DHCPv6 Prefix Delegation for NEMO (wrap up discussion) draft-ietf-mext-nemo-pd-05

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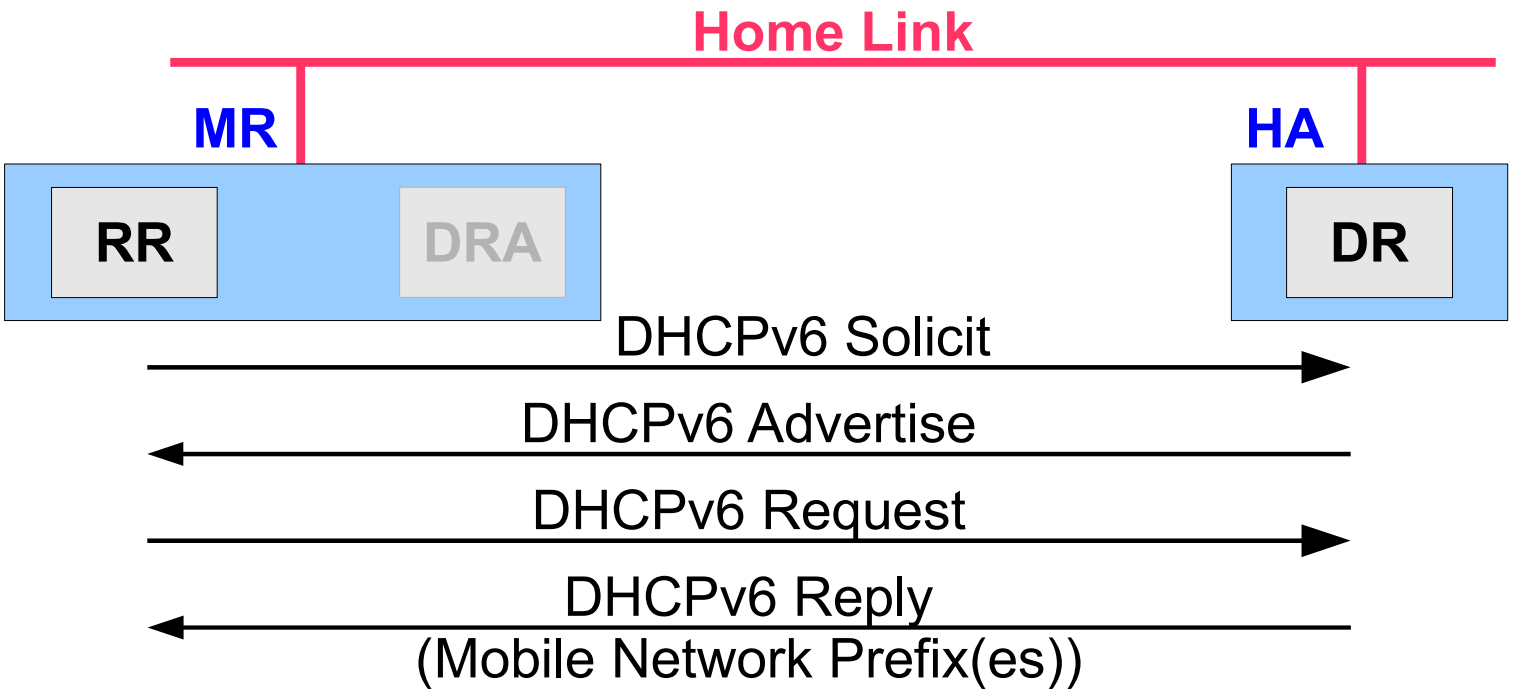
Latest history of the draft

- Version -03 submitted in October 2009
- Version -04 submitted in March 2010
  - Carlos J. Bernardos joined the editorial team
  - The draft went through WGLC in March 2010
    - Comments received from Jean-Michel Combes, Michaela Vanderveen, Alex Petrescu, Julien Laganier and Ryuji Wakikawa
  - Version -05 submitted in June 2010
    - Addressing comments received in the previous WGLC, as well as some others received afterwards
    - Revised by Jean-Michel Combes and Julien Laganier

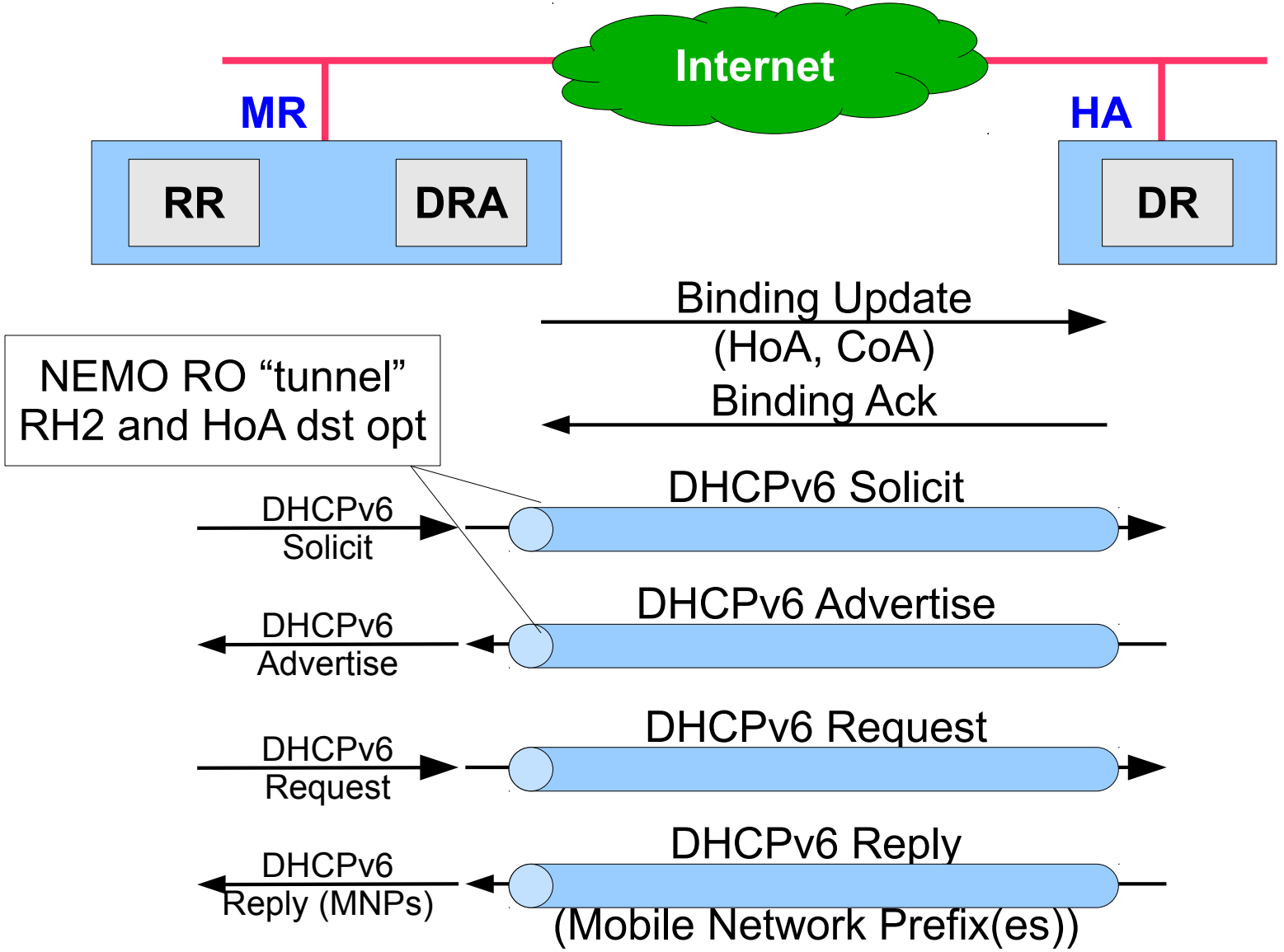
Basic operation (in a glimpse)

- DHCPv6 Prefix Delegation (RFC3633) used for delegation of Mobile Network Prefixes to the Mobile Router
- The Home Agent assumes the role of Delegating Router (DR): DHCPv6 server
- The Mobile Router
  - When at home, assumes the role of Requesting Router (RR): DHCPv6 client
  - When not at home, assumes the role of DHCPv6 Relay Agent (DRA), co-located with the RR function
- Only Implicit BU signalling is supported
- Leverages on IPsec security mechanisms mandated by MIPv6

Basic operation (MR at home)



Basic operation (MR not at home)



Changes from version -03 to -05 (1)

- Only implicit BU mode is supported
  - Addressing comments from Julien and Ryuji
    - Switching between explicit and implicit modes removed
      - Avoids updating RFC3963
      - Makes easier to meet RFC3963 security requirements
  - Jean-Michel suggested to send first a MIPv6 BU (R flag set to 0) and then send a NEMO BU (R flag set to 1)
    - RFC 3963 explicitely prohibits this behavior

Changes from version -03 to -05 (2)

- HA acting as a DHCPv6 relay is not supported
  - Addressing Julien's comment
    - The HA is a router, so it can be itself the DR
    - The HA is already stateful
    - Hard for the HA to ensure that the MR is registering the prefix that was delegated via DHCPv6PD
- A DRA function co-located with the RR at the MR is used when the MR is not at home
  - Addressing Julien's comment
    - Avoids the issue of the sending packets with LL addresses
      - Section 10.4.4 of RFC3775
    - Packets are sent using MR's CoA and HA global unicast addresses

Changes from version -03 to -05 (3)

- Clarification on MR and HA exchange of messages and tunneling
  - Addressing comments from Jean-Michel (there were also discussion on the ML)
    - RFC3375bis states that MN and HA operate in RO mode when sending traffic between them
    - Term “tunnel” removed from the draft
    - MR uses HoA destination option when sending to the HA
    - HA uses RH2 when sending to the MR
    - (there is still a minor error in version -05, page 5, /s/destination option is./destination option is used./, will be fixed in version -06)

Changes from version -03 to -05 (4)

- Added some additional text on Security Considerations section to address how the HA enforces that the MR registers the prefixes that were delegated to it via DHCPv6PD
  - Addressing comments from Jean-Michel and Julien
- Use of MIPv6 IPsec security mechanisms to authenticate DHCPv6PD signalling
  - Addressing comments from Julien and Jean-Michel
    - Only IPsec authentication mechanism is recommended (use of DHCPv6 authentication is removed)
    - Added lists of SPD and SAD entries

Changes from version -03 to -05 (5)

- Added some additional text about Renewing/Rebinding processes
  - Addressing comment from Ryuji
  - There is still an error to be fixed in -05 version (the text “In this case, only one BU signaling sequence is required.” in page 5 should be removed, will be fixed in version -06)

Changes from version -03 to -05 (6)

- Editorial changes
  - Terminology suggestions from Alex
  - Fixed typos spotted by Alex, Jean-Michel, Julien, Ryuji and Michaela

Wrap up and next steps

- Current version (when fixed minor pending typos in version -06) addressed comments receiving during last WGLC and on the ML
- Version -06 should capture WG consensus