Draft Policy ARIN-2025-1: Clarify ISP and LIR Definitions and References to Address Ambiguity in NRPM Text

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Problem Statement

Current Text (19 March 2025)

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, removing an ambiguous word and clarification on usage for the term LIR, removing an ambiguous terminology statement in Section 6.5.1a, and changing terms in Section 6.5 to explicitly state it applies to "LIR/ISP," thus fulfilling the original intent of 6.5.1a, in all appropriate locations.

Policy Statement

Add Internet Service Provider definition:

Remove the word "primarily" from the definition of LIR and add usage clarification:

FROM: 2.4. Local Internet Registry (LIR)

A Local Internet Registry (LIR) is primarily an IR that assigns IP addresses to the users of the network services that it provides. LIRs are generally Internet Service Providers (ISPs) whose customers are primarily end users and possibly other ISPs.

TO: 2.4. Local Internet Registry (LIR)

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Policy Statement (cont.)

Add definition for ISP:

2.18 Internet Service Provider (ISP)

An Internet Service Provider (ISP) is a type of LIR 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.

Replace Section 6.5.1a

Original Text: "The terms ISP and LIR are used interchangeably in this document and any use of either term shall be construed to include both meanings."

New Text: "[Retired]"

Policy Statement (cont.)

Change all references in section 6.5 to use LIR/ISP, where appropriate:

Amend Section 6.5.2 to add ISP and LIR in 15 locations

6.5.2. Initial Allocation to LIRs/ISPs

6.5.2.1. Size

1. All allocations shall be made on nibble boundaries.

Policy Statement (cont.)

2. In no case shall an LIR/ISP receive smaller than a /32 unless they specifically request a /36 or /40. In order to be eligible for a /40, an LIR/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 LIR/ISP receive more than a /16 initial allocation.

Policy Statement (cont.)

3. The maximum allowable allocation shall be the smallest nibble-boundary aligned block that can provide an equally sized nibble-boundary aligned block to each of the requesters serving sites large enough to satisfy the needs of the requesters largest single serving site using no more than 75% of the available addresses.

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 4/3serving sites and Y is a multiple of 4 greater than 4/3end sites served by largest serving site.

Policy Statement (cont.)

4. For purposes of the calculation in (c), an end site which can justify more than a /48 under the end-user assignment criteria in 6.5.8 shall count as the appropriate number of /48s that would be assigned under that policy.

5. For purposes of the calculation in (c), an LIR/ISP which has subordinate LIRs/ISPs shall make such reallocations according to the same policies and criteria as ARIN. In such a case, the prefixes necessary for such a reallocation should be treated as fully utilized in determining the block sizing for the parent LIR/ISP. LIRs/ISPs which do not receive resources directly from ARIN will not be able to make such reallocations to subordinate LIRs/ISPs and subordinate LIRs/ISPs which need more than a /32 shall apply directly to ARIN.

6. An LIR/ISP is not required to design or deploy their network according to this structure. It is strictly a mechanism to determine the largest IP address block to which the LIR/ISP is entitled.

Policy Statement (cont.)

7. An LIR/ISP 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/ISP'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/ISP's current or former IPv4 address holdings.

Policy Statement (cont.)

Amend Section 6.5.2.2 to add LIR in 2 locations:

6.5.2.2. Qualifications

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

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

2. Are currently multihomed for IPv6 or will immediately become multihomed for IPv6 using a valid assigned global AS number. In either case, they will be making reassignments or reallocations from allocation(s) under this policy to other organizations.

3. Provide ARIN a reasonable technical justification indicating why an allocation is necessary. Justification must include the intended purposes for the allocation and describe the network infrastructure the allocation will be used to support. Justification must also include a plan detailing anticipated reassignments and reallocations to other organizations or customers for one, two and five year periods, with a minimum of 50 assignments within 5 years.

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Policy Statement (cont.)

Amend Section 6.5.3 to add ISP in 4 locations:

6.5.3. Subsequent Allocations to LIRs/ISPs

1. Where possible ARIN will make subsequent allocations by expanding the existing allocation.

2. An LIR/ISP qualifies for a subsequent allocation if they meet any of the following criteria:
- Shows utilization of 75% or more of their total address space
- Shows utilization of more than 90% of any serving site
- Has allocated more than 90% of their total address space to serving sites, with the block size allocated to each serving site being justified based on the criteria specified in section 6.5.2

3. If ARIN can not expand one or more existing allocations, ARIN shall make a new allocation based on the initial allocation criteria above. The LIR/ISP is encouraged, but not required to renumber into the new allocation over time and return any allocations no longer in use.

4. If an LIR/ISP has already reached a /12 or more, ARIN will allocate a single additional /12 rather than continue expanding nibble boundaries.

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Policy Statement (cont.)

Amend Section 6.5.4.1 to add ISP in 1 location:

6.5.4.1. Reassignment to Operator's Infrastructure

An LIR/ISP may reassign up to a /48 per PoP as well as up to an additional /48 globally for its own infrastructure.

Amend Section 6.5.5 to add LIR in 1 location:

6.5.5. Registration

LIRs/ISPs 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.

Policy Statement (cont.)

Amend Section 6.5.5.4 to add LIR in 1 location:

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/ISP shall register that assignment as described in section 6.5.5.1.

Policy Statement (cont.)

Amend Section 6.5.7 to add ISP in 1 location:

6.5.7. Existing IPv6 Address Space Holders

LIRs/ISPs which received an allocation under previous policies which is smaller than what they are entitled to under this policy may receive a new initial allocation under this policy. If possible, ARIN will expand their existing allocation.

Action	Date
Proposal	8 January 2025
Draft Policy	29 January 2025
Revised	27 March 2025

History

Community Feedback

- One positive remark:

  "Overall I think it looks pretty good and this proposal addresses the concerns I had from the previous effort. A possible downside is that it's slightly verbose stylistically, but I think the compromise is worth it."

- Otherwise, no other feedback (positive or negative)

Policy Impact

- A Staff and Legal review has not yet been performed, so that isn't addressed here

- This change does not attempt to align definitions with other regions

- This change should equalize the application of the LIR and ISP terms without impacting their definitions

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Questions for the Community

- Are you in favor of this policy?

- Should the AC continue working on it?