An IPv6 Distributed Client Mobility Management approach using existing mechanisms draft-bernardos-mext-dmm-cmip-00

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Motivation

- Current IP mobility approaches rely on a central anchor point (either HA or LMA)

- Issues:

  - Sub-optimal routing

  - Reliability

  - Scalability

  - Lack of granularity (mobility is offered on a per-mobile basis)

 - Signaling overhead

FAMA. Basic principles (I)

- ## Flat Access and Mobility Architecture (FAMA)[1]

  - ### DMM approach for Client MIP, using existing approaches
    - Mobile IPv6 : RFC 3775
    - Authorizing MIPv6 BU with CGAs: draft-laganier-mext-cga

  - ### The HA is moved to the edge
    - Distributed Anchor Router (DAR)
    - Deployed in the MN's default gateway (first hop router)

  - ### Each time an MN attaches to a DAR, it gets a topologically valid address

[1] F. Giust, A. de la Oliva, C. J. Bernardos, *"Flat Access and Mobility Architecture: an IPv6 Distributed Client Mobility Management solution"*, accepted in Mobiworld 2011, co-located with IEEE INFOCOM 2011

FAMA. Basic principles (II)

- While attached to a particular DAR, the MN can send/receive traffic using the address from that DAR

- Every time the MN moves, it obtains a new address
  - The MN can preserve the reachability of IPv6 addresses obtained at previous DARs, by sending a BU to the DARs
    - How this dynamic decision is taken is out-of-scope of the draft (for example, it can be done on an application-basis)

- DARs play the role of the HA for those addresses that the MN want to keep reachability,
  - and only for the period of time decided by the MN

- MNs simultaneously handle several IPv6 addresses
  - Each of them anchored at a different DAR

FAMA. Basic principles (III)
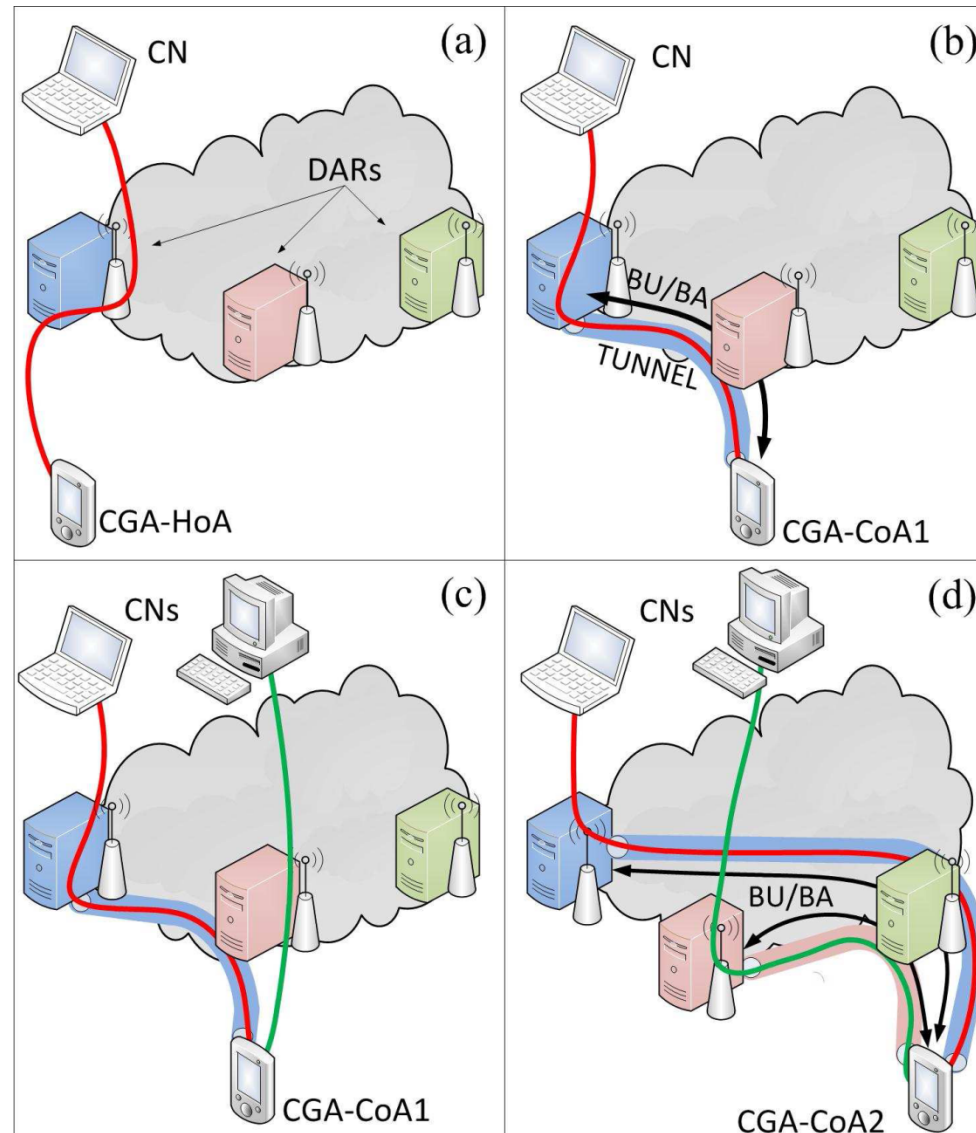
FAMA. MBIP BU auth with CGAs

- With a DMM approach like FAMA, many IPsec SAs would be required to follow RFC4877 security

- We adopt the use of CGAs to provide authentication between the DAR and the MNs

  - As introduced in draft-laganier-mext-cga

FAMA. Signaling