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