RIR Comparative Policy Overview

(version 2004-07)

The goal of this document is to provide a comparative overview of policies across the 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 While this document was accurate on the date of publication (16 July 2004), it may be outdated by subsequent policy implementations. The official policy documents can be found at the respective web sites of the RIRs. This is a public document that will be reviewed and revised through the co-ordinated efforts of the RIRs.

For more information, refer to the APNIC, ARIN, LACNIC, and RIPE NCC web sites.

RIR COMPARATIVE POLICY OVERVIEW

1. General

1.1 Goals of the RIR System

RIR	Policy
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
APNIC	Qualification	Membership is open globally without conditions.
	Access to registration services	Members have full access to all services. Non-members may access resource assignment and allocation services.
	Fee model	Not-for-profit organisation. Fee schedule established to enable cost recovery of operations.

ARIN	Qualification	Open globally without conditions. Organisations that receive allocations automatically become members.
	Access to registration services	Do not need to be a member to receive registration services.
	Fee model	Not-for-profit organisation. Fee schedule established to enable cost recovery of operations.
LACNIC	Qualification	Membership is open to LACNIC region only, without conditions.
	Access to registration services	Organisations approved for IP addresses automatically become members. It is not necessary to become a member to obtain some services like ASN assignments. Only organisations based in LACNIC region may apply for resources.
	Fee model	Not-for-profit organisation. Fee schedule established to enable cost recovery of operations.
RIPE NCC	Qualification	Membership is open globally without conditions.
	Access to registration services	Members only.
	Fee model	Not-for-profit organisation. Fee schedule established to enable cost recovery of operations.

1.3 Allocation terms and conditions

1.3.1 Type of custodianship

RIR	Policy
APNIC	Allocates and assigns on a 'license' basis, to be of specific limited duration (normally 1 year). Licenses are renewable if: a) the original basis of the allocation or assignment remains satisfied and b) requirements have been met at time of renewal.

RIR	
ARIN 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
ARIN LACNIC RIPE NCC	Do not allow sale of addresses, but recognise name changes and transfers of tangible assets associated with addresses. Requires submission of legal documents. Utilisation is verified. May require new agreement.
APNIC	As above, with the exception of "historical resource transfers". "Historical" resources can be transferred to APNIC members without the need for the technical justification procedures.

1.3.3 Recovering Unused Resources

RIR	Policy	Comment
APNIC	Valid as long as original criteria remain satisfied.	Has procedures to actively recover 'unused' networks. If an organization closes, unused resources are returned to the public pool.
ARIN LACNIC RIPE NCC	Valid as long as original criteria remain satisfied.	Does not actively recover unused resources, but if an organisation

		closes, unused resources are returned to the public pool.

2. IPv4

2.1 Initial allocation

RIR	Category	Policy
APNIC	Size	Slow start: /21 (can be exceeded when documented immediate infrastructure need exceeds /21).
	Eligibility	a) Membership or pay non-member fee; b) have previously used or can demonstrate immediate need for /23; c) complied with policies in managing all previous address space; d) detailed plan for use of a /22 within a year; e) commit to renumber from previously deployed space.
	Period	1 year.
ARIN	Size	Slow start: /22 minimum for multihomed, otherwise /20 (can be exceeded when documented immediate need exceeds /20).
	Eligibility	For a /22: efficient utilisation of a /23 from upstream; multihomed; agree to renumber, **or** For a /21: efficient utilisation of /22 from upstream; multihomed; agree to renumber, **or** For a /20: efficient utilisation of /21 from upstream; multihomed; agree to renumber, **or** Efficient utilisation of /20 from upstream (no renumbering required).
	Period	3 months.

LACNIC	Size	Slow start: /20 (can be exceeded when documented immediate infrastructure need exceeds /20).
	Eligibility	Must have /22 from upstream; multihomed; agree to renumber within 12 months. **or** If not multihomed must demonstrate use of /21 from upstream and agree to renumber within 12 months. **or** Demonstrate immediate need.
	Period	3 months.
RIPE NCC	Size	Slow start: /21 (can be exceeded when justified).
	Eligibility	a) Membership; b) demonstration of need.
	Period	Not set during "slow start".

2.1.1 Initial allocation for the African Regions

Note: AfriNIC is an emerging RIR. Once AfriNIC is officially recognised as a new RIR, it will be responsible for allocating number resources for Africa. Currently the economies of Africa are served by APNIC, ARIN and RIPE NCC. The following table shows APNIC's, ARIN's and RIPE NCC's initial allocation policy for the regions they serve in Africa.

RIR	Category	Policy
APNIC	Size	Slow start: /22 (can be exceeded when documented immediate infrastructure need exceeds /22).
	Eligibility	a) Membership or pay non-member fee; b) have previously used or can demonstrate immediate need for /24; c) complied with policies in managing all previous address space; d) detailed plan for use of a /23 within a year; e) commit to renumber from previously deployed space.
	Period	1 year
ARIN	Size	Slow start: Minimum /22 (can be exceeded when documented immediate need exceeds /22).

	Eligibility	Efficient utilisation of /23 from upstream; multihomed. **or** Efficient utilisation of /22 from upstream.
	Period	3 months.
RIPE NCC	Size	Slow start: /22 (can be exceeded when justified).
	Eligibility	a) Membership; b) demonstration of need.
	Period	Not set during "slow start".

2.2 Subsequent allocation

RIR	Category	Policy	Comment
APNIC	Size	Minimum /21, no maximum.	Contiguous allocation provided where possible.
	Eligibility	Demonstrate 80% efficient utilisation of all prior allocated space.	
	Period	3 months up to 1 year based on previous utilisation.	
ARIN	Size	Minimum /22 for multihomed, otherwise /20, no maximum.	
	Eligibility	Demonstrate efficient utilization of all previous allocations and at least 80% of the most recent allocation.	
	Period	3 months. Internet Service Providers (ISPs) may request 6 months after they have been an ARIN member for one year.	
LACNIC	Size	Minimum /20, no maximum.	
	Eligibility	Demonstrate 80% efficient utilisation of all prior allocated space.	
	Period	3 months.	
RIPE NCC	Size	Minimum /21, no maximum.	
	Eligibility	Demonstrate approximately 80% efficient utilisation of all prior allocated space.	

	Period	Two years, previous utilisation considered.	

2.3 Sub-allocations

RIR	Policy	Comment
APNIC	LIRs may sub-allocate addresses to other organisations, 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 organisations, which further assign addresses to End Users.	
LACNIC	RIR allocates and assigns IP blocks to organisations that can be ISPs, End Users or National Internet Registries, (NIRs - see section 7). NIRs allocate and assign IP blocks to organisations 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 organisations, 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.

2.4 Assignments by RIRs (independent/portable)

2.4.1 General

RIR	Category	Policy	Comment
APNIC	Size	No minimum, no maximum.	Known as

	Eligibility	Requesting organisation needs to be multihomed and agree to renumber out of previously assigned address space. Assignments will be made according to the following criteria: 25% immediate utilisation rate and 50% utilisation rate within one year.	'small multihoming assignment policy'. Can be applied for under membership or as a 'non-member'.
ARIN	Size	/22 minimum for multihomed, otherwise /20, no maximum.	Known as 'end-user' assignments.
	Eligibility	Assignments will be made according to the following criteria: 25% immediate utilisation rate and 50% utilisation rate within one year.	
LACNIC	Size	/24 minimum, no maximum.	
	Eligibility	Multihomed organisations (End User) may receive a minimum of /24 based on previous assignments of /25 from upstream providers. Singlehome organisation may apply, for at least a /20, based on demonstrated need of /21.	
RIPE NCC	Size	No minimum, no maximum.	Submit an application via an existing LIR. Cannot request directly.
	Eligibility	Based on demonstrated need, according to the criteria listed above.	

2.4.2 Critical infrastructure

RIR	Category	Policy	Comment
APNIC	Definition	Root DNS, ccTLD, gTLD, IANA, RIRs, NIRs.	
	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.	
ARIN	Definition	Root DNS, ccTLD, gTLD, IANA, RIRs, IXPs.	Requested via the 'micro-allocations' policy.
	Size	/24 minimum.	
	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.	
	Eligibility	Assignments to critical infrastructure are available only to the actual operators of the network infrastructure performing such functions.	
RIPE NCC	Definition	No specific policy.	Portable address space can be obtained by submitting a request through an existing LIR.
	Size	Not applicable.	
	Eligibility	Not applicable.	

2.4.3 Internet exchange points (IXPs)

RIR	Category	Policy	Comment
APNIC	Size	/24 minimum assignment.	There is no

	Eligibility	Must be an IXP. The number of ISPs connected should be at least three and there must be a clear and open policy for others to join.	restriction on routing prefixes assigned under this policy.
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 two total), ASN, and contact information.	
LACNIC	Size	/24.	Requested via the 'micro-allocations' policy.
	Eligibility	Exchange point operators must provide documentation showing that it is an IXP, list of participants, structure diagram and numbering plan.	
RIPE NCC	Size	No specific policy.	Portable address space for this purpose can be requested via an existing LIR.
	Eligibility	No specific policy.	

2.5 Assignments by LIRs (aggregatable/non-portable)

2.5.1 Assignment window

RIR	Policy	Comment
APNIC LACNIC RIPE NCC	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.
ARIN	Not applicable.	Assignment

		practices are audited by ARIN staff at time of request for additional resources.

2.5.2 Dynamic addressing

RIR	Policy
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
APNIC ARIN LACNIC RIPE NCC	There is no special assignment policy with respect to mobile terminals.

2.5.4 Web hosting

RIR	Policy
APNIC ARIN LACNIC RIPE NCC	Name based web hosting is strongly encouraged where feasible.

2.5.5 Network address translation (NAT)

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

2.5.6 RFC1918 Private Address Space

RIR	Policy
APNIC ARIN LACNIC 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.

3. IPv6

3.1 Initial allocation

RIR	Category	Policy	Comment
ARIN	Size	/32.	Organisations may qualify for an initial allocation greater than /32 by submitting documentation that reasonably justifies the request.
	Eligibility	a) Be an LIR; b) not be an end site; c) plan to provide IPv6 connectivity to organisations to which it will assign /48s, by advertising that connectivity through its single aggregated address allocation; d) have a plan for making at least 200 /48 assignments to other organisations within two years.	
	Period	For up to two years.	
APNIC RIPE NCC	Size	/32.	Allocations consistent with the globally co-ordinated 'IPv6 Address Allocation and Assignment Policy' document. Organisations may qualify for an initial allocation greater than /32 by
	Eligibility	a) Be an LIR; b) not be an end site; c) plan to provide IPv6 connectivity to organisations to which it will assign /48s, by advertising that connectivity through its single aggregated address allocation; d) have a plan for making at least 200 /48 assignments to other organisations within two years. In addition, APNIC will make allocations to 'closed' networks if they meet all other criteria.	

	Period	For up to two years.	/32 by submitting documentation that reasonably justifies the request. Uses the HD ratio as a means of justifying a larger initial allocation size.
LACNIC	Size	/32	
	Eligibility	a) Be a LIR or an ISP; b) not be an end site (End User); c) document a detailed plan for the services and IPv6 connectivity to be offered to other organisations (clients); d) announce a single block in the Internet inter-domain routing system, aggregating the total IPv6 address allocation received, within a period not longer than 12 months; e) offer IPv6 services to clients physically located within the region covered by LACNIC within a period not longer than 24 months.	
	Period	For up to two years.	

3.2 Subsequent allocation

RIR	Category	Policy	Comment
APNIC ARIN LACNIC 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 utilisation in terms of the number of sites in units of /48 assignments. The HD-Ratio of 0.8 is used to determine the utilisation thresholds that justify the allocation of additional addresses.	possible.
			RFC 3194 defines the HD-Ratio.
	Period	Up to 2 years.	

3.3 Assignments by RIRs (independent/portable)

3.3.1 Critical Infrastructure

RIR	Category	Policy	Comment
APNIC	Definition	Root DNS, ccTLD, gTLD, IANA, RIRs, NIRs.	
	Size	/32 minimum.	
	Eligibility	Assignments to critical infrastructure are available only to the actual operators of the network infrastructure performing such functions.	
ARIN	Definition	Root DNS, ccTLD, gTLD, IANA, RIRs, IXP.	
	Size	/48 minimum.	
	Eligibility	Assignments to critical infrastructure are available only to the actual operators of the network infrastructure performing such functions.	Known as 'micro-allocation' policy.
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.	

	Size	Minimum allocation size at time of request.	
	Eligibility	Assignments to critical infrastructure are available only to the actual operators of the network infrastructure performing such functions.	Portable address space for this purpose can be obtained by members or if not a member by submitting a request through an existing LIR.

3.3.2 Internet exchange points (IXPs)

RIR	Category	Policy
APNIC ARIN LACNIC RIPE NCC	Size	/48 minimum.
	Eligibility	The IXP must have a clear and open policy for others to join and must have at least 3 members.

3.4 Assignments by LIRs (aggregatable/non-portable)

3.4.1 Dynamic addressing

RIR	Policy	Comment
APNIC ARIN LACNIC RIPE NCC	There is currently no specific policy related to dynamic addressing.	See RFC3177.

3.4.2 Mobile terminals

RIR	Policy
APNIC ARIN	There is no special assignment policy with respect to mobile terminals.

LACNIC RIPE NCC	

3.4.3 Web hosting

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

3.4.4 Network address translation (NAT)

RIR	Policy
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 Autonomous System numbers are allocated to NIRs for further distribution to their members.
ARIN LACNIC RIPE NCC	Not applicable.

4.2 Assignments

RIR	Category	Policy	Comment
APNIC	Eligibility	ASNs may be obtained directly from APNIC as a member or non-member. The ASN obtained directly is portable. ASNs may also be obtained indirectly, through a LIR	

RIR	Category	Policy	Comment
		who 'sponsors' the request. In this event, the ASN is non-portable. Criteria need to be met in both cases, that is: An organisation is eligible if it a) is multihomed; and b) has a single, defined routing policy that is different from its providers' routing policies. An organisation 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).	
ARIN LACNIC RIPE NCC	Eligibility	Policies for AS number 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 AS Number.	In RIPE region ASNs cannot be requested directly. An application must be submitted to the RIPE NCC via an existing LIR.

5. Database - Registration

RIR	Category	Policy	Comment
APNIC	Modification	LIRs required to register all assignments and sub-allocations except infrastructure assignments. Registrations will be stored privately by APNIC unless the custodian wishes them to be made publicly available in the APNIC database.	
	Entry	Can update all assignment and sub-allocation registrations (protection mechanism available).	

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
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" approved but not yet implemented.
ARIN	Provides reverse DNS for all allocations and assignments in the database with the following exception: For all /16 or shorter prefixes ARIN	Policy for "lame delegations"

	delegates reverse DNS authority to the registrant.	checking established and enforced.
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" approved but not yet implemented. Nowadays "lame delegation" is checked and members are advised about the problem.
RIPE NCC	Provides reverse DNS delegation on request. Holders of /16 or larger are required to use the RIPE NCC's nameserver as secondary.	RIPE NCC verifies RFC1912 compliance.

7. National Internet Registries (NIRs)

RIR	Policy
APNIC	NIRs operate in Korea, China, Japan, Taiwan, Indonesia and Vietnam. They are not ISPs. They allocate to their members following APNIC policies. Organisations may go to either the relevant NIR or APNIC.
ARIN RIPE NCC	Not applicable.
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

RIR	Policy
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
APNIC RIPE NCC	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.
ARIN	ARIN will allocate Numbering Resources to entities requiring temporary Numbering Resources for a fixed period of time under the terms of recognised 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 organisations wishing to use examples of Internet resources in educational materials, case studies and other documentation.
ARIN LACNIC RIPE NCC	No specific policy.