

ASO Report

Louie Lee Chair, ICANN ASO Address Council

> ICANN 39 Cartagena, Colombia 10 December 2010

> > The ASO is a supporting organization of ICANN



ASO Workshop at ICANN 39





Agenda

- 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



IANA Status Update: IPv4 excerpt



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



IPv4 Exhaustion: Projections

Projected IANA Unallocated Address Pool Exhaustion: 26 February 2011

Projected RIR Unallocated Address Pool Exhaustion: 25 November 2011 Present status Present status Reserved blocks(IANA) 2% 7/256 blocks X-day (estimation) Feb 26, 2011 Until X-day (estimation) 75 days Num of IPv4 Address 103,591,704 jNetCore via IPv4

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/



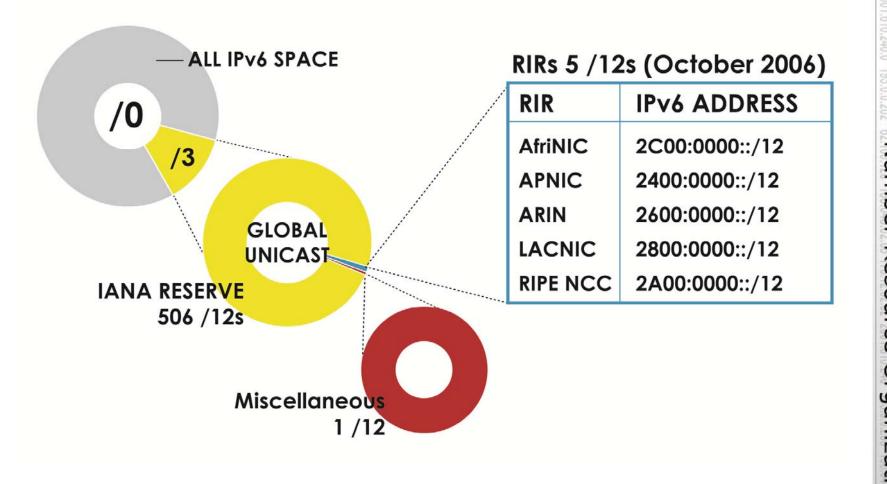
NRO Update: IPv6 excerpt





IPv6 ADDRESS SPACE

How much has been allocated to the RIRs?

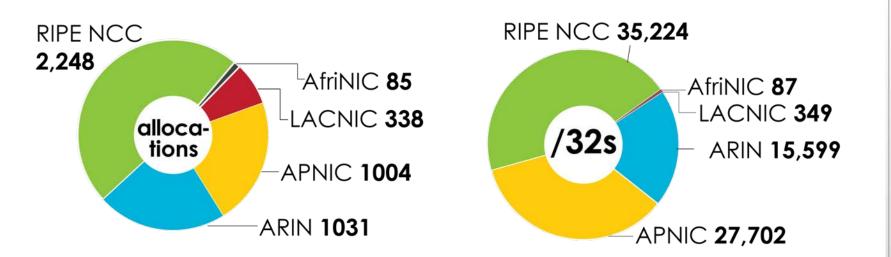




IPv6 ALLOCATIONS RIRs to LIRs/ISPs (Jan 1999 – Sept 2010)

How many total allocations have been made by each RIR?

In terms of /32s, how much total space has each RIR allocated?

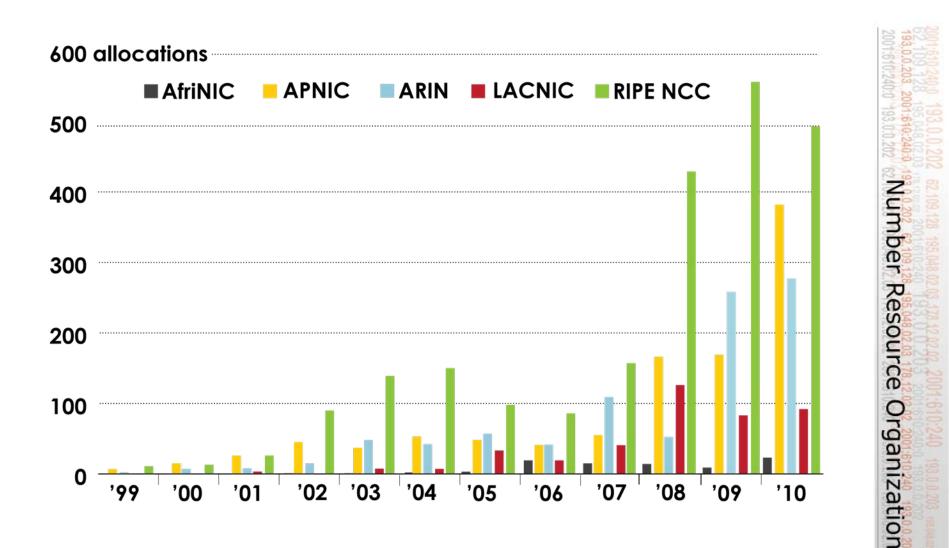


Number Resource Organization



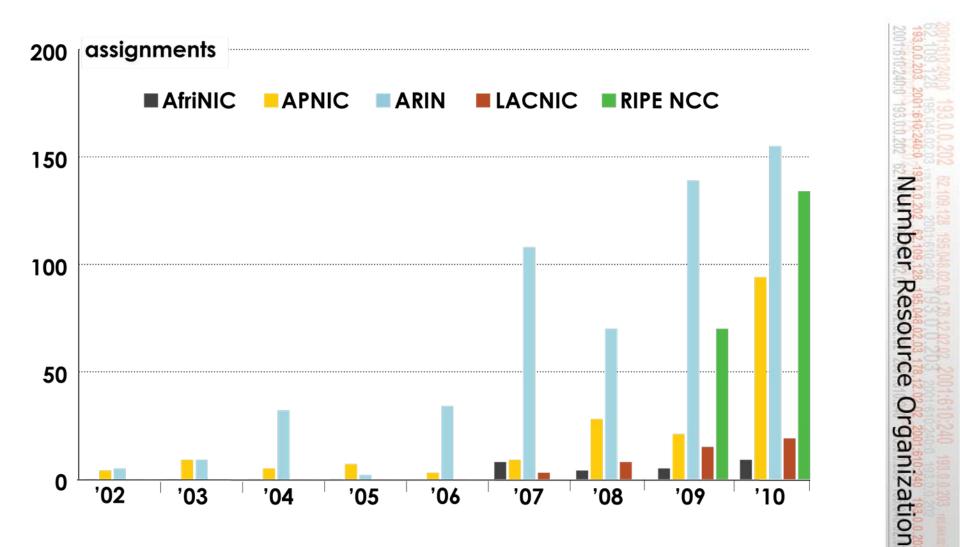
IPv6 Allocations RIRs to LIRs/ISPs

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





IPV6 ASSIGNMENTS RIRS TO END-USERS





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 Policy Activity in 2010: Ratified Policy

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 Activity in 2010: Policy Lost Global Status

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



Recent Regional Policy Activities Summary (2010)

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

18

Total: 42 regional policies



Participation is Easy!

Subscribe to the RIR policy list(s)

No membership requirements

Attend RIR meetings

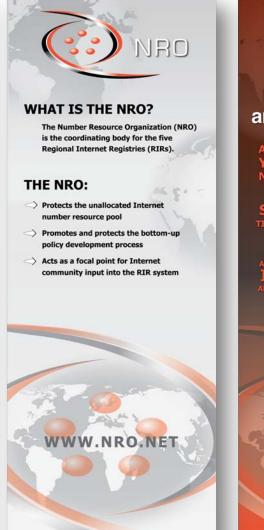
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Visit the NRO Booth







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

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

PLY FOR 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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