Assignment Clarification in IPv6 Policy

RIPE-2018-02 v3

Jordi Palet
(jordi.palet@theipv6company.com)

Summary of Proposal (1)

- This proposal aims to clarify the definition of "Assign" in RIPE-699 (section 2.6).
- The proposal solves the inconsistencies raised during community discussions on the policy proposal 2016-04, "IPv6 Sub-Assignment Clarification" where the RIPE NCC's understanding, as explained in the impact analysis, didn't match with the current policy text.
- The policy text says "Providing another entity with separate addresses (not prefixes)", while the impact analysis said "as long as the subnet size does not exceed a /64".
- In addition to cases where a /64 is used for a point-to-point link, VPNs and similar, where typically a single address is used on the "customer side" (in addition to the one used at the LIR side), the IETF has recently approved the use of a unique /64 prefix per interface/host (RFC 8273) instead of a unique address. This, for example, allows users to connect to a hotspot, receive a /64 such that they are "isolated" from other users (for reasons of security, regulatory requirements, etc.) and they can also use multiple virtual machines on their devices with a unique address for each one (within the same /64)..

Summary of Proposal (2)

- Another case involves a third party contracted by the End User to provide services in their network that require the deployment of other devices, servers, network equipment, etc. For example, a security surveillance system may involve the contractor providing their own cameras, recording system, even their own firewall and/or router for a dedicated VPN. In many cases, this surveillance system would need to use the addressing space of the End User.
- We need to understand that the concept of BYOD (Bring Your Own Device), even in enterprise networks, universities, etc., doesn't limit the number of addresses that a single device may decide to use. In fact, previous standards already allow this because a single device can get an IPv6 address by means of SLAAC, another with DHCPv6, and one more using privacy addresses. The actual policy text will not allow this, while the RIPE NCC's understanding seems to support it.

- All this doesn't happen (in general) with IPv4 because the use of NAT.

Summary of Proposal (3)

RIPE NCC Impact analysis on Policy Proposal 2016-04 (v2)

- “If this proposal is accepted, it is the RIPE NCC’s understanding that for an IPv6 assignment, the provision of separate addresses to customers of the assignment holder will not be considered a sub-assignment.”
- “It is the RIPE NCCs understanding that assignments as described above are dynamic in nature, either by varying the prefix or interface identifier (IID) over time. Any permanent and static assignments of a prefix would still be considered a sub-assignment as per clause 2.6, “Assign” of the IPv6 address allocation and assignment policy. Consequently the RIPE NCC will not provide IPv6 PI assignments for such deployment plans.”
- “… despite the intention of the proposer, broadband providers will request and receive IPv6 PI assignments as long they comply with the requirement to only provide separate addresses to customers ... The RIPE NCC would make any such requester aware that such IPv6 deployment is against IPv6 best current practices and the intent of this policy change, but ultimately it could not deny such an IPv6 PI request.”

Proposed Changes

2.6. Assign

To “assign” means to delegate address space to an ISP or End User for specific use within the Internet infrastructure they operate. Assignments must only be made for specific purposes documented by specific organisations and are not to be sub-assigned to other parties.

~~Providing another entity with separate addresses (not prefixes) from a subnet used on a link operated by the assignment holder is not considered a sub-assignment. This includes for example letting visitors connect to the assignment holder's network, connecting a server or appliance to an assignment holder's network and setting up point-to-point links with 3rd parties.~~

2.6. Assign

To “assign” means to delegate address space to an ISP or End User for specific use within the Internet infrastructure they operate. Assignments must only be made for specific purposes documented by specific organisations and are not to be sub-assigned to other parties.

Providing addressing space to third party devices including addresses for point-to-point links and/or non-permanently providing addressing space to third parties, for use on a network managed and operated by the assignment holder, shall not be considered a sub-assignment.

The provision of addressing space for permanent or semi-permanent connectivity, such as broadband services, is still considered a sub-assignment and is prohibited under this policy.

Proposed Changes (2)

2.6. Assign

To “assign” means to delegate address space to an ISP or End User for specific use within the Internet infrastructure they operate. Assignments must only be made for specific purposes documented by specific organisations and are not to be sub-assigned to other parties.

Providing addressing space to third party devices including addresses for point-to-point links and/or non-permanently providing addressing space to third parties, for use on a network managed and operated by the assignment holder, shall not be considered a sub-assignment.

The provision of addressing space for permanent or semi-permanent connectivity, such as broadband services, is still considered a sub-assignment.

1. “subcontractor with devices siting on the holders network, maybe long-term contract”

2. “point-to-point links often are long-term”

3. “BYOD”, employee, visitor, etc.

4. “make sure that ISPs are LIRs, not end-users”

Rationale

a. Arguments Supporting the Proposal

This proposal will avoid the above-mentioned discrepancies and simplify RIPE NCC clarifications and avoid misunderstandings.

b. Arguments Opposing the Proposal

None foreseen beyond the impact analysis of 2016-04