

AUTHORS' DATA:

Name: Ricardo Patara

Email: patara@registro.br

Telephone: +55 11 55093525

Organization: NIC.BR

PROPOSAL DATA:

Policy Proposal Title: Update RIRs-on-48

Policy Proposal Type: LACNIC

Id: LAC-2012-09

Version: 1

PROPOSAL SUMMARY:

The current IPv6 policy mentions RFC 3177, which recommends that address delegation follow these general rules:

/48 in the general case, except for very large subscribers.

/64 when it is known that one and only one subnet is needed by design.

/128 when it is absolutely known that one and only one device is connecting.

However, RFC 6177 has been updated, rendering the previous RFC obsolete.

Generally speaking, it maintains that assignment size should be decided by network operators and eliminates the recommendation included in RFC 3177 that by default an ISP's customers should be assigned a /48.

RATIONALE:

RFC 3177 specifies that, if the possibility of more than one subnet exists, an ISP's end users should be assigned a /48. LACNIC's current policy is based on that RFC and its recommendations.

A new RFC (RFC 6177) was published in May 2011 which rendered RFC 3177 obsolete. This RFC specifies that how much address space to assign is an issue for network operators to decide.

Nevertheless, it recommends that /64s should only be assigned when it is known that one and only one subnet is needed and that the default assignment should be, for example, a /56.

The fact that the current policy references an outdated RFC justifies the proposed change.

Since 2005, some RIR communities (APNIC, ARIN, RIPE) started discussing

policies for the assignment of smaller blocks, such as, for example, a /56, from LIRs or ISPs to their customers.

RFC 3177 took some criticism, particularly in the sense that its recommendations were wasteful, as, according to this RFC, a large company with many employees could receive the same amount of IP addresses as a residential user.

Situation in other RIRs:

- AfriNIC:

Still references RFC 3177 and follows the recommendation of assigning a /48 by default.

- APNIC:

Does not mention RFCs 3177 or 6177, but specifies that the size of the block to be assigned to an end customer should be the LIR's or ISP's decision.

Its HD-RADIO calculation example uses a /56.

- ARIN:

Does not mention RFCs 3177 or 6177, but specifies that the size of the block to be assigned to an end customer should be decided by the community. Its HD-RATIO reference specifies a /56 as the calculation parameter.

- RIPE:

Does not mention RFCs 3177 or 6177, but specifies that the size of the block to be assigned to an end customer should be the LIR's or ISP's decision.

Its HD-RADIO calculation example uses a /56.

PROPOSAL TEXT:

Replace the following paragraph of section "4.1 Scope:"

[RFC 3177], the particular emphasis of this document is on policies relating to the bits within 2000::/3 to the left of the /48 boundary.

By:

[RFC 3177], the particular emphasis of this document is on recommendations to LIRs/ISPs regarding their assignments to connected users and customers.

Replace the text in paragraph "4.2.1. Utilization:"

Unlike IPv4, IPv6 is generally assigned to end sites in fixed amounts (/48). The actual utilization of addresses within each assignment will be quite low when compared to IPv4 assignments. In IPv6, "utilization" is only measured in terms of the bits to the left of the /48 boundary. In other words, utilization refers to the assignment of /48s to end sites, and not to the number of addresses assigned within individual /48s at those end sites.

Throughout this chapter, the term utilization refers to the assignment of /48s to

end sites, and not to the number of addresses assigned within individual /48s at those end sites."

By:

"Unlike IPv4, IPv6 is generally assigned to end sites in fixed amounts. The actual utilization of addresses within each assignment will be quite low when compared to IPv4 assignments. In IPv6, "utilization" is only measured in terms of the bits to the left of the /56 boundary. In other words, utilization refers to the assignment of /56s to end sites, and not to the number of addresses assigned within individual /56s at those end sites.

Throughout this chapter, the term utilization refers to the assignment of /56s to end sites, and not to the number of addresses assigned within individual /56s at those end sites."

Replace the text in paragraph "4.5.3.1. Address space assignment:"

"Assignments are to be made in accordance with existing guidelines [RFC3177, RIRs-on-48], which are summarized here as:

/48 in the general case, except for very large subscribers.

/64 when it is known that one and only one subnet is needed by design.

/128 when it is absolutely known that one and only one device is connecting."

By:

"Assignments are to be made in accordance with the needs specified by the ISP's users as well as existing recommendations [RFC 6177], the most important of which are summarized below:

End users or end sites should be assigned enough addresses to meet their current and planned needs.

End users or end sites should not be assigned less than a /64.

The exact size of the assignment is an operational decision for the LIR or ISP to make.

RFC 6177 recommends assigning end users/sites more than a /64 but does not recommend assigning all end users/sites a /48 by default.

One recommendation would be to assign between a /48 and a /56."

ADDITIONAL INFORMATION:

Timetable: Immediate implementation