NETLMM IETF#71
TUESDAY, March 11, 2008
0900-1130 Morning Session I

Chairs:
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Executive Summary
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The consensus of the meeting was to concentrate on the work for the next
twelve months. We discussed in the meeting, which would be the work items we
would think should be done first.

The meeting was able to identify the following:
 * GRE Keying
 * PMIP6/MIP6 interactions
 * AAA - Diameter & Radius
 * LMA discovery

The right place to do the AAA work has to be found. It is either
in netlmm or in the relative AAA working group (Dime or Radex).

LMA discovery on the other hand is something that might be either solved in AAA
or specific separate procedure.

Consensus on the other work items could not be found, yet. Main reason was the
lack of clarity of the work needed. Thus, if one or two items in addition to the now
agreed work is needed to be done, the scope and importance of the work has to
be understood.

The right way of identifying other work items was discussed, a paragraph or two
describing the work would be needed, and listing the people that would be
interested to work on the topic. The interested people to add work on the charter
are requested to
 1) Describe the topic with a paragraph or two (what is needed, not thesolution
itself)
 2) Who would be the people who would be able and interested to invest to the
work.

Notice that the people who are listed as interested in additional topics
will also commit to further the other work in the charter through
contribution and review.

The consensus of the working group is tested on the mailing list. Thus, the described way forward should be considered as a proposal. However, if somebody would think this way forward is not the correct one, those individuals are requested to justify their objections quite carefully.

Agenda
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PRELIMINARIES (10 minutes)
Agenda review
Blue sheets
Notes and Jabber scribe
WG status

WG DRAFT DISCUSSIONS (ca. 1h)

 Topic: Proxy Mobile IPv6
 Draft: draft-ietf-netlmm-proxymip6-11.txt

 Topic: IPv4 Support for Proxy Mobile IPv6
 Draft: draft-ietf-netlmm-pmip6-ipv4-support-02.txt

 Topic: Interface between a Proxy MIPv6 Mobility Access Gateway and a Mobile Node
 Draft: draft-ietf-netlmm-mn-ar-if-03

DISCUSSION OF THE WG PRIORITIES FOR NEXT 12 MONTHS

Discussion of the items the WG has to get done _first_ and what can be prioritized to be done later or by other groups. Following categories have been proposed, but are up to discussion before and during the meeting.

 1. Required for PMIPv6 deployment (priority one)
 Currently proposed candidates:
  - LMA discovery
  - RADIUS and Diameter extensions (MAG-AAA and LMA-AAA interfaces)
  - GRE keys
  - Binding revocation (this is guess is being done in the MEXT WG)
  - Heartbeat mechanism for PMIPv6

(The rest are not necessarily in the order of priority)
 2. Interactions with host-based mobility protocols
  - PMIPv6 - MIPv6 interactions

- PMIPv6 - MIPv4 interactions

3. Multiple interface support and multi-homing
 - Different multi-homing scenarios (various drafts)
 - Handovers across interfaces using PMIPv6 (various drafts)

4. Handover optimizations
 - Transient CoA (Ahmad)
 - Two stage proxy BU (Marco)
 - FMIPv6 signaling for inter-MAG tunneling and CT (MIPSHOP WG)

5. NEMO support with PMIPv6

6. PMIPv6 route optimization

RECHARTERING DISCUSSIONS

NEXT STEPS and WRAP UP

Pmip6 base I-D:
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Sri Gundavelli (editor)
Version 11


IESG review
09 version went to IETF last call
AD review and IETF review comments resolved during this rev.
Gen-art review (by Elwyn Davis)
Clarification on bi-directional tunnel setup
Remove M-flag from PBA, not specified in RFC 4140
Explanation around per-MN-prefix model
Added IANA registry for access technology type
Explained MN-Id role

Transport Directorate (Alison Mankin)
MTU aspects (change of MTU size during inter-MAG handoff).
Change in transport type in case of MAG change (v4 to v6 transport).
This may happen in case of MIPv4 also when FA changes
How does the MN get notified?
Proposed resolution: MTU option was made mandatory. After handoff, the MAG
must indicate path MTU size for MAG – LMA path. This is based on provisioning
ECN code point: The tunnel mode is per RFC 2473. We are bound by that spec.

So, ECN part should be specified in this spec. If transport AD suggests fixing this in the spec we will do that.

DHC (Ralph Droms). Two comments:
Pools are configured in the DHCP server. LMA is the address management entity.
Relation is kept between NAI and HNP. Ralph suggests keeping the prefix lifetime to be low to reclaim unused prefixes expeditiously
Use of DHCP in case of inter administrative domain transactions may be an administrative nightmare.

Implementation update: many vendors are implementing PMIP6.


IPv4 over PMIP6:
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Ryuji Wakikawa(Editor):

Waiting on the base spec review to be completed before making major updates to this spec

Next rev:
- changes to signaling flow related to IPv4 HoA
- Default router address option
- MTU issue

IPv4 HoA management:
        MAG needs to complete PMIP6 signaling before DHCP transaction takes place.
If a standalone DHCP server manages the pool, the LMA needs to have ways to interact with the DHCP server.
If the DHCP server releases address in the middle of PMIP6 session, the LMA will not know.
In the draft it was made that the LMA manages the pool/address.

Added default router option in the PBA.

NAT consideration:
MAG private addresses
Hesham Soliman: it works the same way as the VPN today.
Sri Gundavelli: after de-capsulation, how does the MN deal with same addresses on two interfaces?
George Tsirtsis: it is policy routing.
Domagoj Premec: MN may think it is home if the local network gives it the same

private address.

Hesham Soliman: in MIP4 case, for movement detection some ref to DNAv4.

Ryuji Wakikawa: always rely on v6 RA.

Domagoj Premec: DNAv4 does not rely on ARP.

Hesham Soliman: DSMIP6 is not designed for PMIP6.

Frank Xia: There are two categories: shared and p2p. In the p2p model there isn't an issue.

Avi Lior: IETF cannot mandate that DHCP Server must be placed in LMA. Address allocation function can be anywhere in the network. IETF cannot dictate how these products get delivered.

Jonne Soininen: IETF should specify functionally how this works.

Sri Gundavelli: it is not about packaging but it is about call flows….i.e. how it works.

Avi Lior: I object to mandating any packaging.

Julien Laganier: why should a MAG be behind a NAT? It seems to be a twisted use case

Sri Gundavelli: there is a NAT between LMA and MAG.

Julien Laganier: Is it the case that the operator does not have enough public address? Which operator needs a private address on its MAG (an internal node)! It is different case from DSMIP6 perspective since there are too many MNs in case of DSMIPv6.

Sri Gundavelli: This is common in WiMAX.

Hesham Soliman: This is a global mobility issue. Note this down as a global mobility issue.

Domagoj Premec: It is not important whether the MAG has a private address towards the LMA. It is the case when the MAG has a private address towards the MN.

Behcet Sarikaya: We are talking about PMIP, but why we are getting into NAT issues here. We are having trouble understanding this deployment scenario.

Jonne Soininen: the document describes this scenario in a generic way (for completeness), which is aligned with DSMIPv6.

Frank Xia: there is a local address. The AR acts as a MAG. The LMA provides the same address. Supports the scenario

George Tsirtsis: there is no way one can guarantee that the MAG address and the address from LMA (HoA) won't overlap. So, we need to deal with this scenario.
The way the spec is defined to work, the LMA and the DHCP server must be collocated. Otherwise it does not work.

Jonne Soininen: May be there is a re-wording issue. Functionally how it works is defined in the spec.

Julien Laganier: DHCP relay can be in the LMA.

George Tsirtsis: there should be a clarification that the LMA has the DHCP relay. Whether DHCP server is collocated in the LMA should be a footnote.

Ahmad Muhanna: access network with private addresses in the network does not

make sense.

Sri Gundavelli: it happens in enterprise environment.

Julien Laganier: If there is an overlap (unlikely), but roaming agreements do not allow this (perhaps).

Domagoj Premec / Sri Gundavelli: the address on the MAG facing the MN is the default router address.

MTU issue:

PMTU may be different between MAG and the LMA

MN may not trigger DHCP, so new MTU cannot be conveyed to the MN

Solution: the operator SHOULD compute all MTUs in the managed access link and assign the least one.

Inter-Media HO:

Added multi-homing consideration to comply with the changes in the base PMIP6 spec

Define LMA processing rules.

Jonne Soininen: To the editor's: Don't wait until the base spec is fully done. Continue to edit the doc as and when comments are resolved.

MN-AR interface:

Pete McCann (Editor):

Version 03

Added/Summary of updates:

MAG- to-MN RA MUST happen after MAG-LMA signaling

MAG_GET_HI function added

     Recommended values based on MAG's knowledge

New Security Considerations

-    eavesdropping, redirection, denial of service

Outside the scope: shared link behavior

When MN-Attach happens:

Sri Gundavelli: there is some confusion about the assumption that MN-Attach trigger is coming from the MN. It should be noted that network can also convey that trigger.

Pete McCann: DNA requires RS to come from the MN. If there are other ways, it may be discussed.

Sri Gundavelli: the draft describes the MN-NAI to be public key

Julien Laganier: Link change detection --- L2 going down/up.

Suresh Krishnan: Every link-up event should trigger attach to a new MAG/AR.

Frank Xia/Pete McCann: this interface requires minimal support from L2.

Frank Xia: if DNA is not supported then what?

Pete McCann: In that case, w/o L2 assistance, there is no reliable way to detect attachment to the AR.

Frank XIA: Why do we assume that DNA is an essential part of MN-AR interface?

Suresh Krishnan: DNA defines link interaction for all link types. It says how each of these access links define attach/detach. So, Pete is talking about the use of that DNA catalogue.

Pete McCann: If the MN does not have DNA, the handover may not be optimized w/o the help of L2.

Frank Xia: It is just a performance issue then.

Pete McCann: yes.

Ashutosh Dutta: Where does the MN attach function happens?

Pete McCann: the first step is the MN sends a RS every time the link changes. The draft way in this doc is the DNA way.

Yokota Hidetoshi: Current draft mandates the MN SHOULD send the HI field. If the MN does not know how to populate this field, then what happens?

Pete McCann: The case when the MN gets same HNP on both interfaces that should be avoided. So, when MN-interface ID is different, the MN SHOULD indicate that.

Pete McCann: If the MN has L2 info, this "SHOULD" requirement in the spec can be violated.

George Tsirtsis: How we can describe what L2 means. Such indication may not come from Link Layer (L2) but come from some other layer e.g. auth layer.

Pete McCann: We can perhaps describe it better than what we have so far.

Jonne Soininen: A clarification on this L2 trigger should be useful.


Re-charter Discussion:

The priorities for next 12 months
Jonne Soininen (Chair)

- We are discussing about timing here.
- Work Item importance is not being discussed

Pragmatic discussion

LMA discovery
GRE extension to PMIP6
Binding Revocation

MAG-LMA heartbeats
Interaction with MIP6
Interaction with MIP4
Mutihoming
Handover Optimization
NEMO and PMIP6
RO for PMIP6

Hesham Soliman: wasn't interaction with MIP6 in the old charter?
Jonne Soininen: it was never formally adopted.

Input from 3GPP:

The following I-Ds are in 3GPP dependency list:

    Base and v4 support
    Draft-korhonen for dime
    Muhanna-revoke
    Muhanna-GRE
    Draft mip6-pmip6

Input from 3GPP2:
    Base and v4 support

Alper:
    WiMAX forum will use PMIP6
    2nd half of 2008. So, more feedback will come then.

Gerardo:
    The mip6-pmip6 draft does not define any new messages. However this
does not have related text in the 3GPP docs. So, we should not take this draft so
seriously.
Jari Arkko: AAA work needs to be there in AAA WGs.
Vidya Narayanan (via jabber): Just because a draft is in the dependency list it
does not mean that the SDO really requested it.
Jonne Soininen: clarification: a draft in the dependency list means a clear
requirement by that SDO.
Jari Arkko: It is official. It is up for us to discuss what things we should do. We
care what 3GPP requires.
Sri Gundavelli: regarding the GRE draft: we cannot afford to have two
encapsulation types
Gerardo: We did AAA requirements for MIP6. Do we need a requirement
document for PMIP6-AAA? It was useful for MIP6. Regarding binding revocation:
will MEXT define mip6 specific procedures and then NETLMM will define PMIP6

specific procedures?

Jonne Soininen: the mip6 revoke should be generic enough. So, it should be possible to use it in PMIP6 as well.

Gerardo: in MEXT case, there are alternative ways.

Sri Gundavelli: When we define these options, we can't have multiple options. It belongs in the base work, so it should be done in MEXT.

Vijay Deverapalli/Vidya Narayanan (via jabber): the revocation work should be done in the NETLMM WG.

Ahmad Muhanna: we should focus on the top priority items only.

Jouni Korhonen: We have a req document (00 version). There have been questions whether NETLMM really needed this work either via AAA requirement document or via direct communication with the AAA WGs.

Jonne Soininen: good point. It is not necessary to write a requirement document to convey this need to the AAA WGs.

Avi Lior: Agreed. RADEXT and Dime WGs work differently. Do not agree to start a new requirement document for AAA aspects. It may delay things when the job is quite obvious.

Jari Arkko: agreed. The job will be done by the same people. So, requirements draft on AAA aspects for PMIPv6 may not be needed.

Jari Arkko: The revocation, GRE keys should be done in NETLMM.

Michael Comb: consequences of revocation are not the same between MIPv6 and PMIPv6. In PMIPv6, the consequences will be on the MAG.

Jonne Soininen: two docs in two WGs may not make sense. The spec should work for both MIP6 and PMIP6. The spec should be developed jointly.

Sri Gundavelli: the option should be applicable to MIP6 and PMIP6.

Behcet: The work item on AAA belongs to NETLMM.

Jonne Soininen: the guidance from AD: the relevant work should be done in relevant AAA WGs.

Vidya Narayanan(via jabber): We should first discuss what we want to do rather than where to do the work.

Jonne Soininen: good point.

Raj: Guiding principles where the work should be done is ….

Mohana: multihoming and multiple interfaces, and issues with handoff scenarios. These should be handled in NETLMM.

Ahmad Muhanna: Priority work items should be handled first, and then other categories can be discussed.

Gerardo: let's revisit the principles on multi-homing and multi interface support.

Marco Liebsch: GRE keys…3GPP requests should be done here with priority. The timeline is tight. RO, multihoming etc. should be looked at as well.

Hesham Soliman: what is optimized handover?

Jonne Soininen: handover that is optimized ☺

Hesham Soliman: multihoming scope is not clear.

Vijay Deverapalli (via jabber): mipshop is discussing fast handover for PMIP6.

Ajay: Multihoming definition needs clarity. Multiple interface handover on the contrary has clear definition and problem scenario.

Jonne Soininen: multihoming means two MAGs in use but one LMA for a given MN and HNP.

Ajay: there are two independent interfaces. As long as the MN knows that the two interfaces are not active at the same time, there is no issue.

George Tsirtsis: What we need to address is what multihoming means for PMIP6? MCoA? Someone needs to explain what this means.

Ajay: there are three I-Ds, and one of them specifies that there is a single binding and multiple interfaces. Multiple interface handover must be specified. Multihoming needs further clarification.

Jonne Soininen: it will be good to concentrate on what the priority list is. GRE, MIP-PMIP etc. should be in the priority list. Multihoming, LMA discovery is important. Handover optimization….not clear on this

Raj: One of the difficulties we found was that the MN was unaware. To make the protocol much more useful, add features to the MN to know that the PMIP6 is running in the network.

George Tsirtsis: The principle has been violated by adding inter technology handover support in the base spec.

Someone: the base spec has inter-tech HO. There needs to be some optimization on this spec.

George Tsirtsis: The main point was to agree on what the issues were. GRE, revoke ….many of the work items do not have clear problem definition.

Hui Deng: Multihoming is in the PMIP solution. Multi homing is not in current charter….

Jari Arkko: Are you asking alignment between base spec and current charter?

Hui Deng: More possible scenarios in multihoming may be left out of the base spec.

Jari Arkko: We have to make sure that there is alignment between base spec and the current charter.

Marco Liebsch: two work items in the list are there related to multiple interfaces. Multihoming has too many scenarios. There are current drafts that explain many scenarios. Some analysis in an informational RFC can be done and then we can make decision on what needs to be specified.

Ahmad Muhanna: the fast handover for PMIP6 was sent to mipshop. However, mipshop was cancelled. The work should be done in NETLMM.

Jari Arkko: The mipshop WG has the expertise to deal with FMIP protocol, but this group of people should analyze whether it will be needed or not.

Ahamd: The draft should be discussed first in NETLMM and then we can decide.

Yokota Hidetoshi: FMIP draft is being defined in mipshop where the experts are. The same group of people attends both the WGs and it would not be bad to spread out the work across WGs.

Ahmad Muhanna: PMIP6 requirements should be defined here.

Jouni Korhonen: LMA discovery can be done via AAA. So there is an overlap

with the PMIP6-AAA item.

Jonne Soininen: it should be discussed.

Hesham Soliman: It will be helpful if there is a one paragraph description of the problem statement for each of the items so that anyone can discuss what we needed to include in the charter.

Jari Arkko: we need paragraph for each of these items. Some may need more than one paragraph.

Ryuji Wakikawa: WG already try to modify the client. If we agree, we should agree and do that now.

Jari Arkko: Correct way to categorize the issue is that unmodified host will not crash with NETLMM. However, if the MN wants to preserve address across interfaces, it needs additional capabilities.

Sri Gundavelli: The group needs to understand that MN needs some basic capabilities to handle things like inter tech HO. That does not mean that (unlike George Tsirtsis'es statement) the MN needs a FA or a Client MIP function. That is extreme.

Ashutosh Dutta: RO had some discussions. There is a requirements draft and a few other drafts. Perhaps some work items like this should be defined either in NETLMM or elsewhere such as mobopts, mipshop etc.

Jonne Soininen: These are charter items. But it does not mean that people cannot work on these topics with interested parties.

Gennady: We have several items in the list. LMA discovery and multiple LMA should be dealt here. Handover optimization perhaps needs clarification (is it handover across multiple interfaces)?

Ahmad Muhanna: handover optimization may be limited to inter-technology, so it can be moved out of multihoming. Context transfer may be not be feasible in next 12 months.

Gerardo: Regarding change of the MN issue. Agree that the current base spec assumes some changes in the MN for inter-tech HO. Additional change requests move us to a path that we will have duplicate protocols over what IETF has already defined i.e. MIP6.

Marco Liebsch: We should not limit the discussion to next 12 months priorities only.


Jonne Soininen: Chair's summary of the discussion:

We can agree on the list of items. Unclear cases and work items should have paragraph or two describing the use cases. Needs volunteers for that….

Preliminary items for next 12 month's focus:

GRE key
PMIP6 - MIP6 interaction

AAA: Diameter & RADIUS for PMIP6
LMA discovery
Binding revocation: to be done in MEXT

Outcome of the show-of-hand poll: Overwhelming consensus to adopt this list.
No objections to this list (to be added to the new charter).

Closing Remark by AD:

Jari Arkko: it is a good plan. Some of the work items may require significant
discussion.