

1.5. Resource Request Size

Determining the validity of the amount of requested IP address resources is the responsibility of ARIN.

1.6. Aggregation

In order to preserve aggregation, when issuing IPv4 address space, ARIN attempts to issue blocks of addresses on appropriate "CIDR-supported" bit boundaries. ARIN will make each allocation and assignment as a single continuous range of addresses.

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2.12. Organizational Information

When required, organization Information must include at a minimum: Legal name, street address, city, state, zip code equivalent and at least one valid technical and one valid abuse Point of Contact (POC). Each POC shall be designated by the organization and must include at least a verifiable email address and phone number.

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3.2. Distributed Information Service Use Requirements

The minimal requirements for an organization to setup a distributed information service to advertise reassignment and reallocation information are:

- The distributed information service must be operational 24 hours a day, 7 days a week to both the general public and ARIN staff. The service is allowed reasonable downtime for server maintenance according to generally accepted community standards.
- The distributed information service must allow public access to reassignment and reallocation information. The service may restrict the number of queries allowed per time interval from a host or subnet to defend against DDOS attacks, remote mirroring attempts, and other nefarious acts.
- The distributed information service must return reassignment and reallocation information for the IP address queried. The service may allow for privacy protections for customers. For residential users, the service may follow ARIN's residential privacy policy that includes displaying only the city, state, zip code, and country. For all other reassignments and reallocations, the service shall follow ARIN's privacy policy for publishing data in a public forum.
- The distributed information service may return results for non-IP queries.
- The distributed information service must respond to a query with the minimal set of attributes per object as defined by ARIN staff.
- The distributed information service may include optional attributes per object that are defined locally. The distributed information service must return results that are up-to-date on reassignment and reallocation information.
- Use of directory services operated by ARIN (e.g. updating WHOIS or RDAP via SWIP) meets these requirements.

4. IPv4

4.1 Administration of IPv4

4.1.1 Minimum Issuance

ARIN issues blocks of addresses no smaller than a /24 equivalent to ISPs and end users. Smaller allocations should be requested from an upstream provider.

4.1.2 ARIN Waitlist

ARIN issues all IPv4 assignments/allocations (excluding 4.4 and 4.6 space) from the ARIN waitlist. The maximum address space in aggregate for which an organization may qualify at any one time is a /22. Organizations may elect to be placed on the waitlist for a smaller block size for which they qualify down to a /24. End-users and ISPs without direct assignments or allocations from ARIN qualify for an initial assignment or allocation of a /24. ARIN will only accept and approve requests from organizations holding a /20 or less. Address space distributed from the waitlist will not be eligible for transfer for a period of 60 months.

Repeated requests, in a manner that would circumvent the ARIN aggregation principles set out in 1.6, are not allowed. An organization currently on the waitlist must wait 90 days after receiving a distribution from the waitlist before applying for additional space. ARIN, at its sole discretion, may waive this requirement if the requester can document a change in circumstances since its last request that could not have been reasonably foreseen at the time of the original request, and which now justifies additional space. Qualified requesters will also be advised of the availability of the transfer mechanisms in section 8 as an alternative mechanism for obtaining IPv4 addresses.

4.1.2.1 Sequencing and Fulfillment

ARIN will fulfill requests on a first-approved basis, subject to the availability of address blocks of the sizes being requested. Each organization may have one approved request on the waiting list at a time. A timely review shall be conducted by ARIN staff as address blocks become available. Requests will not be partially filled. Any requests met through a transfer will be considered fulfilled and removed from the waitlist.

4.2 Allocations to ISPs (Requirements for Requesting Initial Address Space)

4.2.1 Principles

4.2.1.1 Purpose

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

4.2.1.2 Annual Renewal

An annual fee for registered space is due by the anniversary date of the ISP's first allocation from ARIN. ISPs should take care to ensure that their annual renewal payment is made by their anniversary due date in accordance with the Registration Services Agreement. If not paid by the anniversary date, the address space may be revoked. Please review the Annual Renewal/Maintenance Fees Page for more details.

4.2.2 Initial Allocation to ISPs

All ISP organizations without direct allocations, direct assignments, re-allocations or reassignments automatically qualify for a /24. These organizations do not have to demonstrate the efficient utilization of previously held IPv4 space. These organizations may qualify for a up to a /22 space by documenting how the requested allocation will be utilized within a 24-month period.

ISPs holding re-allocations 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. Reassigning and Reallocating Address Space to Customers

4.2.3.1. Efficient Utilization

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

4.2.3.2. VLSM

To increase utilization efficiency of IPv4 address space, ISPs 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. ISPs should issue blocks smaller than /24 wherever feasible.

4.2.3.3. Contiguous Blocks

IP addresses are allocated to ISPs in contiguous blocks, which should remain intact. Fragmentation of blocks is discouraged. To avoid fragmentation, ISPs are encouraged to require their customers to return address space if they change ISPs. Therefore, if a customer moves to another service provider or otherwise terminates a contract with an ISP, it is recommended that the customer return the network addresses to the ISP and renumber into the new provider's address space. The original ISP 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

ISPs must require their downstream customers to adhere to the following criterion:

4.2.3.4.1. Utilization

Reassignment and reallocation information for prior allocations must show that each customer meets the 80% utilization criteria and must be available via a directory service which meets the standards set forth in section 3.2 prior to being issued additional space.

4.2.3.4.2. Downstream ISPs

Customers must follow ARIN policy for ISPs.

4.2.3.5. Reassignments to Multihomed Downstream Customers

Under normal circumstances an ISP is required to determine the prefix size of a reassignment to a downstream customer according to the guidelines set forth in RFC 2050. Specifically, a downstream customer justifies the reassignment by demonstrating it has an immediate requirement for 25% of the IP addresses being assigned, and that it has a plan to utilize 50% of their assignment within one year of its receipt. This policy allows a downstream customer's multihoming requirement to serve as justification for a /24 reassignment from the upstream ISP, regardless of host requirements. Downstream customers must provide contact information for all of their upstream providers to the ISP from whom they are requesting a /24. The ISP will then verify the customer's multihoming requirement and may assign the customer a /24, based on this policy. A customer may receive a /24 from only one of its upstream providers under this policy without providing additional justification. ISPs 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. This information may be requested by ARIN staff when reviewing an ISP's utilization associated with a request for additional IP addresses space.

4.2.3.6. Registration

ISPs 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.

4.2.3.6.1. Reassignment and Reallocation Information

Each IPv4 reassignment or reallocation containing a /29 or more addresses shall be registered via a directory services system which meets the standards set forth in section 3.2.

Reassignment registrations must include each customer name, except where specifically exempted by this policy. Reassignment registrations shall only include point of contact (POC) information if either: (1) requested by the customer; or (2) the reassigned block is intended to be routed and announced outside of the provider's network.

Reallocation registrations must contain the customer's organization name and appropriate POC information.

4.2.3.6.2. Reassignments and Reallocations Visible Within Seven Days

All reassignments and reallocations shall be made visible as required in section 4.2.3.6.1 within seven calendar days of reassignment or reallocation.

4.2.3.6.3. Residential Subscribers

4.2.3.6.3.1. Residential Customer Privacy

To maintain the privacy of their residential customers, an organization with downstream residential customers holding /29 and larger blocks may substitute that organization's name for the customer's name, e.g. 'Private Customer - XYZ Network', and the customer's street address may read 'Private Residence'. Each private downstream residential reassignment must have accurate upstream Abuse and Technical POCs visible on the WHOIS or Distributed Information Service record for that block.

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

IP addresses reassigned by an ISP 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:

- initial assignments to each piece of hardware represent the smallest subnet reasonably required to deploy service to the customer base served by the hardware
- additional assignments to each piece of hardware are made only when all previous assignments to that specific piece of hardware are at least 80% used and represent a 24 month supply
- IP allocations issued through 4.2.3.7 are non-transferable via section 8.3 and section 8.4 for a period of 36 months. In the case of a section 8.2 transfer the IP assignment must be utilized for the same purpose or needs based justification at a rate consistent with intended use.

4.2.4. ISP Additional Requests

4.2.4.1. Utilization Percentage (80%)

An ISP 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 its customers.

4.3 Assignments to End-users

4.3.1. Principles

ARIN assigns blocks of IP addresses to end-users who request address space for their internal use in running their own networks, but not for sub-delegation of those addresses outside their organization. End-users must meet the requirements described in these guidelines for justifying the assignment of an address block.

4.3.2 Utilization Rate

An organization may qualify for a larger initial assignment by providing appropriate details to verify its 24-month growth projection including a 50% utilization rate within 24 months. A greater utilization rate may be required based on individual network requirements.

4.3.3 Non-connected Networks

End-users not currently connected to an ISP and/or not planning to be connected to the Internet are encouraged to use private IP address numbers reserved for non-connected networks (see RFC 1918). When private, non-connected networks require interconnectivity and the private IP address numbers are ineffective, globally unique addresses may be requested and used to provide this interconnectivity.

4.3.4. Additional Assignments

4.3.4.1. Utilization Requirements for Additional Assignment

End-users must have efficiently utilized all assignments, in aggregate, to at least 80% and at least 50% of every assignment in order to receive additional space, and must provide ARIN with utilization details.

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.

Exchange point allocations must be allocated from specific blocks reserved only for this purpose. All other micro-allocations will be allocated out of other blocks reserved for micro-allocation purposes. ARIN will make a list of these blocks publicly available.

Exchange point operators must provide justification for the allocation, including: connection policy, location, other participants (minimum of three total), ASN, and contact information. ISPs and other organizations receiving these micro-allocations will be charged under the ISP fee schedule, while end-users will be charged under the fee schedule for end-users. This policy does not preclude exchange point operators from requesting address space under other policies.

ARIN will place an equivalent of a /15 of IPv4 address space in a reserve for Critical Infrastructure, as defined in section 4.4.

ICANN-sanctioned gTLD operators may justify up to the equivalent of an IPv4 /23 block for each authorized new gTLD, allocated from the free pool or received via transfer, but not from the above reservation. This limit of a /23 equivalent per gTLD does not apply to gTLD allocations made under previous policy.

4.5. Multiple Discrete Networks

An organization with multiple discrete networks desiring to request new or additional address space under a single Organization ID must meet the following criteria:

1. The organization shall be a single entity and not a consortium of smaller independent entities.
2. The organization must have compelling criteria for creating discrete networks. Examples of a discrete network include:

1. Regulatory restrictions for data transmission,
2. Geographic distance and diversity between networks,
3. Autonomous multihomed discrete networks.

3. The organization must keep detailed records on how it has allocated space to each location, including the date of each allocation.

4. When applying for additional internet address delegations from ARIN, the organization must demonstrate utilization greater than 50% of both the last block allocated and the aggregate sum of all blocks allocated from ARIN to that organization. If an organization is unable to satisfy this 50% minimum utilization criteria, the organization may alternatively qualify for additional internet address delegations if any blocks of address space not allocated to a location are smaller than ARIN's minimum allocation size.

5. The organization may not allocate additional address space to a location until each of that location's address blocks are 80% utilized.

6. The organization should notify ARIN at the time of its request for address space of its intention to apply this policy to its account.

7. Upon verification that the organization has shown evidence of deployment of the new discrete network site, the new network(s) shall be allocated the minimum allocation size under ARIN policy.

4.6 Dedicated IPv4 block to Facilitate IPv6 Deployment

ARIN shall allocate a contiguous /10 from its last /8 IPv4 allocation from IANA. This IPv4 block will be set aside and dedicated to facilitate IPv6 deployment. Allocations and assignments from this block must be justified by immediate IPv6 deployment requirements. Examples of such needs include: IPv4 addresses for key dual stack DNS servers, and NAT-PT or NAT464 translators. ARIN staff will use their discretion when evaluating justifications.

The block size allocated will be a /24. ARIN should use sparse allocation when possible within that /10 block. In order to receive an allocation or assignment under this policy:

- the applicant may not have received resources under this policy in the preceding six months, except to the extent that the applicant is requesting resources for a discrete network in respect of which it has not received any resources under this policy in the preceding six months;
- previous allocations/assignments under this policy must continue to meet the justification requirements of this policy;
- previous allocations/assignments under this policy must be utilized to at least 80% to obtain an additional allocation or assignment;
- the applicant must demonstrate that no other allocations or assignments will meet this need.
- An applicant requesting multiple allocations under this policy to support Multiple Discrete Networks, as defined under Section 4.5, may not receive more than the equivalent of a /21 of IPv4 address space in any one six-month period hereunder.

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6.5.5.1. Reassignment Information

Each static IPv6 reassignment or reallocation containing a /47 or more addresses, or subdelegation of any size that will be individually announced, shall be registered in a directory service which meets the standards set forth in section 3.2. Reassignment registrations shall include each client's organizational information, except where specifically exempted by this policy.

6.11. IPv6 Multiple Discrete Networks

Organizations with multiple discrete IPv6 networks desiring to request new or additional address space under a single Organization ID must meet the following criteria:

6.11.1 Single Entity

The organization shall be a single entity and not a consortium of smaller independent entities.

6.11.2 Compelling Criteria

The organization must have compelling criteria for creating discrete networks. Examples of a discrete network might include:

- Regulatory restrictions for data transmission,
- Geographic distance and diversity between networks,
- Autonomous multihomed discrete networks.

6.11.3 Detailed Records

The organization must keep detailed records on how it has allocated space to each location, including the date of each allocation.

6.11.4 Included in Request

The organization should notify ARIN at the time of the request their desire to apply this policy to their account.

Requests for additional space:

1. Organization must specify on the application which discrete network(s) the request applies to
2. Each network will be judged against the existing utilization criteria specified in 6.5.2 and 6.5.3 as if it were a separate organization, rather than collectively as would be done for requests outside of this policy.

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8.3. Transfers Between Specified Recipients Within the ARIN Region

In addition to transfers under section 8.2, IPv4 numbers resources and ASNs may be transferred according to the following conditions.

Conditions on source of the transfer:

- The source entity must be the current registered holder of the IPv4 address resources, and not be involved in any dispute as to the status of those resources.
- The source entity must not have received a transfer, allocation, or assignment of IPv4 number resources from ARIN for the 12 months prior to the approval of a transfer request. This restriction does not include 8.2 transfers.
- Address resources from a reserved pool (including those designated in Section 4.4 and 4.6) are not eligible for transfer.

Conditions on recipient of the transfer:

- The recipients must meet the transfer requirements as defined in section 8.5.
- The resources transferred will be subject to current ARIN policies.

8.4. Inter-RIR Transfers to Specified Recipients

Inter-regional transfers of IPv4 number resources and ASNs may take place only via RIRs who agree to the transfer and share reciprocal, compatible needs-based policies.

Conditions on source of the transfer:

- The source entity must be the current rights holder of the IPv4 address resources recognized by the RIR responsible for the resources, and not be involved in any dispute as to the status of those resources.
- Source entities outside of the ARIN region must meet any requirements defined by the RIR where the source entity holds the registration.
- Source entities within the ARIN region must not have received a transfer, allocation, or assignment of IPv4 number resources from ARIN for the 12 months prior to the approval of a transfer request, unless either the source or recipient entity owns or controls the other, or both are under common ownership or control. This restriction does not include 8.2 transfers.
- Address resources from a reserved pool (including those designated in Section 4.4 and 4.6) are not eligible for transfer.

Conditions on recipient of the transfer:

- The conditions on a recipient outside of the ARIN region will be defined by the policies of the receiving RIR.
- Recipients within the ARIN region must meet the transfer requirements as defined in section 8.5.
- Recipients within the ARIN region will be subject to current ARIN policies.