PMIP6 indication in RA
draft-damic-netlmm-pmip6-ind-discover

Basavaraj Patil
Damjan Damic
Meghana Sahasrabudhe
Suresh Krishnan
Domagoj Premec

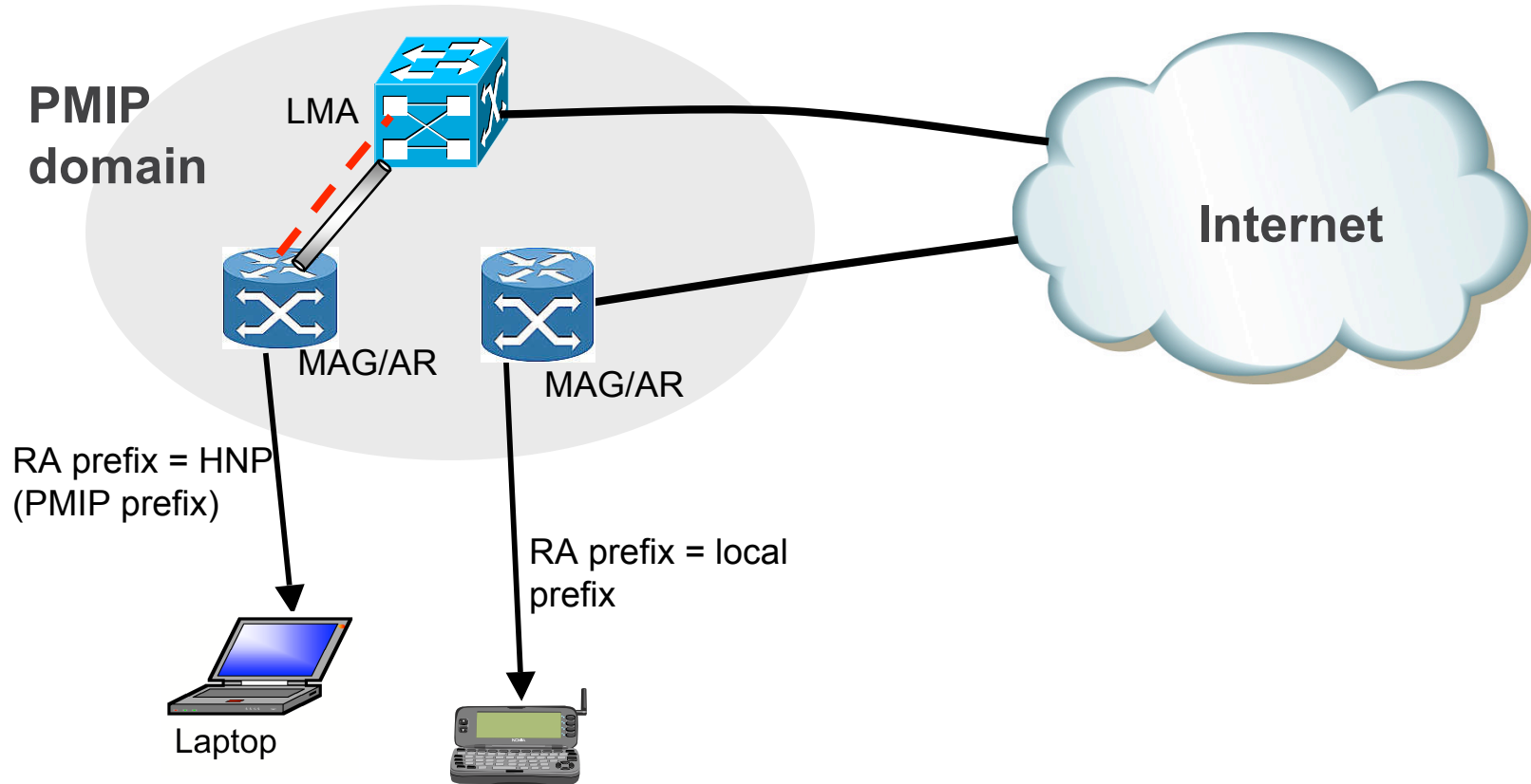# Problem statement

NetLMM WG is specifying the PMIP6 protocol.

Hosts attaching to a PMIP6 domain receive RAs with either the home nework prefix or local network prefix for SLAAC.

A network deploying the PMIP6 protocol may provide PMIP6 service to some of the hosts and provide regular IP access to other hosts.

Access network needs to provide an indication of PMIP6 service availability to the host.
– via RA

Overview

PMIP domain

LMA

MAG/AR

MAG/AR

Internet

RA prefix = HNP (PMIP prefix)

RA prefix = local prefix

Laptop

Proposal

Enhance RS / RA to carry the information necessary for mobility mode selection.

- – using RFC 5175 router advertisments flags option

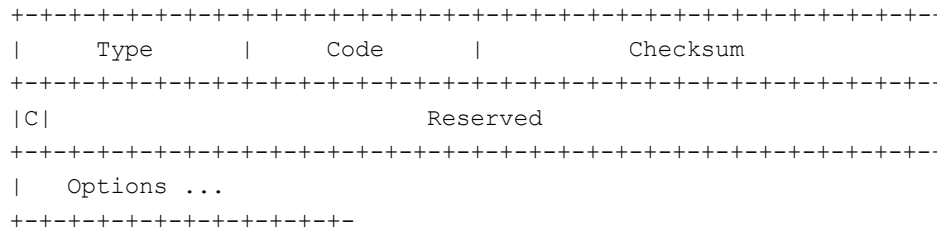Host uses a new flag in the RS to indicate its MIP capability and that it would like to use host based MIP.
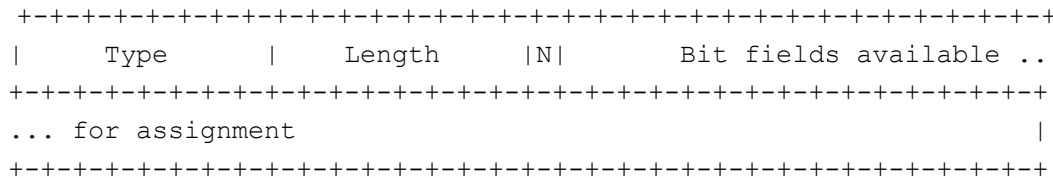
Network:

- use new flag in the RA to indicate that it supports PMIP6 service

- use new prefix information option to flag a prefix as a PMIP6 / simple IP prefix

  - – layout of the new option is compatible with the existing PIO, simply a flag is added saying which service is provided to that prefix

Option layout - flags

- RS flag indicating MIP capability

```
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|     Type       |      Code      |              Checksum         |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|C|                        Reserved                              |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|   Options ...
+-+-+-+-+-+-+-+-+-+-
```

- RA flag expansion option with a PMIP6 indication

```
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|     Type       |     Length     |N|      Bit fields available ..
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
... for assignment                                              |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

New prefix information option

```
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|     Type      |     Length    | Prefix Length |L|A|   |Pr.Type|
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                        Valid Lifetime                         |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                      Preferred Lifetime                       |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                          Reserved                             |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                                                               |
+                                                               +
|                                                               |
+                        IPv6 Prefix                            +
|                                                               |
+                                                               +
|                                                               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

PR. type:
- 0 local prefix
- 1 PMIP prefix

Next steps

- standardize RA/RS options indicating PMIP6 support
- adopt as a WG item
  draft-damic-netlmm-pmip6-ind-discover

backup

Mixed mode deployment

How do the network and the host know which type of service to select?

The baseline PMIP6 document does not provide an answer.

Alternatives:

- provide PMIP6 service to all hosts
- static per-MN network policy
- MN and network can detect PMIP6/MIP6 capabilities of each other