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

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MonAmi6 Chairs
Prague, 19th March 2007
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

- Create flow bindings on HA/MAP and MN/MR

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

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1\textsuperscript{st} 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
2\textsuperscript{nd} 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)
3\textsuperscript{rd} 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 Levkowetz / 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 onsider 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