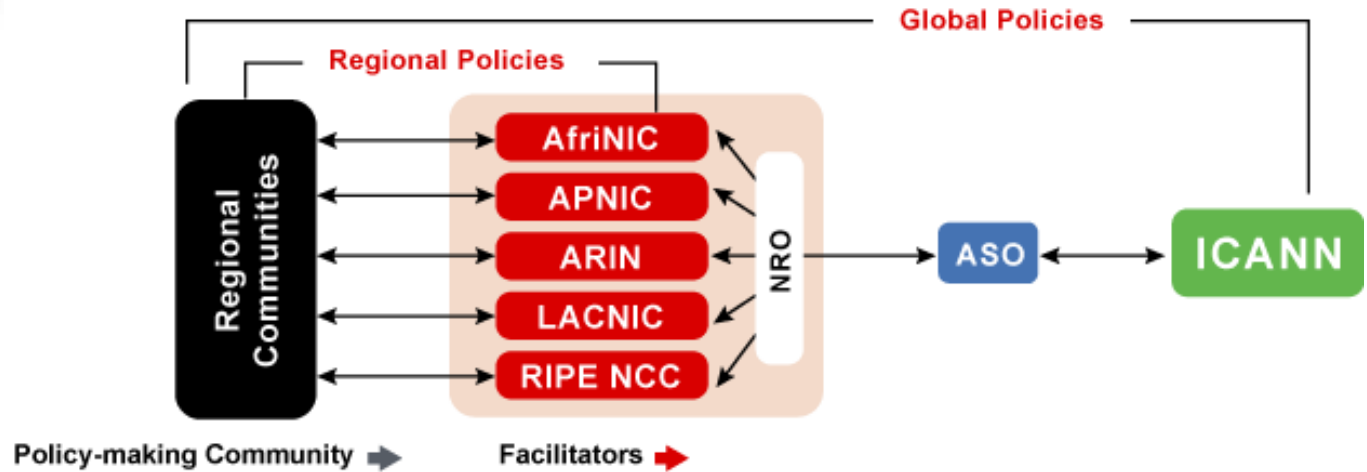- Conducts assessments of proposal impacts
- Implement ratified policy

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

The ASO is a supporting organization of ICANN
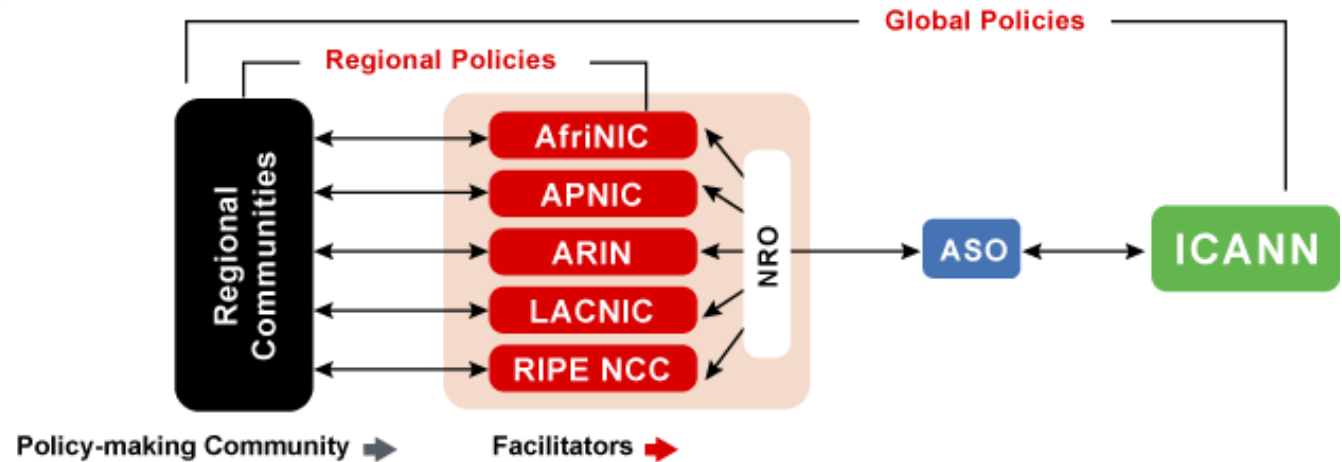
Global proposal discussed/presented at all 5 RIRs per their PDPs

– ASO AC members follow and participate in discussions

After adoption by all 5 RIRs proposal forwarded to the ASO AC

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Global Policies

Regional Policies

Regional Communities

AfriNIC
APNIC
ARIN
LACNIC
RIPE NCC

NRO

ASO

ICANN

Policy-making Community ➡

Facilitators ➡

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

The ASO is a supporting organization of ICANN

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

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

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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.

NRO & ICANN - 2010

- 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)

Internet Governance Forum

- 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

Unavailable **13.67%**

IPv4 FREE POOL

Allocated **86.33%**
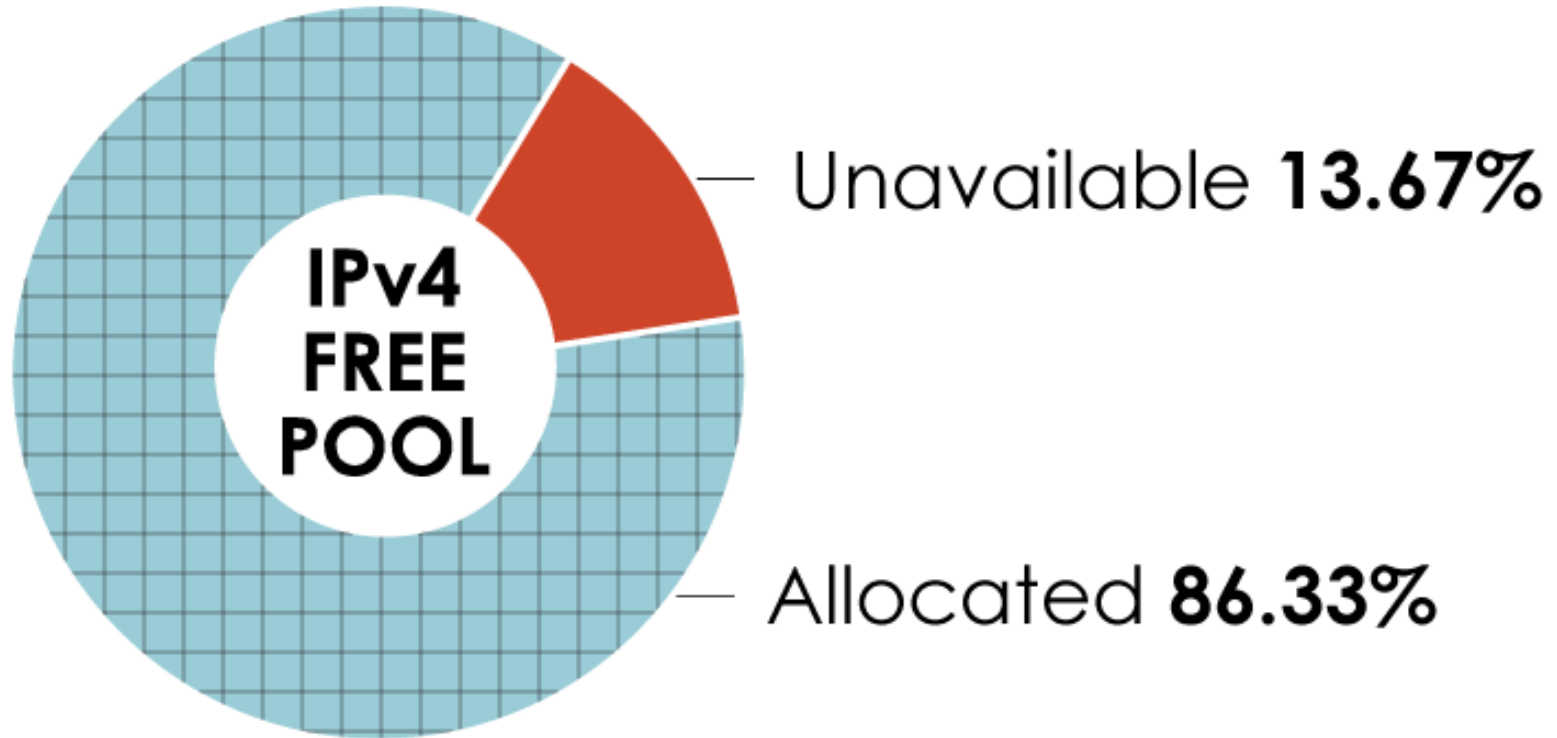
*as of 3 February 2011

Available IPv4 Space in /8s

Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Feb
62	62	59	55	49	49	44	42	41	39	39	34	32	30	26	26	22	16	14	7	0

'06 '07 '08 '09 '10 '11
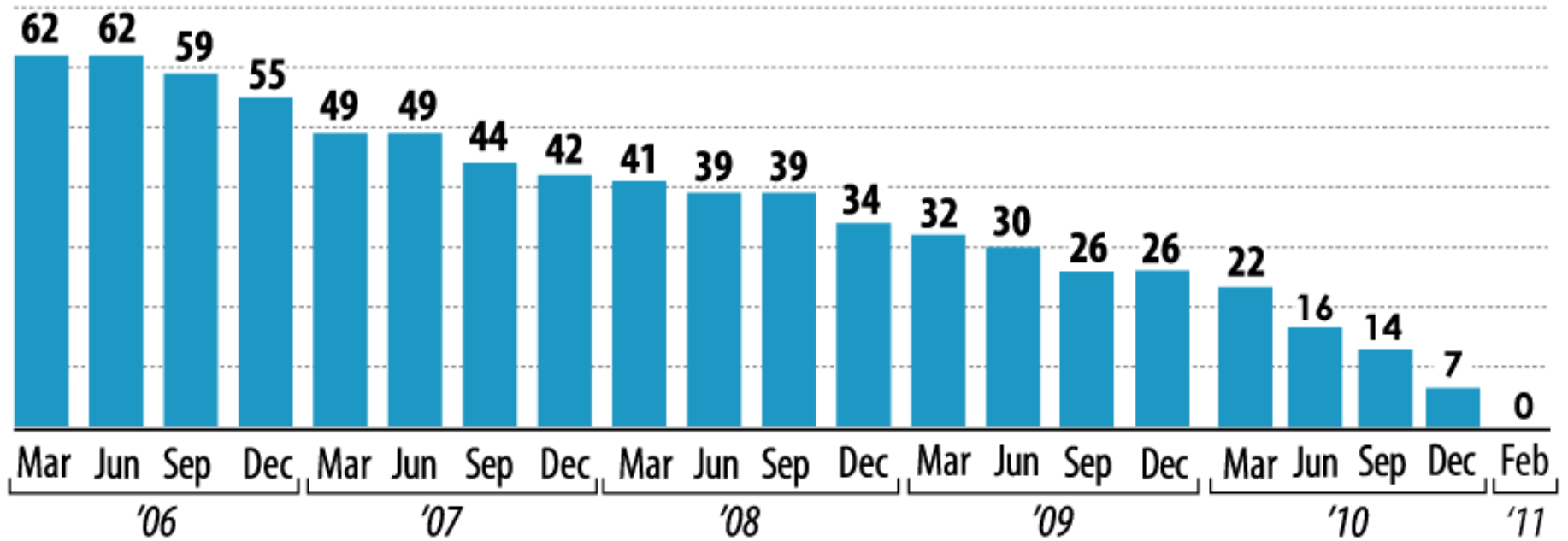
IPv4 Depletion Situation Report

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.

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.

IPv4 & IPv6 Coexistence

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…

IPv4 & IPv6 Transition Problem

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 <u>entire</u> 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

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 F A Q**

http://www.nro.org/ipv6/nro_depletion_deployment_faq
http://www.youtube.com/v/XGZ0Cao_o_E&hl=en&fs=1&

find::more:about:IPv6

RIR IPv6
Resources

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 <u>IPv4 address </u>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 <u>IPv6 Address </u>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

Global Policy for Allocation of <u>ASN Blocks</u> 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 <u>IPv4 Address</u> 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 <u>ASN Blocks</u> 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

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AfriNIC Policies and Proposals

Fiona Asonga
AfriNIC representative, ICANN ASO Address Council

agenda

- 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

AfriNIC

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.

AfriNIC

IP Address Assignments
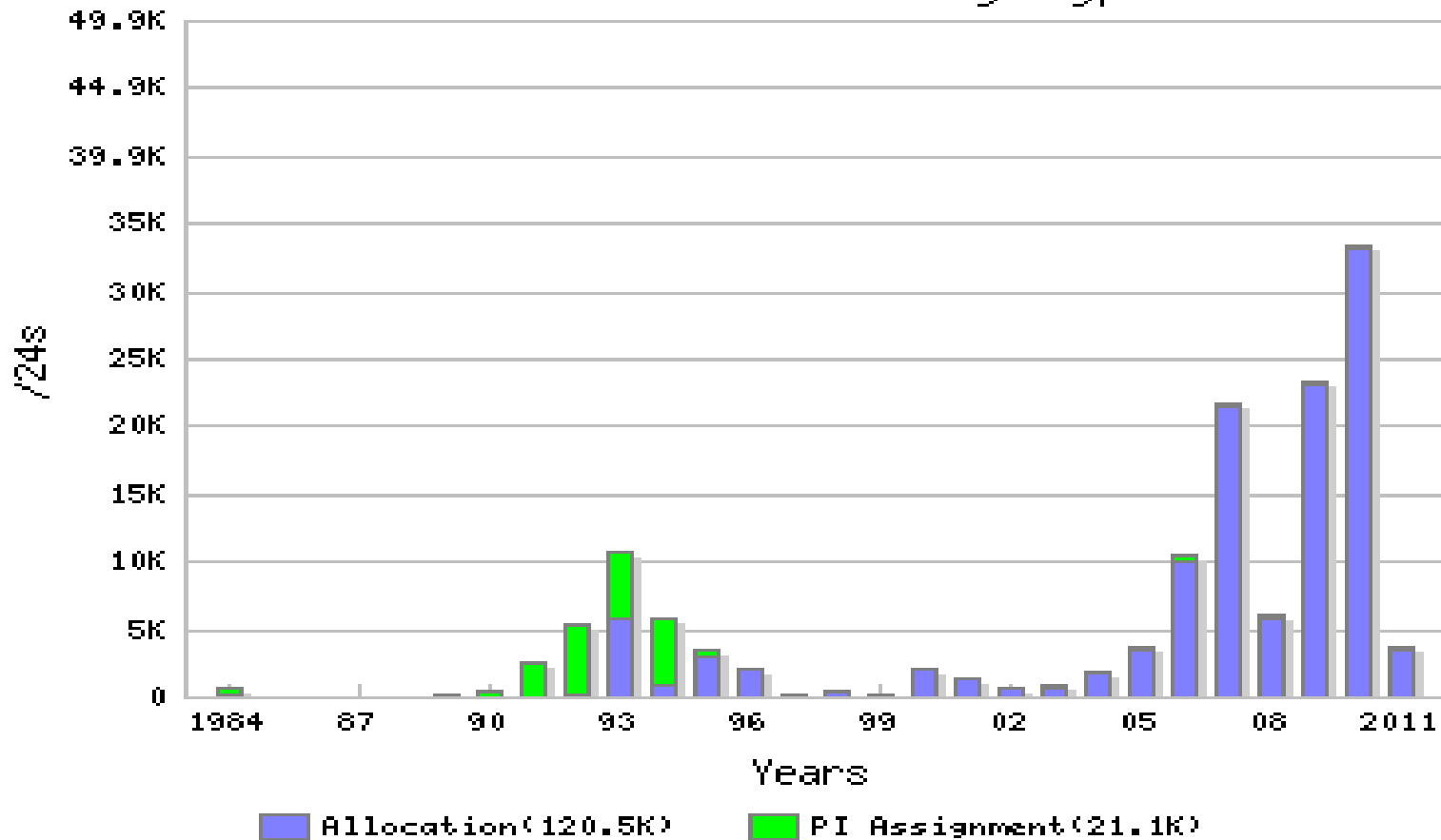
IP Address Assignments
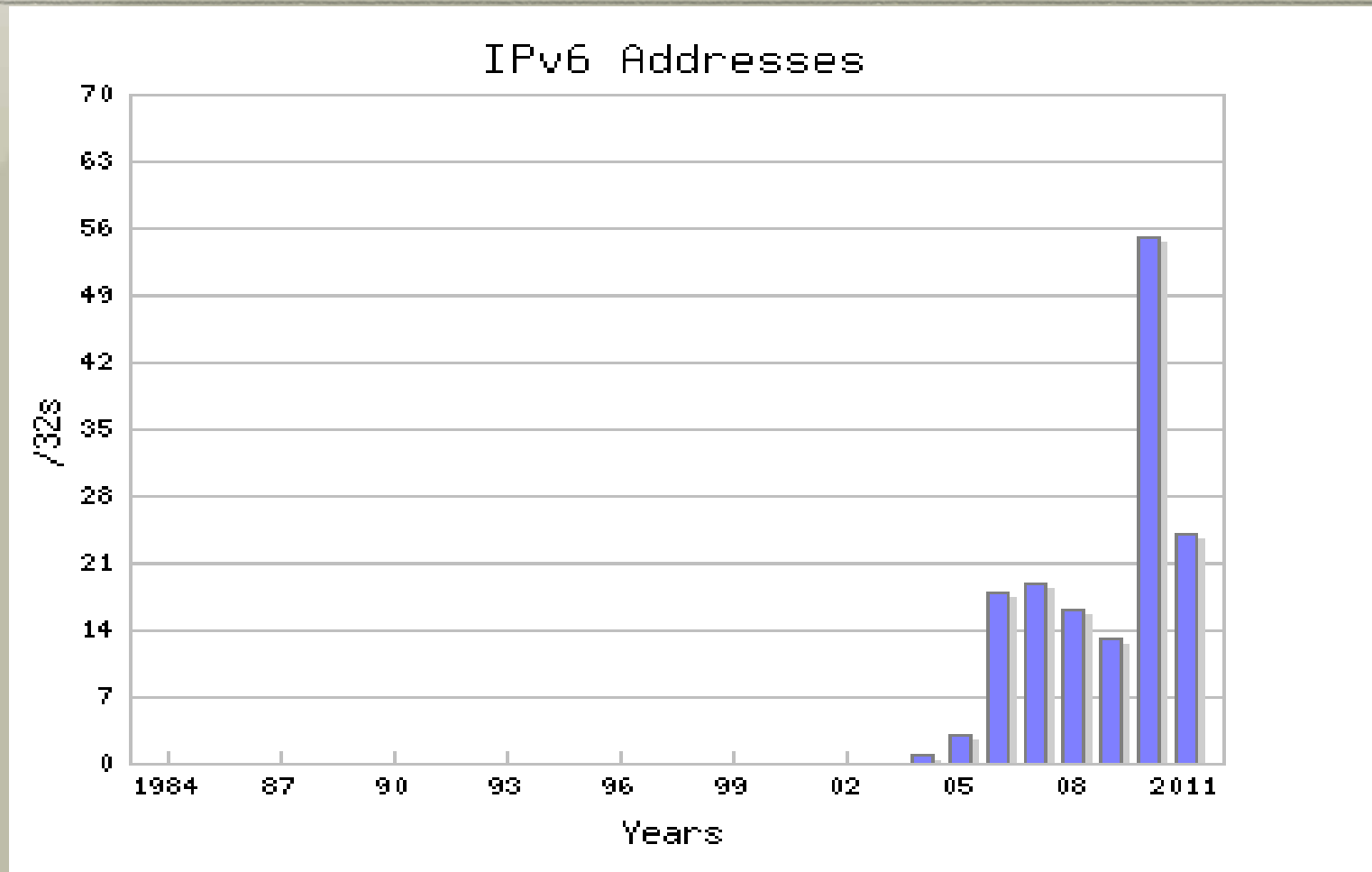
Status of AS Number Assignment
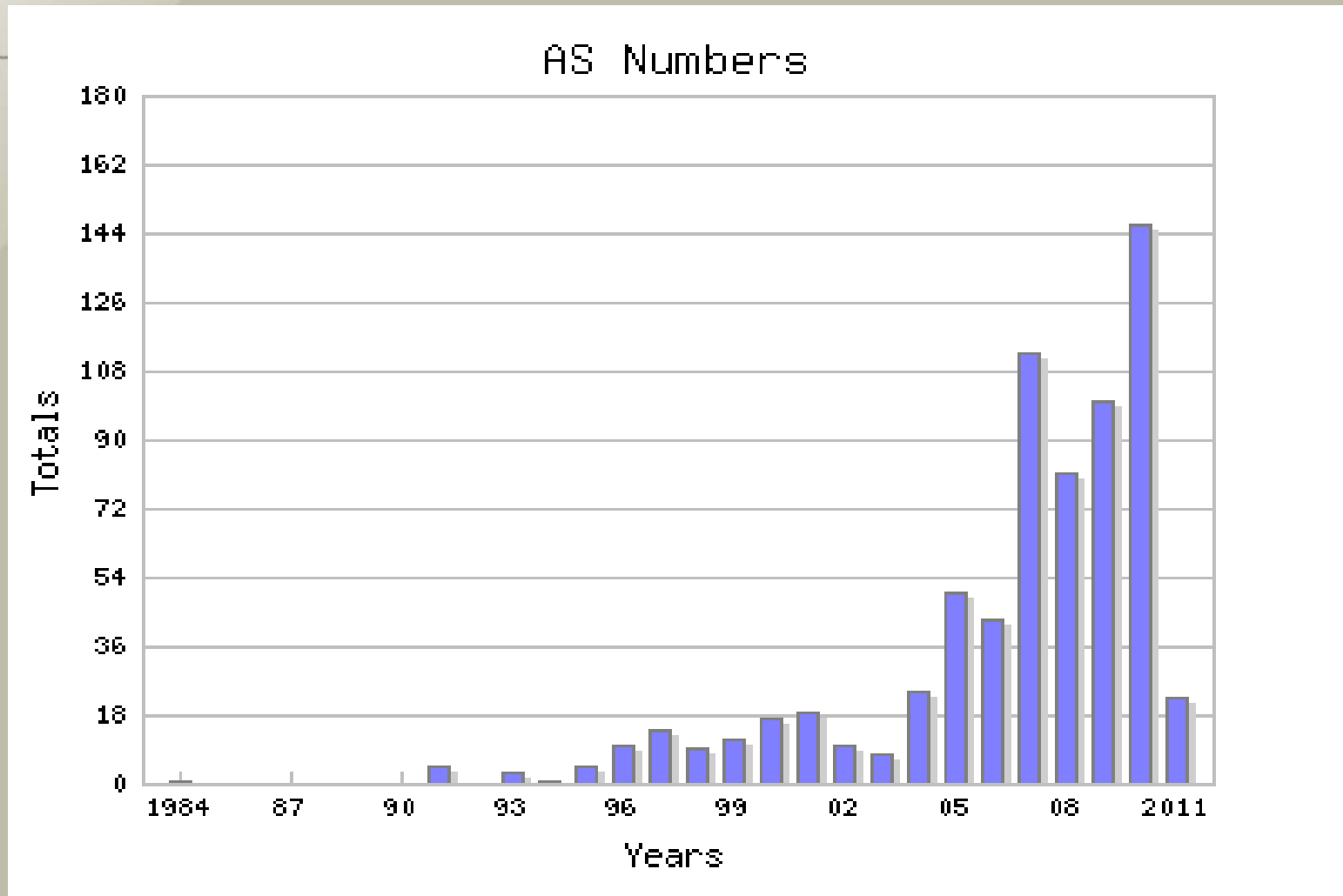
The AfriNIC policy development process

- --*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*--

AfriNIC

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.

AfriNIC

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

AfriNIC

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.

AfriNIC

Proposals Currently Under Discussion

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

- <u>Addition of Real Contact Email into ASN Whois Bulk Data</u> (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

AfriNIC

Outreach and Education Activities

DATES	LOCATION	LANGUAGE	STATUS
6-8 April 2011	Ghana	English	Confirmed
11-13 April 2011	Togo	French	Confirmed
18-20 May 2011	Niger	French	Confirmed
4-6 June 2011	Tanzania (AfriNIC-14)	English	Confirmed
15-17 June 2011	Kenya	English	Confirmed

AfriNIC

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.

AfriNIC

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/

AfriNIC

Thank you

Fiona Asonga
AfriNIC representative, ICANN ASO Address Council

APNIC Policies and Proposals

Tomohiro Fujisaki
APNIC representative, ICANN ASO Address Council

Recently Implemented Policies

Proposal	Title	Overview
Prop-079 Implemented 8 Nov 2010	Abuse contact information	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.
Prop-080 Implemented 5 July 2010	Removal of IPv4 prefix exchange policy	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.
Prop-082 Implemented 5 July 2010	Removing aggregation criteria for IPv6 initial allocations	This is a proposal to remove the aggregation requirement from the IPv6 initial allocation policy.

http://www.apnic.net/policy/proposals

Reached Consensus at APNIC 31

	Proposal	Title	Overview
IPv6 Policy	**prop-083**	Alternative criteria for subsequent IPv6 allocations	Permits current APNIC account holders with networks in multiple locations but without a connecting infrastructure to obtain IPv6 resources for each location.
IPv4 Transfer Policy	**prop-095**	Inter-RIR IPv4 address transfer proposal	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.
Global Policy	**prop-097**	Global policy for post exhaustion IPv4 allocation mechanisms by the IANA	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.

http://www.apnic.net/policy/proposals

Reached Consensus at APNIC 31

	Proposal	Title	Overview
Final /8 Policies	**prop-088**	Distribution of IPv4 addresses once the final /8 period starts	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.
	prop-093	Reducing the minimum delegation size for the final /8 policy	This is a proposal to change the minimum size of IPv4 delegations to a /24 when the final /8 policy is activated.
	prop-094	Removing renumbering requirement from final /8 policy	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.

http://www.apnic.net/policy/proposals

Under discussion on the Policy SIG mailing list

	Proposal	Title	Overview
Whois data	**prop-084**	Frequent whois information update request	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.
Final /8	**prop-089**	Additional criterion for final /8 allocations (and assignments)	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.
	prop-096	Maintaining demonstrated needs requirement in transfer policy after the final /8 phase	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.

http://www.apnic.net/policy/proposals

Next APNIC Meeting

APNIC 32
Busan, South Korea
29 August - 2 September 2011

- Policy Discussion Mailing lists

  sig-policy@apnic.net

Thank you

Tomohiro Fujisaki
APNIC representative, ICANN ASO Address Council

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

ARIN
American Registry for Internet Numbers

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

Draft Policy Discussions (cont.)

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 (eg. 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."

ARIN

American Registry for Internet Numbers

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

American Registry for Internet Numbers

ARIN Meetings

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 interconection

- 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

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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

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

• Defines mandatory contractual relationship for IPv4 assignments between End Users and IR (LIRs 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

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/proposals/index.html

- http://www.ripe.net/ripe/maillists/archives/address-policy-wg/2011/index.html

- http://www.ripe.net/ripe/maillists/archives/index.html

- 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

Watch the ASO AC site for news about new global proposals

– 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

Participation is Easy!

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

Attend RIR meetings
- In person (open, nominal fee)
- Remote (free)

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Thank you.
Questions?

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Chair, ICANN ASO Address Council