

IPv6 PI Sub-assignment Clarification (2016-04)

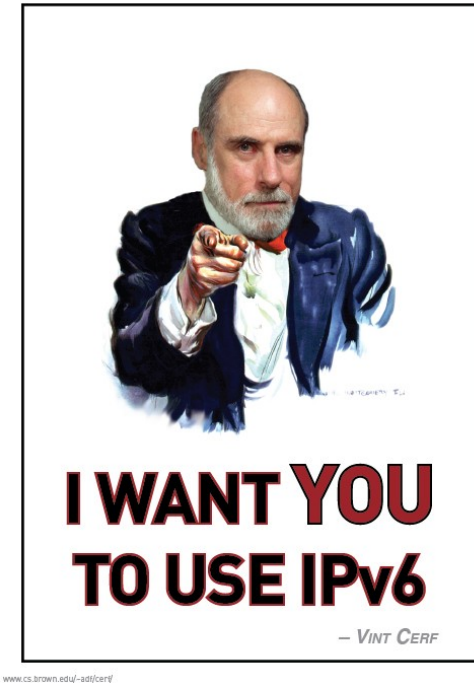
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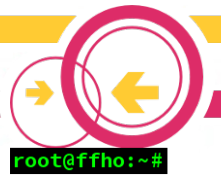
Freifunk Hochstift /
Freifunk Rheinland e.V. (AS201701)

24.10.2017
#RIPE75

Problem statement

- People want to deploy IPv6 PI
 - Already have IPv4 PI
 - Independent / Multi-homed for IPv6
- Today networks usually contain
 - (Public) WIFI / Guest network
 - VPN-PTP link (e.g. to customers)
- Within these 3rd parties get assigned (single) IPs
 - SLAAC / Privacy Extensions
 - Statically (VPN)





Problematic policy parts

- Ripe-684 (IPv6 Address Allocation and Assignment Policy) Section 7:
“The PI assignment cannot be further assigned to other organisations.”
- Ripe-637 (Contractual Requirements for PI holders) states:
“Notice that none of the provider independent resources may be sub-assigned to a third party.”

Problematic parts

- RIPE NCC interpretation:
Users using one IP (/128) from a /64 prefix (e.g. on in a public wifi, VPN-PTP-link, ...) is a sub-assignment.
- Therefore IPv6 PI is declined.

Proposed policy change v1.0

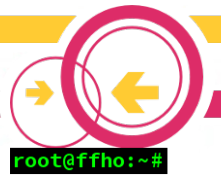
- Ripe-684 (IPv6 Address Allocation and Assignment Policy)

7. IPv6 Provider Independent (PI) Assignments

Add:

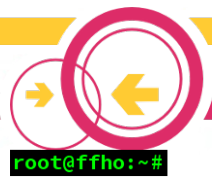
»Within the context of these policies, a sub-assignment is an assignment of a length of /64 or shorter.«

Deprecated



Status Quo after v1

- Rough consensus in discussion phase
- Went through Impact Analysis and review phase
- Some concerns raised
 - Fixed boundary of /64
 - Conflicts between RFCs and RIPE policy
 - Unintended interpretation by RIPE-NCC :-)
- Not as intended



v2.0-rc0 (#RIPE74)

RIPE-684:

- ~~“The PI assignment cannot be further assigned to other organisations.”~~
 - "PI space may only be used on networks that are under control and responsibility of the entity they are assigned to. Delegating responsibility to third parties or assigning subnets to third parties is not permitted."
- Still problematic / some concerns raised.

Deprecated

v2.0

- New approach: Fix “sub-assignment” globally
 - For PA as well as PI
- Current policy from RIPE-684:

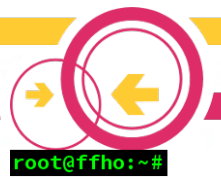
2.6. Assign

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.

v2.0

- Add to 2.6:

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.

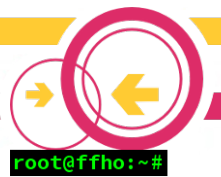


V2.0 / PI specific minor fix

- Ripe-684

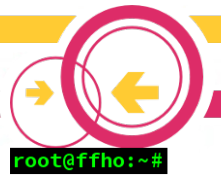
“7. IPv6 Provider Independent (PI) Assignments
[...]

The PI assignment cannot be further *sub-*
assigned to other organisations.”



Thou shalt (not)

- ✓ Allow use of IPv6-PI for
 - ✓ WIFI (like here :-))
 - ✓ PTP-Links to users/customers
 - ✓ Hosting/Housing of servers
- x Do NOT allow use of IPv6-PI for
 - x DSL/Cable/... customers



Status Quo

- New Impact Analysis available since Oct 19th
- Review Phase open again