

Requiring aggregation for IPv6 subsequent allocations

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Introduction

- Current IPv6 address policy defines two kinds of criteria, “initial allocation” and “subsequent allocation”.

Current criteria

	Initial allocation	subsequent allocation
Target	For organizations firstly request IPv6 address	For organizations who need additional IPv6 address
Criteria	<ul style="list-style-type: none">a) be an LIRb) not be an end sitec) plan to provide IPv6 connectivity to organizations to which it will make assignments, by advertising that connectivity through its single aggregated address allocationd) meet one of the two following criteria: - have a plan for making at least 200 assignments to other organizations within two years OR - be an existing LIR with IPv4 allocations from APNIC or an NIR that will make IPv6 assignments or sub-allocations to other organizations and announce the allocation in the inter-domain routing system within two years	Subsequent allocation will be provided when an organization (ISP/LIR) satisfies the evaluation threshold of past address utilization in terms of the number of sites in units of /56 assignments. The HD- Ratio [RFC 3194] is used to determine the utilization thresholds that justify the allocation of additional address as described below.

Current problem

- The initial IPv6 address allocation criteria requires that LIRs:
 - “Plan to provide IPv6 connectivity to organizations to which it will make assignments, by advertising that connectivity through its single aggregated address allocation.”
- There is no similar aggregation requirement in the criteria for subsequent allocations.

Current criteria

	Initial allocation	subsequent allocation
Target	For organizations firstly request IPv6 address	For organizations who need additional IPv6 address
Criteria	<ul style="list-style-type: none">a) be an LIRb) not be an end sitec) plan to provide IPv6 connectivity to organizations to which it will make assignments, by advertising that connectivity through its single aggregated address allocationd) meet one of the two following criteria: - have a plan for making at least 200 assignments to other organizations within two years OR - be an existing LIR with IPv4 allocations from APNIC or an NIR that will make IPv6 assignments or sub-allocations to other organizations and announce the allocation in the inter-domain routing system within two years	Subsequent allocation will be provided when an organization (ISP/LIR) satisfies the evaluation threshold of past address utilization in terms of the number of sites in units of /56 assignments. The HD- Ratio [RFC 3194] is used to determine the utilization thresholds that justify the allocation of additional address as described below.

Proposal

- Add the same requirement as the initial allocation criteria under the subsequent IPv6 allocation criteria.

Other RIRs

- The LACNIC community is currently discussing the following proposal to remove the requirement to announce an initial allocation as a single prefix in favour of announcing the prefix with the minimum possible level of disaggregation:
 - 2007-01: Modifications to the IPv6 Prefix Initial Allocation Policy
<http://www.lacnic.net/documentos/politicas/LAC-2007-01v3-propuesta-en.pdf>
- The RIPE community is currently discussing the following proposal to remove routing requirements from IPv6 policy:
 - 2009-06: Removing Routing Requirements from the IPv6 Address Allocation Policy
<http://www.ripe.net/ripe/policies/proposals/2009-06.html>

Benefits/disadvantages

- Benefits
 - By describing clearly in the policy as a requirement, it may contribute to limiting routing expansion of the global IPv6 routing table in the future.
- Disadvantages
 - This proposal may just be a nonbinding requirement.
 - APNIC policy may be more strict than other regions if other RIR communities decided to remove aggregation requirement from their policy.

Implementation

- Add aggregation requirement criteria into the "IPv6 Address Allocation and Assignment Policy" , section 5.2

Proposed text:

- “Recipients of further IPv6 allocations **MUST** attempt to (have a plan to) minimize the deaggregation of the allocation as much as is technically feasible”

Summary

- Proposed to add the requirement under the subsequent IPv6 allocation criteria to aggregate subsequent IPv6 allocations as a single prefix
 - it may contribute to limiting routing expansion of the global IPv6 routing table in the future.