EXTENSIONS TO IPV6 ROUTER ADVERTISEMENTS

I-D: draft-damic-netlmm-pmip6-ind-discover

Basavaraj Patil (Nokia), Domagoj Premec, M. Sahasrabudhe, Damjan Damic (Nokia Siemens Networks) and, Suresh Krishnan (Ericsson)

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Background

- Proxy Mobile IPv6 enables the advertisement of a prefix by an AR (MAG) which is topologically anchored at an LMA
Prefix Advt via RA in PMIP6

Prefixes (P1, P2… Pn)

LMA

On-link-Prefix: O1

MAG/AR

O2

MAG/AR

O3

MAG/AR

RA (P1, O2)
Proposal 1: Indicate Prefix type

- New PIO type which has the ability to indicate prefix type

- Prefix type:
  - 0 – On-link prefix
  - 1 – PMIP6 prefix

<table>
<thead>
<tr>
<th>Type</th>
<th>Len</th>
<th>Prefix Length</th>
<th>L</th>
<th>A</th>
<th>Prefix Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Valid Lifetime</td>
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<td></td>
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<td></td>
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<td>Preferred Lifetime</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Reserved</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IPv6 Prefix</td>
</tr>
</tbody>
</table>
Justification

- Enables the host to determine the prefix type in the scenario where the RA includes PMIP6 and on-link prefixes.

- Is backwards compatible since legacy hosts do not have to process the new PIO type.
Proposal 2: Request on-link-prefix

- A flag in RS requesting the AR/MAG to include the on-link-prefix in the RA
- Flag “C” set by the host in the RS sent to the MAG/LMA
Justification

- Mobile node has the ability to obtain the OLP and use it to configure a CoA and manage its own mobility

- MN can configure and use address derived from the OLP for sessions that do not require mobility
  - Refered to as local-breakout in some SDOs
Proposal 3: PMIP6 MAG capability indication

- A flag in RA indicating that the AR supports PMIP6 MAG functionality
- Flag “N” set by the AR/MAG in the RA

<table>
<thead>
<tr>
<th>Type</th>
<th>Length</th>
<th>Checksum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cur Hop Limit</td>
<td>M</td>
<td>O</td>
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</tbody>
</table>

- Flag set by the AR/MAG in the RA

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Justification

- Hosts which implement Mobile IPv6 functionality can recognize that the prefix advertised by the MAG as its home prefix is virtual
  - May decide to use OLP and configure a CoA for managing its own mobility
- Why does the host care if the AR is also a MAG?
  - Hosts which have MIPv6 capability can establish optimized paths with CNs (using RO)
Next steps

- 6MAN WG should extend IPv6 RS/RA functionality (as a result of ProxyMIP6)
- Adopt I-D: draft-damic-netlmmpmip6-ind-discover as WG doc