A proposal for Improved IPv6 Allocations

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Introduction

- Similar to ARIN Policy 2011-3 adopted 10 June, 2011
- Allows providers to seek more liberal IPv6 allocations to facilitate better network administration and better aggregation

Current problem

- ISPs squeezing into a /32 based on (often erroneous) belief that is all they can get
- Bitmath-errors leading to outages
- Disaggregation created when even medium sized LIRs outgrow /32
- Undersized assignments by LIRs to end users to minimize consumption of limited resources in /32

Other RIRs

- Summarise the position in other RIRs, if relevant
  - ARIN -- Adopted 2011-3
  - LACNIC -- Not yet Proposed
  - RIPE NCC -- Existing RIPE policy generally allows what this policy proposes
  - AfriNIC -- Not yet proposed

Proposal

- Makes it clear ISP can get any justified prefix size larger(shorter) than a /36 while leaving default at /32
  - Reduces probability of ISPs choosing undersized blocks
  - Encourages right-sizing downstream allocations to end-users (current policy encourages under-sizing)

Proposal (cont)

- Significantly eases qualifications for larger prefixes.
  - Streamlines request process
  - Simplifies ability for LIR to justify (relatively) large blocks
  - Preserves needs-basis criteria and safeguards

Proposal (Cont.)

- Does not require an ISP to take a larger prefix if they don't want to.
  - This proposal sets guidelines for a liberal maximum allocation.
  - ISPs that want to keep things small and inexpensive are actually allowed to get a smaller (/36) block than under current policy
  - Does not tell you how to run your network. Gives you greater flexibility in how much address space you can get in order to do so.

Proposal (Cont.)

- Recommends (but does not require) nibble-boundary round-ups.
  - In Busan, the fee implications of these round-ups seemed to be the major source of contention.
  - This version makes the round-ups voluntary so LIRs can control the fee implications and balance the trade-offs as they see fit.

Benefits/disadvantages

- Benefits:
  - Simplified, Streamlined Justification Process
  - Larger maximum allocations (at the discretion of the LIR)
  - Greater flexibility in running your network
  - Better aggregation
  - More liberal end-user assignments are encouraged
- Disadvantage:
  - Slight increase in IPv6 consumption
    - This will not matter.

Implementation

- APNIC will probably have to do some development work to facilitate implementation. I will leave it to them to determine how long that will take.
- Form changes: LIR Initial allocation and Subsequent IPv6 request forms.
- Documents: Updates IPv6 allocation policy
- NIR Impact: NIRs will need to adapt to the improved allocation practices. Impact should be minimal.

Summary

- Does not tell you how to run your network
- Allows you to get more space IF you want it.
- Allows you to get nibble-aligned allocations IF you want them
- Replaces confusing HD Ratio with simple percentages
- Simplifies and streamlines the justification process