Network Extensions
Host Requirements
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.
• 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 + NAPT66 (especially if number of addresses available is less than SB interfaces)
Yay|nay
hmmmmm?