

prop-164-v006: Allocations of IPv6 Resources longer than a /32 with a nibble boundary alignment

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1. Problem Statement

- Longest IPv6 allocation size is /32.
- Small network operators are required to take an allocation size that is shorter than what they have determined that they need.
- Assignments only get one Whois/RDAP record for the parent delegation.

2. Objective of policy change

- Reduce the longest allocation size from /32 to /40, which:
 - Reduces the number of resources an account holder needs to request, and
 - Helps account holders maintain more accurate records.

3. Situation in other regions

- ARIN already allows for /36 and /40 allocations under section 6.5.2.1 of their Number Resource Policy Manual.
- LACNIC, RIPE NCC and AFRINIC policies all still list /32 as the minimum allocation size.

4. Proposed policy solution

Update "APNIC-127 APNIC Internet Number Resource Policies":

- 5.2.3.1 LIR-to-ISP allocation: Require LIRs to update Whois/RDAP with the relevant delegation details.
- 8.1 Minimum IPv6 allocation: Change the wording to reflect /40 as the longest allocation size.
- 8.1.1 Returning excess IPv6 allocation/s: Allow resource holders to return unused space and shrink their holdings, by keeping the first /40 or /36 and returning all other space.

4. Proposed policy solution (cont.)

- 8.2.1 Account holders with existing IPv4 space: Change the wording to reflect /40 as the longest eligible allocation size.
- (NEW) 8.2.3 Reservation of IPv6 space for future expansion:
 - Codifies into policy the current operational practice of sparse allocations,
 - Stipulates the sizes of these allocations,
 - What to do if no /28 is available, and
 - What to do if no address space is available but reservations do exist.

4. Proposed policy solution (cont.)

- 8.3.1 Existing IPv6 address resource holders
 - Allows existing account holders to expand their current delegation of between a /40 and /33 up to a /32 without requiring additional justification (if s8.2.2 criteria is met),
 - How delegations will be made if contiguous space is not available.
- (NEW) 8.4 Size of IPv6 Allocation(s)
 - Sets out the nibble boundary alignment conditions for initial and subsequent delegations.

5. Advantages / Disadvantages

- Advantages:
 - This would allow an account holder to maintain more accurate records for longer prefixes from a delegation within the Whois database.
- Disadvantages:
 - None known.

6. Impact on resource holders

No potential or actual impacts to resource holders were identified.

7. References

- <https://www.apnic.net/community/policy/resources#ah223>
- <https://www.apnic.net/community/policy/resources#ah5231>
- <https://www.apnic.net/community/policy/resources#ah81>
- <https://www.apnic.net/community/policy/resources#ah821>
- <https://www.arin.net/participate/policy/nrpm/#6-5-2-1-size>



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