

Network Extensions

Host Requirements

Ole Trøan, v6ops IETF 118

Purpose of this talk

- Triggered by the pd-per-node draft specifying network behaviour
- Is there a need for a corresponding “Host requirements document for network extensions”?
- Revision 00 is a placeholder draft. Here to ask the yay or nay if this is worthwhile proceeding with.

draft-ietf-v6ops-dhcp-pd-per-device

- Give same behaviour for extensions as is already there if node is connected to a link supporting SLAAC (PIO / 64 A=1)
 - Limited to a single /64 extension, where additional links, VMs, local interfaces sit on the same L2 domain
 - Virtual bridged link where PD client sends RA.
- Leaves the door open for further network extensions. Extending router asking for larger prefix (hierarchical PD) or multiple /64s (flat PD)

This draft:

- Provide network extensions regardless of address assignment policy on the northbound link
 - Does not restrict southbound link to only support SLAAC
 - Suggested an ordered list of mechanisms to try to interact with northbound network
 - Suggests an ordered list of address assignment mechanisms to use southbound, depending

Turtles all the way down

Types of northbound network:

A. SLAAC

1. “Secured” (802.1x) / WIFI limiting to one MAC address

B. DHCPv6 IA_NA (1 or more addresses)

C. SLAAC & DHCPv6 IA_NA

D. DHCPv6 IA_PD (and or IA_NA & SLAAC):

2. 0-128 prefix length
3. Flat or hierarchical support

E. HDLC, PPP, Tunnel or other non-bridgeable link-layer

NB: Mechanisms available to hosts:

1. DHCPv6 PD client
2. Ethernet Bridging with or without RA proxy / ND proxy. Steal an address from NB link.
3. NAT66. Steal many addresses from NB link.
4. NAPT66. Share interface address on NB link
5. HNCP, MLSR, ...
6. !NPTv6

SB: Addressing:

- If only configuring local host interface, create virtual interface, configure global address(es) from PD
- Alternatives (similar to northbound links):
 - /64:
 - SLAAC L2 bridging (routing not possible)
 - DHCPv6 IA_NA routing or bridging
 - ULA + NAT66 (PD, routing, bridging)
 - Less than /64
 - DHCPv6 IA_NA, routing or bridging downstream
 - ULA + NAP66 (especially if number of addresses available is less than SB interfaces)

**Yay|nay
hmmmm?**