



AfrinIC-b



Abuja - Nigeria  
28 April - 4 May 07

# IPv4 pool exhaustion

## IPv4 lifetime Projections

- **“Using the current allocation statistics, the Internet would exhaust the IPv4 address space between 2005 and 2011”**
  - ALE projections (RFC 1752 - 01/1995)
- **Projected IANA Unallocated Address Pool Exhaustion: 04-Jul-2011**
  - <http://www.potaroo.net/tools/ipv4/> ( 29-Apr-2007 07:58 UTC.)



## Some Global questions

- *What will the situation be at the estimated date, if operators cannot obtain public IPv4 addresses ?*
- *Should there be reserves for addresses locally at the RIR level and/or even at the IANA level to cater for the most urgent?*

***The community is trying to answer them with a policy proposal from the APNIC region, aiming at coordinating and planning the exhaustion of the IPv4 central pool***

***- <http://www.apnic.net/docs/policy/proposals/prop-046-v001.html>***

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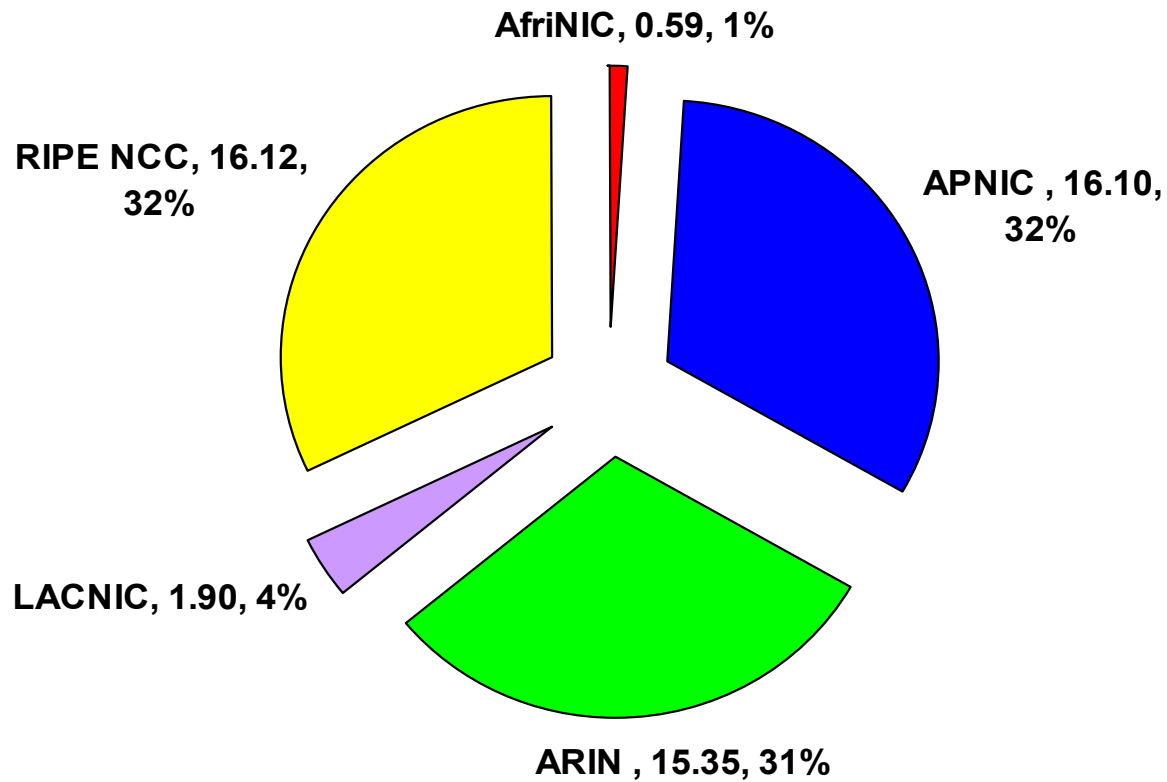


## Some Questions for AfrinIC Region



- *What can those "small" registries (like AfrinIC) do to ensure access to IPv4 addresses in their communities even after exhaustion of the IANA central pool?*
  - *What will the Internet resource management system look like after the exhaustion of the IANA central Pool and that of AfrinIC?*
  - *What about the IPv6 solution?*
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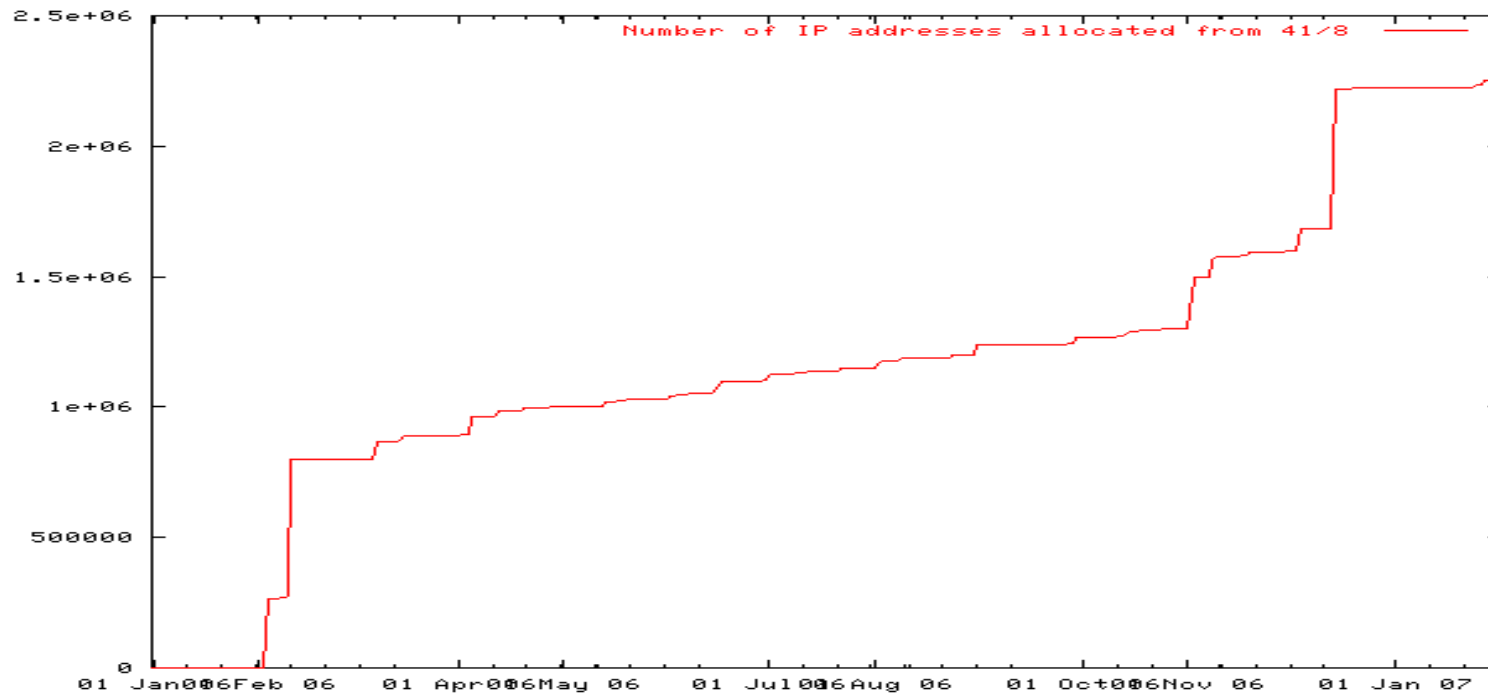
# Where do we stand in the global



## Projections on AfriNIC pool

- We used one year(02/01/06 to 02/01/07) allocation statistics for the 41/8
- Apply an exponential model with instantaneous growth rate of 0.29% based on the current consumption rate
- We projected the date for AfriNIC pool exhaustion according to IANA's pool

# Projections on AfrinIC pool

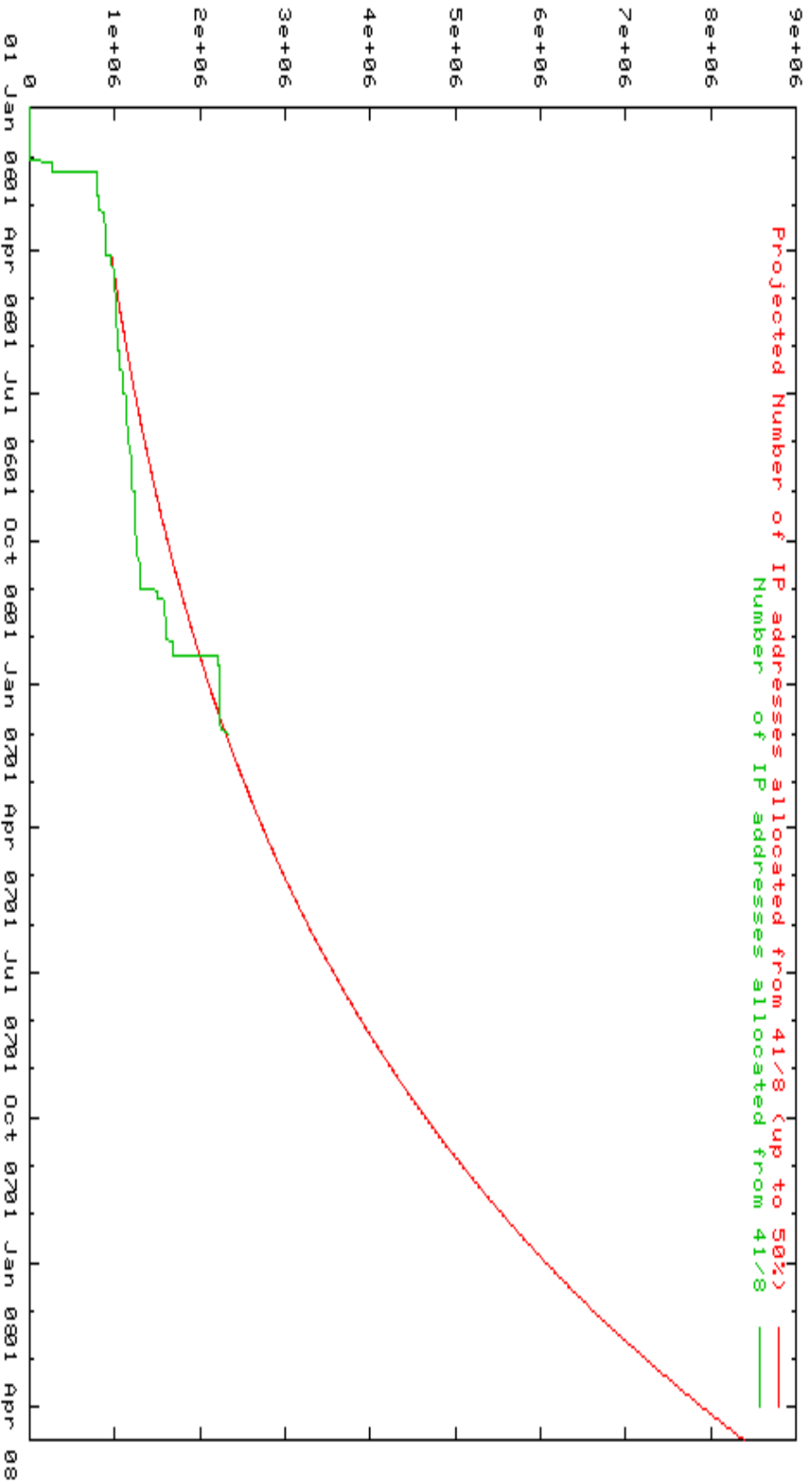


Data: <ftp://ftp.afrinic.net/pub/stats/>

**~14% allocation in 12 months**



# Projections on Afrinic pool



## Projections on Afrinic pool

- IANA pool to be exhausted before July 2011
- Afrinic pool to be exhausted by 11 August 2011
- [http://www.afrinic.net/news/ipv4\\_exhaustion.htm](http://www.afrinic.net/news/ipv4_exhaustion.htm)
  - Projections and possible actions and solutions

## Some possible actions and solutions

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**How can AfrINIC region plan for this event ?**

- **Several actions are possible, requiring regional, but also global coordination**
  - **Here, we define the foundations of some possible approaches.**
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## Some possible actions and solutions

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- To sensitize the community about the situation in order to help operators avoid the related surprises and emergencies so that they can get ready for the exhaustion
    - A SIG is needed
  - To start an active campaign to recover unutilized address in the Afrinic pool
    - A study is needed to see how this can be done
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## Some possible actions and solutions

- **To create a reserve in the remaining pool to supply “critical infrastructures”**
  - What will be critical infrastructures in 2011 ?
  - What can be the size of that reserve ?
  - Will the global community agrees to serve that reserve ?
  
- **To open a global debate on the use of the 16 /8s reserved by IETF for “future use”**
  - 240.0.0.0/4

## Some possible actions and solutions

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- **To open discussions at the global level on the management of the current remaining pool**
    - **Will an equitable distribution of the remaining pool among the 5 RIRs be conceivable?**
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## In the worst case.....

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- **Critical infrastructures may be served**
  - **Others have to face the second (black) market of v4 addresses**
    - **“Thanks NAT on NAT.....”**
  - **Can this market be regulated**
    - **Will the resource certification help regulate somehow the second market ?**
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## What's about the IPv6 solution ?

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- **The solution to the problem is a long-term perspective like IPv6 address space**
  - **Some actions has been taken to promote IPv6 deployment in our region**
    - Afrinic IPv6 trainings
    - Suppression of setup and first annual fees
    - etc.....
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## What's about the IPv6 solution ?

- Allocations have increased by more than 400%
- But, less than 30% of the allocated space is announced to the Internet
  - <http://airrs.afrinic.net/bgp/reports6.html>
- More needs to be done
- It requires a community effort.



**Thank you for attention**

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Questions ?

See you at the BoF

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