Routes Optimization for Multicast Sender in Proxy Mobile IPv6 Domain

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Objective of the Draft

Define Optimized Multicast Sender support for PMIP

Scenario:
1. Multicast sender locally attaches to the MAG
2. The multicast sender sends multicast data to the multicast listeners in the PMIPv6 domain
3. Send multicast data through bidirectional tunnel between two MAGs
Multicast Sender Deployment in PMIPv6

- Requirements on MN and MAG
  - Multicast receiver (e.g., MN2 and MN3) operate as an "SSM-aware" host [RFC4604]
  - MAG (e.g., MAG1 and MAG2) operate as an "SSM-aware" router [RFC4604]
Optimized SPT establishment (SSM Scenario)

1. MLDv2 Reports
2. Acquire CoA1 based on HoA1
3. Tunnel establishment
4. PIM Join (S,G) channel

MN1 HoA1, CoA1
MN2 HoA2
MN3 HoA3
MAG1
MAG2
LMA

Multicast sender
Multicast receiver
Multicast receiver
Multicast data path

- Optimizations on Source-specific shortest path trees
  - SPT don’t have to follow LMA-MAG tunnels towards a multicast sender
  - Multicast data is transmitted through the bidirectional tunnel between two MAGs
  - the bidirectional tunnel between two MAGs can be shared among different multicast senders if needed.
Multicast listener handover

- Quickly reestablish optimized SPT on handover
  - MAG3 gets from MAG2 all the active multicast subscriptions that match the moving node MN3
  - MAG3 reestablishes SPT the same way as stated on page 4
Quickly reestablish optimized SPT on handover

- MAG4 gets from MAG1 all the multicast states that match the moving source MN1
- MAG4 reestablishes SPT with MAG2
MRIB in MAG

- MRIB is built independently of the PMIPv6 policy-based routing
  - The bidirectional tunnel routes between two MAGs MUST be added to the MRIB
Future work

- Handover solution
- Establish SPT in ASM scenario
Questions?