PMIPv6-MIPv6 Interactions

draft-giarettanetlmm-mip-interactions-02
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Status

• draft-giarett-netlmm-mip-interactions-02 submitted

• Version 01 was a merge of three drafts
  – draft-giarett-netlmm-mip-interactions-00
  – draft-devarapalli-netlmm-pmipv6-mipv6-01
  – draft-weniger-netlmm-pmipv6-mipv6-issues-00

• Describes three interworking scenarios between MIPv6 and PMIPv6
  – Captures issues
  – Describes possible solutions to address the issues
Scenario A

- PMIPv6 and MIPv6 used in an hierarchical manner
  - PMIPv6 used for local mobility management
  - MIPv6 used for global mobility management
- PMIPv6 assigned address (MN_HoA) is used as the CoA for MIPv6 binding
- Mobility between MAGs localized to the LMA
- Mobility between LMAs results in an update of MIPv6 binding
- No issues
Scenario B

- A mix of mobile nodes that use MIPv6 and those that depend on PMIPv6 on mobility management are in the same access network
- Access router performs a dual role
  - IPv6 access router for those MNs that use MIPv6
    - Advertising topologically correct prefixes
  - MAG for those MNs that use PMIPv6
    - Advertising prefixes received from the LMA in the PBA
- How to ensure this dual role of the access router?
  - System level solution and not a protocol issue
  - Outside the scope of the draft
Scenario C

- PMIPv6 domain as a MIPv6 home link
  - MN transitions between using MIPv6 and PMIPv6 and vice versa
Open Issues

• Should we include any explicit requirement for the AR behavior in the scenario B?
  – Scenario B should be expanded to cover not only MIPv6 nodes but also other nodes that do not want to or are not authorized to receive PMIPv6 services

• The draft needs to be updated and some issues re-considered based on the multi-homing support in PMIPv6
  – Affect scenario C description and respective issues
Open Issues (cont’d)

• PMIPv6 and MIPv6 binding caches
  – The current version of the draft assumes that there is one binding cache which is shared between the HA and the LMA
    • The same BCE is updated either by the MN or by the MAG
  – This assumption implies some issues
    • E.g. race conditions in the returning home scenario
  – The draft tries to solve those issues with some modifications to the HA/LMA procedures
    • The HA/LMA MUST NOT delete the binding cache entry for the mobile node after receiving a de-registration BU if in the binding cache there is a BCE with the P-flag set for the same MN.
    • A solution for race condition between PBU and BU (using timestamps and sequence numbers) is still TBD after 3 versions of the draft
Open Issues (cont’d)

- PMIPv6 and MIPv6 binding caches: alternative approach provided by George in the mailing list
  - PMIPv6 and MIPv6 Binding Cache entries are kept independent and do NOT affect each other
  - Scenario A and C look identical, except that in scenario C the HNP\text{s} are shared between HA and LMA (as they are co-located)
  - Left for implementations how the LMA and the HA share the HNP
  - Figure shows the example in case of returning home scenario

![Diagram of L2 Connect, PBU (MNID), PBA (HNP), Get (HNP), RA (HNP), BU (Life=0), BA, Co-located LMA/HA, New proxy BCE created, BCE removed]
Next Steps

• To be considered for re-chartering