



APNIC

Asia Pacific Network Information Centre

IPv6 Address Space Management

A follow up to RIPE-261

APNIC16 - Address Policy SIG

Seoul, Korea,

20 August 2003



Document History

- RIPE-261 (Oct 02)
 - ‘IPv6 Address Space Management’
 - <http://www.ripe.net/ripe/docs/ipv6-sparse.html>
 - Presented at RIR meetings
- Follow up to RIPE-261 (Jul 03)
 - ‘Requesting larger IPv6 allocations from IANA and practicing ‘sparse allocations’
 - <http://www.apnic.net/ mailing-lists/sig-policy/archive/2003/07/msg00000.html>

Background RIPE-261 – Current System

- IANA-RIR allocations /23 blocks
- RIR-LIR allocations
 - Minimum allocation /32
 - Reservations up to /29
 - No contiguous allocation beyond /29
 - Sequential allocations by RIRs
- IPv4 based allocation system
 - Observed long terms effects of fragmentation with IPv4 address space

IANA IPv6 Allocations to RIRs (1999-current)

IPv6 Prefix	Allocated To	Date
2001:0000::/23	IANA	Jul 99
2001:0200::/23	APNIC	Jul 99
2001:0400::/23	ARIN	Jul 99
2001:0600::/23	RIPE NCC	Jul 99
2001:0800::/23	RIPE NCC	May 02
2001:0A00::/23	RIPE NCC	Nov 02
2001:0C00::/23	APNIC	May 02
2001:0E00::/23	APNIC	Jan 03
2001:1000::/23	(future)	-
2001:1200::/23	LACNIC	Nov 02
2001:1400::/23	RIPE NCC	Feb 03
2001:1600::/23	RIPE NCC	Jul 03
2001:1800::/23	ARIN	Apr 03

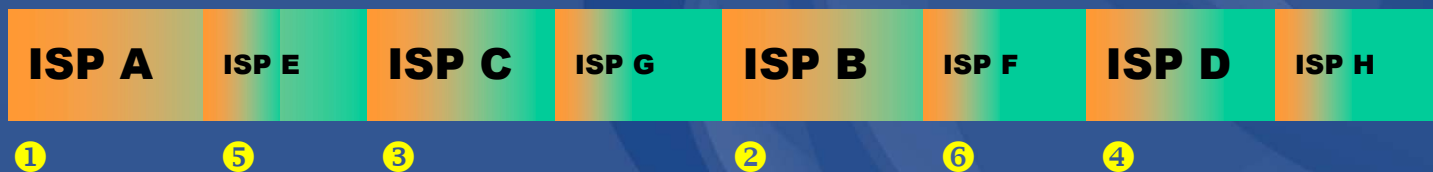


RIPE-261 Proposal

- Objective
 - Minimise long term fragmentation of IPv6 address space
- Method
 - Practice ‘Sparse allocations’, otherwise known as ‘binary chop’
 - Management a single pool of addresses through ‘Common Allocation Pool’

RIPE-261 Proposal

- “Sparse Allocation” system
 - Maximise “distance” between allocations to distinct ISPs
 - Maximise chance of aggregation of subsequent allocations
- For example...





Feedback RIPE-261

- Favour
 - General support for idea but no clear consensus on ‘Common Allocation Pool’
 - Support for IANA to allocate larger blocks
 - /12, /8 suggested
- Against
 - Using a common pool for allocations would no longer allow prefix filtering on RIR-IANA boundaries

RIPE-261 Follow Up Proposal

- IANA-RIR allocations
 - IANA makes allocations to RIRs in /8 units
 - Larger pool supports greater aggregation
 - Preserves regional integrity
- ‘Sparse allocations’
 - May be practiced by RIRs within the allocated blocks (local policy)
 - Reservation of uniform /29 is discontinued



Feedback so far...

- 22 Jul proposal sent to SIG mailing list
 - Endorsement from RIPE Address Policy WG chair
 - Several other comments strongly in favour
 - Minor typo corrections
 - One suggestion
 - Sparse allocations **MUST** be used, rather than **MAY** be used



Next Steps?

- Develop IPv6 companion document
 - ‘IANA Policies for allocation of IPv4 blocks to RIRs’
 - Discuss in RIR communities
 - Community feedback needed
- ASO endorsement
 - Both IPv4 and IPv6 IANA-RIR policies document will be global policies



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Questions? Feedback?