Neighbor Discovery Support for Multi-Home Multi-Prefix

draft-vv-6man-nd-support-mhmp-01

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Draft Scope

- Multi-home Multi-prefix (MHMP) IPv6 environment is the norm for businesses that need to have uplink resiliency.

- Several solutions have been already discussed and proposed to address MHMP and how it can be enabled in different network contexts.

- This draft looks at MHMP from the perspective of Neighbor Discovery Protocols (NDP). The potential solution touches ND (RFC 4861), SLAAC (RFC 4862) and Default Address Selection (RFC 6724).

- The proposed solution swaps the steps defined in RFC 6724 for the Source Address Selection Algorithm.

- For any considered destination, the MHMP challenge may be solved through these steps:
  - The host should choose the proper source address for the packet.
  - The host should choose the best default router as the next-hop.

Feedback, Criticism at IETF 114 and Subsequent Changes in the Draft

Topic	Requested by	Main changes in the draft
Refine the problem statement	Chairs	Reviewed section: 2. Introduction
Check if Provisioning Domains (PvD) [RFC 7556] already solves the same problem	Asked in the room and discussed offline	Reviewed sections: 3. The NDP analysis in MHMP 5. Solution for the case "non-equal prefixes"
Avoid overlapping with on-going drafts / other RFCs	Asked in the room	General cleaning of the draft

Still for the Discussion

- Based on a first analysis, Provisioning Domains (RFC 7556 and RFC 8801) seems to leave a few open aspects.
  - If the host would choose initially the (virtual) router looking to the next-hop, the prefix advertised from that router may prevent the host to reach the destination.
    The issue could be associated to how a host selects the next hop an/or PdV. E.g., it may depend on the API such as getaddrinfo().
  - If the application would use internal logic (related to RFC6724) to bind() itself to the proper source address then PvD would be very helpful to supply more information (like many DNS resolvers).
- If there is interest, we would like to bring some cases to the list or to discuss them offline.

Next Steps

- We would really like having an open talk on PdV.
- Any reviews, criticism, missing aspect?
- Co-authoring is welcome.

- Thank you!