

Recommended Draft Policy ARIN-2020-3 IPv6 Nano-allocations

- Current Text (18 August 2020)
- Staff and Legal Review (3 June 2020)
- History and Earlier Versions
- Related Meetings

Status: Last Call

Shepherds: Andrew Dul, Amy Potter

Current Text (18 August 2020)

AC Assessment of Conformance with the Principles of Internet Number Resource Policy:

Recommended Draft Policy ARIN-2020-3 provides for small IPv6 allocations to ISPs. This policy would allow the smallest ISP organizations to obtain a /40 of IPv6 addresses. This recommended draft is technically sound, supported by the community and enables fair and impartial administration of number resources by providing the smallest organizations the opportunity to obtain an IPv6 allocation without a fee increase under the current fee schedule.

Problem Statement:

ARIN's ISP registration services fee structure has graduated fee categories based upon the total amount of number resources held within the ARIN registry.

In the case of the very smallest ISPs, if a 3X-Small ISP (with a /24 or smaller of IPv4) gets the present minimal-sized IPv6 allocation (a /36), its annual fees will double from \$250 to \$500/year.

According to a Policy Experience Report presented by Registration Services to the AC at its annual workshop in January 2020, this represents a disincentive to IPv6 adoption with a substantial fraction of so-situated ISPs saying "no thanks" and abandoning their request for IPv6 number resources when informed of the impact on their annual fees.

This can be addressed by rewriting subsection 6.5.2.1(b). Initial Allocation Size to allow allocation of a /40 to only the smallest ISPs upon request, and adding a new clause 6.5.2.1(g) to cause an automatic upgrade to at least a /36 in the case where the ISP is no longer 3X-Small.

Reserving /40s only for organizations initially expanding into IPv6 from an initial sliver of IPv4 space will help to narrowly address the problem observed by Registration Services while avoiding unintended consequences by accidentally giving a discount for undersized allocations.

Policy Statement:

Replace the current 6.5.2.1(b) with the following:

b. In no case shall an LIR receive smaller than a /32 unless they specifically request a /36 or /40.

In order to be eligible for a /40, an ISP must meet the following requirements:

- Hold IPv4 direct allocations totaling a /24 or less (to include zero)
- Hold IPv4 reassignments/reallocations totaling a /22 or less (to include zero)

In no case shall an ISP receive more than a /16 initial allocation.

Add 6.5.2.1(g) as follows:

g. An LIR that requests a smaller /36 or /40 allocation is entitled to expand the allocation to any nibble aligned size up to /32 at any time without renumbering or additional justification. /40 allocations shall be automatically upgraded to /36 if at any time said LIR's IPv4 direct allocations exceed a /24. Expansions up to and including a /32 are not considered subsequent allocations, however any expansions beyond /32 are considered subsequent allocations and must conform to section 6.5.3. Partial returns of any IPv6 allocation that results in less than a /36 of holding are not permitted regardless of the ISP's current or former IPv4 number resource holdings.

Comments:

The intent of this policy proposal is to make IPv6 adoption at the very bottom end expense-neutral for the ISP and revenue-neutral for ARIN. The author looks forward to a future era wherein IPv6 is the dominant technology and IPv4 is well in decline and considered optional leading the Community to conclude that sunseting this policy is prudent in the interests of avoiding an incentive to request undersized IPv6 allocations.

Timetable for Implementation: Immediate

Staff and Legal Review (3 June 2020)

Summary (Staff Understanding)

Staff understands the intent of the Draft Policy is to reserve /36 to those who request them specifically, and /40 IPv6 allocations to those who meet specific requirements based on their IPv4 holdings. This would likely remove a current potential disincentive to IPv6 adoption for ISPs holding a /24 or smaller of IPv4 who might see substantial fee increases if allocated a /36 of IPv6.

ARIN Staff Comments

The text is clear and understandable, and can be implemented as written. Staff can adjust vetting of small IPv6 requests in compliance with the new language.

It is suggested that the description of ARIN fees in the problem statement be changed for accuracy to “ARIN’s ISP registration services fee structure has graduated fee categories based upon the total amount of number resources held within the ARIN registry.”

Staff suggests specifying that the language is to be applied to Section 6.5.2.1. (b) and (g) for avoidance of doubt.

ARIN General Counsel – Legal Assessment

This policy creates no ‘material legal issues’.

Resource Impact

Implementation of this policy would have minimal resource impact. It is estimated that implementation would occur within 3 months after ratification by the ARIN Board of Trustees. The following would be needed in order to implement:

- Staff training
- Updated guidelines and internal procedures
- Standard documentation updates

Proposal/Draft Policy Text Assessed: 24 March 2020 Version

Relevant Votes:

ARIN 45: "Do you want the AC to continue working on this draft?"
100 in attendance, 33 yes, 15 no.

ARIN 46: 117 in attendance, 42 in favor, 12 against

Note:

The November 19, 2020 Advisory Council’s motion to advance to the Board of Trustees carried with all in favor via roll call vote, with the following note for the Board’s consideration:

The ARIN Advisory Council notes that the community strongly supports ‘ARIN-2020-03: IPv6 Nano-Allocation’ fixing a fee issue for 3x-small ISPs which appears to provide a disincentive for IPv6 deployment. However, the community appears agnostic to favoring a fix of this issue in the fee schedule rather than in number policy; and, the AC recommends that the Board of Trustees consider fixing this issue as part of a fee schedule update rather than via policy. This policy has completed a successful policy development process for ‘ARIN-2020-03: IPv6 Nano-Allocation’, and is strongly supported by the community and thus the AC forwards this recommended draft policy to the ARIN Board of Trustees for adoption.