# RIR COMPARATIVE POLICY OVERVIEW

*June 2015*

*(Version 2015-2)*

The goal of this document is to provide a comparative overview of policies across the Regional Internet Registry (RIR) system. It is not a policy statement by the RIRs, but serves as a reference for the Internet community. While this document was accurate on the date of publication (14 July 2015) it may be outdated by subsequent policy implementations. The official policy documents can be found at the respective websites of the RIRs. This is a public document that will be reviewed and revised quarterly through the coordinated efforts of the RIRs.

For more information, refer to the AFRINIC, APNIC, ARIN, LACNIC, and RIPE NCC websites.

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# 1. GENERAL

## 1.1 GOALS OF THE RIR SYSTEM

| RIR | Policy |
| --- | --- |
| **AFRINIC** **APNIC** **ARIN** **LACNIC** **RIPE NCC** | All allocations and assignments of Internet resources must be consistent with the goals of the Internet Registry system: aggregation, conservation and registration. |

## 1.2 MEMBERSHIP

| RIR | Category | Policy |
| --- | --- | --- |
| **AFRINIC** | Qualification | Membership is open only to organizations or persons legally present and providing services in the AFRINIC service region. |
| | Access to delegation and registration services | Resource registration is available to members only. AFRINIC manages and distributes Internet Number Resources for its service region only. <br>• AFRINIC requires organizations/persons to be legally present and the infrastructure from which the services are originating must be located in the AFRINIC service region. <br>• The need for IP resources shall also be demonstrated |
| | Fee model | Not-for profit. Fee established to enable cost recovery of operations. |
| **APNIC** | Qualification | Membership is open to all organizations and individuals. |
| | Access to delegation and registration services | APNIC delegates resources only to organizations, which are legally present, or have networks located in the APNIC region. <br> Organizations located outside the APNIC service region must use resources delegated by APNIC within the service region. <br> APNIC permits organizations located within the APNIC service region to use APNIC-delegated resources out of region. <br>• Members have full access to all services. <br>• Non-member account holders have full access to all services, except member's voting activities. <br>• Non-member historical maintenance account holders have access to maintenance of their historical resource information only. |
| | Fee model | Not-for-profit. Fee schedule established to enable cost recovery of operations. |
| **ARIN** | Qualification | Membership is open only to organizations legally present in the ARIN service region. <br> Organizations that receive direct allocations automatically become members. <br> Membership is also open to organizations with direct assignments, or ARIN issued Autonomous System Numbers. |

| RIR | Category | Policy |
|---|---|---|
| | Access to delegation and registration services | Do not need to be a member to receive registration services. ARIN manages and distributes Internet number resources within its region. To receive resources, ARIN requests organizations to verify that: <br>• It has a legally recognized business operation within the ARIN region; <br>• It plans on using the resources within the ARIN region and, with regard to IPv4 and IPv6, routing the least-specific prefix within the ARIN region; and <br>• It has technical infrastructure located within the ARIN region. |
| | Fee model | Not-for-profit. Fee schedule established to enable cost recovery of operations. |
| **LACNIC** | Qualification | Membership is open to LACNIC region only, without conditions. |
| | Access to delegation and registration services | Numbering resources under the stewardship of LACNIC must be distributed among organizations legally constituted within its service region and mainly serving networks and services operating in this region. LACNIC requires organizations to be legally present and have network infrastructure in the LACNIC service region to apply for and receive resources. <br>• Organizations approved for IP addresses automatically become members. It is not necessary to become a member to obtain some services, like ASN assignments. <br>• External clients connected directly to main infrastructure located in the region are allowed. |
| | Fee model | Not-for-profit. Fee schedule established to enable cost recovery of operations. |
| **RIPE NCC** | Qualification | Membership is open without conditions. |
| | Access to delegation and registration services | Access to registration services is available to members only. Legacy resource holders who have a non-member service contract with the RIPE NCC can also access some registration services. The RIPE NCC delegates or registers resources to organizations and individuals that have a need in its service region. The network that will be using the resources must have an active element located in the RIPE NCC service region. |
| | Fee model | Not-for-profit. Fee schedule established to enable cost recovery of operations. |

## 1.3 ALLOCATION TERMS AND CONDITIONS

### 1.3.1 TYPE OF CUSTODIANSHIP

| RIR | Policy |
|---|---|
| **AFRINIC** | Valid as long as original criteria remain satisfied. |
| **APNIC** | Allocates and assigns on a 'license" basis, to be of specific limited duration (normally 1 year). Licenses are renewable if: <br>• The original basis of the allocation or assignment remains valid, and <br>• Requirements have been met at time of renewal. |

| RIR | Policy |
| --- | --- |
| ARIN | Valid as long as organization remains in compliance with policy and registration fees are kept up to date. |
| LACNIC | Valid as long as original criteria remain satisfied and registration fees are kept up to date. |
| RIPE NCC | Valid as long as original criteria remain satisfied. |

## 1.3.2 TRANSFER OF CUSTODIANSHIP

| RIR | Policy |
| --- | --- |
| AFRINIC | Does not allow sale of addresses, but recognizes name changes and transfers of tangible assets associated with addresses. Requires submission of legal documents. Utilization is verified. May require new agreement. |
| APNIC | APNIC recognizes resource transfers under the following conditions:<br><br>• Historical resources may be transferred to an APNIC Member account. Transfers are purely optional and do not need to meet any technical justifications.<br>• APNIC recognizes transfers of AS numbers and IPv4 address blocks of /24 or greater between APNIC account holders. Recipients are required to justify their need for the resources.<br>• Transfers of AS numbers and IPv4 address blocks of a /24 or greater are recognized between APNIC account holders and account holders in other regions, only where that region has a suitable Inter-RIR transfer policy. The APNIC account holder must meet the requirements of APNIC policy and the entity in the other region must meet the policy requirements and criteria in its own region. If the recipient is in the APNIC region, they are required to justify their need for the resources.<br>• APNIC recognizes the transfer of any numeric resource resulting from mergers, acquisitions, and takeovers, where the effect of the new ownership is that an LIR changes its name. Supporting legal documentation is required, as is full disclosure of all address space held by all entities involved. |
| ARIN | IPv4 number resources and ASNs within the ARIN region may be released to ARIN by the authorized resource holder, in whole or in part, for transfer to another specified organizational recipient. The recipient must demonstrate the need for up to a 24-month supply of IP address resources under current ARIN policies and sign an RSA.<br><br>Inter-regional transfers of IPv4 number resources may take place only via RIRs who agree to the transfer and share reciprocal, compatible, needs-based policies.<br><br>ARIN also recognizes name changes and transfers due to mergers, acquisitions and reorganizations. Requires documentation and demonstration of need. |
| LACNIC | Does not allow sale of addresses, but recognizes name changes and transfers of tangible assets associated with addresses. Requires submission of legal documents. Utilization is verified. May require new agreement.<br><br>Once LACNIC or any of its NIRs becomes unable, for the first time, to cover an IPv4 block allocation or assignment because of lack of resources, LIRs and/or End Users within the LACNIC region will be allowed to transfer IPv4 blocks. |
| RIPE NCC | Member LIRs can transfer complete or partial blocks of IPv4 and IPv6 address space that was previously allocated to them by either the RIPE NCC or the IANA within the RIPE NCC service region. The receiving LIR must confirm it will make assignment(s) from the allocation.<br><br>Resource holders of IPv4 Provider Independent (PI) and IPv6 PI space that was previously assigned to them by the RIPE NCC can also transfer complete or partial blocks within the RIPE NCC service region. When transferring PI space, the recipient of the transfer must confirm a specific intended purpose for the resources in order to receive the reassignment.<br><br>Resource holders that receive an IPv4 transfer (including PI space) cannot re-transfer complete or partial blocks of this address space to another LIR within 24 months of receiving the address space. This restriction does not |

| RIR | Policy |
|---|---|
| | apply to IPv6 address space. |
| | Resource holders of Autonomous System (AS) Numbers that were previously assigned to them by the RIPE NCC can transfer these within the RIPE NCC service region. |
| | Inter-RIR transfers of any type of Internet number resource are possible if both RIRs have compatible transfer policies. For transfers to the RIPE NCC service region from RIRs that have needs-based policies, recipients must provide the RIPE NCC with a plan for the use of at least 50% of the transferred resources within five years. |
| | RIPE NCC also recognizes name changes and transfers of tangible assets associated with addresses. This requires the submission of legal documentation. Utilization is verified. This may also require new agreement. |

### 1.3.3 RECOVERING UNUSED RESOURCES

| RIR | Policy | Comment |
|---|---|---|
| AFRINIC<br>RIPE NCC | Valid as long as original criteria remain satisfied. | Do not actively recover unused resources, but if an organization closes, unused resources are returned to the public pool. |
| APNIC<br>LACNIC | Valid as long as original criteria remain satisfied. | Has policy to actively recover 'unused' networks.<br>If an organization ceases operation, unused resources are returned to the public pool. |
| ARIN | Organizations found by ARIN to be materially out of compliance with current ARIN policy shall be requested or required to return resources as needed to bring them into (or reasonably close to) compliance. | - |

## 2. IPv4

### 2.1 INITIAL ALLOCATION

| RIR | Category | Policy |
|---|---|---|
| **AFRINIC** | Size | Slow start: /22 (can be exceeded when justified by requester). |
| | Eligibility | The requesting organization must show an existing efficient utilization of IP addresses from their upstream provider or an immediate need of IP addresses. Justification may be based on a combination of immediate need and existing usage. |
| | Period | 1 year. |
| **APNIC** | Size | New APNIC account holders are eligible to receive a maximum /21 worth of address space from the remaining IPv4 address pool. |
| | Eligibility | • Membership or pay non-member fee;<br>• Have previously used or can demonstrate immediate need for /24;<br>• Complied with policies in managing all previous address space;<br>• Detailed plan for use of a /23 within a year; |
| | Period | 1 year. |
| **ARIN** | Size | Slow start: /24 (can be exceeded when justified by requester) |
| | Eligibility | Have a /24 or equivalent reassigned by the upstream provider via SWIP or RWhois. |
| | Period | 3 months. |
| **LACNIC** | Size | Slow start: /22, otherwise /21 (can be exceeded when documented immediate need exceeds /21). |
| | Eligibility | For a /22: Current use or documented need of a /24; submit a detailed one-year utilization plan for a /23; agree to renumber out of the previously assigned block and return those IPv4 addresses to their ISPs no later than 12 months after the allocation of the /22; if the applicant does not already have an IPv6 block assigned by LACNIC, simultaneously request an IPv6 block in accordance with the corresponding applicable policy.<br><br>or<br><br>For a /21: Must provide information on assignments with prefixes equal to or shorter than /29 (more than 8 IPv4 addresses) on LACNIC's WHOIS database; must provide documentation that justifies the initial address space allocation (This must include detailed information showing how this resource will be used within a period of three, six and twelve months); must agree to renumber out of the blocks obtained from their providers within a period no longer than 12 months and return the space to its original provider; if the applicant does not already have an IPv6 block assigned by LACNIC, simultaneously request an IPv6 block in accordance with the corresponding applicable policy.<br><br>If the applicant is a multihomed ISP: Efficient utilization of at least 25% of the requested address space (contiguous or not).<br><br>If the applicant is a non-multihomed ISP: Efficient utilization of at least a 50% of the requested address space (contiguous or not). |
| | Period | 12 months. |

| RIR | Category | Policy |
|---|---|---|
| **RIPE NCC** | Size | From Friday, 14 September 2012, new and existing RIPE NCC members are eligible to receive one /22 from the last /8. |
| | Eligibility | • Membership;<br>• LIR confirms it will make assignment(s) from the allocation. |
| | Period | No limit. |

## 2.2 SUBSEQUENT ALLOCATIONS

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **AFRINIC** | Size | Minimum /22, no maximum. | - |
| | Eligibility | Demonstrate 80% efficient utilization of last allocated space or an immediate need that requires more IP addresses than are available in the most recent allocation. | |
| | Period | Up to 1 year. | |
| **APNIC** | Size | Minimum /24, up to a maximum /22 of the remaining available space after 15 April 2011.<br><br>From 27 May 2014, following the delegation of additional IPv4 address space to APNIC from the 'IANA Recovered IPv4 Pool', each APNIC account holder is able to receive delegations up to a maximum of /22 address space if they have already received a /22 after 15 April 2014. | New and existing APNIC account holders are able to receive a maximum /22 from the 103/8 IPv4 address pool. Once they have reached that limit, subsequent delegations up to a maximum delegation of /22, are also available from the non-103/8 address pool. |
| | Eligibility | Demonstrate 80% efficient utilization of all prior allocated space. | |
| | Period | Up to 1 year. | |
| **ARIN** | Size | /24. | - |
| | Eligibility | Demonstrate efficient utilization of all allocations, in aggregate, to at least 80% and at least 50% of every allocation in order to receive additional space. | |
| | Period | 3 months. | |
| **LACNIC** | Size | The policy for determining the size of additional allocations is based on the efficient utilization of space within a time frame of 12 months. | - |
| | Eligibility | Demonstrate 80% efficient utilization of all prior allocated space.<br><br>The applicant must already have at least one IPv6 block assigned by LACNIC or, if not, must simultaneously request an initial IPv6 block in accordance with the corresponding applicable policy.<br><br>If an applicant has already been assigned an IPv6 block, they shall submit to LACNIC a brief document describing their progress in the implementation of IPv6. | |
| | Period | 12 months. | |

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **RIPE NCC** | Size | /22 | - |
| | Eligibility | • LIR confirms it will make assignment(s) from the allocation<br>• LIR has not received before a /22 from the last /8. | |
| | Period | No Limit. | |

## 2.3 SUB-ALLOCATIONS

| RIR | Policy | Comment |
|---|---|---|
| **AFRINIC** | LIRs may sub-allocate addresses to other organizations, which further assign addresses to End Users. LIRs also assign addresses. Sub-allocations are subject to the 'Sub-Allocation Window' procedure. | - |
| **APNIC** | LIRs may sub-allocate addresses to other organizations, which further assign addresses to end-users. LIRs also assign addresses. Sub-allocations are subject to the 'Assignment Window' procedure. | See section 2.5.1 'Assignment Window' below. |
| **ARIN** | ISPs may sub-allocate addresses to other organizations, which further assign addresses to End Users. | - |
| **LACNIC** | RIR allocates and assigns IP blocks to organizations that can be ISPs, End Users or National Internet Registries, (NIRs - see section 7). NIRs allocate and assign IP blocks to organizations in their countries. ISPs may sub-allocate IP blocks to other ISPs or assign them to End Users. | - |
| **RIPE NCC** | LIRs may sub-allocate addresses to other organizations, which further assign addresses to End Users. | - |

## 2.4 ASSIGNMENTS BY RIRS (INDEPENDENT/PORTABLE)

### 2.4.1 GENERAL

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **AFRINIC** | Size | /24 minimum, no maximum. | - |
| | Eligibility | • Must be an AFRINIC member<br>• Must EITHER show an existing utilization of /25 from their upstream/ISP, OR<br>• Justify that at least 50% of the total 1 year requirement is needed immediately. | |
| **APNIC** | Size | No minimum, no maximum. | In APNIC IPv4 policy there is no distinction between allocation or assignment. Both are designated as delegations. |

| RIR | Category | Policy | Comment |
|---|---|---|---|
| | Eligibility | Requesting organization needs to be multihomed or demonstrate a plan to multihome within one month. Delegations will be made according to the following criteria: 25% immediate utilization rate and 50% utilization rate within one year. | |
| ARIN | Size | /24, no maximum. | Known as 'end-user' assignments. |
| | Eligibility | Assignments will be made according to the following criteria: 25% immediate utilization rate and 50% utilization rate within one year. | |
| LACNIC | Size | /24 minimum, no maximum. | Must agree to renumber out of all the blocks allocated by providers within a period of 3 months and return the space to its original provider; if the applicant does not already have an IPv6 block assigned by LACNIC, simultaneously request an IPv6 block in accordance with the corresponding applicable policy. |
| | Eligibility | Multi-homed End Users may receive a minimum of /24 based on: 25% immediate utilization rate of the requested block. 50% utilization rate of the requested block within one year. Single-home End Users may apply, for at least a /20, based on previous assignments of /21 from upstream providers. | |
| RIPE NCC | Size | Not applicable. | From Friday, 14 September 2012 the RIPE NCC no longer allocates or assigns PI address space, except for assignments to Internet Exchange Points |
| | Eligibility | | |

## 2.4.2 CRITICAL INFRASTRUCTURE

| RIR | Category | Policy | Comment |
|---|---|---|---|
| AFRINIC | Definition | Public IXPs and root DNS service providers. | Portable space can be obtained by submitting a request directly to AFRINIC. |
| | Size | /24 minimum, more if justified. | |
| | Eligibility | No specific criteria defined. | |
| APNIC | Definition | Root DNS, ccTLD, gTLD, IANA, RIRs, NIRs. | - |
| | Size | /24 minimum. | |
| | Eligibility | Delegations to critical infrastructure are available only to the actual operators of the network infrastructure performing such functions. | |
| ARIN | Definition | Public IXPs, Root DNS and ccTLD providers, IANA, RIRs. | - |
| | Size | /24 minimum. | |

| RIR | Category | Policy | Comment |
|---|---|---|---|
| | Eligibility | Assignments to critical infrastructure are available only to the actual operators of the network infrastructure performing such functions. | |
| **LACNIC** | Definition | Root DNS, ccTLD, gTLD, IANA, RIRs. | Requested via the 'micro-allocations' policy. |
| | Size | /24 minimum, /20 maximum. | |
| | Eligibility | Assignments to critical infrastructure are available only to the actual operators of the network infrastructure performing such functions. If the applicant does not already have an IPv6 block assigned by LACNIC, simultaneously request an IPv6 block in accordance with the corresponding applicable policy. | |
| **RIPE NCC** | Definition | Not applicable. | From Friday, 14 September 2012 the RIPE NCC no longer allocates or assigns address space for Anycasting ccTLD, gTLD, ENUM. |
| | Size | - | |
| | Eligibility | - | |

## 2.4.3 INTERNET EXCHANGE POINTS (IXPS)

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **AFRINIC** | Size | /24. | Portable space can be obtained by submitting a request directly to AFRINIC. |
| | Eligibility | • Minimum number of three peers connected.<br>• Open policy for anyone to connect/peer. | |
| **APNIC** | Size | /24 minimum assignment. | There is no restriction on routing prefixes assigned under this policy. |
| | Eligibility | Must be an IXP.<br><br>The number of ISPs connected should be at least three and there must be a clear and open policy for others to join. | |
| **ARIN** | Size | /24 minimum assignment. | Requested via the 'micro-allocations' policy. |
| | Eligibility | Exchange point operators must provide justification for the allocation, including: connection policy, location, other participants (minimum of three total), ASN, and contact information. | |
| **LACNIC** | Size | /24 minimum, /20 maximum. | Requested via the 'micro-allocations' policy.<br><br>Organizations receiving micro-assignments shall not sub-assign these IPv4 addresses. |
| | Eligibility | Exchange point operators must provide documentation showing that it is an IXP, list of participants, structure diagram and numbering plan. The organization shall have at least three members and an open policy for the association of new members. It must also provide a utilization plan for the following three and six months. If the applicant does not already have an IPv6 block assigned by LACNIC, simultaneously request an IPv6 block in accordance with the corresponding applicable policy. | |

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **RIPE NCC** | Size | /24 minimum, /22 maximum. | A /16 will be held in reserve for exclusive use by Internet Exchange Points (IXPs). |
| | Eligibility | Organisations receiving space under this policy must be IXPs. Assignments will only be made to IXPs who have already applied for, or received an IPv6 assignment for their peering LAN. New IXPs will be assigned a /24. Should they require a larger assignment, they must return their current assignment (or existing PI used as an IXP peering LAN) and receive a replacement /23 or /22. After one year the utilisation of the new assignment must be at least 50%, unless special circumstances are defined. | |

## 2.5 ASSIGNMENTS BY LIRS (AGGREGATABLE/NON-PORTABLE)

### 2.5.1 ASSIGNMENT WINDOW

| RIR | Policy | Comment |
|---|---|---|
| **AFRINIC ARIN** | Not applicable. | Assignment practices are audited by RIR staff at time of request for additional resources. |
| **APNIC LACNIC** | LIRs/ISPs need approval from the RIR when making assignments larger than their Assignment Window. This is the number of addresses an LIR/ISP can assign without prior approval. The RIR sets the assignment window according to the LIR's/ISP's level of experience with the policies. | APNIC does not have assignment windows on infrastructure. |
| **RIPE NCC** | Not applicable. | LIRs can set their own rules on assignment period and utilization. They are not required to complete a forecast-based documentation of need when requesting IPv4 allocations from the RIPE NCC. |

### 2.5.2 DYNAMIC ADDRESSING

| RIR | Policy |
|---|---|
| **AFRINIC APNIC ARIN LACNIC RIPE NCC** | In general, dynamic assignment of IP addresses is expected on transient connections such as analogue dialup. |

### 2.5.3 MOBILE TERMINALS

| RIR | Policy |
| --- | --- |
| AFRINIC<br>APNIC<br>ARIN<br>LACNIC<br>RIPE NCC | There is no special assignment policy with respect to mobile terminals. |

### 2.5.4 WEB HOSTING

| RIR | Policy |
| --- | --- |
| AFRINIC<br>APNIC<br>ARIN<br>LACNIC<br>RIPE NCC | Name based web hosting is strongly encouraged where feasible. |

### 2.5.5 NETWORK ADDRESS TRANSLATION (NAT)

| RIR | Policy |
| --- | --- |
| AFRINIC<br>APNIC<br>ARIN<br>LACNIC<br>RIPE NCC | The use of NAT is neither encouraged nor discussed during the request process. |

### 2.5.6 RFC1918 PRIVATE ADDRESS SPACE

| RIR | Policy |
| --- | --- |
| AFRINIC<br>APNIC<br>ARIN<br>LACNIC<br>RIPE NCC | For private networks that will never be connected to the Internet, the requestor is made aware of the IPv4 address space reserved for use in RFC1918. |

## 2.6. USE OF FINAL UNALLOCATED IPv4 ADDRESS SPACE

| RIR | Category | Policy |
|-----|----------|--------|
| AFRINIC | Size | See below. |
| | Eligibility | EXHAUSTION PHASE 1<br><br>The maximum allocation size will change from /10 to /13.<br><br>Allocations and assignments will be made from the final /8 until no more than a /11 of non-reserved space is available in the final /8. At this point the Exhaustion Phase 2 will begin.<br><br>EXHAUSTION PHASE 2<br><br>• The minimum allocation/assignment size will be /24, and the maximum will be /22 per allocation/assignment.<br>• There is no explicit limit on the number of times an organization may request additional IPv4 address space during the Exhaustion Phase<br>• The current allocation and assignment period of 12 months shall be changed to 8 months. |
| APNIC | Size | /24 minimum up to a maximum of /22 in total. |
| | Eligibility | Since APNIC reached an equivalent of a /8 remaining in the APNIC pool on 14 April 2011:<br>• Each account holder (current and future) will be eligible to request and receive delegations up to a maximum of /22 from the remaining space, providing the account holder meets the criteria for receiving an initial or subsequent IPv4 delegation.<br>• A /16 will be held in reserve for future uses, as yet unforeseen. If the reserved /16 remains unused by the time the rest of the remaining /8 worth of space has been allocated, the /16 will be returned to the APNIC pool for distribution under the policy described in the point above. |
| ARIN | Size | /28 minimum, /24 maximum. |
| | Eligibility | Allocations and assignments are from a reserved /10 and must be justified by immediate IPv6 requirements. |
| LACNIC | Size | /24 up to a maximum of /22. |
| | Eligibility | LACNIC will create a reserve equivalent to a /11 block of IPv4 addresses, from which allocations and assignments will ONLY be done to NEW MEMBERS. IPv4 address requests classified as critical infrastructure according to the LACNIC policies in force may receive addresses, even if they have already been assigned IPv4 resources by LACNIC.<br><br>LACNIC may only make IPv4 allocations or assignments greater than or equal to a /24 and smaller than or equal to /22, IPv4 address blocks larger than a /22 pending approval may only receive a /22, when this reserve is reached. No further allocations or assignments will be possible after receiving resources under this policy.<br><br>Blocks or sub-blocks received under this policy may not be transferred for a period of one year. If the applicant does not already have an IPv6 address block assigned by LACNIC, it must also request an IPv6 address block in accordance with the corresponding applicable policy. The reserve created under section 11.2 is independent from the reserve created under this policy.<br><br>LACNIC will reserve an equivalent to another /11 block of IPv4 addresses for the purpose of achieving gradual exhaustion of IPv4 resources within the LACNIC region. LACNIC may only make IPv4 allocations or assignments greater than or equal to a /24 and smaller than |

| | | |
|---|---|---|
| | | or equal to /22 from this reserve pool. Organizations that receive IPv4 resources under the terms set forth in the following policy may receive additional IPv4 resources from LACNIC six months later. IPv4 address requests classified as critical infrastructure according to the LACNIC policies in force may receive addresses, even if they have already been assigned IPv4 resources by LACNIC.<br><br>Blocks received under this policy may not be transferred as specified in paragraph 2.3.2.18 of the policy manual for a period of one year. Resources allocated by IANA to LACNIC after achieving the final /11 block for gradual exhaustion (section 11.2 of the Policy Manual), will only be allocated / assigned under the guidelines set forth on item 11.1 of the Policy Manual. |
| **RIPE NCC** | Size | /22 |
| | Eligibility | 1. Allocations for LIRs from the last /8:<br>On application for IPv4 resources LIRs will receive IPv4 addresses according to the following:<br><br>• The size of the allocation made will be exactly one /22.<br>• The sum of all allocations made to a single LIR by the RIPE NCC after the 14th of September 2012 is limited to a maximum of 1024 IPv4 addresses (a single /22 or the equivalent thereof).<br>• The LIR must confirm it will make assignment(s) from the allocation.<br>• Allocations will only be made to LIRs if they have already received an IPv6 allocation from an upstream LIR or the RIPE NCC.<br><br>2. Assignments to Internet Exchange Point:<br>A /16 from the final /8 will be held in reserve for exclusive use by Internet Exchange Points.  On application for IPv4 resources, an Internet Exchange Point (IXP) will receive one number resource (/24 to /22) according to the following:<br><br>• This space will be used to run an Internet Exchange Point peering LAN; other uses are forbidden.<br>• Organizations receiving space under this policy must be Internet Exchange Points and must meet the definition as described in section two of the RIPE document "IPv6 Address Space for Internet Exchange Points".<br>• IXPs holding other PI IPv4 space for their peering LAN (i.e. they are seeking a larger assignment), must return their old peering LAN resources back to this pool within 180 days of assignment.<br>• New Internet Exchange points will be assigned a /24.  Should they require a larger assignment, they must return their current assignment (or existing PI used as an IXP peering LAN) and receive a replacement /23 or /22. After one year the utilisation of the new assignment must be at least 50%, unless special circumstances are defined.<br>• IP space returned by Internet Exchange Points will be added to the reserved pool maintained for Internet Exchange Point use.<br>• Assignments will only be made to IXPs who have already applied for, or received an IPv6 assignment for their peering LAN<br><br>3. Unforeseen circumstances:<br>A /16 will be held in reserve for some future uses, as yet unforeseen.<br>The Internet is a disruptive technology and we cannot predict what might happen. Therefore it is prudent to keep a /16 in reserve, just in case some future requirement makes a demand of it. In the event that this /16 remains unused at the time the remaining /8 covered by this policy has been distributed, it returns to the pool to be distributed as per clause 1. |

4. Post-depletion Address Recycling:
This section only applies to address space that is returned to the RIPE NCC and that will not be returned to the IANA but re-issued by the RIPE NCC itself.

Any address space that is returned to the RIPE NCC will be covered by the same rules as the address space intended in clause 1.

## 2.7 USE OF IANA IPv4 RECOVERED ADDRESS SPACE

| RIR | Policy |
|---|---|
| AFRINIC | - |
| APNIC | From 27 May 2014, following the allocation to APNIC of additional IPv4 addresses from the IANA IPv4 Recovered Address Space pool, each account holder (current and future) will be eligible to request and receive additional delegations up to a maximum of /22 from the new IPv4 pool (non-/103 pool). The application criteria for receiving a subsequent IPv4 delegation from this pool is the same as that for delegations under the 'final /8' (/103) pool. |
| ARIN | - |
| LACNIC | Resources allocated by IANA to LACNIC once item 11.2 of the Policy Manual (Allocations/Assignments for Gradual IPv4 Resource Exhaustion) becomes effective will only be allocated/assigned under the guidelines set forth on item 11.1 of the Policy Manual (Special IPv4 Allocations/Assignments Reserved for New Members). |
| RIPE NCC | - |

# 3. IPv6

## 3.1 INITIAL ALLOCATION

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **AFRINIC** | Size | /32. | - |
| | Eligibility | • Be an LIR;<br>• Not be an end site;<br>• Show a detailed plan to provide IPv6 connectivity to organizations in the AFRINIC region.<br>• Show a reasonable plan for making /48 IPv6 assignments to end sites in the AFRINIC region within twelve months. | |
| | Period | Up to one year. | |
| **APNIC** | Size | /32. | Allocations consistent with the globally coordinated 'IPv6 Address Allocation and Assignment Policy' document. |
| | Eligibility | APNIC members with IPv4 resources managed by APNIC, but with no IPv6 resources automatically qualify for an appropriately sized IPv6 block.<br><br>Organizations with no IPv4, or that wish to request more than a /32 should meet the following requirements:<br><br>• Be an LIR;<br>• Not be an end site<br>• Plan to provide IPv6 connectivity to organizations to which it will make assignments;<br>• Meet one of the following two criteria:<br>  o Have a plan for making at least 200 assignments to other organizations within two years, or<br>  o Be an existing LIR with IPv4 allocations from an APNIC or an NIR, which will make IPv6 assignments or sub-allocations to other organizations and announce the allocation in the inter-domain routing system within two years. In addition, APNIC will make allocations to 'closed' networks if they meet all other criteria. APNIC can make allocation based on existing IPv4 network infrastructure. | Organizations may qualify for an initial allocation greater than /32 by submitting documentation that reasonably justifies the request.<br><br>Considers IPv4 deployment as one of the means of justifying a larger initial allocation. |
| | Period | For up to one year. | |
| **ARIN** | Size | /36, /32, /28, /24, /20, /16 | 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. |
| | Eligibility | Organizations must meet any of the following criteria:<br>• Already have an IPv4 ISP allocation from ARIN or one of its predecessor registries or can qualify for an IPv4 ISP allocation under current criteria.<br>• Be multihomed for IPv6 or will immediately become multihomed for IPv6 using a valid assigned global AS number.<br>• Provide a reasonable technical justification indicating why an allocation is necessary. | |
| | Period | For up to five years. | |

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **LACNIC** | Size | /32. | As a special case, LACNIC has a policy for the "Second Allocation" where an Organization that holds only one IPv6 allocation can return it (within the first 6 months of getting it) in order to receive another shorter prefix allocation from LACNIC.<br><br>For allocations larger than a /32, the Organization must address the considerations specified in section 4.5.1.3 of the Policy Manual. |
| | Eligibility | Hold an IPv4 allocation from LACNIC and announce the allocated block with the minimum possible level of disaggregation to the one that is publishing the IP blocks, or:<br>• Be a LIR or an ISP;<br>• Document a detailed plan for the<br>• services and IPv6 connectivity to be offered to other organizations;<br>• Announce the allocated block in the Internet inter-domain routing system, with the minimum possible level of disaggregation to the one that is publishing the IP blocks, within a period no longer than 12 months;<br>• Offer IPv6 services to clients or entities owned/related (including departments and/or sites) physically located within the region covered by LACNIC within a period not longer than 24 months than 24 months. | |
| | Period | For up to one year. | |
| **RIPE NCC** | Size | /32 minimum | Organizations that meet the initial allocation criteria are eligible to receive an initial allocation of /32. For allocations up to /29 no additional documentation is necessary.<br><br>Allocation size larger than /29 will be based on the number of existing users and the extent of the organization's infrastructure. |
| | Eligibility | • Be an LIR;<br>• Have a plan for making sub-allocations to other organizations and/or End Site assignments within two years. | |
| | Period | For up to two years. | |

## 3.2 SUBSEQUENT ALLOCATIONS

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **AFRINIC** | Size | Minimum size of next allocation will equal the first allocation size. More can be allocated but justification must be supplied. | Contiguous allocation provided if possible.<br><br>RFC 3194 defines the HD-Ratio. |
| | Eligibility | ISP/LIR must satisfy the evaluation threshold of past address utilization in terms of the number of sites in units of /48 assignments. The HD-Ratio of 0.94 is used to determine the utilization thresholds that justify the allocation of additional addresses. | |
| | Period | Up to one year. | |

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **APNIC** | Size | Minimum size of next allocation will equal the first allocation size. More can be allocated but justification must be supplied. | Contiguous allocation provided if possible. |
| | | | RFC 3194 defines the HD-Ratio. |
| | Eligibility | ISP/LIR must satisfy the evaluation threshold of past address utilization in terms of the number of sites in units of /56 assignments. The HD-Ratio of 0.94 is used to determine the utilization thresholds that justify the allocation of additional addresses. | Guidelines on what will be considered a valid technical requirement is available at: |
| | | Alternative criteria may be considered where an organization can demonstrate a valid reason for requiring a subsequent allocation. | http://www.apnic.net/criteria/ipv6-guidelines |
| | Period | Up to two years. | |
| **RIPE NCC** | Size | Minimum size of next allocation will equal the first allocation size. More can be allocated but justification must be supplied. | Contiguous allocation provided if possible. |
| | Eligibility | ISP/LIR must satisfy the evaluation threshold of past address utilization in terms of the number of sites in units of /56 assignments. The HD-Ratio of 0.94 is used to determine the utilization thresholds that justify the allocation of additional addresses. | RFC 3194 defines the HD-Ratio. |
| | Period | Up to two years. | |
| **ARIN** | Size | Where possible ARIN will make subsequent allocations by expanding the existing allocation. | Subsequent allocations will also be considered for deployments that cannot be accommodated by, nor were accounted for, under the initial allocation. Justification for the subsequent subnet size will be based on the plan and technology provided with a /24 being the maximum allowed for a transition technology. Justification for transitional allocations will be reviewed every 3 years and reclaimed if they are no longer in use for transitional purposes. All such allocations for transitional technology will be made from a block designated for this purpose. |
| | | If ARIN cannot expand one or more existing allocations, ARIN shall make a new allocation based on the initial allocation criteria above. The LIR is encouraged, but not required to renumber into the new allocation over time and return any allocations no longer in use. | |
| | | If an LIR has already reached a /12 or more, ARIN will allocate a single additional /12 rather than continue expanding nibble boundaries. | |
| | Eligibility | Demonstrate at least 75% utilization of IPv6 allocations, or | |
| | | Demonstrate at least 90% utilization of any single serving site, or | |
| | | Have allocated more than 90% of total address space to serving sites. | |
| | Period | Up to five years. | |
| **LACNIC** | Size | Minimum size of next allocation will equal the first allocation size. More can be allocated but justification must be supplied. | Contiguous allocation provided if possible. |

| RIR | Category | Policy | Comment |
|---|---|---|---|
| | Eligibility | ISP/LIR must satisfy the evaluation threshold of past address utilization in terms of the number of sites in units of /48 assignments. The HD-Ratio of 0.94 is used to determine the utilization thresholds that justify the allocation of additional addresses. | RFC 3194 defines the HD-Ratio. |
| | Period | Up to two years. | |

## 3.3 OTHER ALLOCATIONS

### 3.3.1 MICRO-ALLOCATIONS FOR INTERNAL INFRASTRUCTURE

| RIR | Category | Policy | Comment |
|---|---|---|---|
| AFRINIC APNIC LACNIC RIPE NCC | Size | No policy. | - |
| | Eligibility | Not applicable. | |
| ARIN | Size | /48 minimum. | These allocations come from specific blocks reserved only for this purpose. |
| | Eligibility | Organizations that currently hold IPv6 allocations may apply for a micro-allocation for internal infrastructure. Applicant must provide technical justification indicating why a separate non-routed block is required. Justification must include why a sub-allocation of currently held IP space cannot be utilized. | |

## 3.4 ASSIGNMENTS BY RIRS (INDEPENDENT/PORTABLE)

### 3.4.1 CRITICAL INFRASTRUCTURE

| RIR | Category | Policy | Comment |
|---|---|---|---|
| AFRINIC | Definition | Root DNS operators, IXPs, RIRs | Part of the 'Provider Independent (PI) Assignment for End-Sites' policy |
| | Size | /48 minimum. | |
| | Eligibility | Requestor to prove they operate a critical infrastructure network. | |
| APNIC | Definition | Root DNS, ccTLD, gTLD, IANA, RIRs, NIRs. | - |
| | Size | /32 maximum. | |
| | Eligibility | APNIC members with IPv4 resources assigned under the IPv4 critical infrastructure policy, but with no IPv6 resources, automatically qualify for an IPv6 /48. Members that do not hold an IPv4 critical infrastructure assignment from APNIC, that have existing IPv6 resources, or that wish to request more than /48 should meet the following requirement: <br>• Assignments to critical infrastructure are available only to the actual operators of the network infrastructure performing such functions. | |

| RIR | Category | Policy | Comment |
|------|----------|--------|---------|
| ARIN | Definition | Root DNS, ccTLD, gTLD, IANA, RIRs. | - |
| | Size | /48 minimum. | |
| | Eligibility | Assignments to critical infrastructure are available only to the actual operators of the network infrastructure performing such functions. | |
| LACNIC | Definition | NAPs, Root DNS, ccTLD, gTLD, IANA, RIRs, NIRs. | - |
| | Size | /48 minimum, /32 maximum. | |
| | Eligibility | Micro allocation to critical Internet infrastructure operators only. | |
| RIPE NCC | Definition | Root DNS, Anycasting ccTLD, gTLD, ENUM. | For Anycasting assignments for ccTLD, gTLD and ENUM, the organizations are TLD managers, as recorded in the IANA's Root Zone Database and ENUM administrators, as assigned by the ITU. |
| | Size | For Root DNS minimum allocation size at time of request. It is up to four /48s per Anycasting ccTLD/gTLD and ENUM | |
| | Eligibility | Root DNS: Assignments to critical infrastructure are available only to the actual network infrastructure performing such functions. Anycasting ccTLD, gTLD, ENUM: An organization may receive up to four /48 prefixes per TLD and four /48 prefixes per ENUM. These prefixes must be used for the sole purpose of anycasting authoritative DNS servers for the stated TLD/ENUM, as described in BCP126/RFC4786. | |

## 3.4.2 INTERNET EXCHANGE POINTS (IXPS)

| RIR | Category | Policy | Comment |
|------|----------|--------|---------|
| AFRINIC | Size | /48 minimum. | Part of the 'Provider Independent (PI) Assignment for End-Sites' policy |
| | Eligibility | • Minimum number of three peers connected<br>• Open policy for anyone to connect/peer. | |
| APNIC | Size | /48 minimum. | - |
| | Eligibility | APNIC members with IPv4 resources assigned under the IPv4 IXP policy, but with no IPv6 resources, automatically qualify for an IPv6 /48. Members that do not hold an IPv4 critical infrastructure assignment from APNIC, that have existing IPv6 resources, or that wish to request more than /48 should meet the following requirement: The IXP must have a clear and open policy for others to join and must have at least three members. | - |
| LACNIC | Size | /48 minimum, /32 maximum. | - |
| | Eligibility | The IXP must have a clear and open policy for others to join and must have at least three members. It must also provide documentation showing that it is an IXP, list of participants, structure diagram, numbering plan and a utilization plan for the following three and six months. | |

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **ARIN** | Size | /48 minimum. | - |
| | Eligibility | Exchange point operators must provide justification for the allocation, including: connection policy, location, other participants (minimum of two total), ASN, and contact information. | |
| **RIPE NCC** | Size | /64 or /48. | - |
| | Eligibility | The IXP must have a clear and open policy for others to join and must have at least three members. | |

## 3.4.3 END USERS

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **AFRINIC** | Size | /48 minimum | - |
| | Eligibility | • Not be a LIR;<br>• Qualify for an IPv4 PI assignment from AFRINIC under the IPv4 policy currently In effect;<br>• Be or plan to be an AFRINIC Member of the category "EU-PI"; and<br>• Show a plan to use and announce the IPv6 PI address space within twelve (12) months after approval. | |
| **APNIC** | Size | /48 minimum. | These assignments come from a distinctly identified prefix. |
| | Eligibility | APNIC members with IPv4 resources assigned under the IPv4 multihoming policy, but with no IPv6 resources, automatically qualify for an IPv6 /48.<br>Members that do not hold an IPv4 multihoming assignment from APNIC, that have existing IPv6 resources, or that wish to request more than /48 should meet the following requirement:<br>• An organization is currently multihomed or plans to be multihomed;<br>• Organizations are eligible for a Provider Independent delegation if they are able to demonstrate a valid reason that an assignment from their ISP, or LIR, is not suitable. | |
| **ARIN** | Size | /48 minimum. | The initial assignment size is determined by the number of sites. Nibble boundary assignments are available. |
| | Eligibility | Meet one of the following requirements:<br>• Have a previously justified IPv4 end-user assignment from ARIN or one of its predecessor registries<br>1. currently be IPv6 Multihomed or have a plan to immediately become IPv6 Multihomed using an assigned valid global AS number<br>2. have a network that will makes active use of a minimum of 2000 IPv6 addresses within 12 months<br>3. have a network that will make active use of a minimum of 200 /64 subnets within 12 months<br>4. provide a reasonable technical justification indicating why IPv6 addresses from an ISP or other LIR are unsuitable.<br>or:<br>• Be a Community Network that will immediately have at least 100 simultaneous users and a demonstrated plan to have at least 200 simultaneous users within one year. | |

| RIR | Category | Policy | Comment |
|---|---|---|---|
| LACNIC | Size | /48 minimum, /32 maximum | |
| | Eligibility | Automatic if requestor has IPv4 assignments, or:<br>• Not been an LIR,<br>• In case of announcing the assignment on the Internet inter-domain routing system, the receiving organization shall announce the block maintaining de-aggregation to a minimum in accordance with the announcing organization's needs,<br>• Submit information showing address use plan for 3, 6 and 12 months,<br>• Submit network topology, routing and addressing plan. | |
| RIPE NCC | Size | /48 minimum. | Assignments will be made from a separate 'designated block' to facilitate filtering practices. |
| | Eligibility | Meet the requirements of the policies described in the document entitled "Contractual Requirements for Provider Independent Resources Holders in the RIPE NCC Service Region" | |

## 3.5 ASSIGNMENTS BY LIRS (AGGREGATABLE/NON-PORTABLE)

### 3.5.1 DYNAMIC ADDRESSING

| RIR | Policy | Comment |
|---|---|---|
| AFRINIC<br>APNIC<br>ARIN<br>LACNIC<br>RIPE NCC | There is currently no specific policy related to dynamic addressing. | See RFC3177. |

### 3.5.2 MOBILE TERMINALS

| RIR | Policy |
|---|---|
| AFRINIC<br>APNIC<br>ARIN<br>LACNIC<br>RIPE NCC | There is no special assignment policy with respect to mobile terminals. |

### 3.5.3 WEB HOSTING

| RIR | Policy |
| --- | --- |
| **AFRINIC** **APNIC** **ARIN** **LACNIC** **RIPE NCC** | There is no recommendation for IPv6 assignments in support of web hosting at this time. |

### 3.5.4 NETWORK ADDRESS TRANSLATION (NAT)

| RIR | Policy |
| --- | --- |
| **AFRINIC** **APNIC** **ARIN** **LACNIC** **RIPE NCC** | The use of NAT is neither encouraged nor discussed during the request process. |

# 4. AUTONOMOUS SYSTEM NUMBERS (ASNs)

## 4.1 ALLOCATIONS

| RIR | Policy |
|---|---|
| APNIC | Blocks of ASNs are allocated to NIRs for further distribution to their members. |
| AFRINIC ARIN LACNIC RIPE NCC | Not applicable. |

## 4.2 ASSIGNMENTS

| RIR | Category | Policy |
|---|---|---|
| AFRINIC ARIN RIPE NCC | Eligibility | Policies for ASN assignments are aligned with the guidelines contained in RFC1930. Verify that a network will have a unique routing policy or that it will be a multihomed site before assigning an ASN. |
| APNIC | Eligibility | ASNs may be obtained directly from APNIC as a member or non-member account holder. The ASN obtained directly is portable. ASNs may also be obtained indirectly, through a LIR who 'sponsors' the request. In this event, the ASN is non-portable.<br><br>Criteria need to be met in both cases, that is: An organization is eligible if it:<br><br>• is multihomed; and<br>• has a single, defined routing policy that is different from its providers' routing policies.<br><br>An organization will also be eligible if it can demonstrate that it will meet the above criteria upon receiving an ASN (or within a reasonably short time thereafter). |
| LACNIC | Eligibility | LACNIC shall allocate Autonomous System Numbers to those organizations that meet the following requirements:<br><br>• The organization must have the need to interconnect with other independent Autonomous Systems at the time of the application, or be planning to interconnect within a period of no more than six (6) month as of the moment of the application. After this period, LACNIC may revoke the assigned ASN if it has not been used.<br>• Detail the applicant's routing policy, specifying the ASNs with which the organization will interconnect and the IP addresses that will be announced through the requested ASN. |

### 4.2.1 32-BIT ASNS

| RIR | Policy |
|---|---|
| AFRINIC ARIN RIPE NCC | From 1 January 2007 the RIR will process applications that specifically request 32-bit only AS Numbers (AS numbers that cannot be represented with 16 bits) and assign such AS Numbers as requested by the applicant. In the absence of any specific request for a 32-bit only AS Number, the RIR will assign a 16-bit AS Number. From 1 January 2009 RIR will process applications that specifically request 16-bit AS Numbers and assign such AS Numbers as requested by the applicant. In the absence of any specific request for a 16-bit AS Number, the RIR will assign a 32-bit only AS Number. |

| RIR | Policy |
|---|---|
| | From 1 January 2010 the RIR will cease to make any distinction between 16-bit AS Numbers and 32-bit only AS Numbers, and will operate AS Number assignments from an undifferentiated 32-bit AS Number allocation pool. |
| APNIC | From 1 January 2010, APNIC ceased to make any distinction between two-byte only AS numbers and four-byte only AS numbers, and operates AS number assignments from an undifferentiated four-byte AS number pool. |
| LACNIC | From 1 January 2007 the RIR will process applications that specifically request 32-bit only AS Numbers (AS numbers that cannot be represented with 16 bits) and assign such AS Numbers as requested by the applicant. In the absence of any specific request for a 32-bit only AS Number, the RIR will assign a 16-bit AS Number. |
| | From 1 January 2009 RIR will process applications that specifically request 16-bit AS Numbers and assign such AS Numbers as requested by the applicant. In the absence of any specific request for a 16-bit AS Number, the RIR will assign a 32-bit only AS Number. |
| | From 1 January 2010, LACNIC shall allocate 32-bit AS numbers by default. 16-bit AS numbers shall be allocated, if available, in response to applications specifically requesting said resource and that duly justify the technical reasons why a 32-bit AS number would not be appropriate for its needs. |

## 5. DATABASE - REGISTRATION

| RIR | Category | Policy | Comment |
|---|---|---|---|
| **AFRINIC** | Modification | LIRs are required to register all assignments and sub-allocations. | - |
| | Entry | Can update all assignment and sub-allocation registrations (protection mechanism available). Org object cannot be created by a LIR. | |
| **APNIC** | Modification | LIRs required to register all assignments and sub-allocations. Registrations will be stored privately by APNIC unless the custodian wishes them to be made publicly available in the APNIC Whois Database. | Not required to register infrastructure assignments. |
| | Entry | Can update all assignment and sub-allocation registrations (protection mechanism available). Incident Response Team reference mandatory for all IP address and AS number objects in the APNIC Whois Database to assist in reporting network abuse. | |
| **ARIN** | Modification | Downstream reassignments and reallocations are reported, showing hierarchy and End User assignments. Reassignment information for residential customers need not contain the customer's name nor street address. | Not required to register infrastructure assignments. |
| | Entry | Can modify all parent data except "org name" and address range. Can modify all child data. | |
| **LACNIC** | Modification | Downstream reassignments and reallocations are reported, showing hierarchy and End User assignments. | Not required to register infrastructure assignments. |
| | Entry | Can modify all parent data except "org name" and address range. Can modify all child data. Users have to authenticate themselves in LACNIC web system. | |
| **RIPE NCC** | Modification | LIRs are required to register all assignments and sub-allocations. | - |
| | Entry | Can update all assignment and sub-allocation registrations (protection mechanism available). | |

# 6. REVERSE DNS

| RIR | Policy | Comment |
|---|---|---|
| AFRINIC | Only make delegations on 8-bit boundaries (/16 or /24). Multiple delegations may be requested to cover CIDR prefixes for blocks bigger than a /24. | Members may only obtain rDNS if address space issued (assigned or sub-allocated) is recorded in the AFRINIC whois Database. |
| APNIC | Provides reverse DNS based on domain objects in the APNIC database. If the delegation is /16 or larger then the authority for the reverse zone, it is delegated to the custodian of the address space. | Policy for "lame delegations" checking established and enforced. |
| ARIN | Provides reverse DNS for all allocations and assignments in the database with the following exception: For all /16 or larger blocks ARIN delegates reverse DNS authority to the registrant. | - |
| LACNIC | Provides reverse DNS for all parent blocks. Does not provide reverse DNS for reassignments on child blocks if the parent is /16 or greater. | Policy for "lame delegations" checking established and enforced |
| RIPE NCC | Provides reverse DNS delegation on request. Deploys DNSSEC on all the reverse zones. | RIPE NCC verifies RFC1912 compliance. |

# 7. NATIONAL INTERNET REGISTRIES (NIRs)

| RIR | Policy |
|---|---|
| AFRINIC ARIN RIPE NCC | Not applicable. |
| APNIC | NIRs operate in Korea, China, Japan, Taiwan, Indonesia, India and Vietnam. They are not ISPs. They allocate to their members within their economy following APNIC policies. Organizations within those NIR economies may go to either the relevant NIR or APNIC. |
| LACNIC | NIRs operate in Brazil and Mexico. They are not ISPs. They allocate to their members following LACNIC policies. NIRs are responsible for providing services within their country. |

## 8. POLICY DEVELOPMENT

| RIR | Policy |
|---|---|
| AFRINIC APNIC ARIN LACNIC RIPE NCC | The policy development process is consensus based, open to anyone to participate and is transparent in archiving all decisions and policies so that they are publicly accessible. |

## 9. INTERNET EXPERIMENTS

| RIR | Policy |
|---|---|
| AFRINIC APNIC | Allocations and assignments of Internet resources for Internet experiments are available. Such allocations or assignments are made for one year after which they must be returned. They are intended to support experimental Internet activities. Results of experiments must be made freely available to the public. |
| RIPE NCC | RIPE NCC uses a reserved pool of Internet resources for temporary assignment. For conferences and other events of short, fixed duration, the maximum assignment time period will be one month longer than the scheduled length of the conference/event but no longer than two months in any case. The assignment time limits for longer-term projects and research purposes are up to six calendars months. In the case where an End User requires number resources for research purposes, and where the research project details are made public upon registration End User commits to making public the results of their research project free of charge and free from disclosure constraints, then the requested number resources may be issued for a period of up to one calendar year. |
| ARIN | ARIN will allocate Numbering Resources to entities requiring temporary Numbering Resources for a fixed period of time under the terms of recognized experimental activity. |
| LACNIC | LACNIC shall make experimental allocations with the aim of encouraging research and development within the region of Latin America and the Caribbean. The experimental allocation shall be for a period of one year, renewable for a period of the same duration, with no specified maximum. The results of the experiment must be published on a public website. |

## 10. DOCUMENTATION PREFIX

| RIR | Policy |
|---|---|
| APNIC | A documentation prefix is available to organizations wishing to use examples of Internet resources in educational materials, case studies and other documentation. |
| AFRINIC ARIN LACNIC RIPE NCC | No policy. |