



# ***DISCUSSION GUIDE***

# WELCOME TO THE ARIN 57 PUBLIC POLICY AND MEMBERS MEETING!

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Policies in the ARIN region are developed by the Internet community using the open and transparent ARIN Policy Development Process (PDP). The Internet community develops policies via discussion on the ARIN Public Policy Mailing List (PPML), at ARIN Public Policy Consultations (PPCs), and at ARIN Public Policy and Members Meetings. Anyone may participate in the process – ARIN membership is not required.

The ARIN Board of Trustees adopts Recommended Draft Policies forwarded by the ARIN Advisory Council if the Board determines that the PDP has been followed, that support and consensus for policies has been reached among the community, and if the Draft Policies are consistent with ARIN's Articles of Incorporation, Bylaws, and applicable laws and regulations.

The ARIN Public Policy and Members Meeting is conducted in an orderly manner to understand the sense of the majority, to respect the views of the minority, and to protect the interests of those absent. Accordingly, the flow of the meeting is structured according to a published agenda and participants are expected to follow Meeting Courtesies, Expected Standards of Behavior, and Rules of Discussion.

**The American Registry for Internet Numbers, a nonprofit member-based organization, supports the operation of the Internet through the management of Internet number resources throughout its service region; coordinates the development of policies by the community for the management of Internet Protocol number resources; and advances the Internet through informational outreach.**

# WHAT'S INSIDE

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## FOR DISCUSSION

This document contains the Draft Policies on the agenda for this Public Policy and Members Meeting.

Draft Policies are works in progress and are included in this document to assist with discussion. This text is subject to change, and the most up-to-date text is always available on the ARIN website at: <https://www.arin.net/participate/policy/drafts/>

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# ARIN PARTICIPANTS EXPECTED STANDARDS OF BEHAVIOR

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Those who take part in any ARIN meeting, conference or event including but not limited to Public Policy and Member Meetings, ARIN on the Road, ARIN in the Caribbean, etc., and related activities (including but not limited to ARIN staff, members of the Board of Trustees, Advisory Council [“AC”], Address Supporting Organization Address Council [“ASO AC”], and ARIN meeting attendees) must:

- Treat each other with civility, courtesy and respect (both face-to-face and online), regardless of the sex, race, color, national origin, marital status, age, religion, creed, disability, pregnancy, sexual orientation, gender identity, occupation, line of business, or any other classification protected by law, or policy position of other participants.
- Make reasonable and informed comments when participating in policy development and decision-making discussions and processes.
- Listen respectfully to the views of all stakeholders when considering policy issues.
- Those who take part in the ARIN Policy Development Process must take responsibility for the success of the model by trying to build consensus with other participants and find solutions to issues.
- Act fairly and in good faith with other participants in the ARIN process.
- Act in accordance with ARIN’s Policy Development Process when participating in ARIN public policy events. The ARIN model is based on a bottom-up, consensus-driven approach to policy development.
- Refrain from inappropriate photography or recording of individuals without their knowledge or permission.
- Follow the rules and regulations of the event venue or hotel.

Further, those who participate in ARIN events and related activities must foster an environment that is free from any form of discrimination and conduct that is harassing, coercive, or disruptive. ARIN prohibits harassment in any form – verbal, physical or visual – and will not tolerate discriminatory harassment or inappropriate conduct of a harassing nature directed against any individual on the basis of sex, race, color, national origin, marital status, age, religion, creed, disability, pregnancy, sexual orientation, gender identity, occupation, line of business, or any other classification protected by law, or policy position of other participants.

Sexual harassment is a form of gender discrimination that is unlawful and violates this policy. For purposes of this policy, sexual harassment is defined generally to include unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature when such conduct is made a condition of an individual’s employment or participation, used as the basis for decisions,

or has the effect of substantially interfering with an individual’s performance or creating a hostile environment. Sexually harassing conduct, as well as inappropriate conduct of a harassing nature, is prohibited. Examples of prohibited conduct include, but are not limited to: (1) sexually-oriented kidding, teasing, gestures or jokes; (2) offensive or unwelcome sexual flirtations, advances, or propositions; (3) verbal abuse of a sexual nature; (4) graphic or verbal comments, epithets, or slurs about an individual’s body; (5) sexually degrading words used to describe an individual; (6) the display or transmission (e.g., e-mail, text or social media) of sexually suggestive or sexually explicit materials (such as magazines, videos, pictures, cartoons or posters); (7) inquiries into another individual’s sexual experiences and activities or discussion of one’s own sexual experiences and activities; and (8) unwelcome intentional touching of another person or other unwanted intentional physical conduct.

ARIN is committed to supporting a productive and safe environment for all participants at ARIN events. Any ARIN participant who feels that another participant has violated these standards is asked to immediately notify any of the following: ARIN’s President and CEO, Chief Human Resources Officer, or General Counsel; the Chair of ARIN’s Board; or the Ombudsperson. Contact information for these individuals can be found here. Any ARIN participant who believes there has been a violation of this policy on the ARIN mailing list should report it via the ARIN Mailing List Acceptable Use Policy.

All allegations of violations that are reported will be reviewed as promptly as possible and will be treated with as much confidentiality as possible, consistent with the need to conduct a thorough review and investigation if necessary.

ARIN prohibits retaliation against any ARIN community member or participant who, in good faith, alleges a violation of these standards, even if sufficient evidence is not found to substantiate the allegation. ARIN also prohibits retaliation against any ARIN participant or community member participating in a review or an investigation of an allegation. An ARIN community member or participant will not be penalized in any way for reporting a potential violation of these standards.

Violations of these standards may result in disciplinary action without warning, which correlates with the nature and gravity of the violation. Discipline can include but is not limited to:

- A reprimand.
- Removal from ARIN-related activities and/or initiatives.
- Any other measure deemed necessary to maintain a productive and safe working environment for all participants.

# RULES OF DISCUSSION

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The Chair moderates discussions of formal draft policies so that all can speak and all can be heard. Accordingly, every person who participates in a Public Policy Consultation is asked to follow these simple rules and customs:

1. All persons have equal rights, privileges, and obligations.
2. Full and free discussion of all draft policies is the right of every person participating in the meeting.
3. Only one policy is considered at a time.
4. Persons should not speak in the discussion until they have moved to a designated speaker's position and have been recognized by the Chair and granted the floor.
5. Every time a speaker is recognized by the Moderator, speakers should do the following:
  - State their name.
  - State intent to support or not support the policy under discussion.
6. No person should speak a second time on the same topic if anyone who has not spoken on that topic wishes to do so.
7. No person should speak for more than three minutes unless the Moderator gives consent.
8. Speakers should direct all remarks to the Moderator. They should not debate with other speakers or otherwise attack or question the motives of other speakers.
9. While the discussion is in progress, speakers may suggest amendments or other secondary proposals to the Moderator, who will see them acted on accordingly.
10. Only the Moderator may call for a poll to gain a sense of the participants regarding the policy under discussion, any part of that policy, any proposed amendment to that policy, or any secondary proposal. The Chair will state all questions before polling responses mean.

# DRAFT POLICY ARIN-2025-1

## Clarify ISP and LIR Definitions and References to Address Ambiguity in NRPM Text

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[https://www.arin.net/participate/policy/drafts/2025\\_1](https://www.arin.net/participate/policy/drafts/2025_1)

**STATUS:** Under Discussion

**SHEPHERDS:** Leif Sawyer and Elizabeth Goodson

### ***Current Text (5 March 2026)***

#### **PROBLEM STATEMENT:**

Section 2.4 of the NRPM defines an LIR but does not explicitly define an ISP. An ISP is defined in the context of an LIR, but the explicit definition is otherwise assumed.

Through implication and in common business practice, all ISPs are LIRs, but not all LIRs are ISPs.

This proposal adds clarity by creating an explicit definition for ISP, clarifying the historical and out-of-region usage for the term LIR, and replaces LIR with ISP throughout the NRPM as appropriate.

#### **POLICY STATEMENT:**

Update the Table of Contents, replacing ISP with LIR as follows:

4.2. Allocations to LIRs

4.2.2. Initial Allocation to LIRs

4.2.3.4.2. Downstream LIRs

4.2.4. LIR Additional Requests

6.5.4. Reassignments from LIR

Section 2:

Rewrite the LIR definition to provide clarity and relationship to ISP

2.4. Local Internet Registry (LIR)

A Local Internet Registry (LIR) is an IR that is a member of an RIR, receives allocations of internet numbers from that RIR, for allocation to its customers, end-users, and infrastructure, at a local level. LIRs include Internet Service Providers (ISPs) whose customers are primarily end users and possibly other ISPs. Historically in the ARIN service region "ISP" was used as an equivalent, albeit incomplete, term.

Replace ISP with LIR:

2.15. Provider Assignment Unit (IPv6)

When applied to IPv6 policies, the term "provider assignment unit" shall mean the prefix of the smallest block a given LIR assigns to end sites (recommended /48).

Add new definition for ISP:

2.18 Internet Service Provider (ISP)

An Internet Service Provider (ISP) is a type of organization that provides Internet services to other organizations, its customers, and/or individuals other than its employees. Internet services include, but are not limited to, connectivity services, web services, colocation, dedicated servers, virtual private servers, and virtual private networks.

Section 3:

Replace only the first instance of ISP with LIR

### 3.6.3. Organizations Covered by this Policy

This policy applies to every Organization that has Internet number resources issued by ARIN (or one of its predecessor registries) or a reallocation from an upstream LIR. This includes but is not limited to upstream ISPs and their downstream ISP customers (as defined by NRPM 2.5 and 2.6), but not reassignments made to their downstream end user customers.

Section 4:

Replace ISP with LIR: in the following sections:

## 4.2. Allocations to LIRs (Requirements for Requesting Initial Address Space)

### 4.2.1.1. Purpose

ARIN allocates blocks of IP addresses to LIRs for the purpose of reassigning and reallocating that space to their customers.

### 4.2.1.5. Minimum Allocation

In general, ARIN allocates /24 and larger IP address prefixes to LIRs. If allocations smaller than /24 are needed, LIRs should request address space from their upstream provider.

## 4.2.2. Initial Allocation to LIRs

All LIR organizations without any IPv4 addresses from ARIN automatically qualify for an initial allocation of a /24. LIRs providing a 24-month utilization plan for the request size specified may receive up to a /22. LIRs holding reallocations and/or reassignments must show the efficient utilization of their resources consistent with the requirements in sections 4.2.3 and 4.2.4.

### 4.2.3.1. Efficient Utilization

LIRs are required to apply a utilization efficiency criterion in providing address space to their customers. To this end, LIRs should have documented justification available for each reassignment and reallocation. ARIN may request this justification at any time. If justification is not provided, future receipt of allocations may be impacted.

### 4.2.3.2. VLSM

To increase utilization efficiency of IPv4 address space, LIRs reassigning IP address space to their customers should require their customers to use variable length subnet mask (VLSM) and classless technologies (CIDR) within their networks. LIRs should issue blocks smaller than /24 wherever feasible.

### 4.2.3.3. Contiguous Blocks

IP addresses are allocated to LIRs in contiguous blocks, which should remain intact. Fragmentation of blocks is discouraged. To avoid fragmentation, LIRs are encouraged to require their customers to return address space if they change LIRs. Therefore, if a customer moves to another service provider or otherwise terminates a contract with an LIR, it is recommended that the customer return the network addresses to the LIR and renumber into the new provider's address space. The original LIR should allow sufficient time for the renumbering process to be completed before requiring the address space to be returned.

#### 4.2.3.4. Downstream Customer Adherence

LIRs must require their downstream customers to adhere to the following criteria:

##### 4.2.3.4.1. Utilization

A downstream customer requesting address space from an upstream LIR must document a plan to the allocating LIR for their utilization to conform to Section 4.3.3. Reassignment and reallocation information for prior allocations must show that each customer meets the 80% utilization criteria and must be available via SWIP / a distributed service which meets the standards set forth in section 3.2 prior to issuing them additional space.

##### 4.2.3.4.2. Downstream LIRs

Customers must follow ARIN policy for LIRs.

##### 4.2.3.6. Reassignments to Multihomed Downstream Customers

If a downstream customer has a requirement to multihome, that requirement alone will serve as justification for a /24 allocation. Downstream customers must provide contact information for all of their upstream providers to the LIR from whom they are requesting a /24, and utilize a border routing protocol between the customer and the ISP. Customers may receive a /24 from only one of their upstream providers under this policy without providing additional justification. LIRs may demonstrate they have made an assignment to a downstream customer under this policy by supplying ARIN with the information they collected from the customer, as described above, or by identifying the AS number of the customer.

##### 4.2.3.7. Registration

LIRs are required to demonstrate efficient use of IP address space allocations by providing appropriate documentation, including but not limited to assignment histories, showing their efficient use.

##### 4.2.3.8. Reassignments for Third Party Internet Access (TPIA) over Cable

IP addresses reassigned by an LIR to an incumbent cable operator for use with Third Party Internet Access (TPIA) will be counted as fully used once they are assigned to equipment by the underlying cable carrier provided they meet the following requirements:

#### 4.2.4. LIR Additional Requests

##### 4.2.4.1. Utilization Percentage (80%)

LIRs must have efficiently utilized all allocations, in aggregate, to at least 80% and at least 50% of every allocation in order to receive additional space. This includes all space reassigned or reallocated to their customers.

##### 4.2.4.3. Request Size

LIRs may request up to a 24-month supply of IPv4 addresses.

#### Section 6:

Update terminology section to reference how ISP and LIR are used

##### 6.5.1. Terminology

a. The terms ISP and LIR were previously used interchangeably in this section. Unless otherwise noted, the term ISP is treated as a subset of LIR.

Replace ISP with LIR in the following sections:

##### 6.5.2.1 Size

a. All allocations shall be made on nibble boundaries.

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 LIR 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 LIR receive more than a /16 initial allocation.

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 LIR's current or former IPv4 address holdings.

#### 6.5.2.2. Qualifications

An organization qualifies for an allocation under this policy if they meet any of the following criteria:

a. Have a previously justified IPv4 allocation from ARIN or one of its predecessor registries or can qualify for an IPv4 allocation under current criteria.

#### 6.5.4. Reassignments from LIRs

#### 6.5.5. Registration

LIRs are required to demonstrate efficient use of IP address space allocations by providing appropriate documentation, including but not limited to reassignment and reallocation histories, showing their efficient use.

#### 6.5.5.4. Registration Requested by Recipient

If the downstream recipient of a static assignment of /64 or more addresses requests publishing of that assignment in ARIN's registration database, the LIR shall register that assignment as described in section 6.5.5.1.

#### 6.5.8.1. Initial Assignment Criteria

f. By providing a reasonable technical justification indicating why IPv6 addresses from an LIR are unsuitable.

**Timetable for Implementation:** Immediate.

# DRAFT POLICY ARIN-2025-3

## Change Section 9 Out Of Region Use Minimum Criteria

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[https://www.arin.net/participate/policy/drafts/2025\\_3](https://www.arin.net/participate/policy/drafts/2025_3)

**STATUS:** Under Discussion

**SHEPHERDS:** Gerry George and Matthew Wilder

### ***Current Text (25 March 2025)***

#### **PROBLEM STATEMENT:**

Section 9 of the NRPM, Out of Region Use, requires organizations to use at least a /22 in the ARIN region before they can justify out of region use. This harms smaller organizations that have less than a /22 in region but do require some out of region use.

#### **POLICY STATEMENT:**

Modify the following text in Section 9:

FROM:

IPv4: At least a /22 used in region.

TO:

IPv4: At least a /24 used in region.

RESULT:

Out of region use of ARIN registered resources are valid justification for additional number resources, provided that the applicant has a real and substantial connection with the ARIN region which applicant must prove (as described below) and is using the same type of resources (with a delegation lineage back to an ARIN allocation or assignment) within the ARIN service region as follows:

IPv4: At least a /24 used in region IPv6: At least a /44 used in region ASN: At least one ASN present on one or more peering sessions and/or routers within the region

**TIMETABLE FOR IMPLEMENTATION:** 3 Months.

### ***Staff and Legal Review (23 February 2026)***

**STAFF UNDERSTANDING:** NRPM Section 9, Out of Region Use, for IPv4 addresses requires that to justify out-of-region use, an organization must utilize at least a /22 within the ARIN region before additional resources may be approved for use outside the region. Section 9 applies to IPv4 address requests in conjunction with section 4 "IPv4", section 8.3 "Transfers Between Specified Recipients Within the ARIN Region", and section 8.4 "Inter-RIR Transfers to Specified Recipients". This section does not apply to section 4.4 or 4.10 space, these sections have their own restrictions.

Draft Policy 2025-3 proposes reducing the in-region IPv4 utilization threshold from a /22 (or equivalent) to a single /24. Under this change, an organization would need to demonstrate use of only one /24 within the ARIN region to justify receiving additional ARIN-issued IPv4 resources for use outside the ARIN region. Neither the current policy text nor this draft policy establishes any maximum on the amount of IPv4 space that may be justified to be used outside the ARIN region, so long as at least a single /24 is utilized within the ARIN region, meaning a single in-region /24 could, in practice, unlock requests for substantially larger blocks for deployment entirely outside the ARIN region. This draft policy does not modify the current Section 9 threshold for Autonomous System Number and IPv6 usage.

In conjunction with section 4.1.8 “ARIN Waitlist”, an organization could request an initial /22 from the IPv4 waitlist with the intent to use a portion outside the ARIN region, provided they demonstrate efficient projected usage of one /24 within the ARIN region, and three /24s outside the ARIN region.

Staff anticipates this draft policy would significantly increase the volume of IPv4 waitlist requests. Because the policy requirements for an organization to justify an initial /24 are generally straightforward to meet, it is expected that more organizations may request a /24 primarily to qualify for additional ARIN-issued IPv4 addresses for out-of-region use. It is expected that this would result in more ARIN IPv4 space being used out of region.{}

**IMPLEMENTABLE AS WRITTEN?:** Yes

**IMPACT ON ARIN REGISTRY OPERATIONS AND SERVICES:** Anticipate increase to staff ticket workload

**LEGAL REVIEW:** No material legal issue

**IMPLEMENTATION TIMEFRAME ESTIMATE:** Staff Training; Updates to public documentation; Updates to internal procedures and guidelines

**PROPOSAL/DRAFT POLICY TEXT ASSESSED:** 25 March 2025

# DRAFT POLICY ARIN-2025-6

## Fix Formula in 6.5.2.1c

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**STATUS:** Under Discussion

**SHEPHERDS:** William Herrin and Gus Reese

### ***Current Text (3 September 2025)***

#### **PROBLEM STATEMENT:**

Sections 6.5.2.1 explains the initial IPv6 ISP/LIR allocation in a way that is difficult to follow and the formula in section (c) does not match the remainder of the text.

#### **POLICY STATEMENT:**

In 6.5.2.1c, replace:

“This calculation can be summarized as  $/N$  where  $N = P-(X+Y)$  and  $P$  is the organization’s Provider Allocation Unit  $X$  is a multiple of 4 greater than  $4/3$  serving sites and  $Y$  is a multiple of 4 greater than  $4/3$  end sites served by largest serving site.”

with:

“This calculation can be summarized as  $/N$  where  $N = P-(X+Y)$  and  $P$  is the organization’s Provider Allocation Unit,  $X$  is a multiple of 4 greater than  $4/3 \log_2(\text{serving sites})$  and  $Y$  is a multiple of 4 greater than  $4/3 \log_2(\text{end sites served by largest serving site})$ .”

In 2.15 and 2.16, replace “provider assignment unit” with “provider allocation unit.”

**TIMETABLE FOR IMPLEMENTATION:** Immediate.

### ***Staff and Legal Review (16 March 2026)***

**STAFF UNDERSTANDING:** NRPM section “6.5.2.1. Size” describes requirements for the size of IPv6 allocations to ISPs/LIRs. Sub-section “c” defines how to calculate the largest allocation justified by the requestor. Accompanying the text description is a mathematical formula that intends to summarize the calculation as “ $/N$  where  $N = P-(X+Y)$  and  $P$  is the organization’s Provider Allocation Unit  $X$  is a multiple of 4 greater than  $4/3$  serving sites and  $Y$  is a multiple of 4 greater than  $4/3$  end sites served by largest serving site.”

This draft policy indicates the formula does not match the text, and intends to correct it with, “This calculation can be summarized as  $/N$  where  $N = P-(X+Y)$  and  $P$  is the organization’s Provider Allocation Unit,  $X$  is a multiple of 4 greater than  $4/3 \log_2(\text{serving sites})$  and  $Y$  is a multiple of 4 greater than  $4/3 \log_2(\text{end sites served by largest serving site})$ .”

ARIN staff currently implements NRPM 6.5.2.1.c based on the policy text rather than the summarized formula. The summarized formula is overly complex for many typical IPv6 requestors, while the policy text is more readily understood by customers and more consistently applied by ARIN staff.

In practice, staff evaluates initial allocation size by reviewing the number of serving sites in the ARIN region and the number of end sites served by the largest serving site and then applying the 75% utilization standard consistent with current implementation. This approach is also reflected in the training materials ARIN provides to assist organizations in calculating IPv6 address requirements. In addition, the applicable policy parameters are built into the workflow for IPv6 ISP address requests.

Removal of the summarized formula from the NRPM would have no impact on ARIN operations and would simplify the policy language for IPv6 requestors. Staff would continue to implement NRPM 6.5.2.1.c consistent with current practice.

NRPM section “6.5.2.1. Size” includes the text “Provider Allocation Unit”, while sections 2.15 and 2.16 reference the term, “Provider Assignment Unit”. This draft policy intends to update the text in sections 2.15 and 2.16 to “Provider Allocation Unit”. Modifying “Assignment” to “Allocation” aligns with the deprecation of Direct Assignment’s that occurred during ARIN’s fee harmonization. Staff agrees the terms should match between section 2 and section 6. Staff considers subnetted Direct Allocations, Reallocations, and Reassignments to be “Provider Assignment Units”. This modification aligns with staff’s current implementation.

**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

**PROPOSAL/DRAFT POLICY TEXT ASSESSED:** 3 September 2025

# DRAFT POLICY ARIN-2025-7

## Make Policy in 6.5.8.2 Match the Examples

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**STATUS:** Under Discussion

**SHEPHERDS:** Lily Botsyoe and Leif Sawyer

### ***Current Text (4 February 2026)***

#### **PROBLEM STATEMENT:**

6.5.8.2 states “An organization qualifies for an assignment on the next larger nibble boundary when their sites exceed 75% of the /48s available in a prefix.” and then follows with “For example: More than 1 but less than or equal to 12 sites justified, receives a /44 assignment;” implying that a single site should only receive a /48. However, 1 /48 exceeds 75% of the /48s available in a /48 (1), so per the rule an organization with a single site should receive a /44, which differs from the example.

#### **POLICY STATEMENT:**

Change the sentence “The initial assignment size will be determined by the number of sites justified below.”

To: “Larger initial assignment sizes will be determined by the number of sites justified below.”

Resulting with:

Organizations that meet at least one of the initial assignment criteria above are eligible to receive an initial assignment of /48. Larger initial assignment sizes will be determined by the number of sites justified below; an organization qualifies for an assignment on the next larger nibble boundary when their sites exceed 75% of the /48s available in a prefix. For example:

- More than 1 but less than or equal to 12 sites justified, receives a /44 assignment;
- More than 12 but less than or equal to 192 sites justified, receives a /40 assignment;
- More than 192 but less than or equal to 3,072 sites justified, receives a /36 assignment;
- More than 3,072 but less than or equal to 49,152 sites justified, receives a /32 assignment; etc...

**TIMETABLE FOR IMPLEMENTATION:** Immediate.

# DRAFT POLICY ARIN-2025-8

## Reserve 4.10 Space for In-Region Use

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**STATUS:** Under Discussion

**SHEPHERDS:** Kaitlyn Pellak and E. Marie Brierley

### ***Current Text (14 July 2025)***

**PROBLEM STATEMENT:**

ARIN 4.10 allocations, reserved to facilitate IPv6 deployment, currently have no restrictions for out-of-region use beyond the general restrictions laid out in Section 9. As the use of these allocations outside of the ARIN region seems to be contrary to the intentions for use of this space - and ARIN staff has interpreted the policy as such - the prohibition of this practice should be codified in policy.

**POLICY STATEMENT:**

Change the second sentence in NRPM Section 4.10 from:

“This IPv4 allocation will be set aside and dedicated to facilitate IPv6 deployment.”

to:

“This IPv4 allocation will be set aside and dedicated to facilitate IPv6 deployment within the ARIN service area”

**TIMETABLE FOR IMPLEMENTATION:** Immediate.

### ***Staff and Legal Review (12 November 2025)***

**STAFF UNDERSTANDING:** The current implementation of Section 4.10 (Dedicated IPv4 Allocations to Facilitate IPv6 Deployment) requires that IPv4 addresses be used within the ARIN region. Draft Policy ARIN-2025-8: Reserve 4.10 Space for In-Region Use codifies the current practices applied by ARIN staff when processing requests under Section 4.10. This policy does not alter existing review practices; it formally documents the longstanding approach ARIN staff has used and will continue to apply.

**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:** 14 July 2025

# DRAFT POLICY ARIN-2026-1

## Taking IP To Other Planets (TIPTOP)

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**STATUS:** Under Discussion

**SHEPHERDS:** Alison Wood and Brian Jones

### ***Current Text (24 March 2026)***

#### **PROBLEM STATEMENT:**

Organizations conducting space exploration missions are deploying IP-based networking infrastructure beyond Earth orbit, including on the Moon and in other deep-space environments. These networks currently utilize address space allocated independently from multiple RIRs, including ARIN.

As international missions expand and networks operated by multiple agencies interconnect to share communications infrastructure and provide operational redundancy, the use of unrelated terrestrial address allocations introduces routing scalability concerns. Existing allocations are not aligned with the topology of outer space communications networks, which may require the advertisement of numerous disaggregated prefixes when networks interconnect.

Outer space communications infrastructure is expected to develop around natural clusters near celestial bodies, with limited communication links between those regions. Addressing structures that reflect these topological boundaries could improve route aggregation and long-term routing scalability.

For the purposes of this policy, outer space includes the Moon and regions beyond Earth orbit, but excludes low Earth orbit (LEO) and geostationary Earth orbit (GEO).

#### **POLICY STATEMENT:**

ARIN may allocate IPv4 and IPv6 address space to organizations operating IP networking infrastructure in outer space, including beyond Earth orbit and on the Moon. Allocations are intended to support interagency connectivity, operational redundancy, and scalable routing in emerging space networks.

Addressing structures should be organized hierarchically to reflect major celestial regions—such as the Moon, Earth–Moon Lagrange points, asteroid belt, and other planetary systems—enabling route aggregation where feasible. Participation in aggregation is voluntary, and organizations may advertise more specific prefixes when necessary.

This policy applies to government, research, and commercial space operators, and encourages coordination among agencies to facilitate efficient address usage and scalable routing for outer space networks.

Definitions (Add to NRPM Section 2)

2.xx Extra-Terrestrial Network (ETN) An ETN is defined as any IP-based networking infrastructure operating physically beyond the Geostationary Earth Orbit (GEO) arc, including but not limited to Lunar, Martian, or deep-space deployments.

IPv4 Policy (Add to NRPM Section 4)

4.11 IPv4 Allocations for Extra-Terrestrial Networks ARIN shall maintain a dedicated pool or specific registration guidelines for organizations operating ETNs to ensure routing scalability.

- 4.11.1 Eligibility: Applicants must demonstrate a direct operational requirement for networking infrastructure located beyond Earth's orbit. Eligible entities include government agencies, research institutions, and commercial operators.

- 4.11.2 Topological Hierarchy: To prevent global routing table exhaustion, allocations for ETNs should be issued from contiguous blocks where possible, designated by “Celestial Regions” (e.g., Luna, Mars, Lagrange Points).
- 4.11.3 Utilization Requirements: Standard utilization requirements (Section 4.2.4) apply, but ARIN may grant exceptions for high-latency “cold storage” nodes or orbital relay constellations where traditional “active host” pings are impractical for verification.

#### IPv6 Policy (Add to NRPM Section 6)

6.12 IPv6 Allocations for Extra-Terrestrial Networks Due to the vast distances and high-latency nature of deep-space communications, IPv6 is the preferred protocol for ETN deployments.

- 6.12.1 Minimum Allocation: The minimum allocation size for an ETN operator shall be a /48, or a size sufficient to allow for hierarchical subnetting per celestial body.
- 6.12.2 Planetary Aggregation: Organizations are encouraged to aggregate all prefixes within a specific gravity well or orbital system to a single aggregate route for advertisement back to Terrestrial Ground Stations (TGS).
- 6.12.3 Sparse Allocation: ARIN will employ sparse allocation techniques within the ETN block to allow for the future growth of lunar and planetary colonies without fragmenting the space.

### ***Staff and Legal Review (1 April 2026)***

**STAFF UNDERSTANDING:** The Draft Policy seeks to establish provisions within the NRPM for the allocation of address space to organizations operating IP networking infrastructure beyond Earth orbit (Extraterrestrial Networks, or ETNs). The Draft Policy introduces definitions, eligibility criteria, and allocation practices intended to support routing scalability through hierarchical addressing aligned with celestial regions.

Specifically, the Draft Policy calls for:

- A. Establishment of a dedicated allocation pool or registration guidelines within ARIN for address space used by networks operating in outer space.
- B. Introduction of new definitions and eligibility criteria for Extraterrestrial Networks (ETNs) within the NRPM.
- C. Development of allocation practices intended to facilitate routing aggregation for deep-space networking environments, including hierarchical addressing aligned with celestial regions.

Per discussion on ARIN-PPML, the Draft Policy appears primarily motivated by concerns regarding current operational practices among space agencies deploying deep-space networking infrastructure. In particular, the Draft Policy seeks to address current use of address space from existing allocations without coordination for long-term routing aggregation across shared deep-space communications infrastructure and to establish a coordinated addressing framework intended to improve routing scalability in such environments.

The Draft Policy amends the NRPM directly and therefore falls within the procedural scope of ARIN’s Policy Development Process (PDP). However, it raises several considerations related to clarity, implementability, and alignment with ARIN’s role in the Internet number resource system.

The Draft Policy seeks to improve routing aggregation through coordinated allocation practices for ETNs from dedicated, contiguous address blocks reserved for deep-space use. Without such address space, networks built using ad hoc IPv4 and IPv6 allocations would not support meaningful aggregation. Accordingly, the availability and source of dedicated address space are prerequisites for achieving the Draft Policy’s stated objectives and should be clearly specified as an underlying assumption of the policy.

The IETF could direct IANA to allocate dedicated address space for this purpose, including coordination with the RIR system for appropriate allocation and registry services for the relevant operational community (including, for

example, interim administration by an existing RIR of registry and policy development functions until such time as the establishment of a distinct Internet number registry organization by that community).

While ARIN served a “rest of world” role at the time of its formation (i.e., requests not handled specifically by RIPE NCC or APNIC were handled by ARIN), it is not clear that the ARIN Board would consider ARIN serving as the “default” registry for this purpose, even on an interim basis, to fall within the scope of ARIN’s current mission. If the Board were to determine that providing such services is compatible with ARIN’s mission (e.g., until such time as there is a deep-space Internet Number Registry organization), then ARIN could provide such services pursuant to policy recommended by the community and adopted by the Board. Such a determination would likely depend on both community sentiment and explicit acknowledgment by the other RIRs that such a role is acceptable.

The Draft Policy, as written, presumes that these prerequisite conditions have already been satisfied, and these conditions should be clearly stated in the policy to provide a shared understanding of the circumstances under which the policy could be adopted: (a) that the IETF has determined that a dedicated address block is required; (b) that IANA has allocated appropriate IPv6 and/or IPv4 address space for this purpose and coordinated with the RIRs to provide operational registry services for that space; (c) that the ARIN Board of Trustees has determined that providing such services is consistent with ARIN’s mission; and (d) that the other RIRs have concurred with ARIN serving in this capacity.

Due to the complexity of this Draft Policy, active discussions, and necessary confirmations described above, a comprehensive staff review will be necessary once this Draft Policy is further developed.

**IMPLEMENTABLE AS WRITTEN?:** No

**IMPACT ON ARIN REGISTRY OPERATIONS AND SERVICES:** n/a

**LEGAL REVIEW:** At this preliminary stage, Legal has identified several areas for further consideration, including potential jurisdictional questions, coordination with other RIRs, and the source of IP resources. Additional clarity in definitions and alignment with the service region model will also be important. These observations are based on the Draft Policy in its current form, and a more comprehensive legal analysis may be provided if and when the Draft Policy is further developed.

**IMPLEMENTATION TIMEFRAME ESTIMATE:** n/a

**IMPLEMENTATION REQUIREMENTS:** n/a

**PROPOSAL/DRAFT POLICY TEXT ASSESSED:** 24 March 2026

## SCAN TO VISIT

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### NUMBER RESOURCE POLICY MANUAL

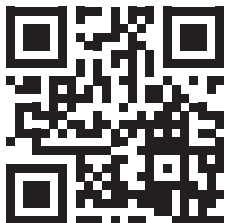
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[ARIN.NET/NRPM](https://arin.net/nrpm)

### POLICY DEVELOPMENT PROCESS

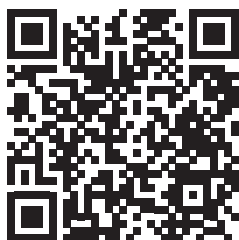
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[ARIN.NET/PDP](https://arin.net/pdp)

### CURRENT DRAFT POLICIES AND PROPOSALS

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[ARIN.NET/  
DRAFT\\_POLICIES](https://arin.net/draft_policies)

