



APNIC

Asia Pacific Network Information Centre

IPv6 Interim Policy Draft

RIPE 42

Amsterdam, The Netherlands

1 May 2002



Overview

- Goals
- Key Issues Addressed
- FAQ
- Questions



Review Process

- Oct 1999-Dec 2001
 - Feedback from RIR communities, IETF
 - Major progress Aug 2001 (Taipei)
 - Global mailing list created Oct 2001
- Dec 2001
 - Initial interim draft policy document
- April 25
 - Revised interim draft
 - Modified initial criteria based on RIPE input
- Consensus in ARIN and APNIC regions



Goals

- Goals
 - Achieve interim global policy
 - Encourage IPv6 deployment
- Goals today
 - Explain contents of new draft
 - Seek ‘workable consensus’



Key Issues Addressed

- Provide a larger initial allocation
- Facilitate access to IPv6 addresses
- Consider previous deployment experience for allocation size
- Provide convenient 'utilisation' method



FAQ – Allocation Size

- Is there a minimum allocation size?
 - Yes, a /32
 - It will be allocated if you meet the criteria
- Is there a maximum allocation size?
 - No
 - Your actual need, based on IPv4 and/or IPv6 assignment history, will be considered

FAQ – Allocation Criteria

- How do I get an IPv6 allocation?
 - Must satisfy criteria
 - Be an LIR and
 - Not be an end site and
 - Plan to provide IPv6 connectivity to organisations and to end sites and
 - Have a plan for making at least 200 /48 assignments to other organisations within two years



FAQ – Allocation Criteria

- Can I get more than a /32?
 - Yes, enough to enable you to provide IPv6 service to all of your IPv4 customers
 - No more than initial /32 will be given to requestors who cannot demonstrate previous assignment history

FAQ – Definitions

- What is a ‘end site’?
 - An ‘end user’ who has a business relationship with a provider carrying traffic
 - E.g Consumer (dial up/cable/DSL)
 - E.g Enterprise (leased line)
- How do you measure ‘utilisation’?
 - Count the number of /48s assigned. No need to consider usage within each /48



FAQ – License Framework

- Are allocations permanent?
 - No, they are ‘licensed’ for use
- Is the license permanent?
 - No, renewed periodically
 - Automatic renewal
 - Assuming good faith by LIR

FAQ – HD Ratio

- What is the ‘Host Density (HD)’ ratio?
 - In a hierarchical address plan, as the size of the allocation increases, the density of assignments will decrease
- Do I need to calculate HD ratio?
 - No, just use the table in the policy document
- Why do I need to know about it?
 - Defines the point at which you should come back to the RIR for more address space
 - Helps with measuring how much to allocate

Example: HD Ratio 0.8

IPv6 prefix	Site addr bits	Total site addrs in /48s	Threshold	Util%
42	6	64	28	43.5%
36	12	4096	776	18.9%
35	13	8192	1351	16.5%
32	16	65536	7132	10.9%
29	19	524288	37641	7.2%
24	24	16777216	602249	3.6%
16	32	4294967296	50859008	1.2%
8	40	1099511627776	4294967296	0.4%
3	45	35184372088832	68719476736	0.2%

RFC3194 "The Host-Density Ratio for Address Assignment Efficiency"

Subsequent Allocations

- Registration necessary to determine 'usage'
 - Count /48s assigned
 - Meet utilisation threshold in HD ratio table for prefix
- Allocation size
 - Existing allocation doubled
 - E.g. /32 will be expanded to a /31
 - May be larger
 - Allocations based on two year plan



Other Issues

- LIR to ISP allocation
 - Policy determined by LIR
 - Must be able to meet HD ratio for subsequent allocations
 - LIR responsible for tracking all /48s
- DB registration
 - All /48 and shorter prefix allocations and assignments must be registered
- Existing /35 holders
 - Eligible to have /35 expanded to a single /32 prefix



Assignments

- Previous global consensus
 - /48 generally
 - /64 only one subnet
 - /128 only one device connecting
- Multiple /48s
 - Should be reviewed by RIR/NIR (until experience is gained)
- ISP infrastructure
 - /48 per POP



Questions?

- Presentation slides
 - <http://www.apnic.net/>
- Draft policy document
 - <ftp://ftp.cs.duke.edu/pub/narten/ietf/global-ipv6-assign-2002-04-25.txt>
- Global-v6 mailing list
 - Subscribe <majordomo@lists.apnic.net>