

# **IPv6 Policy and Allocation Update**

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#### Overview

- IPv6 allocation and assignment policy
  - Where to request IPv6 addresses
  - IPv6 allocation Criteria
  - IPv6 assignment policy
- IPv6 allocation status update
  - Global IPv6 allocations
  - APNIC allocation and assignment details
  - Global IPv6 routing table

#### 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

# IPv6 Address Policy

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

- <u>http://www.apnic.net/docs/policy/ipv6-</u> 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 assignments

#### Default assignment /48 for all end sites

64 bits

128 bits

POP also defined as end site

48 bits

- Providing 16 bits of space for subnets
- Other assignment sizes
  - /64 only one subnet
  - /128 only one device connecting
- Larger assignments Multiple /48s
  - Seek second opinion from CNNIC / APNIC

# IXP IPv6 assignment policy

- Criteria
  - Demonstrate 'open peering policy'
  - 3 or more peers
- Portable 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

**MPNIC** 

## 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)
- Assignment size is /32 at this stage

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### Request IPv6 addresses from APNIC

- Become APNIC member
  - http://www.apnic.net/member/index.html
- IPv6 Allocation Request Form
  - <u>http://ftp.apnic.net/apnic/docs/ipv6-alloc-request</u>
- Internet Exchange Point or Critical Infrastructure Assignment Request Form
  - <u>http://ftp.apnic.net/apnic/docs/portable-assign-request.txt</u>

APNIC

## IPv6 allocation status update

- IANA allocations to RIRs
- RIRs allocations to LIRs/ISPs
- APNIC allocation and assignment details
- Global IPv6 routing table

Note: Data current as 31 Mar 2006



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13

## RIR allocations to LIRs/ISPs Cumulative Total (Jan 1999 – Mar 2006)





**APNIC** 



#### **APNIC** annual allocations

Asia Pacific Network Information Centre

DING NIC



Asia Pacific Network Information Centre

DINIC NIC





JINIC NIC



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20

## **Useful URLs**

- <u>http://www.iana.org/assignments/ipv6-</u> <u>unicast-address-assignments</u>
- <u>http://ftp.apnic.net/stats/apnic/delegated-apnic-latest</u>
- Questions?

## »Thanks!