



ASO Report

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ICANN 39

Cartagena, Colombia

10 December 2010



Number Resource Policy Development Activities

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The ASO is a supp



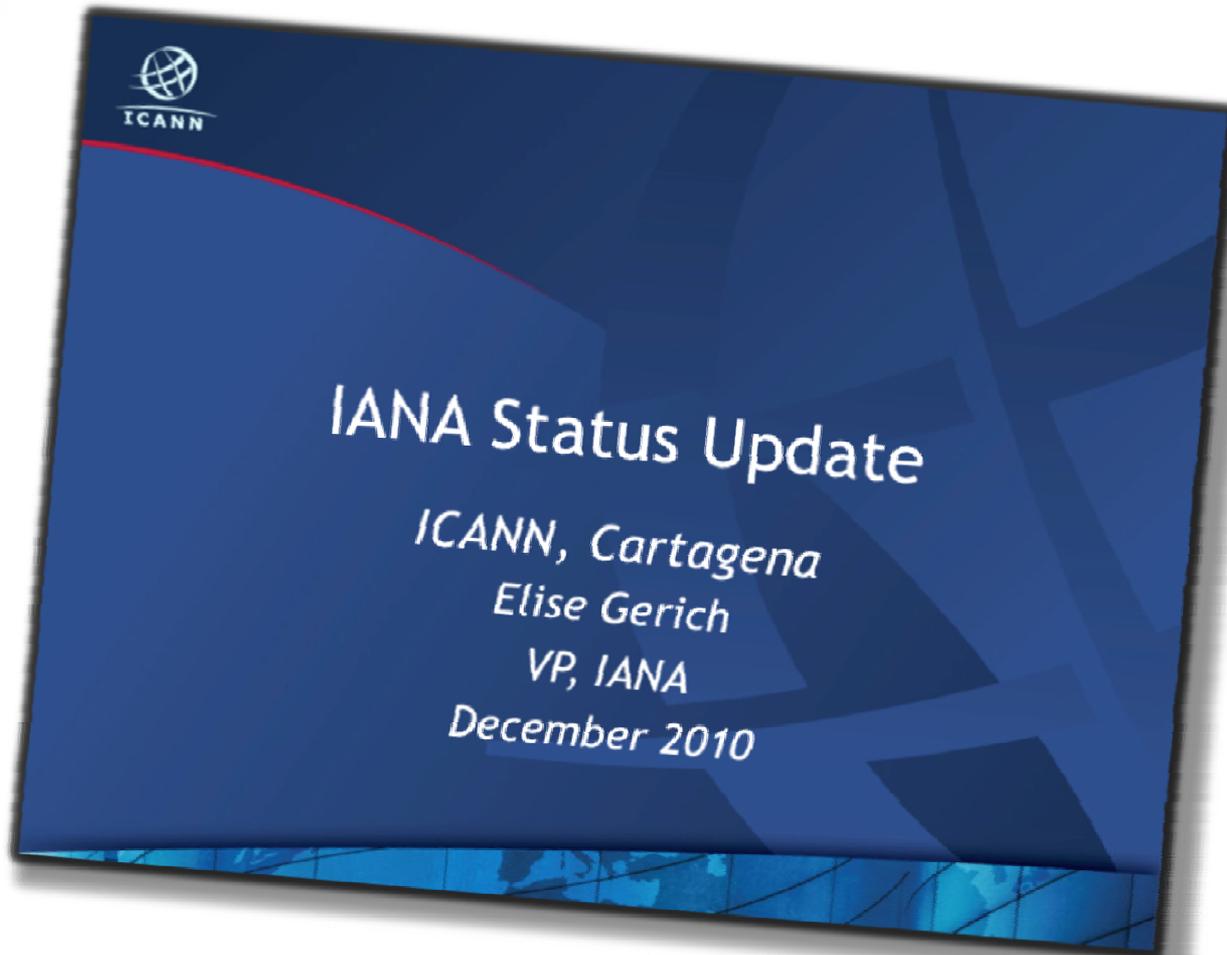
Agenda

1. About the ASO: MoU, Global Policy, Address Council
 2. RIR PDP: Principles, Roles, Basic Steps
 3. Global Process: Overview, Statistics, "Global Coordinated Policy"
 4. IANA Update
 5. NRO Update
 6. Mitigating the Effects of IPv4 Exhaustion
 7. Global Number Policy and Global Proposals
 8. Regional Activities: Afrinic, APNIC, ARIN, LACNIC, RIPE
 9. Closing: Questions and Answers, How to Participate
- Please ask questions at the end of each section.*

2

The ASO is a supporting organization of ICANN

1. ASO Workshop
2. IANA Status Update: IPv4 excerpt
3. IPv6 Exhaustion Projections
4. NRO Update: IPv6 excerpt
5. Mitigating the Effects of IPv4 Exhaustion
6. Global Number Policy and Proposals
7. Recent Regional Policy Activities Summary (2010)
8. Closing: Questions and Answers, How to Participate



IPv4 Status 2010



- 19 /8s have been allocated so far this year
- 8 have been allocated to APNIC
- ARIN & RIPE NCC have each received 4
- LACNIC has received 2
- AfriNIC has received 1

IPv4 Status 2010

About 3% of total IPv4 space left in the pool.

This equals approximately 100 Million unique addresses.

- 7 unallocated /8s remain
- 2 will be allocated under the global policy that was ratified in 2005
- Then the last 5 blocks will be allocated simultaneously as per the special global policy ratified in 2009

**Projected IANA Unallocated
Address Pool Exhaustion:
26 February 2011**

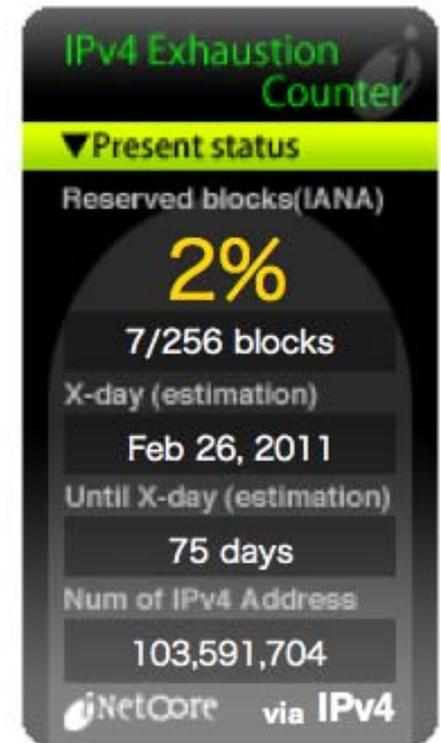
**Projected RIR Unallocated
Address Pool Exhaustion:
25 November 2011**

Sources:

- IPv4 Address Report (10 Dec 2010)
by Geoff Huston, Chief Scientist, APNIC

<http://www.potaroo.net/tools/ipv4/>

- Counter: <http://inetcore.com/project/ipv4ec/>

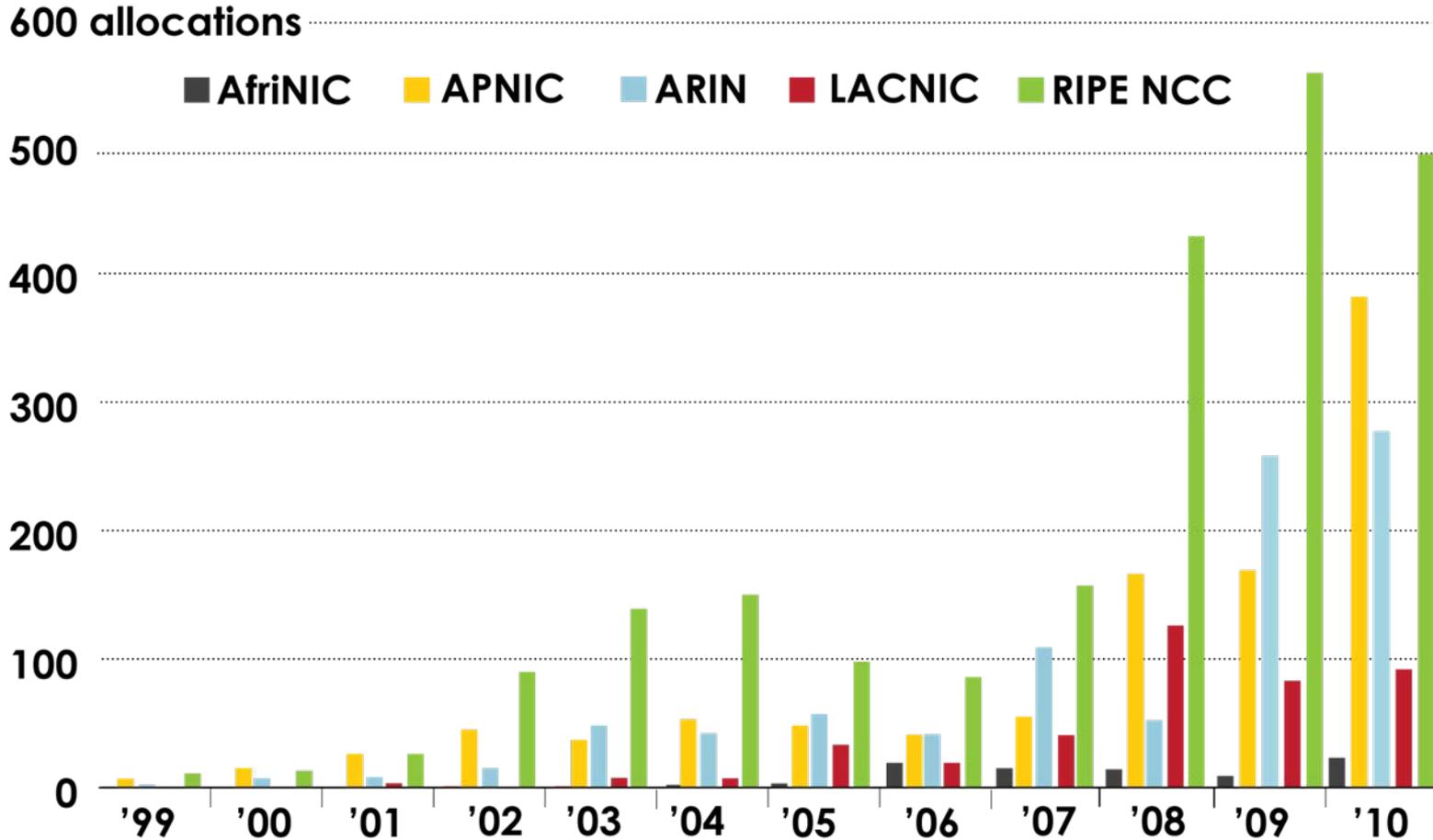






IPv6 Allocations RIRs to LIRs/ISPs

How many allocations have been made by each RIR by year?



Number Resource Organization

Mitigating the Effects of IPv4 Exhaustion: IPv4 Activities

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 to reduce hoarding
- 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 & Outreach

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.
- Education support: guides, pamphlets, brochures, stickers

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)

- Allows IANA to receive address space from the RIRs (with mandatory return)
- Allows IANA to allocate space back to the RIRs
- 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

Global Policy Activity in 2010: Policy Proposal under Discussion

Global Policy for IPv4 Allocations by the IANA Post Exhaustion

- Allows IANA to receive address space from the RIRs (with optional return)
- Allows IANA to allocate space back to the RIRs
- Status: (Slightly different versions are under discussion)
 - AfriNIC – Discussed/presented and sent back to the list for more discussion
 - APNIC – Discussed/presented and sent back to the list for more discussion
 - ARIN – Recommendation to adopt (revised, Nov. 2010)
 - LACNIC – Discussed/presented and sent back to the list for more discussion
 - RIPE – Discussed/presented and sent back to the list for more discussion

IPv4 soft landing policies (8)

- AfriNIC, APNIC(2), ARIN(3), RIPE(2)

Other IPv4 policies: allocation, reclamation, transfer (14)

- APNIC, ARIN(6), LACNIC(4), RIPE(3)

IPv6 address allocation policies (11)

- APNIC(3), ARIN(6), LACNIC, RIPE

PDP & procedure changes policies (3)

- AfriNIC, LACNIC(2)

WHOIS database changes policies (6)

- AfriNIC, APNIC(2), ARIN, LACNIC, RIPE

Total: 42 regional policies

Subscribe to the RIR policy list(s)

- No membership requirements

Attend RIR meetings

- In person (open, nominal fee)
- Remote (free)



Internet Number Resource Policy Development: Participation is Easy!

The Number Resource Organization (NRO) encourages all stakeholders to get involved and participate in the development of Internet number resource policy. These policies govern how the Regional Internet Registries (RIRs) allocate and manage IPv4 and IPv6 address space and Autonomous System Numbers.

<http://nro.net/about/rirs.html>

All policy issues are open to everyone. Anyone can propose a policy or topic for or against a policy proposal, so everyone's voice can be heard. All policy proposals, discussions, and debates are conducted publicly on email lists and at open policy meetings. Decisions are based on the consensus of all participants. There are several ways to get involved.

- 1. Read the Policy Proposals Under Discussion**
Proposals are available for anyone to read. To find out what's currently under discussion in your region, visit:
AfriNIC - <http://www.afriNIC.net/policy.html>
APNIC - <http://www.apnic.net/policy/proposals>
LACNIC - <http://www.lacnic.net/policy/proposals>
ARIN - <http://arin.net/our/policies>
RIPE NCC - <http://www.ripe.net/our/policies/proposals>
- 2. Discuss Policy Proposals on RIR Mailing Lists**
Each RIR maintains an open mailing list devoted to the discussion and development of the policies in its region. No membership is required.
AfriNIC - discuss@afriNIC.net
APNIC - mail@lists.apnic.net
ARIN - lists@lists.apnic.net
LACNIC - mail@lists.lacnic.net
RIPE NCC - <http://www.ripe.net/our/policies>
- 3. Attend RIR Public Policy Meetings**
Each RIR holds regular open policy meetings where anyone interested in Internet resource policy can meet to discuss policy issues, share technical expertise and best practices, and collaborate on solutions to issues that don't have ready answers.
<http://nro.net/meetings>
- 4. Propose a Policy Idea**
Internet number resource policy development starts with people just like you. It's a way that Internet number resource management can evolve and improve. If you have an idea, contact your local RIR to find out more about how you can submit your idea for consideration.

Your participation is a critical part of the continued success of the Internet. By staying actively involved, participants help ensure that RIRs distribute the Internet numbers resources that organizations need for their networks and their customers, thereby ensuring the health and success of the Internet into the future and beyond.

AfriNIC **APNIC** **ARIN** **LACNIC** **RIPE NCC**

www.nro.net



REGIONAL INTERNET REGISTRIES (RIRs)
RIRs register and distribute Internet number resources (IPv4 and IPv6 address space and Autonomous System Numbers), provide tools and services to their local Internet communities and work together on joint projects as the Number Resource Organization (NRO).



THE RIRs:

- Provide technical coordination and management of Internet number resources
- Participate in Internet community meetings and events
- Operate as autonomous, not-for-profit membership-based organizations
- Facilitate policy development by their members and the Internet community via open meetings and mailing lists



WWW.NRO.NET



WHAT IS THE NRO?
The Number Resource Organization (NRO) is the coordinating body for the five Regional Internet Registries (RIRs).

THE NRO:

- Protects the unallocated Internet number resource pool
- Promotes and protects the bottom-up policy development process
- Acts as a focal point for Internet community input into the RIR system



WWW.NRO.NET



are::you:IPv6:ready?

ASSESS YOUR NEEDS Your deployment plan should address the specific needs of your organization and customers.

SET A TIMETABLE Factor IPv6 deployment into your current IT upgrade cycle. Actively engage your vendors and suppliers and ensure they are aware of your needs.

APPLY FOR IPv6 ADDRESSES Get IPv6 address space for your network. Contact your RIR or upstream provider to find out more.



WWW.NRO.NET



**Thank you.
Questions?**

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