ARIN 52
POWERED BY PARTICIPATION

Draft Policy 2023-2: /26 Initial IPv4 Allocation for IXPs

Shepherds: Matthew Wilder, Gus Reese

Problem Statement

Current Text
20 June 2023

Per NRPM Section 4.4, ARIN has reserved a /15 for micro-allocations for critical internet infrastructure, such as internet exchange points (IXPs) and core DNS service providers. The majority of these allocation requests are made by IXPs. As of the last ARIN report, roughly half of this reservation is allocated (see Statistics & Reporting Projections from ARIN staff suggest that at current allocation rates, the remaining reserved space may be exhausted in the next few years.

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Problem Statement (cont.)

Current Text
20 June 2023

In parallel, an analysis of PeeringDB data conducted by the RIPE Address Policy Working Group shows that approximately 70% of global IXPs have fewer than 32 members registered with that site. An IXP this size could readily operate with a /26 allocation, which would provide 100% overprovisioning beyond their existing peer count. (Source: https://github.com/mwichtlh/address-policy-wg)

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Problem Statement (cont.)

Current Text
20 June 2023

Unlike other types of allocations, IXP peering networks are not required by member networks to be globally reachable; only members of the IXP must be able to reach the prefix. As such, there is no technical requirement that an IXP allocation must be no smaller than a /24.

Policy Statement

Current Text (20 June 2023)

Existing text:

4.4. Micro-allocation

ARIN will make IPv4 micro-allocations to critical infrastructure providers of the Internet, including public exchange points, core DNS service providers (e.g. ICANN-sanctioned root and ccTLD operators) as well as the RIRs and IANA. These allocations will be no smaller than a /24. Multiple allocations may be granted in certain situations.

Policy Statement

Current Text (20 June 2023)

Replace with:

4.4 Micro-allocation

ARIN will make IPv4 micro-allocations to critical infrastructure providers of the Internet, including public internet exchange points (IXPs), core DNS service providers (e.g. ICANN-sanctioned root and ccTLD operators) as well as the RIRs and IANA. These allocations will be no smaller than a /26 for IXPs, or a /24 for other allocations that require global reachability of the assigned allocation. Multiple allocations may be granted in certain situations.

Policy Statement

Proposed Text (20 June 2023)

4.4.1 Micro-allocations for Internet Exchange Points (IXPs)

An IXP requesting an initial IPv4 allocation from this reserved space will be assigned a /26 by default. An IXP requesting an allocation larger than a /26 must show an immediate need to utilize more than 25% of the requested allocation size upon initial commissioning.

An IXP requesting an allocation under this section must have also requested, or already received, an IPv6 allocation for the same purpose under Section 6.10.1.

An allocation made to an IXP under this section may only be used for the operation of its public peering LAN. No other uses are allowed.

An IXP that has received an IPv4 allocation under this section may request a larger allocation once they have utilized more than 50% of their existing one. Upon receiving the larger allocation, the IXP must migrate to the new allocation and return their previous one to ARIN within 6 months.

History

Action	Date
Proposal	25 May 2023
Draft Policy	20 June 2023

Community Feedback

Public Policy Mailing List (PPML) Feedback:

- Adoption of policy would impose a renumbering plan on IXPs if they expanded outside the initial allocation.
- If an allocation of a /26 or smaller is made will the IXP have the remainder of the /24 reserved for future growth potentially rendering renumbering unnecessary?
- Replenishment policy for IP resources of NRPM 4.4 is already in place via NRPM 4.1.7.2.

Community Feedback

PPML and other feedback:

- IXP definition may be needed – does the interconnection of 3 ASNs in a basement qualify as an IXP?
- Return criteria may be needed - over the last 31 years, 34% of IXPs have gone defunct, but allocations have not been returned
- Some IXP allocations are apparently advertised to the Internet – perhaps a review of justification and usage may be warranted?

Predicting IXP Viability

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QUESTION(S) FOR THE COMMUNITY

Is it worth developing the option of allowing smaller assignments for IXPs?

Is there value in defining what constitutes an Internet Exchange Point / Public Exchange Point in NRPM 4.4?

Should the community define a policy to require the return of IP resources in the event of an IXP ceasing operations after a given time period?

Thank You

Questions or Comments?