Proxy Mobile IPv6 extensions for Distributed Mobility Management

draft-bernardos-dmm-pmipv6-dlif-01

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Outline

- Overview

- Network-based DMM

- Distributed Logical Interface

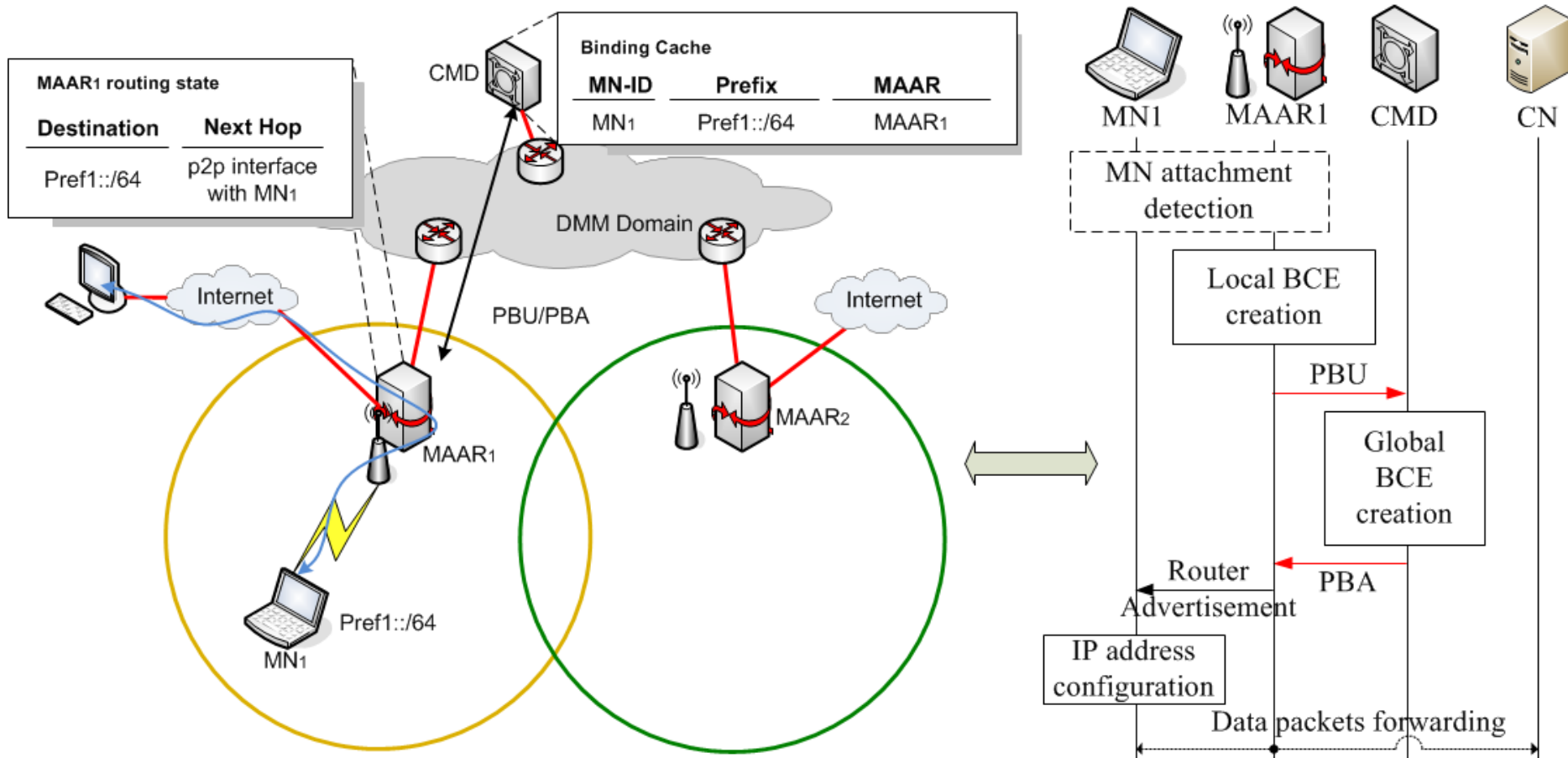- Demos & Open Source

- Next Steps

Overview

- ## Network based DMM approach

  - ### Based on Proxy Mobile IPv6 (RFC 5213)

- ## Mobility management pushed to the edge

  - ### Access router level

- ## Partially distributed solution

  - ### <u>Centralized control plane</u>

    - #### A central node (kind-of LMA) stores mobility sessions of MNs

  - ### <u>Distributed data plane</u>

    - #### Only the edge routers handle the data forwarding

Entities

- <u>Mobility Anchor and Access Router</u> (MAAR)
  - One IP hop distance from the MN
  - Concentrates AR, LMA & MAG functions per-MN, per-prefix
    - Access-DPN, Home-DPA and Access-CPN
  - Delegates and anchors an IP prefix to each MN attached
    - Serving MAAR (S-MAAR)
    - Anchor MAAR (A-MAAR)
  - Forwards data packets to/from IP networks

- <u>Central Mobility Database</u> (CMD)
  - Central node storing the BCEs of all the MNs in the domain
    - H-CPA
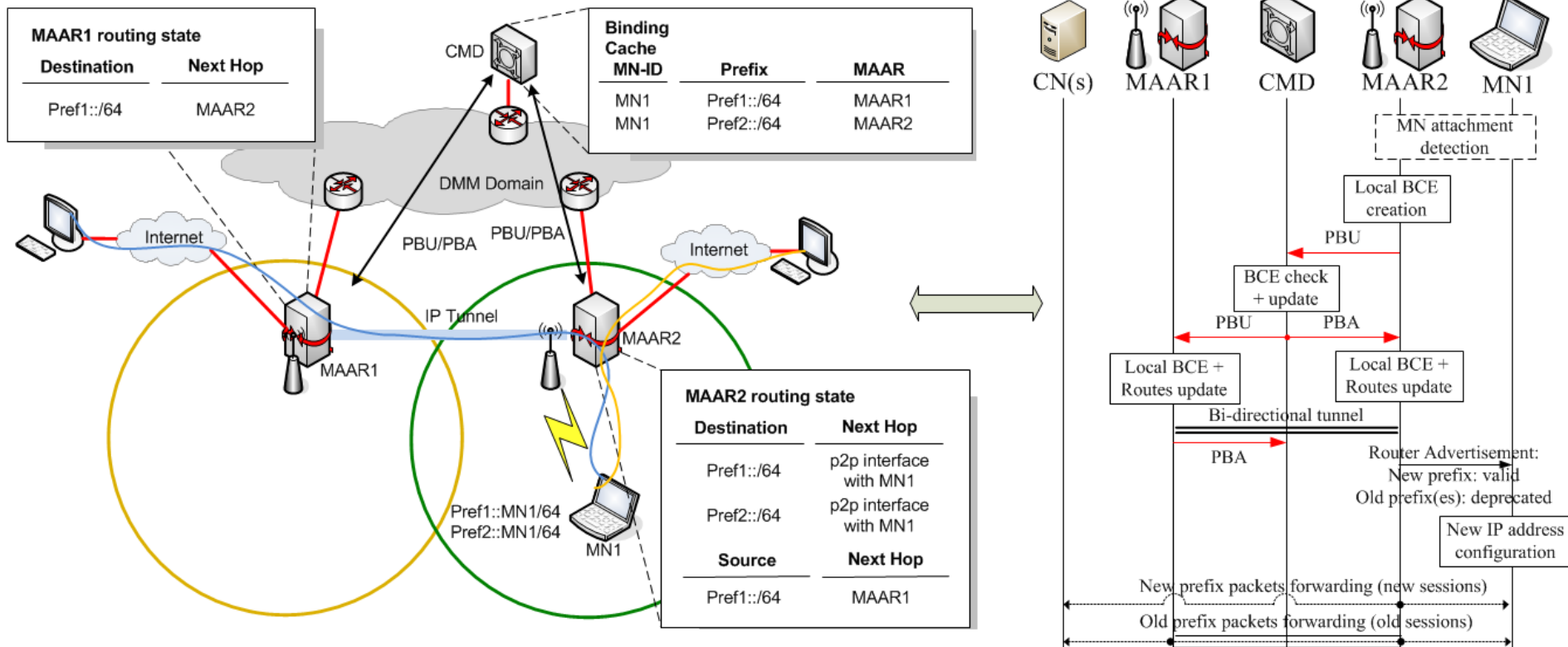 - It plays the role of the LMA for the control plane

Operations: initial registration

- The S-MAAR registers the MN at the CMD through a PBU/PBA handshake

CMD as PBU/PBA proxy

- The CMD receives a PBU from the new S-MAAR announcing the MN attachment

- The CMD sends instructions to the S-MAAR and A-MAAR(s) on how to establish the proper routing configuration

Demos & Open Source

- **ODMM**: **O**pen platform for **DMM** solutions
  - https://www.odmm.net
    - GitHub repo http://github.com/ODMM
  - Platform hosting <u>Open Source DMM implementations</u>
    - Mobility Anchors Distribution for PMIPv6 (MAD-PMIPv6)
      - https://odmm.net/node/12
      - draft-bernardos-dmm-pmip & draft-bernardos-dmm-distributed-anchoring
- Network-based DMM demonstrations

83rd IETF, Paris (March 2012)

87th IETF, Berlin (July 2013)

Status & Next steps

- Version -00 (merge of previous solution drafts) presented in Singapore

  - Consensus for adopting the document

- Version -01 posted before London

  - Addressing comments received in Singapore from Danny and Sri

  - Discussed over the mailing list

  - Reviews from Dirk, Xinpeng, Alex, Akbar and Daniel

- Ready for WG adoption?