Multicast Source Mobility Support in PMIPv6 Network
draft-zhang-multimob-msm-02

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Outline

◆ Background

◆ Analysis & Solutions
  ➢ ASM
    • LMA-based scheme
    • MAG-based scheme
  ➢ SSM
    • LMA-based scheme
    • MAG-based scheme

◆ LMA-based vs. MAG-based

◆ Extensions of PMIPv6
Background

◆ New Charter in the multimob group

◆ Related goals

Mechanisms needed to support multicast source mobility. Both any source multicast and source specific multicast source mobility will be covered.

◆ Related milestones

◆ Nov 2011: Initial version of document on PMIPv6 multicast source mobility solution

◆ Nov 2012: Submit PMIPv6 multicast source mobility solution to IESG for publication as Internet Standard
Analysis & Solutions

RFC 5213: On receiving a packet from a mobile node connected to its access link, to a destination that is not directly connected, the packet MUST be forwarded to the local mobility anchor through the bi-directional tunnel established between itself and the mobile node's local mobility anchor.

◆ LMA-based scheme:
   Packets sent out from the MN are directed to the LMA firstly and then transmitted to the receivers

◆ MAG-based scheme:
   Packets sent out from the MN are directly transmitted from the MAG to the receivers.
ASM (Any Source Multicast)

- LMA-based scheme
- MAG-based scheme
SSM (Source-Specific Multicast)

- LMA-based scheme
- MAG-based scheme
  - Passive approach
  - Active approach
### LMA-based vs. MAG-based

<table>
<thead>
<tr>
<th></th>
<th>PMIPv6 Extension</th>
<th>PIM-SM Extension</th>
<th>Handover Delay</th>
<th>Handover Overhead</th>
<th>Path</th>
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<tbody>
<tr>
<td><strong>LMA-based</strong></td>
<td>RPT / /</td>
<td>low</td>
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<td>worst</td>
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<tr>
<td><strong>ASM</strong></td>
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<td>low</td>
<td>medium</td>
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<td><strong>MAG-based</strong></td>
<td>RPT MAG /</td>
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<td>low</td>
<td>better than LMA-based RPT</td>
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<tr>
<td><strong>MAG-based</strong></td>
<td>SPT MAG/LMA MR &amp; receiver DR</td>
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**MAG-based SPT**
- Optimal path
- Unstable & high handover delay and overhead
- It needs to extend multicast routing protocol and difficult to implement.

**LMA-based schemes**
- Simpler for implementation than other schemes
- Suboptimal path

**MAG-based RPT**
- It’s path is better than the LMA-based RPT in ASM
- It requires a little extensions at the MAG
Extensions of PMIPv6 (1/3)

1. Notify the multicast source-related information in PMIPv6 network
2. Negotiate the multicast support capability between the MAG and the LMA

◆ **PBU**

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<tr>
<th>Multicast address option</th>
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- **S flag:** identify the MN is a multicast source
- **J flag:** identify the MAG is able to support the MAG-based scheme
- **Multicast address option:** the related multicast address
## Extensions of PMIPv6 (2/3)

### PBA

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- **S flag and Multicast address option**: identify the MN is a multicast source and the related multicast address
- **J flag**: MAG-based tree is allowed by LMA
Multicast address option

Option Type: TBD
Option Length: 8-bit unsigned integer indicating the length of the option in octets
Multicast address: The multicast address related to the multicast session provided by the MN
Thank You!

Q & A