DNA solution framework

draft-jinchoi-dna-soln-frame-00.txt

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Overview

- Outlines author's opinions of a good approach for DNA
- Tries to identify the pieces of work that is needed
- Key idea: host checks whether attached to the same or different link
  - If the same, keep all information (and existing mechanism in ND can update this information when needed e.g., due to routers crashing)
  - If different, discovery new information for everything

DNA steps

- Hint
  - Could be a “link up” from the L2 device driver
  - Could be a Router Advertisement indicating a previously unknow prefix
- Receive a Router Advertisement as fast as possible
  - By sending a Router Solicitation, or through other means
- Determine if same or different link from RA
  - If different link use information in that RA to create new configuration

Link Identity

- Want to be able to determine the attached link from a single RA
- With unmodified routers the best we have is the list of (global) prefixes asssigned to the link
  - As in Complete Prefix List draft
  - This doesn't always work with the reception of a single RA
- Explore an explicit LinkID option so that with modified routers a single RA is sufficient

DAD Implications

- When the hint is received, host could be on the same or different link
  - Too early to send DAD probe? Defer until known it is on a different link
  - But need to treat addresses as tentative in case host moved to a different link (and there is a duplicate)
  - In particular, RS would have the TSLLAO option
- When determined that it's on the same link
  - Turn off optimistic DAD mode

Work Needed

- Link Identifier
- Complete Prefix List approach when Link Identifier is not available
- Immediate RA responses to RS
- Optionally RAs that are sent by APs
- Optimistic DAD and TSLLAO (in IPv6 WG)
- Figure out when DAD is triggered in the sequence of events
- Figure out when MLD is triggered in the sequence