

68th IETF Meeting
MonAmi6 WG
Summary of the Discussion
“Flow/Binding Policies Exchange”

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MonAmi6 Chairs
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17:40-19:50

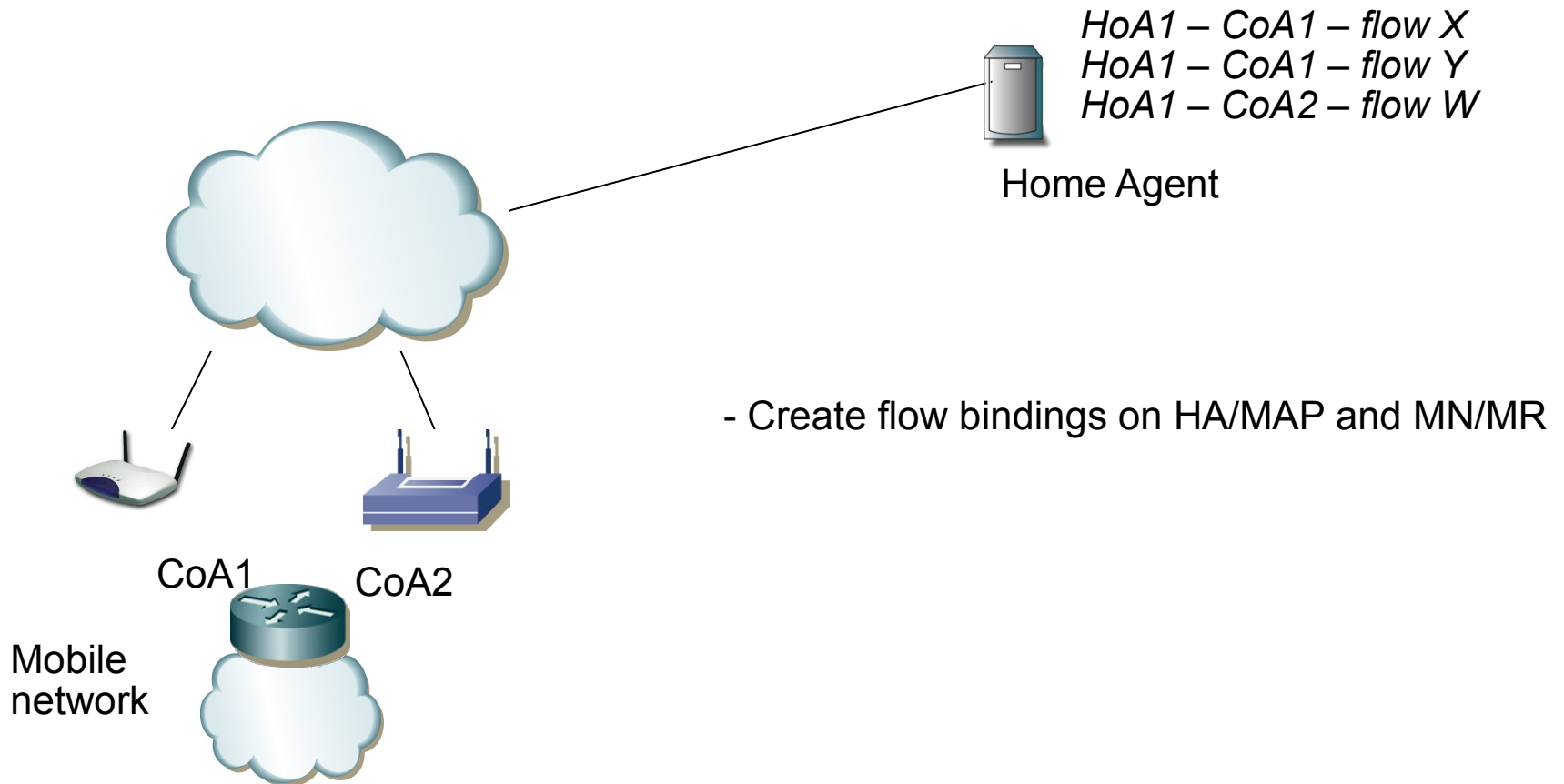
Outline

1. Monami6 needs and existing solutions
2. Summary of Int-Area discussion
3. Moving forward

Objective in Monami6

- Distribute **different** and **independent** flows over multiple paths, e.g.:
 - FTP over a Wifi interface, and VoIP over Wimax
 - MR to select route A for MNNs who paid X € dollars and route B for MNNs who paid Y €
- Monami6 scope
 - Keep the same address ID (HoA), but change locators (CoAs)

Operations...cont



Inputs
Flow X, Y : 802.11 interface, 802.16 interface
Flow W : 802.16 interface, 802.3
Flow Z : 802.3

→
HoA1 - CoA1 - flow X
HoA1 - CoA1 - flow Y
HoA1 - CoA2 - flow W

Objective in Monami6

- Needs a standardized mechanism to: exchange preferences/binding rules in order to apply these on distant nodes
 - Not necessarily end-nodes of the flow
 - Synchronize MR/MN and the HA/MAP/CN behavior
 - Control what traffic goes to what CoA
- No interest into generic issues (path selection, criteria for path ranking, ...)

1st solution on the plate

- draft-soliman-monami6-flow-binding-04.txt
- MN adds a filter to a MIPv6 BU to tell what traffic should use this binding
 - using MCoA draft-ietf-monami6-multiplecoa
 - Aggregate flow bindings/policies in one BU
 - Use default CoA when packets don't match a flow binding

2nd solution on the plate

- 2 companion drafts
 - draft-larsson-monami6-filter-rules-02.txt
 - raft-kauppinen-monami6-binding-filter-rule-00.txt
- Decouples the policy exchange from the mobility protocol.
- Policies are
 - exchanged at a different time (typically earlier)
 - carried by a different protocol (UDP)

3rd solution on the plate

- draft-mitsuya-monami6-flow-distribution-policy-03.txt
- Separates the mobility protocol and policy transfer
- Carries the policies in HTTP

Int-Area ML Discussion

- “Lifting up a filter discussion from Monami6”
- Initiated by AD Jari Arkko 2007-02-14
- Credits:
 - Henrik Levkowitz / Thomas Narten / Alexandru Petrescu / Hesham Soliman / Narayanan Vidya / Tero Kauppinen / Benjamin Lim / Pekka Savola / Ryuji Wakikawa / Marcelo Bagnulo / Jari Arkko / Nicolas Montavont / Thierry Ernst / and a few other
 - Basically the same usual suspects. More input from Shim6 / HIP / Mobike / TSV / would be useful

Int-Area ML Discussion Topics

- Similar solution likely needed for MIP6-
NEMO / HIP / Shim6 / Mobike / TSV /
NSIS / Pana
 - Potential overlap
 - Design a tailored solution for each ?
 - Pros & cons for a generic/specific solution ?
 - Generic solution doable ?
 - Understanding the scenarios & requirements

Int-Area ML Discussion Topics

- Policy exchange MR – MNN
 - MR is multihomed and need for the MR and MNN to exchange preferences
 - See sections 4.10 & 5 draft-ietf-nemo-multihoming-issues-07.txt
 - Not specific to mobility
 - Several layers
 - MR - HA policy exchange
 - MNN - MR policy exchange
 - MNN and CN to exchange policies ?
 - Didn't think of nested-NEMO ;-)

Int-Area ML Discussion

- Things to consider
 - flow distribution format
 - timing of the policy exchange
 - transport of the mechanism
 - security of the mechanism

- how do you map flows to a path?
- how do you determine path quality ?

Int-Area ML Discussion

3 potential approaches

1. Define format & mechanism for each protocol
2. Define a common format for policies and the transport is adapted for each specific protocol (MIP6-NEMO, HIP, Mobike, ...)
3. Define a common format for policies and a common transport to carry these policies

Int-Area ML Discussion

One size fits all Pros & Cons

- Mobility specific solution cons
 - changes to rules not always result in mobility management signaling.
 - Complexity to implement when have to deal with several protocols ?
- Generic solution cons
 - Must consider several modes of operation to work for all different protocols
 - What is the benefit of single sol ?
 - Complexity for implementers ?

Int-Area ML Discussion

One size fits all Pros & Cons

- All protocols are different with respect to:
 - identification
 - security requirements
 - e.g. How could we just assume IPsec with a CN
 - sender of the signaling
 - sender of the payload packet
 - static or dynamic filter rules
 - update/timing frequencies
 - Liability to external events (handoffs, ...)
- Understanding the scenarios and the resulting requirements

Int-Area ML Discussion Consensus

- separating filter rules **as much as possible** from mobility management protocols is good
 - developing something generic that works for multiple protocols instead of just Mobile IP
 - keeping in mind the issue of mobility and latency concerns associated with that
- How and what ?

Int-Area ML Discussion Consensus

- Common functions
 - module handling flow descriptions and the policies associated between a flow and an interface
 - generic API
 - policy container format
 - IPv6 extension header or as a Destination Option ??
 - not an apparent good idea as not Internet layer info and limited size

Int-Area ML Discussion Consensus

- Protocol specific functions
 - Carrier of the binding rules
 - Timing of the policy exchange
 - (dynamic vs static, client vs server, same timing as handoff)

My own view

- A solution is needed in MonAmi6 as quickly as MCoA is finalized
- 2 implementations of draft-soliman already exist
- Should accept draft-soliman as WG doc
 - Informational RFC so that we can move forward
 - Solution considered at time of the WG set up and merging a set of initial solutions