

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

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 reframing and aligning with the term LIR, and replaces ISP with LIR throughout the NRPM as appropriate.

Policy Statement:

Update the Table of Contents, replacing ISP with Local Internet Registries as follows:

4.2. Allocations to Local Internet Registries

4.2.2. Initial Allocation to Local Internet Registries

4.2.3.4.2. Downstream Local Internet Registries

4.2.4. Local Internet Registry Additional Requests

6.5.4. Reassignments from Local Internet Registries

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 Internet Registry 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~~ LIRs include, but are not limited to, large enterprises, universities, and 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 Local Internet Registry:

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 Local Internet Registry 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 first ISP with Local Internet Registry, remaining with LIR

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 Local Internet Registry. This includes but is not limited to upstream LIRs and their downstream LIR customers, but not reassignments made to their downstream end user customers.

Section 4:

Replace ISP with Local Internet Registry: in the following sections:

4.2. Allocations to Local Internet Registries (Requirements for Requesting Initial Address Space)

4.2.1.1. Purpose

ARIN allocates blocks of IP addresses to Local Internet Registries 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 Local Internet Registries. If allocations smaller than /24 are needed, LIRs should request address space from their upstream provider.

4.2.2. Initial Allocation to LIRs

All Local Internet Registry 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

Local Internet Registries 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, Local Internet Registries 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 Local Internet Registries 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

Local Internet Registries 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 Local Internet Registry 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 Local Internet Registries

Customers must follow ARIN policy for Local Internet Registries.

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 Local Internet Registry from whom they are requesting a /24, and utilize a border routing protocol between the customer and the LIR. 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

Local Internet Registries 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 a Local Internet Registry 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. Local Internet Registry Additional Requests

4.2.4.1. Utilization Percentage (80%)

Local Internet Registries 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

Local Internet Registries may request up to a 24-month supply of IPv4 addresses.

Section 6:

Update terminology section to reference how Internet Service Provider and Local Internet Registry are used

6.5.1. Terminology

~~a. The terms Internet Service Provider and Local Internet Registry were previously used interchangeably in this section. Unless otherwise noted, the term ISP is treated as a subset of LIR.~~
(retired)

Replace ISP with Local Internet Registry in the following sections:

6.5.2.1 Size

a. All allocations shall be made on nibble boundaries.

b. In no case shall a Local Internet Registry 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. A Local Internet Registry 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 Local Internet Registries

6.5.5. Registration

Local Internet Registries 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 Local Internet Registry 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 a Local Internet Registry are unsuitable.