

IPv6 Allocation and Policy Update

Global IPv6 Summit in China 2007

April 12, 2007

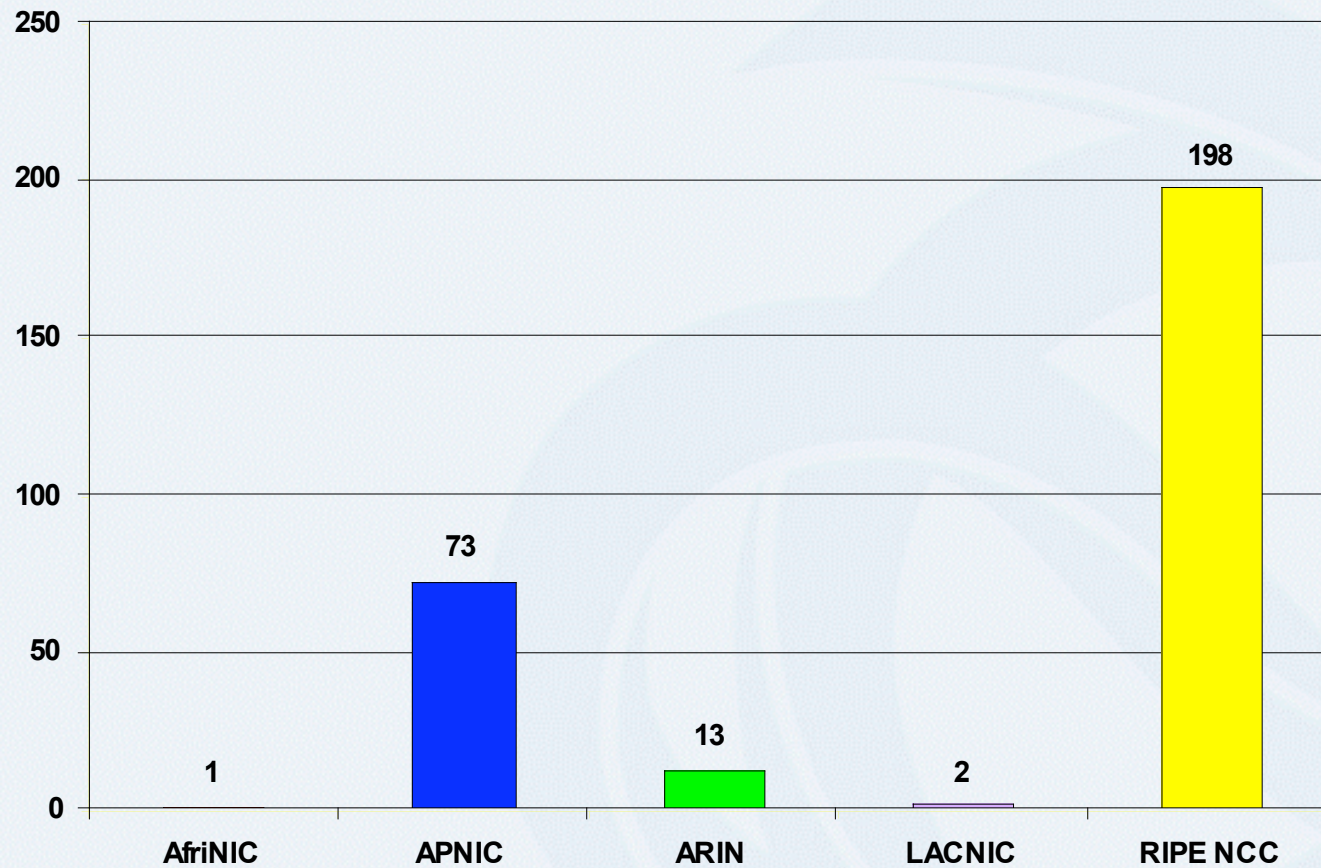
Guangliang Pan

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

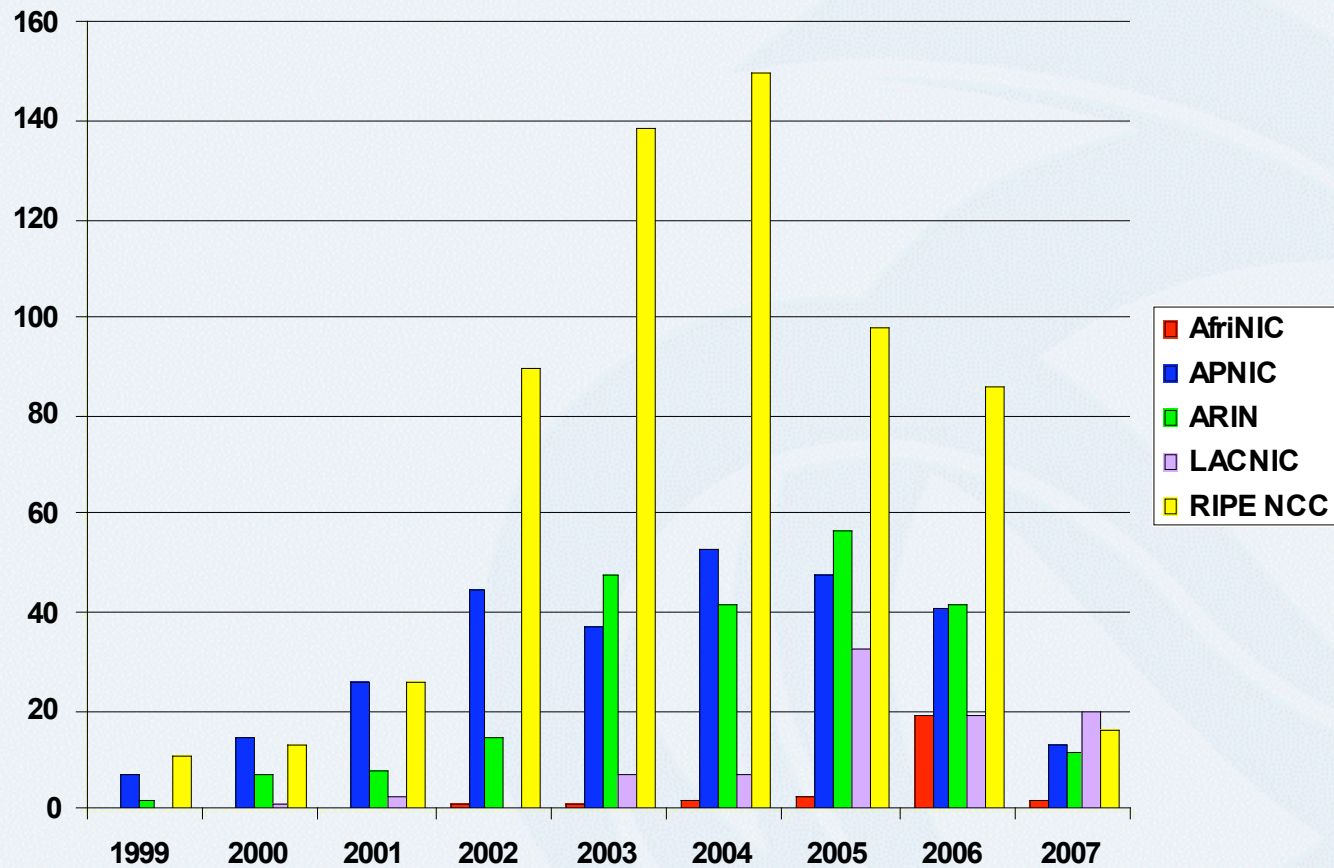
RIR	IPv6 Address
AfriNIC	2C00:0000::/12
APNIC	2400:0000::/12
ARIN	2600:0000::/12
LACNIC	2800:0000::/12
RIPE NCC	2A00:0000::/12

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



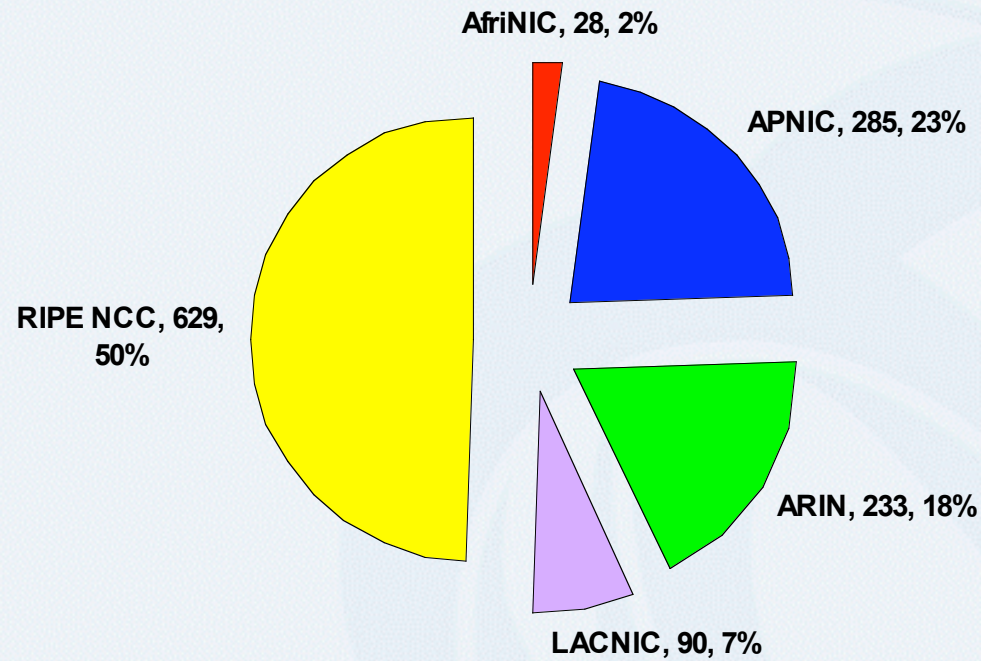
IPv6 Allocations RIRs to LIRs/ISPs

Yearly Comparison – data up to Mar 2007

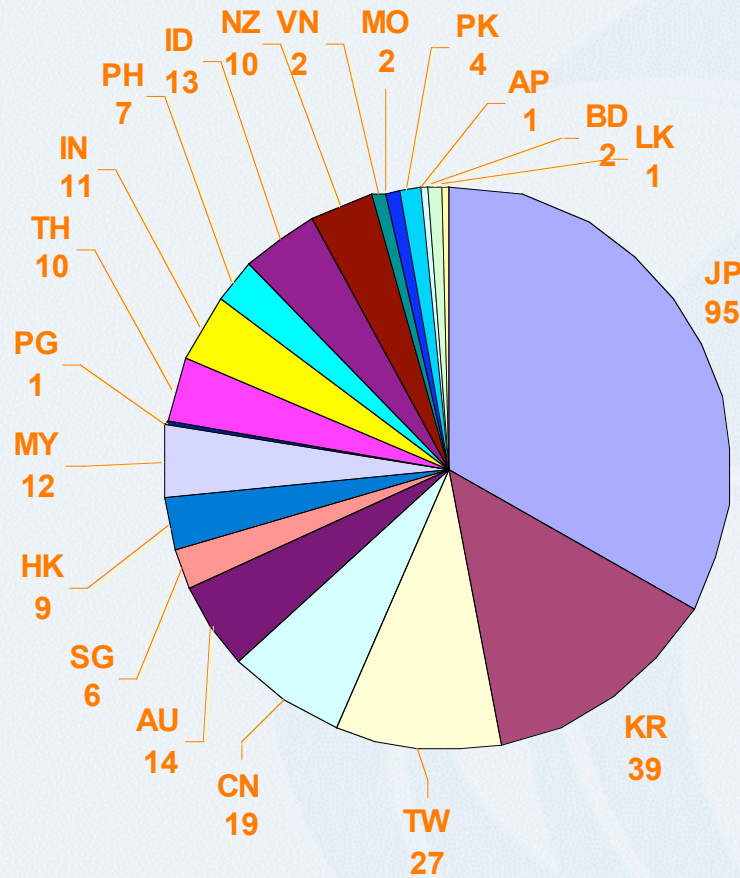


IPv6 Allocations RIRs to LIRs/ISPs

Cumulative Total (Jan 1999 – Mar 2007)

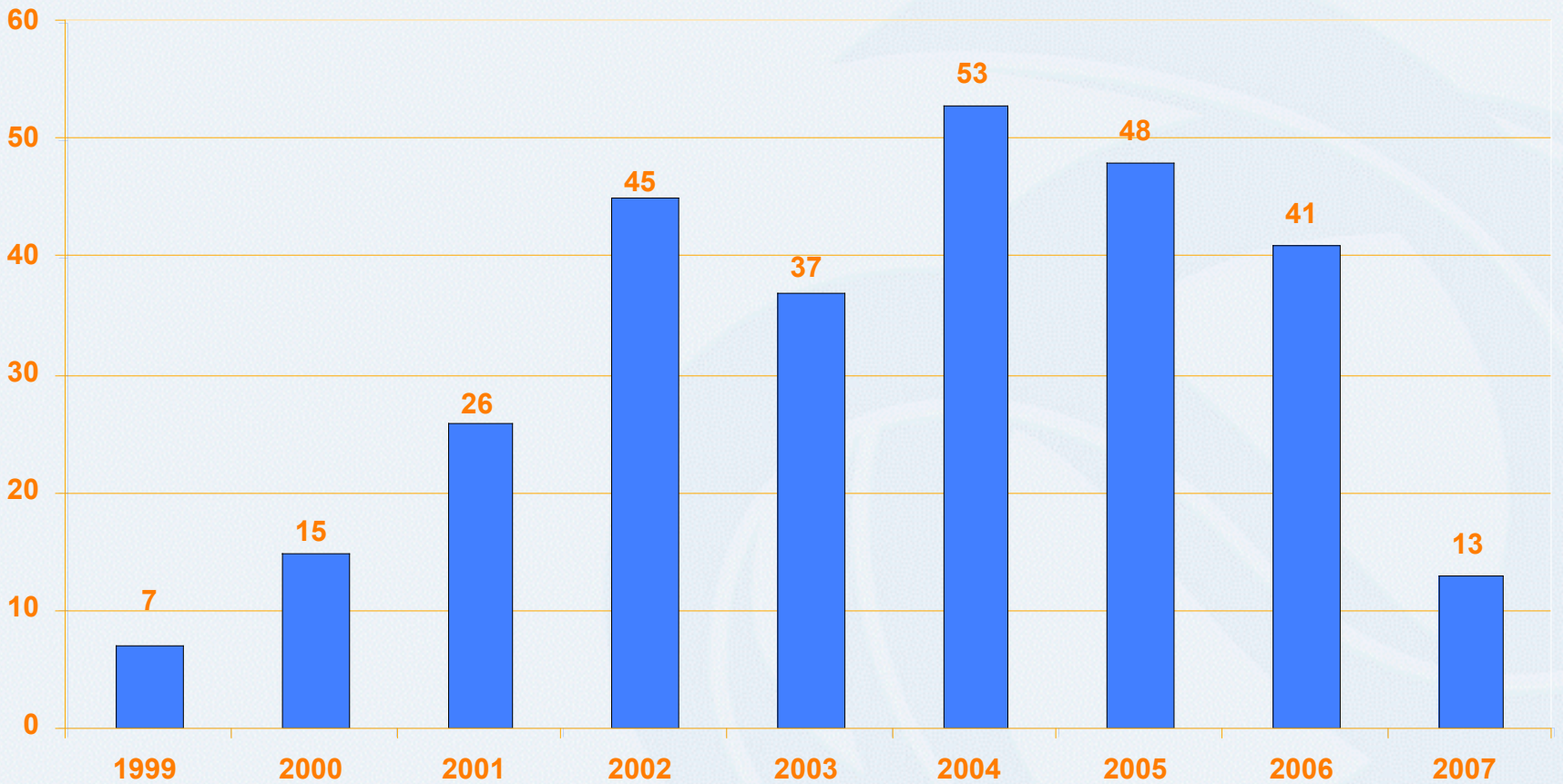


APNIC allocations by economies

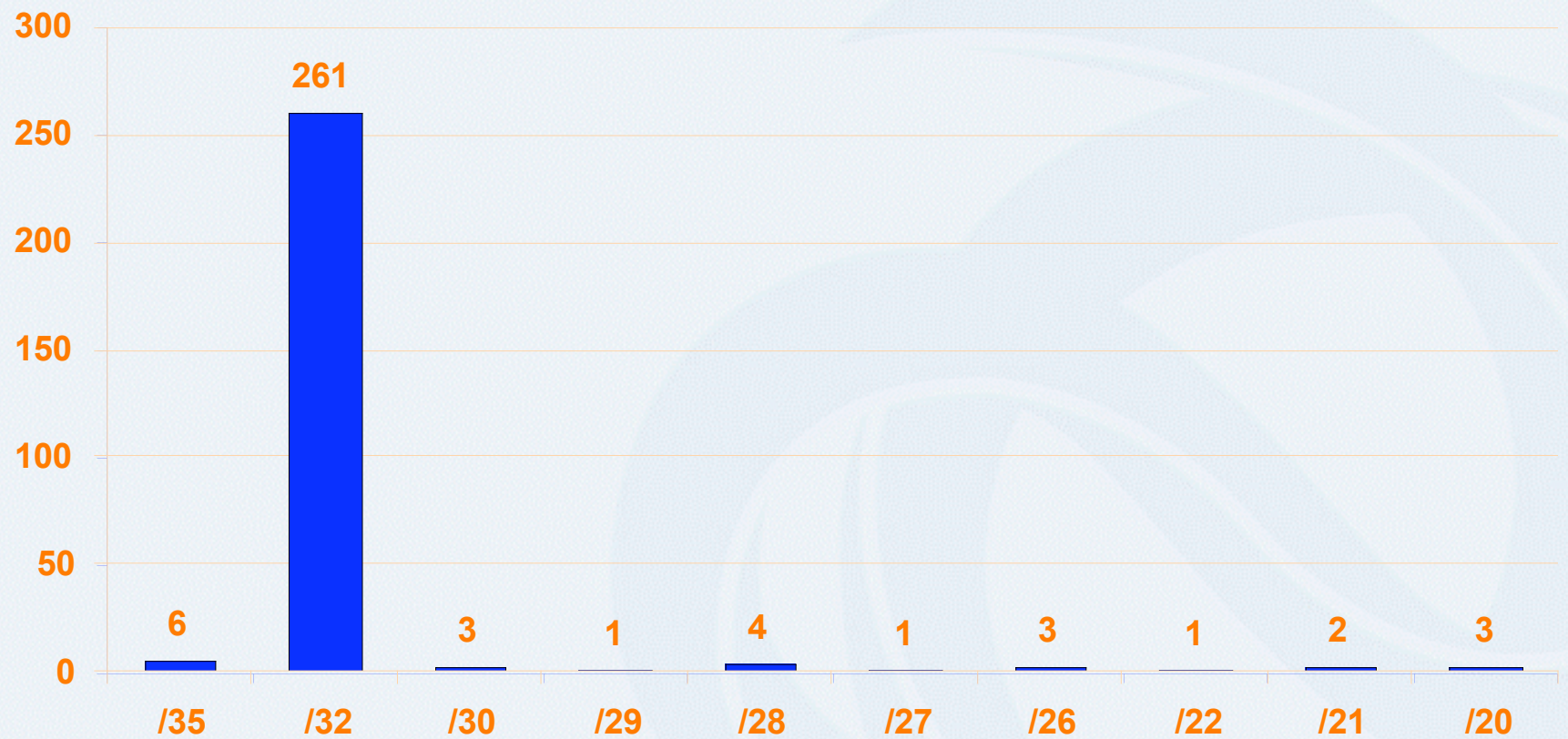




APNIC annual allocations

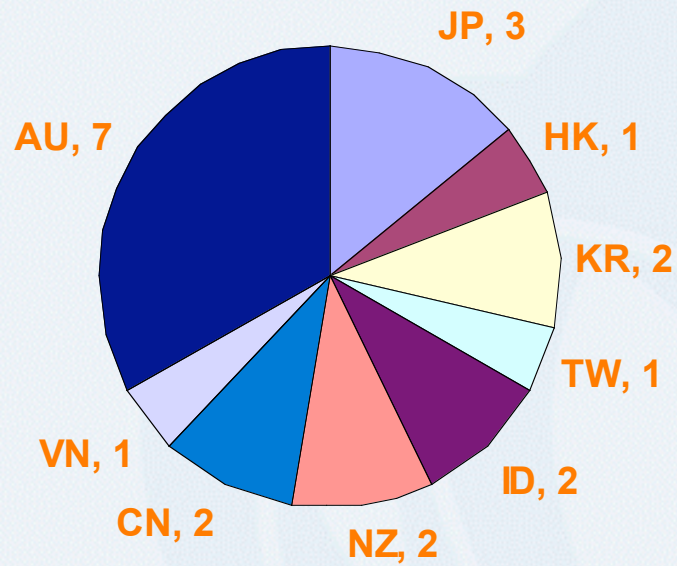


APNIC allocations by sizes

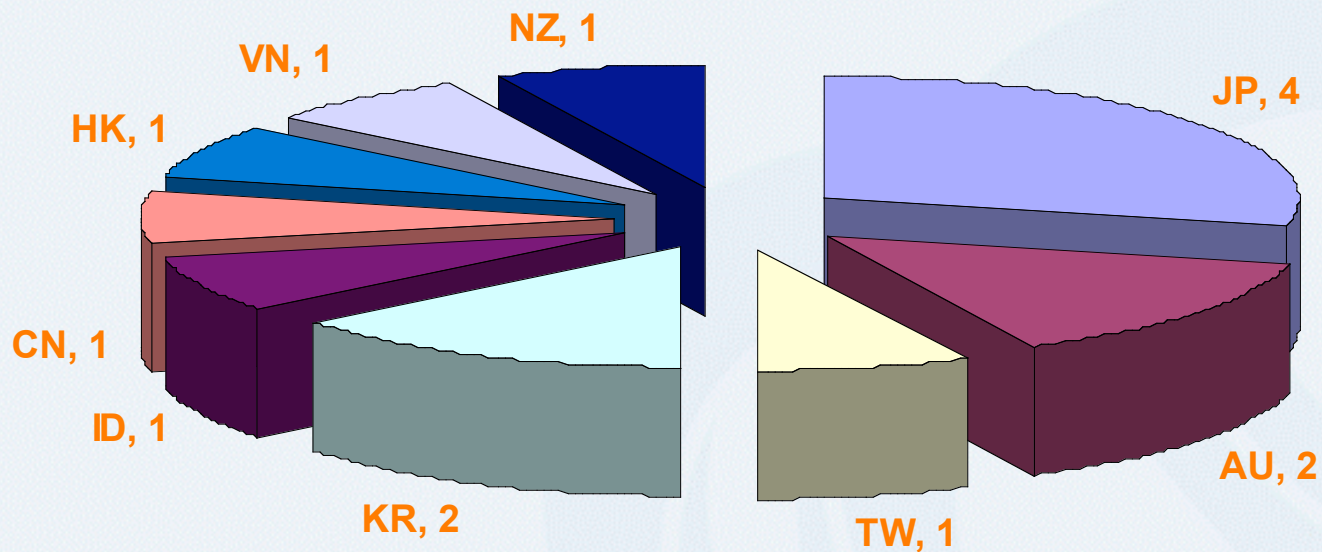


APNIC IXP assignments

All /48s except 4 are /64s

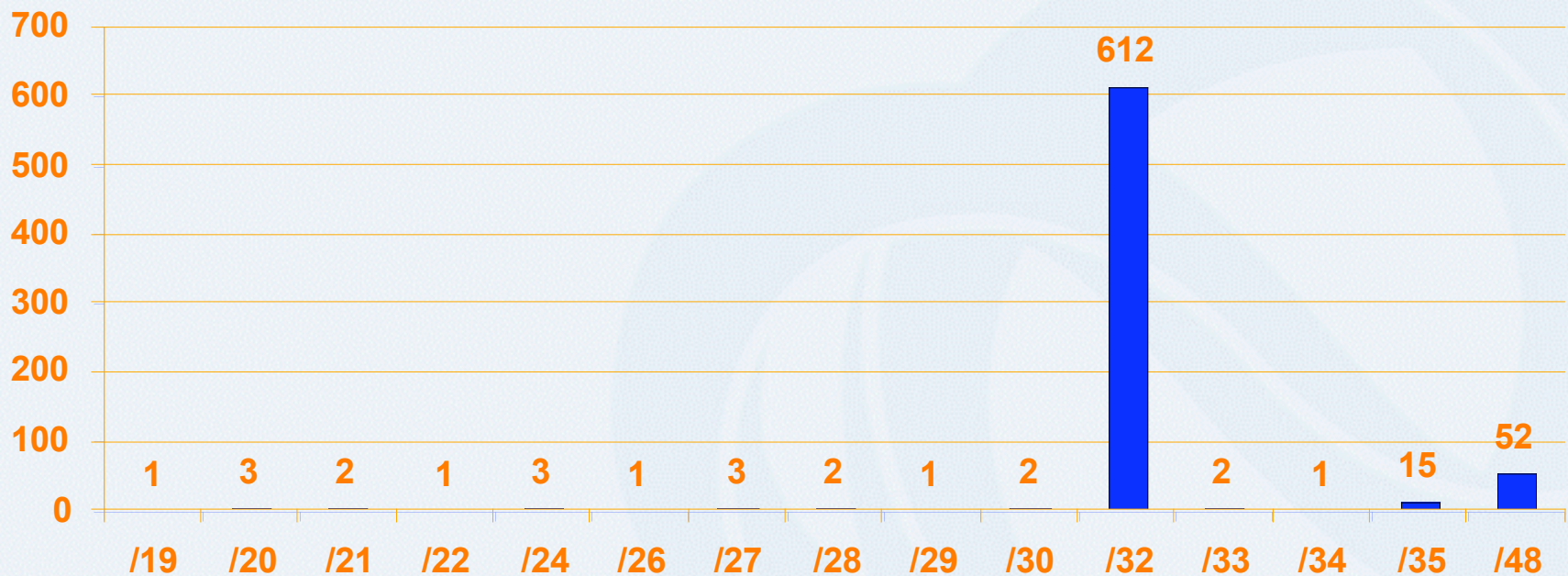


APNIC critical infrastructure assignments (/32s)

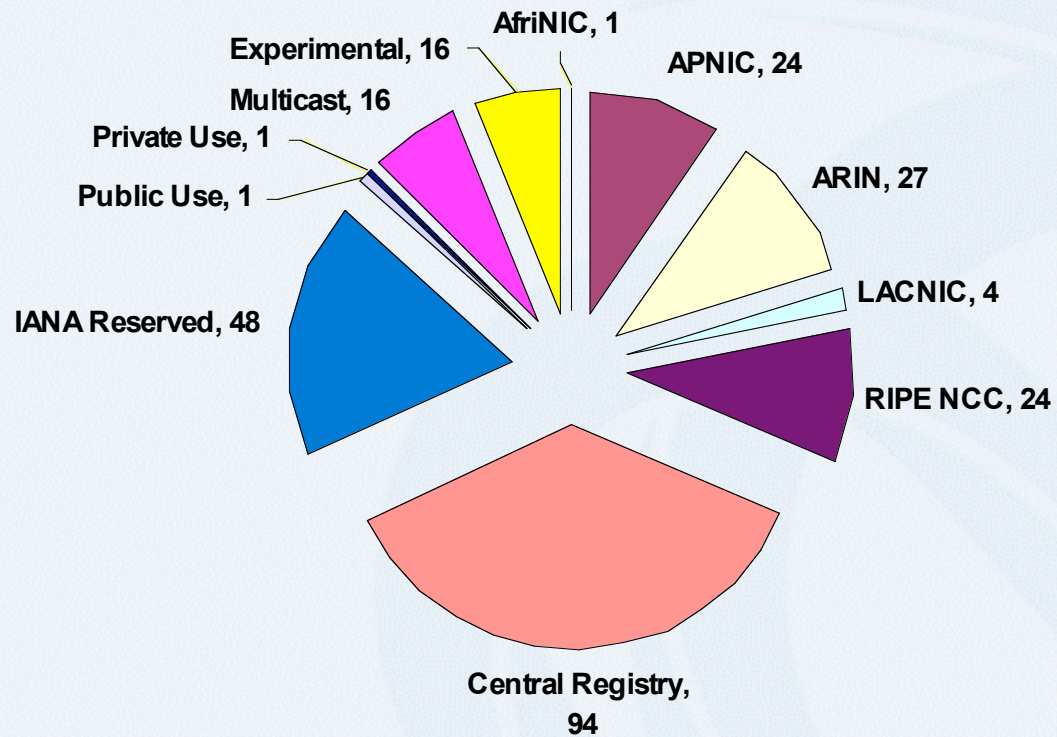


Global IPv6 root routing table

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



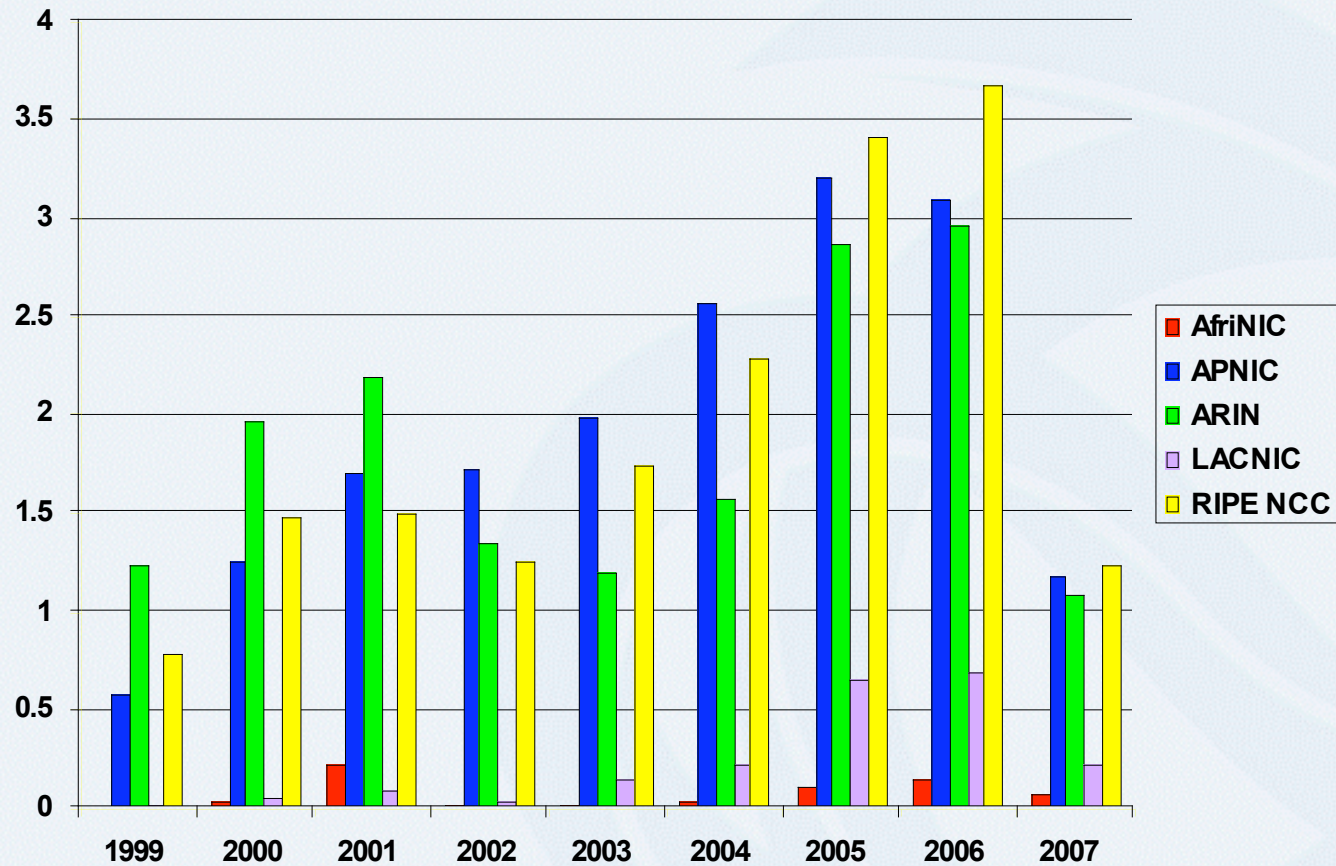
Status of 256 /8s IPv4 Addresses





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!