Draft Policy ARIN-2024-5: Rewrite of NRPM Section 4.4 Micro-Allocation

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Problem Statement

Current Text (18 March 2025):

The current NRPM Section 4.4 language hasn't aged well. As the ARIN 53 policy experience report demonstrated, 4.4 has also become difficult to implement by ARIN staff. The growth and use of Internet Exchanges have also changed. The overhaul seeks to improve technical soundness, respect the privilege of a dedicated pool and to more closely observe conservation principles using clear, minimum and enforceable requirements and underscoring the value of routability of allocated prefixes as required.

Policy Statement

4.4 Critical Internet Infrastructure (CII) Allocations

ARIN will reserve a /15 equivalent of IPv4 address space for Critical Internet Infrastructure (CII) within the ARIN RIR service area. Allocations from this pool will be no smaller than a /24. Sparse allocation will be used whenever practical. CII includes Internet Exchanges, IANA-authorized root servers, TLD operators that offer domain-level DNS services to outside parties, ARIN, and IANA.

Previous allocations under this policy must continue to meet the justification requirements of this policy. Use of this policy for CII is voluntary. ARIN will publish all 4.4 allocated addresses for research purposes.

Policy Statement (cont.)

4.4.1 Internet Exchange Allocations

Internet Exchange operators must justify their need by providing a minimum of three initial participants not under common control connected to a shared, physical switching fabric to be used for the purpose of the exchange of data destined for and between the respective networks. This justification must include participant names, ASNs and contact information for each named participant. The applicant's Internet Exchange affiliated ASNs are not eligible to be included in meeting the participant requirement.

Allocated addresses may be publicly reachable at the operator's discretion, but must be assigned only to resources required to operate the IXP.

Policy Statement (cont.)

4.4.2 TLD Allocations

TLD operators will provide justification of their need and certification of their status as currently active zone operators.

4.4.3 Additional Requests

A recipient may request up to a 24-month supply of IPv4 resources under this section. Requests for additional resources under this section will be evaluated using Section 4.2.4.1's usage requirements.

Timetable for Implementation: Immediate.

Action	Date
Proposal	23 April 2024
Draft Policy	21 May 2024
Revised	10 December 2024
Revised	6 March 2025
Revised (incorporated Staff and Legal recommended changes)	18 March 2025

History

Staff and Legal Review
(17 March 2025)

Staff Understanding:

Staff understands that this draft policy seeks to address certain ambiguities in the current policy language and formalize existing ARIN practices.

Under current practice, Internet exchange points (IXPs) are typically allocated a /24. Requests for allocations larger than a /24 are evaluated based on other policies outlined in Section 4, including utilization requirements. The draft policy clarifies that IP addresses issued under Section 4.4 are intended exclusively for operational use directly related to the IXP and not for other purposes.

The policy resolves any ambiguity regarding the routing of IXP space and specifies that IP addresses allocated under this policy may be made publicly reachable at the operator's discretion. The draft also establishes that a qualified recipient may request up to a 24-month supply of IPv4 addresses for the IXP. Any justifications for allocations beyond a /24 will be reviewed in accordance with the relevant policies in Section 4.

Staff and Legal Review (cont.)

Staff notes the change of "the RIRs" to "ARIN" in the list of examples of critical infrastructure providers of the Internet. This aligns with ARIN's current business practice.

In section 4.4, staff suggests removing "Only Section 8.2 transfers are allowed" since this text is a duplication of the transfer requirements in section 8.3. Transfers Between Specified Recipients Within the ARIN Region and Section 8.4. Inter-RIR Transfers to Specified Recipients. Both section 8.3 and 8.4 already state "Address resources from a reserved pool (including those designated in Section 4.4 and 4.10) are not eligible for transfer."

Staff and Legal Review (cont.)

In section 4.4, staff suggests replacing, "Addresses allocated from this pool may be revoked if they are no longer in use or not used for approved purposes," with, "Previous allocations under this policy must continue to meet the justification requirements of this policy." This is consistent with other policy requirements for reserved pools, such as section 4.10.

In section 4.4.3, staff recommends removing the / in front of "/24-month".

In section 4.4.3, staff suggests referencing section 4.2.4.1 for utilization requirement instead of duplicating the text in the NRPM.

Staff and Legal Review (cont.)

Implementable as Written?: Yes

Impact on ARIN Registry Operations and Services: None=

Legal Review: No material legal issue

Implementation Timeframe Estimate: 3 Months

Implementation Requirements:

- Staff Training

- Updates to public documentation

- Updates to internal procedures and guidelines

Proposal/Draft Policy Text Assessed: 6 March 2025

Community Feedback

"Maybe I'm just being persnickety, but is 'Use of this policy for CII is voluntary' unambiguous?

"'TLD Operators that offer domain-level DNS services to outside parties' is very confusing"

"...no mention to how, or even if, Root Server operators, ARIN or IANA need to justify their requests"

"Does section 4.4.2 create a chicken and egg problem: A TLD operator must be "a currently active zone operator" to apply for 4.4 space?"

Policy Impact

- Renames section header to better communicate intent and purpose of allocations under this section

- Resolves several ambiguities in existing Section 4.4:
  o Definitions of organizations that qualify for CII space are clearer and more explicit
  o States that CII allocations to IXP operators may be routed at the operator's discretion
  o Restricts use of allocations to IXP operators to resources required to operate the IXP

- Provides guidance on qualifications for larger-than-/24 allocations under this section

Questions for the Community

- Does the current language match the community's understanding as to what types of operators should qualify for CII space under this section?

- Should there be language explicitly stating that all recipients qualify for an initial /24 under this section? Should larger initial requests be allowed?

- Are there potential avenues of abuse that should be accounted for in the policy text?