

# IPv6 Allocation and Policy Update

Global IPv6 Summit in China 2007

April 12, 2007

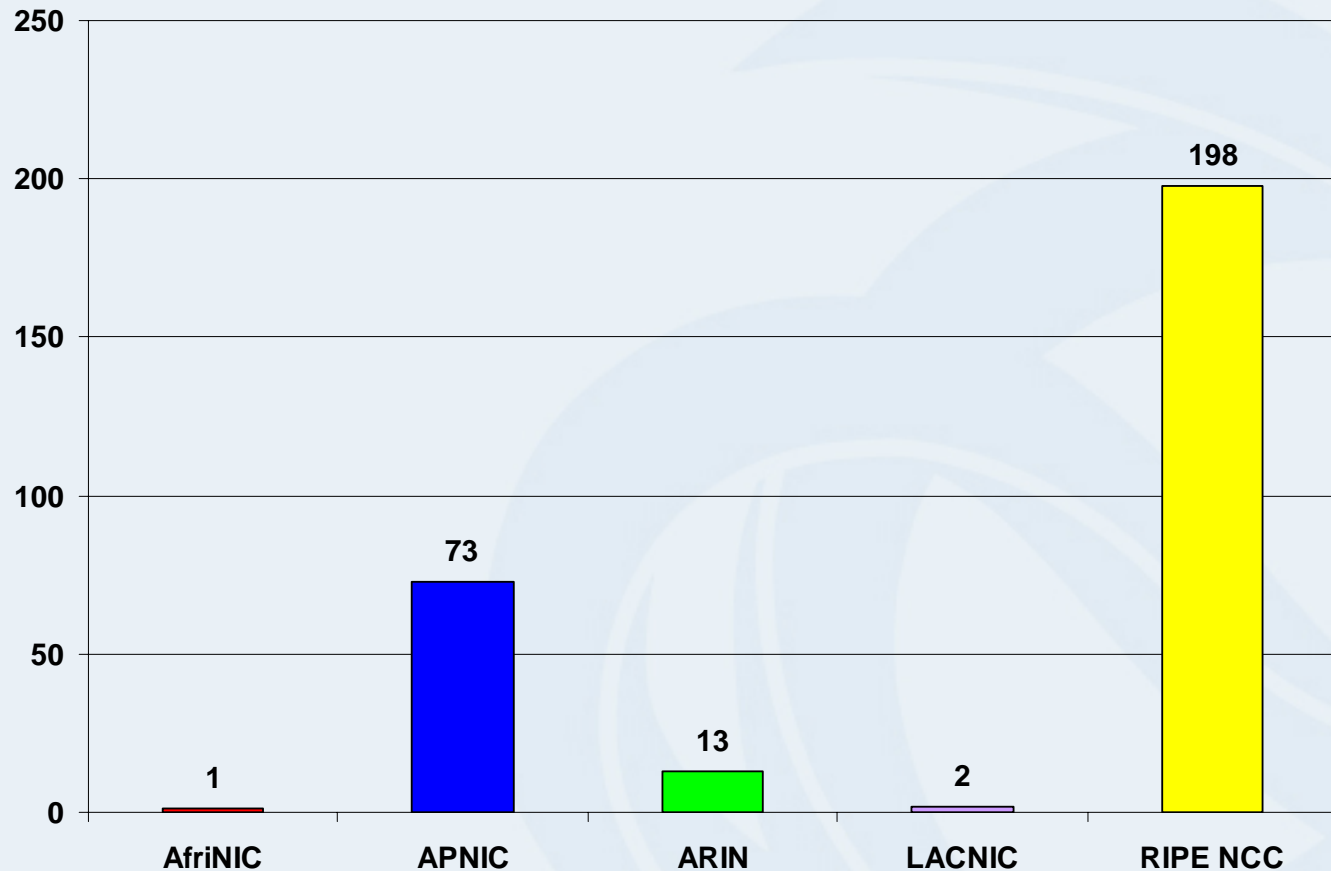
Guangliang Pan

# Overview

- IPv6 allocation status update
  - Global IPv6 allocations
  - APNIC allocation and assignment details
  - Global IPv6 routing table
  - Status of IPv4 address space
- IPv6 policy update
  - IPv6 allocation and assignment policy
  - Where to request IPv6 addresses
  - IPv6 request forms

# IANA IPv6 Allocations to RIRs

issued as /23s prior to Oct 2006



# IANA IPv6 Allocations to RIRs

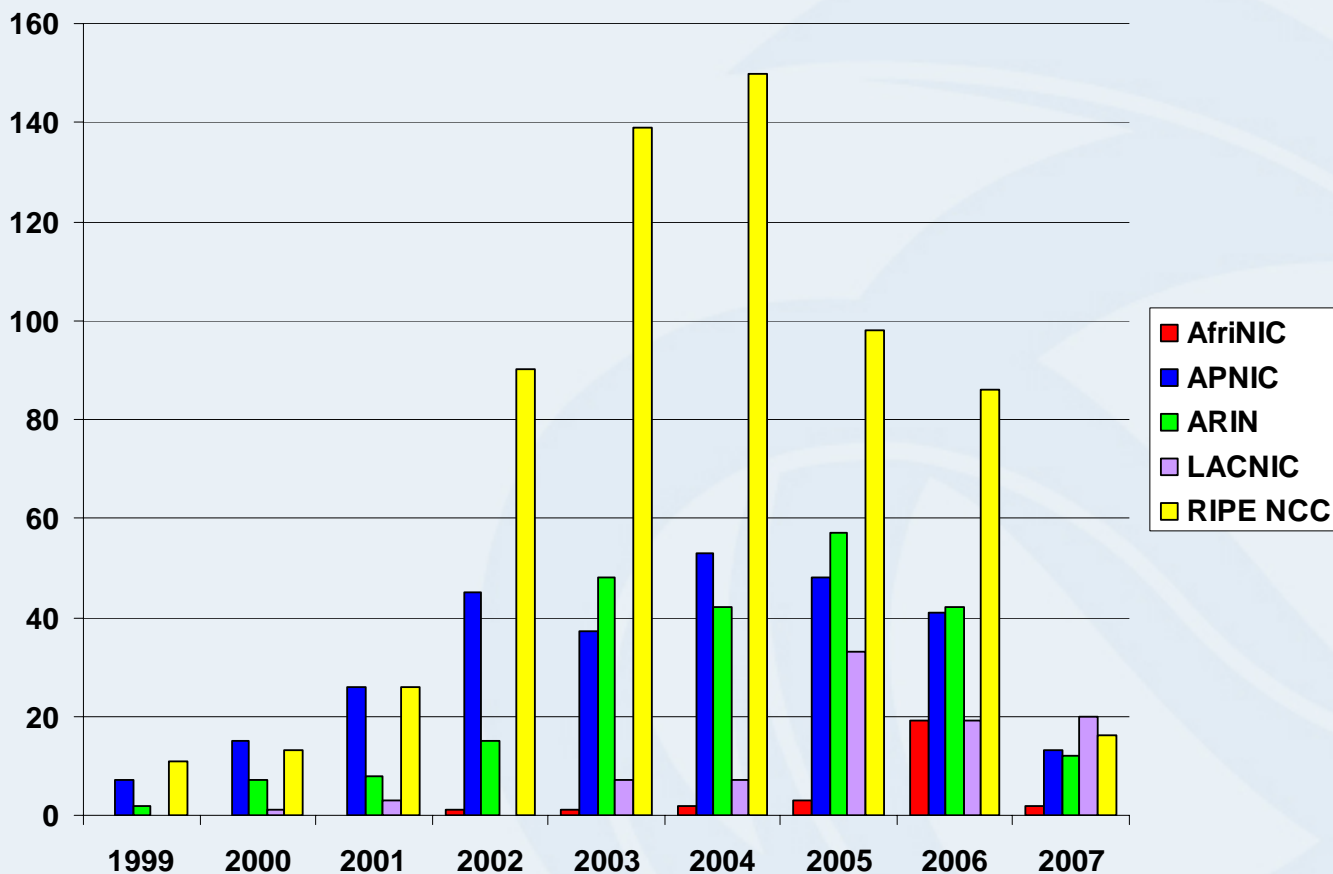
issued in Oct 2006

<b>RIR</b>	<b>IPv6 Address</b>
<b>AfriNIC</b>	<b>2C00:0000::/12</b>
<b>APNIC</b>	<b>2400:0000::/12</b>
<b>ARIN</b>	<b>2600:0000::/12</b>
<b>LACNIC</b>	<b>2800:0000::/12</b>
<b>RIPE NCC</b>	<b>2A00:0000::/12</b>

Some /23s from the previous slide are incorporated in these /12s

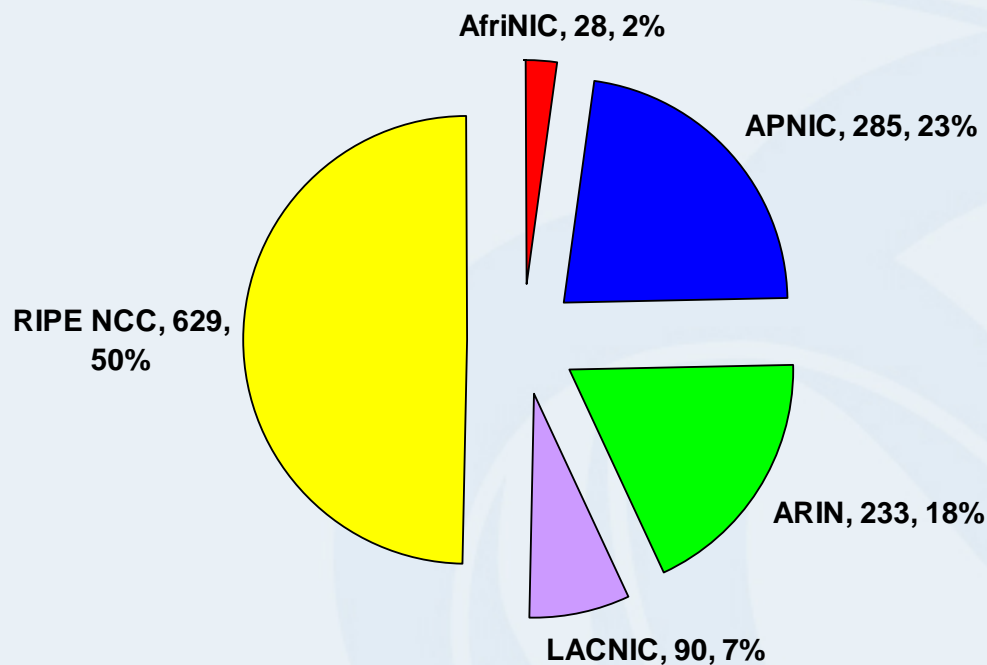
# IPv6 Allocations RIRs to LIRs/ISPs

Yearly Comparison – data up to Mar 2007

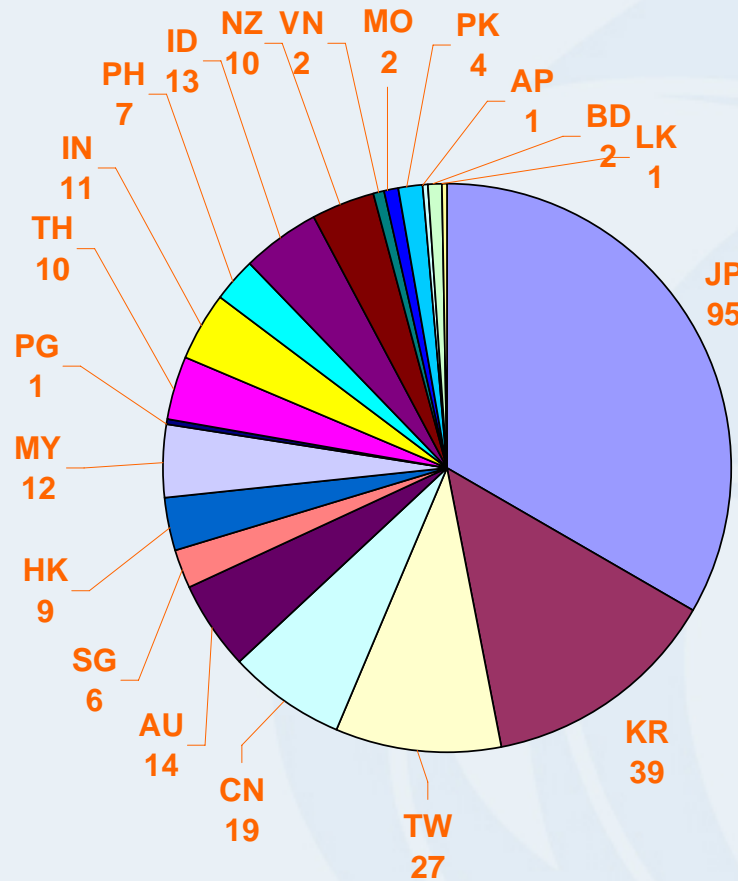


# IPv6 Allocations RIRs to LIRs/ISPs

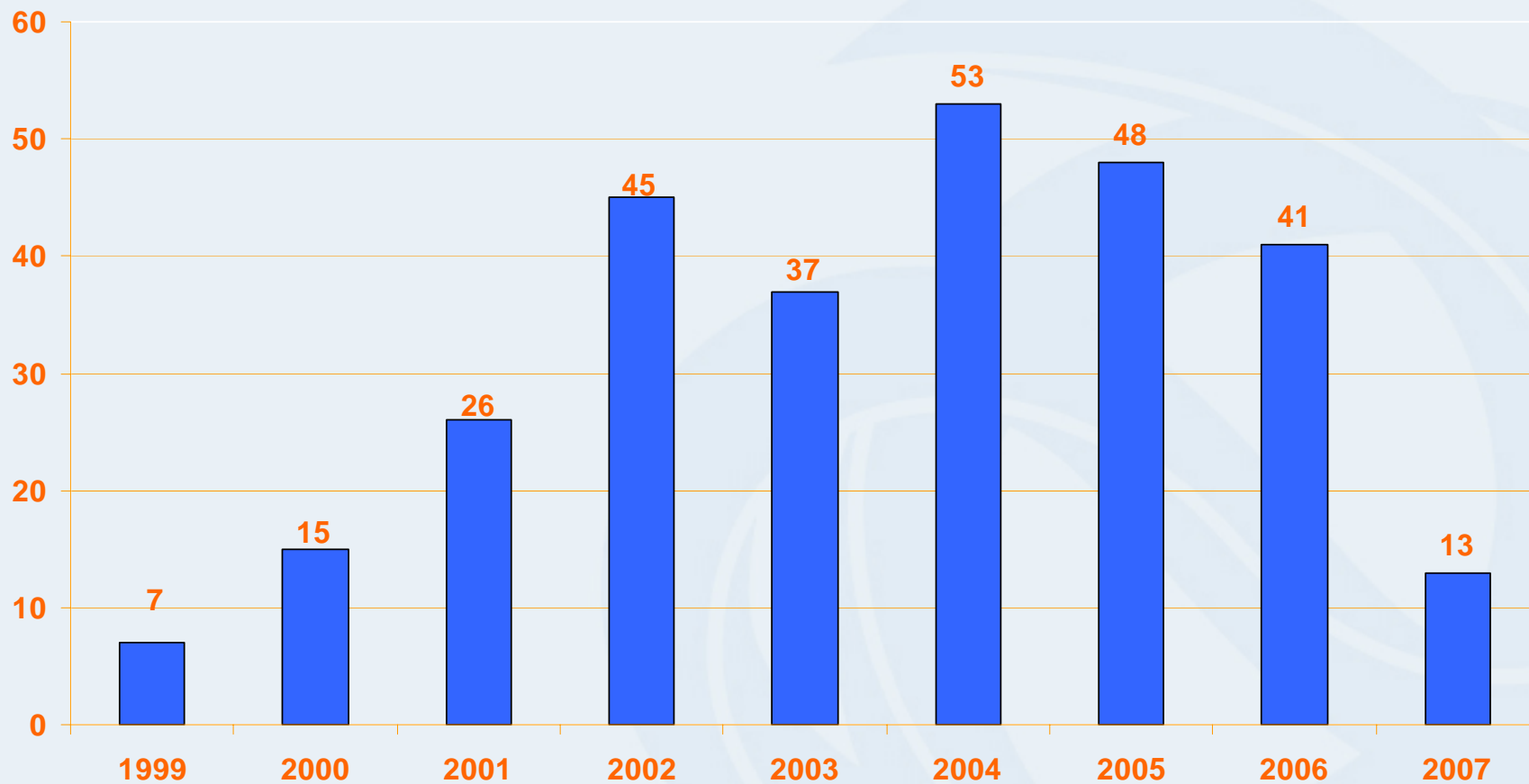
Cumulative Total (Jan 1999 – Mar 2007)



# APNIC allocations by economies



# APNIC annual allocations



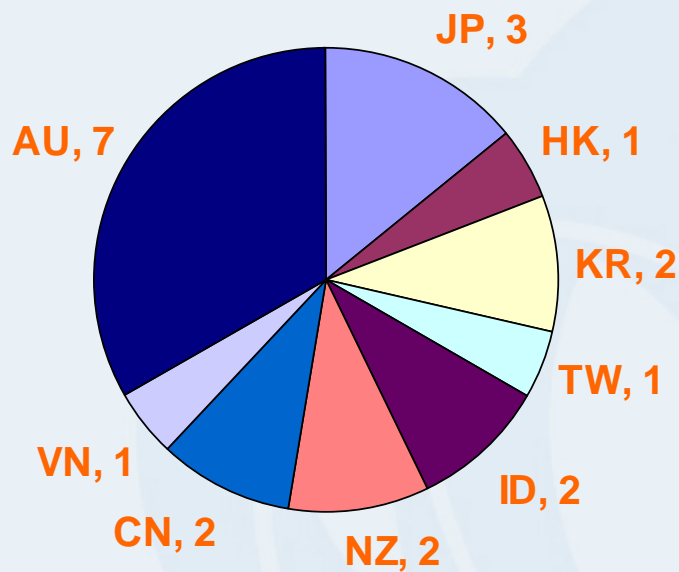


# APNIC allocations by sizes

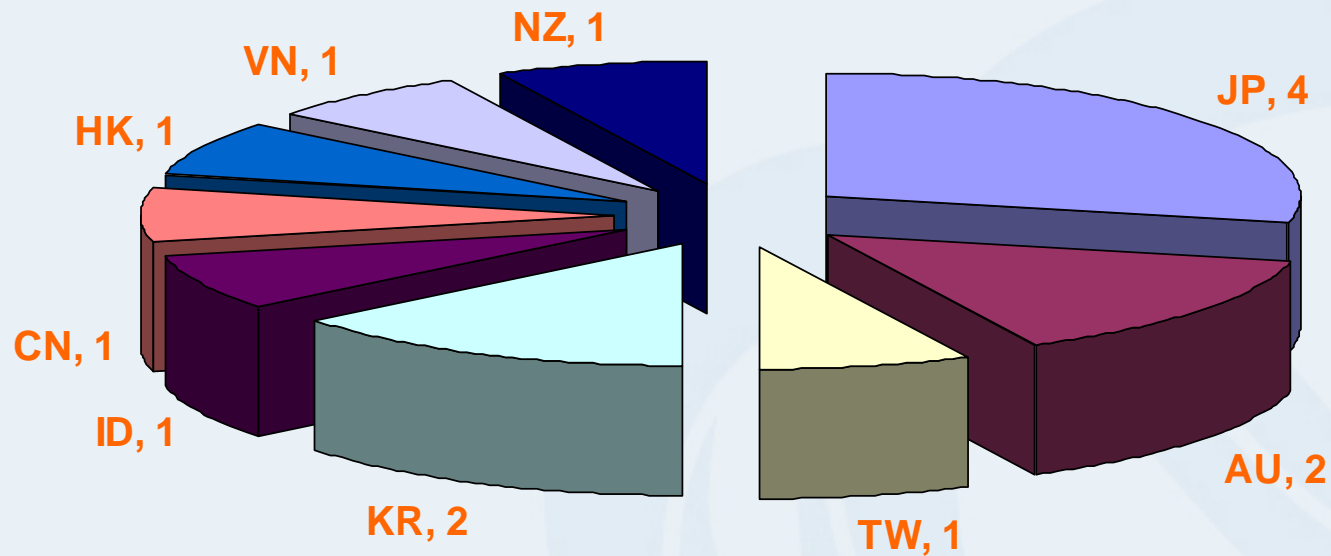


# APNIC IXP assignments

All /48s except 4 are /64s

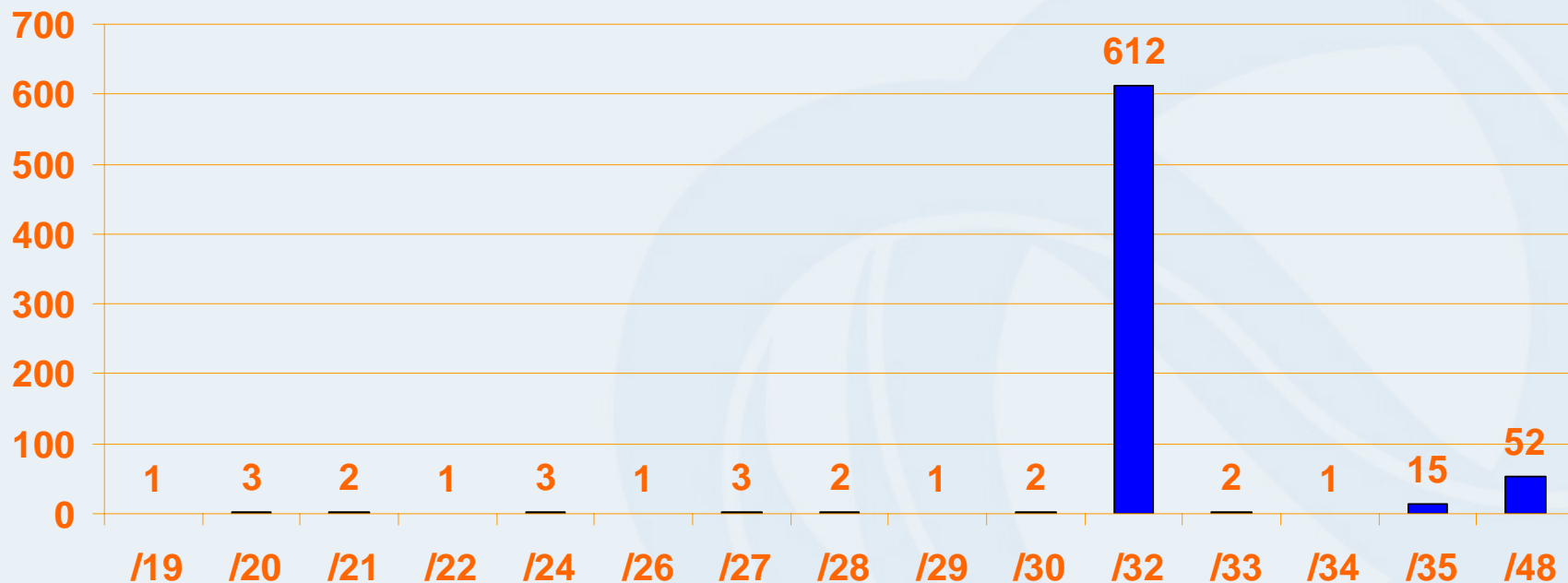


# APNIC critical infrastructure assignments (/32s)

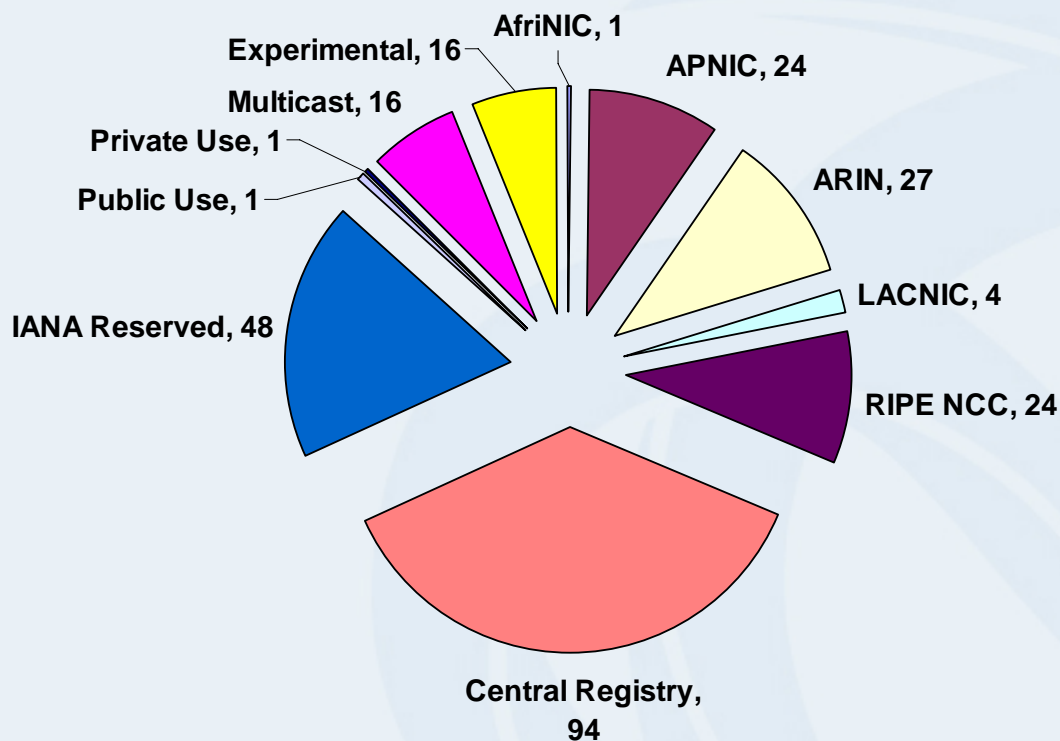


# Global IPv6 root routing table

Data as 1 April 2007 from  
<http://bgp.potaroo.net/v6/as1221/index.html>

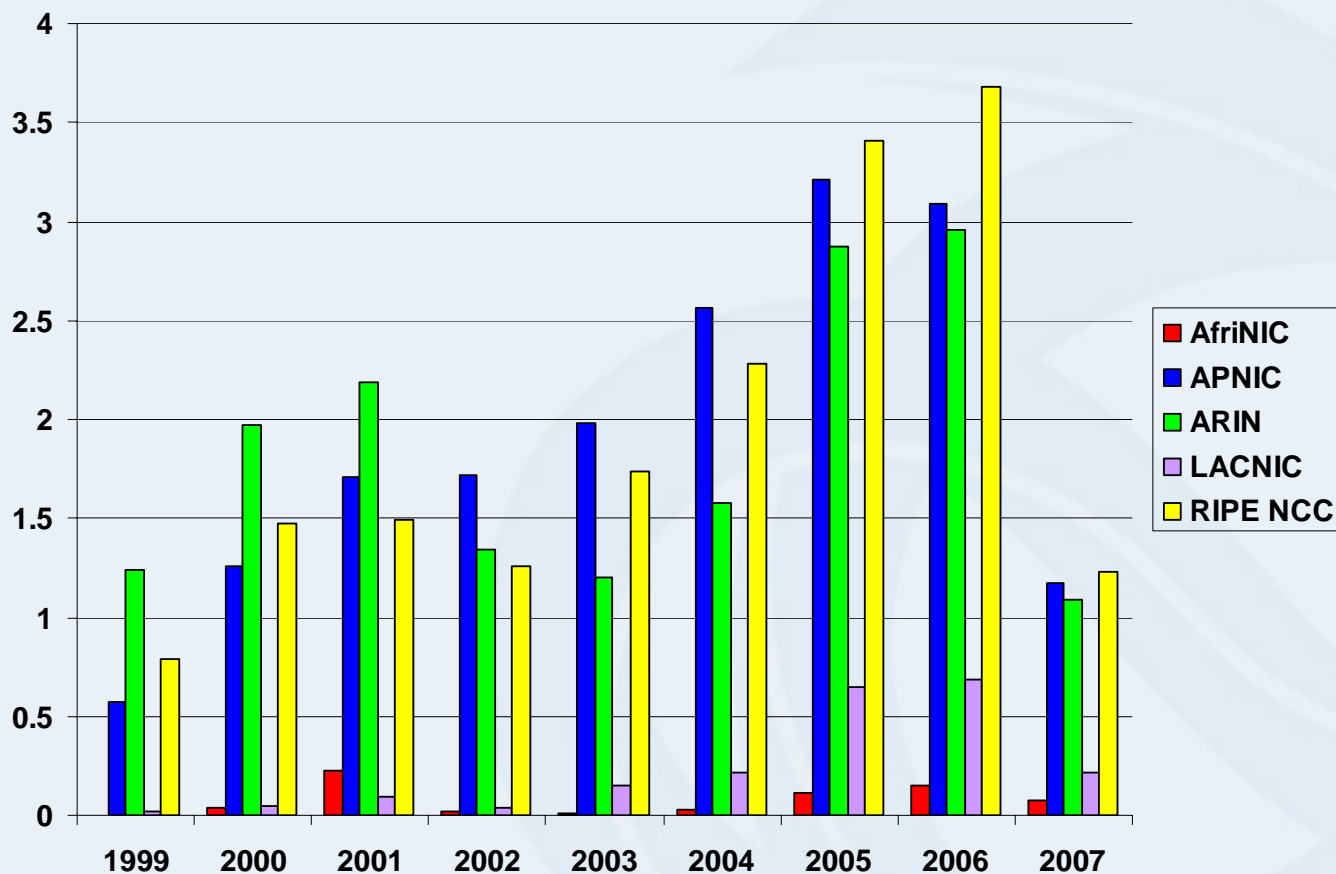


# Status of 256 /8s IPv4 Addresses



# IPv4 Allocations RIRs to LIRs/ISPs

Yearly Comparison (/8s) - data up to Mar 2007



# IPv6 Address Policy

- IPv6 Address Allocation and Assignment Policy
  - <http://www.apnic.net/docs/policy/ipv6-address-policy.html>
- APNIC guidelines for IPv6 allocation and assignment requests
  - <http://www.apnic.net/docs/policy/ipv6-guidelines.html>

# IPv6 Initial allocation criteria

- be an LIR;
- not be an end site;
- plan to provide IPv6 connectivity to organizations to which it will assign /48s, by advertising that connectivity through its single aggregated address allocation; and
- have a plan for making at least 200 /48 assignments to other organizations within two years.
  - Minimum initial allocation size is /32.



# Larger initial allocations

- Initial allocations larger than /32 may be justified by:
  - its existing IPv4 infrastructure and customer base,
  - its intention to provide its existing IPv4 services via IPv6, and
  - its intention to move some of its existing IPv4 customers to IPv6 within two years.
- Previous /32 holders can use this policy to extend their allocation size.

# IPv6 customer assignment size (New)

- You can assign /64 to /48 to your customer network depends on their requirement without seek CNNIC/APNIC approval.
- If you assign larger than /48 to one customer network, please seek second opinion from CNNIC / APNIC.
- HD ratio changed from 0.8 to 0.94 and measurement unit changed from /48 to /56.

# IPv6 IXP assignment policy

- Criteria
  - Demonstrate ‘open peering policy’
  - 3 or more peers
- Assignment size: /48
  - All other needs should be met through normal processes
  - /64 holders can “upgrade” to /48
    - Through CNNIC / APNIC
    - Need to return /64

# IPv6 Critical Infrastructure Assignment

- Organisations seeking assignment for critical infrastructure must be an actual operator of the network infrastructure performing the following functions:
  - root domain name system (DNS) server
  - global top level domain (gTLD) DNS server
  - country code TLD (ccTLDs) DNS server
  - Regional Internet Registry (RIRs)
  - National Internet Registry (NIRs)
- \* Minimum assignment size is /48

# IPv6 Multihoming Assignment (New)

- An organisation is eligible to receive a portable assignment from APNIC if it:
  - is currently multihomed with provider-based addresses, or demonstrates a plan to multihome within three months and,
  - agrees to renumber out of previously assigned address space.
- \* Minimum assignment size is /48

# Where to request IPv6 addresses?

- 1. From your upstream ISP
  - Receive an assignment or sub-allocation
  - Address space is non-portable
- 2. From CNNIC
  - CNNIC member
  - Address space is portable
- 3. From APNIC
  - APNIC member
  - Address space is portable

**Note: 6bone address is no longer available**

# Request IPv6 addresses from APNIC

- Become APNIC member
  - <http://www.apnic.net/member/index.html>
- IPv6 Allocation Request Form
  - <http://ftp.apnic.net/apnic/docs/ipv6-alloc-request>
- IPv6 Portable Assignment Request Form
  - <http://www.apnic.net/services/portable-assign/index.html>

# »Thanks!

