61th IETF, NEMO WG

Global HAHA

draft-thubert-nemo-global-haha-00

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Nemo Requirements

- Multihoming is desirable
  - Local and global mobility
  - Scalability
- Airplane use case
  - A requirement from Airplane companies
  - Somewhat addressed in IPv4 (rehoming)
- Multihoming issues draft
  - "2.3 (1,n,1): Single MR, Multiple HAs, Single MNP . . . . . 8 “
  - Also AKA the JetSet problem.

Some History

- The older draft draft-wakikawa-mip6-nemo-haha-01.txt is no longer maintained, but we may use this as a reference overview.

- Base spec: draft-wakikawa-mip6-nemo-haha-spec-00.txt
- Usage for global deployment: draft-thubert-nemo-global-haha-00
- Usage for local deployment: ????

- HAHA base spec gives the protocol configuration and specification.
- Home Agents operation is described in the HAHA usage draft(s).

- The HAHA base spec is applicable to both MIP and NEMO, but the global HAHA usage draft is basically for the NEMO.

Problem(s) being Addressed

(from draft-ietf-nemo-multihoming-issues)

- 4.1 Path Survival . . . . . ~~
- 4.2 Path Selection
- 4.3 Ingress Filtering . . . . . .~~
- 4.4 Failure Detection
- 4.5 Media Detection
- 4.6 HA Synchronization . . . . . Yes
- 4.7 MR Synchronization
- 4.8 Prefix Delegation
- 4.9 Multiple Bindings/Registrations . . . . . .~~
- 4.10 Source Address Selection
- 4.11 Impact on the Routing Infrastructure . . . .~~
- 4.12 Nested Mobile Networks
- 4.13 Split Mobile Networks

Fully L3

- NEMO basic support and MIPv6

  => Home is anchored to the Home Link at L2

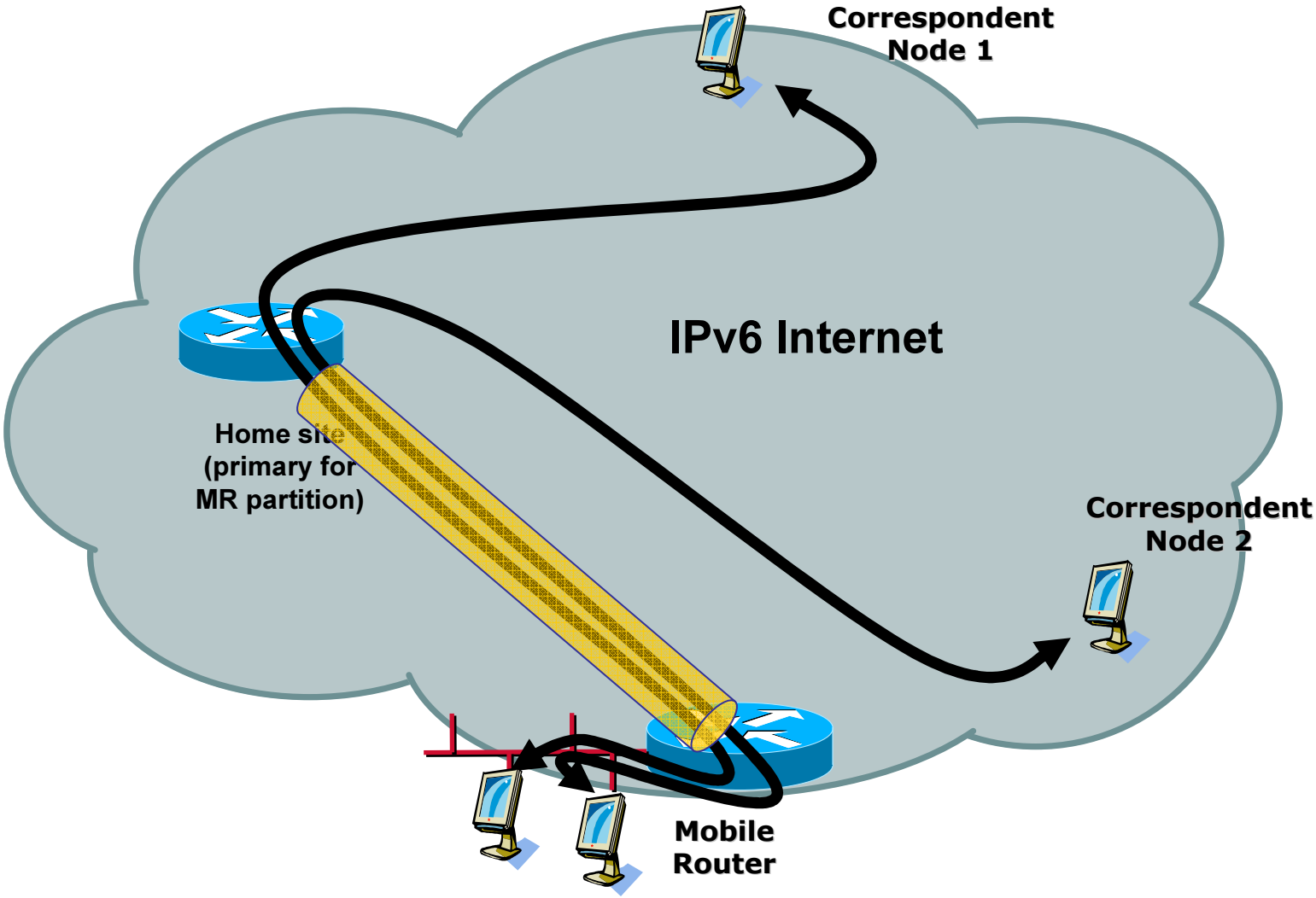
  => Home can not be distributed geographically

  => Home is a single point of failure

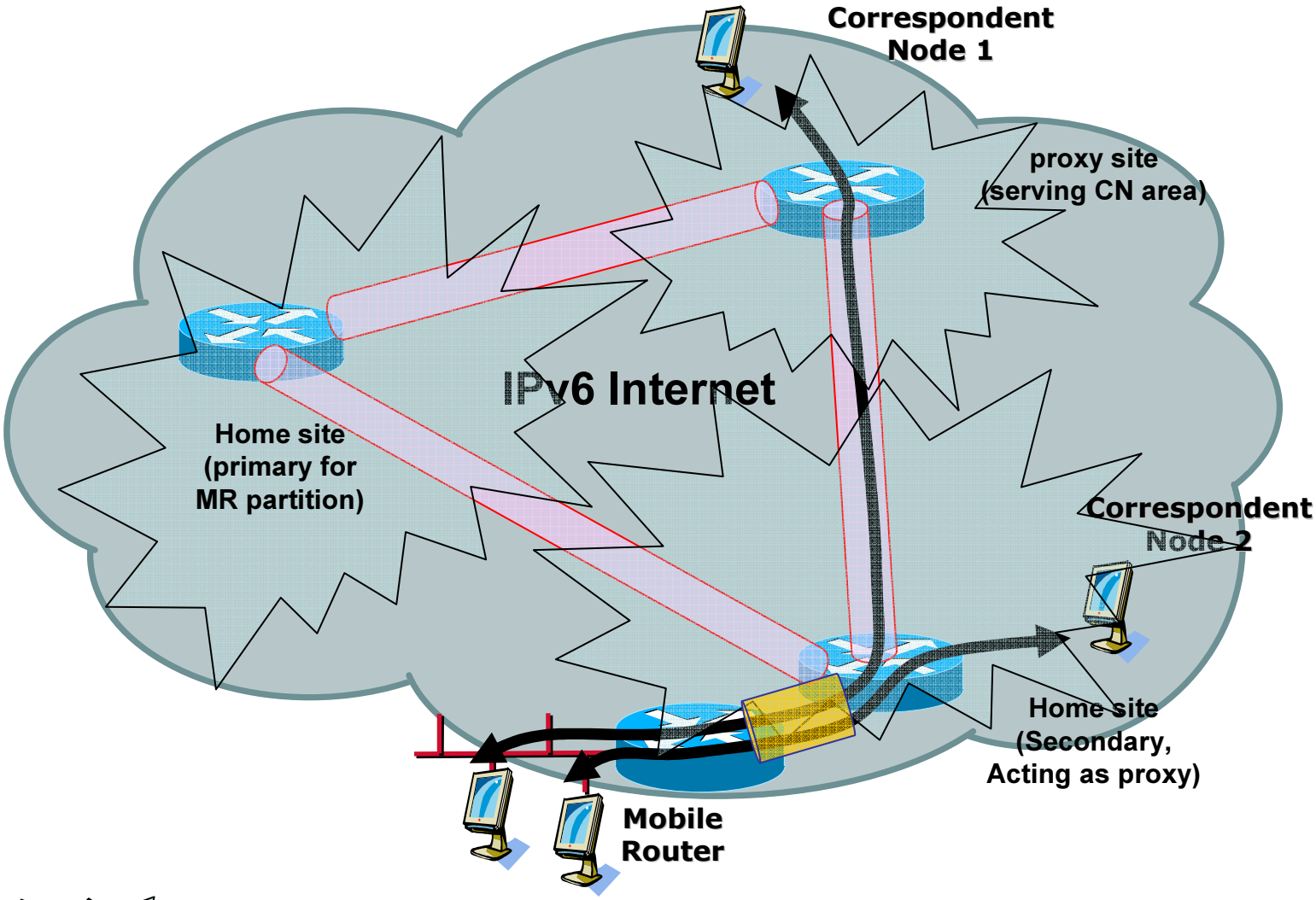
- In particular for NEMO,
  - NEMO is an hybrid, paying the price for both lookups
  - what's needed is a route to a mobile prefix via a tunnel end point that is the CareOf address of the Mobile Router.
  - the Home Address is but a practical artifact that is mostly needed as a correlator for the registration

=> We could make NEMO fully L3.

Without Path Improvement

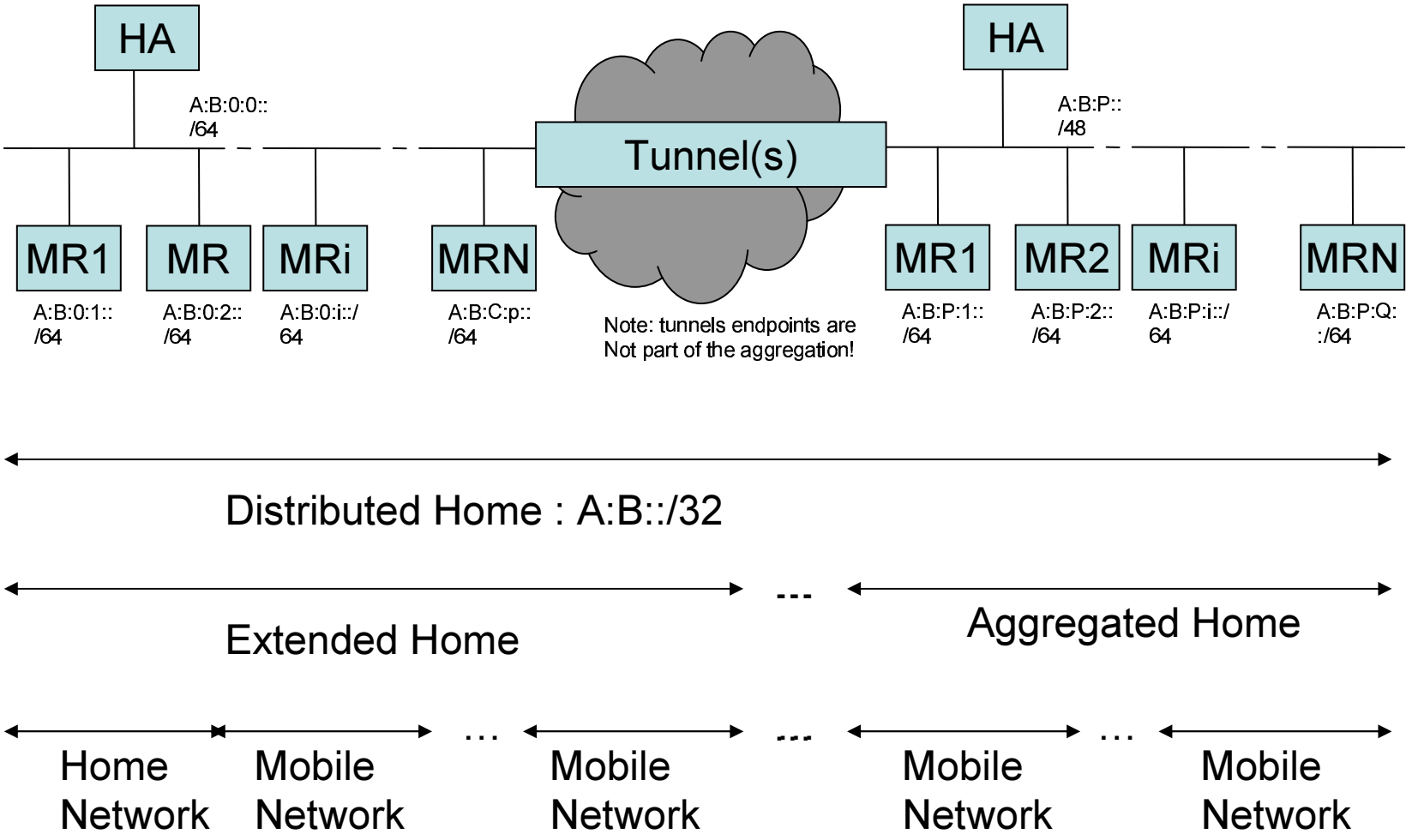


Path Improvement (RO?)



: zone of attraction for home:: prefix

Distributed Home Network



Proxies

- Global HAHA introduces HA proxies

  => Perform primary binding to HA

  => Then might perform secondary bindings

- The proxies belong to the Infrastructure

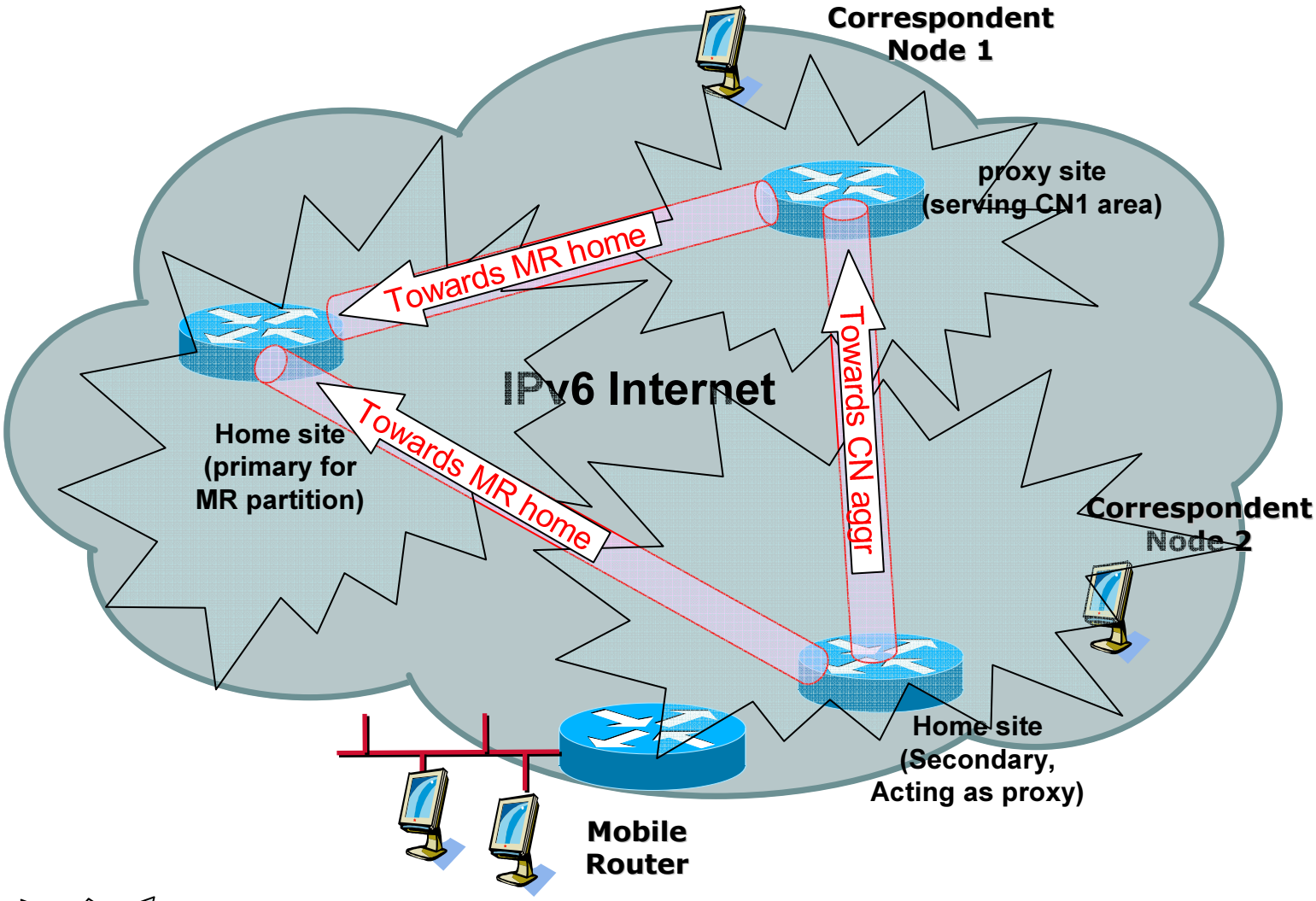
  => They can perform route projection as well

  => Can be widely distributed

  => No RR test

  => Proxy to Proxy RO

Initial situation



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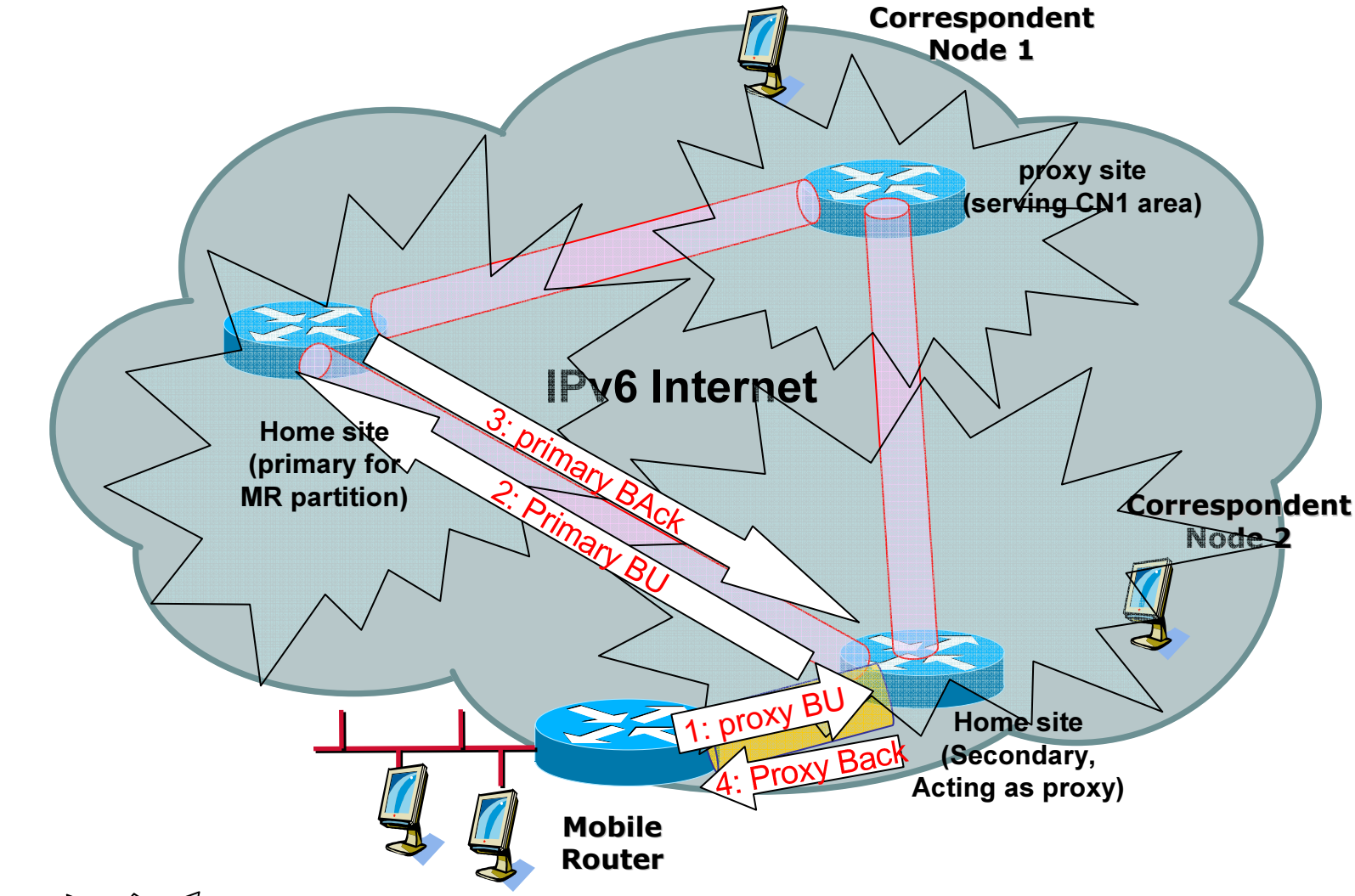
Proxy & primary Bindings



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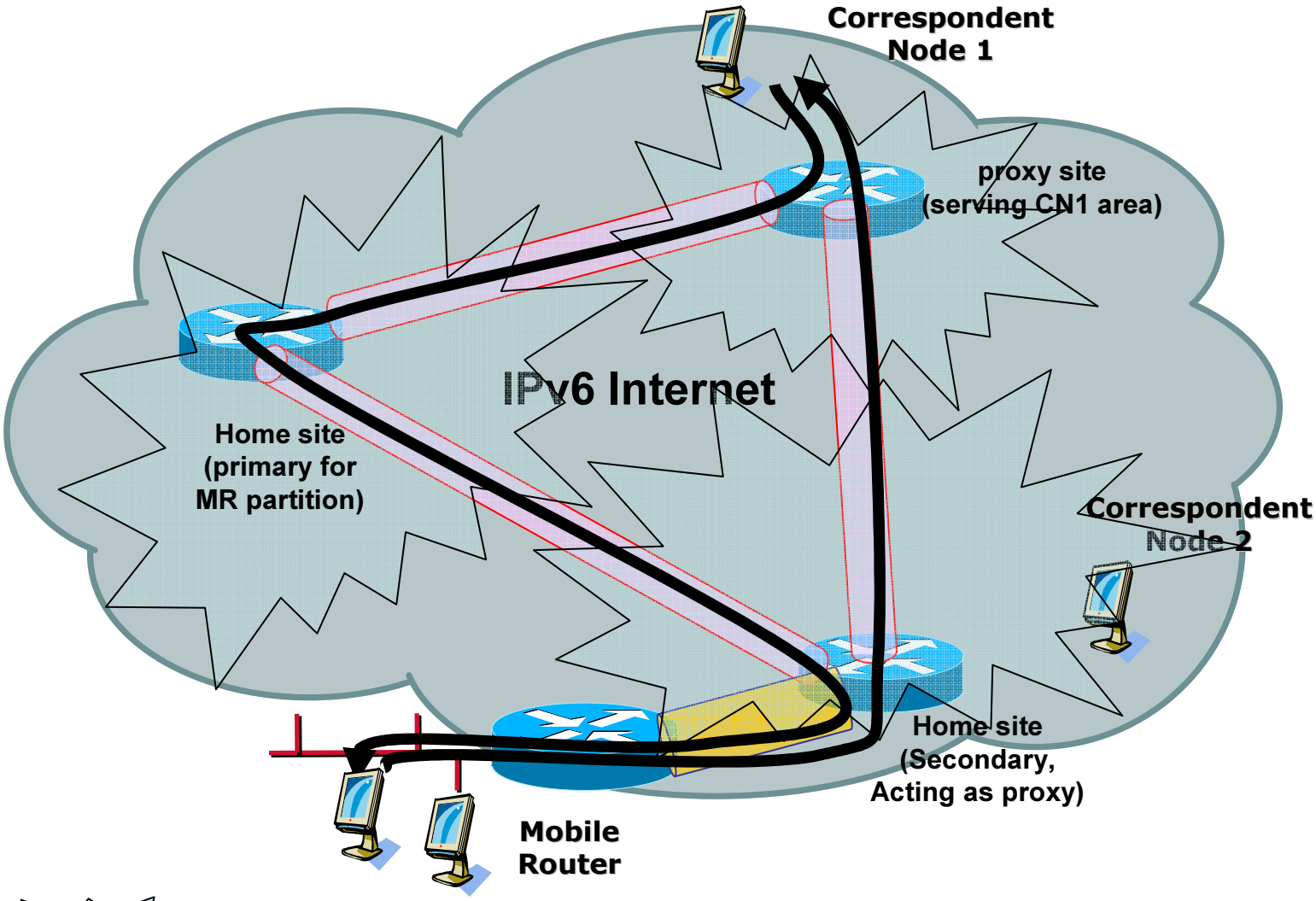
Partial improvement for remote



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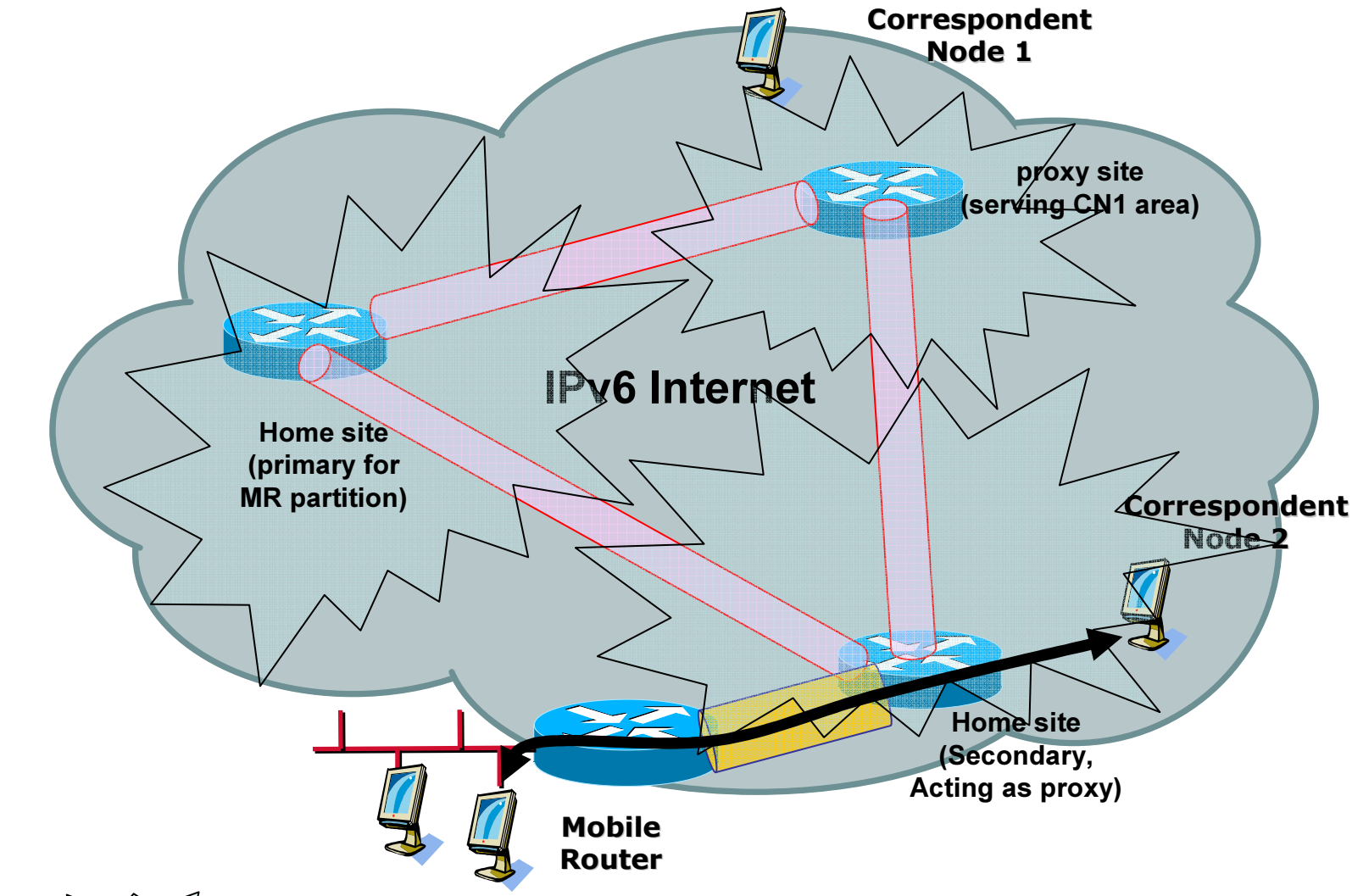
Path improvement for local



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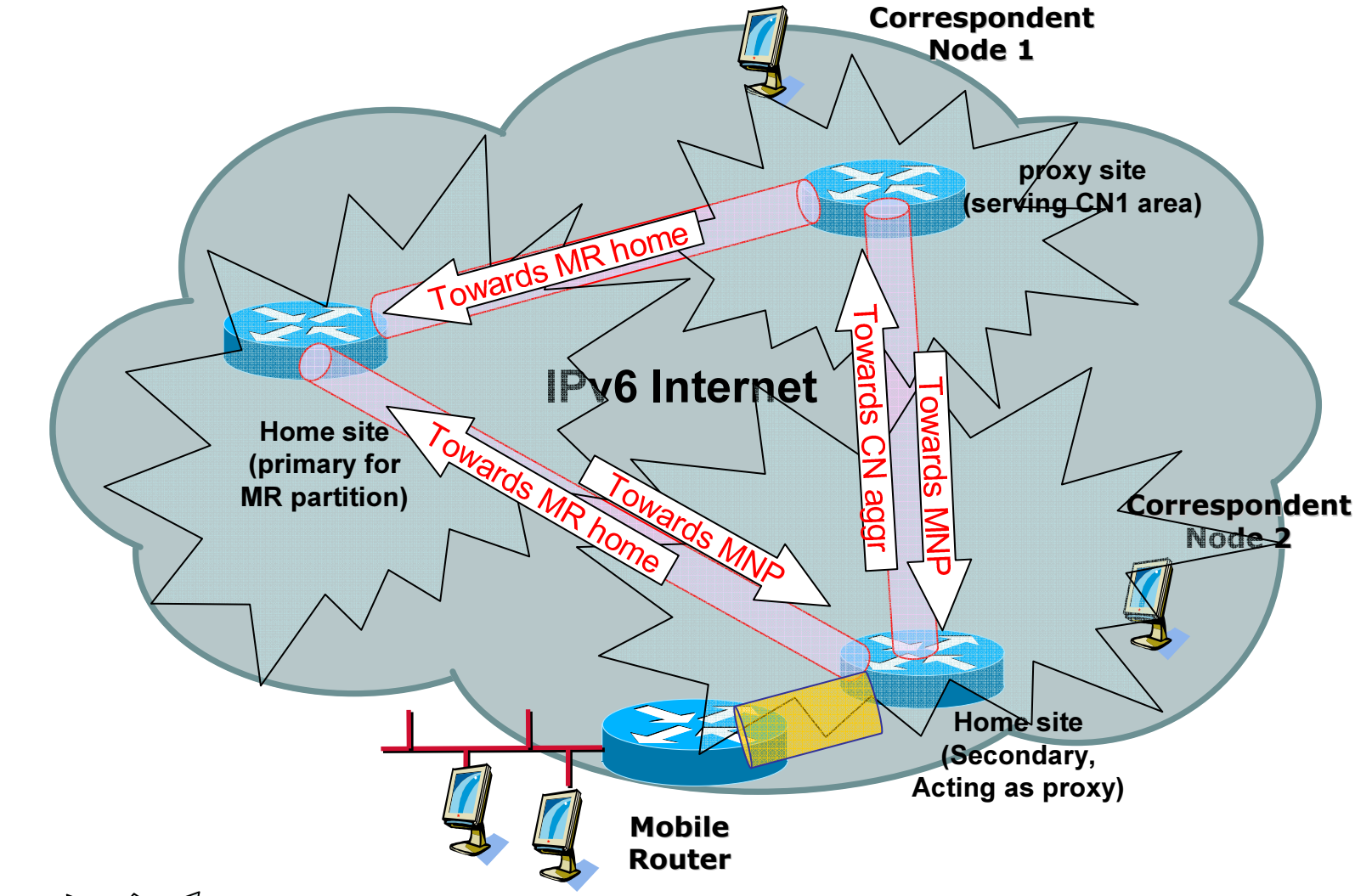
Leaking MNP routes



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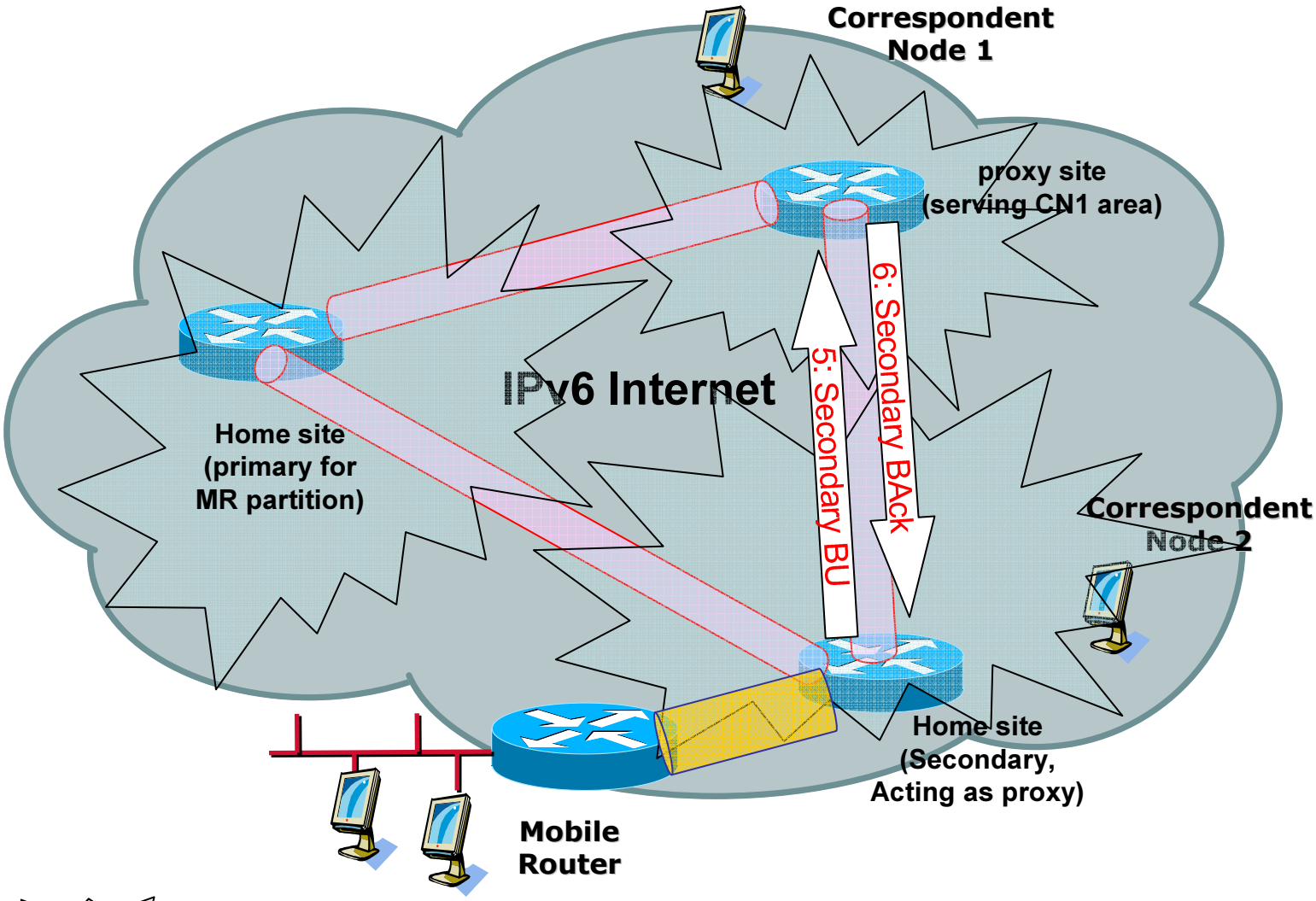
On demand Secondary Bindings



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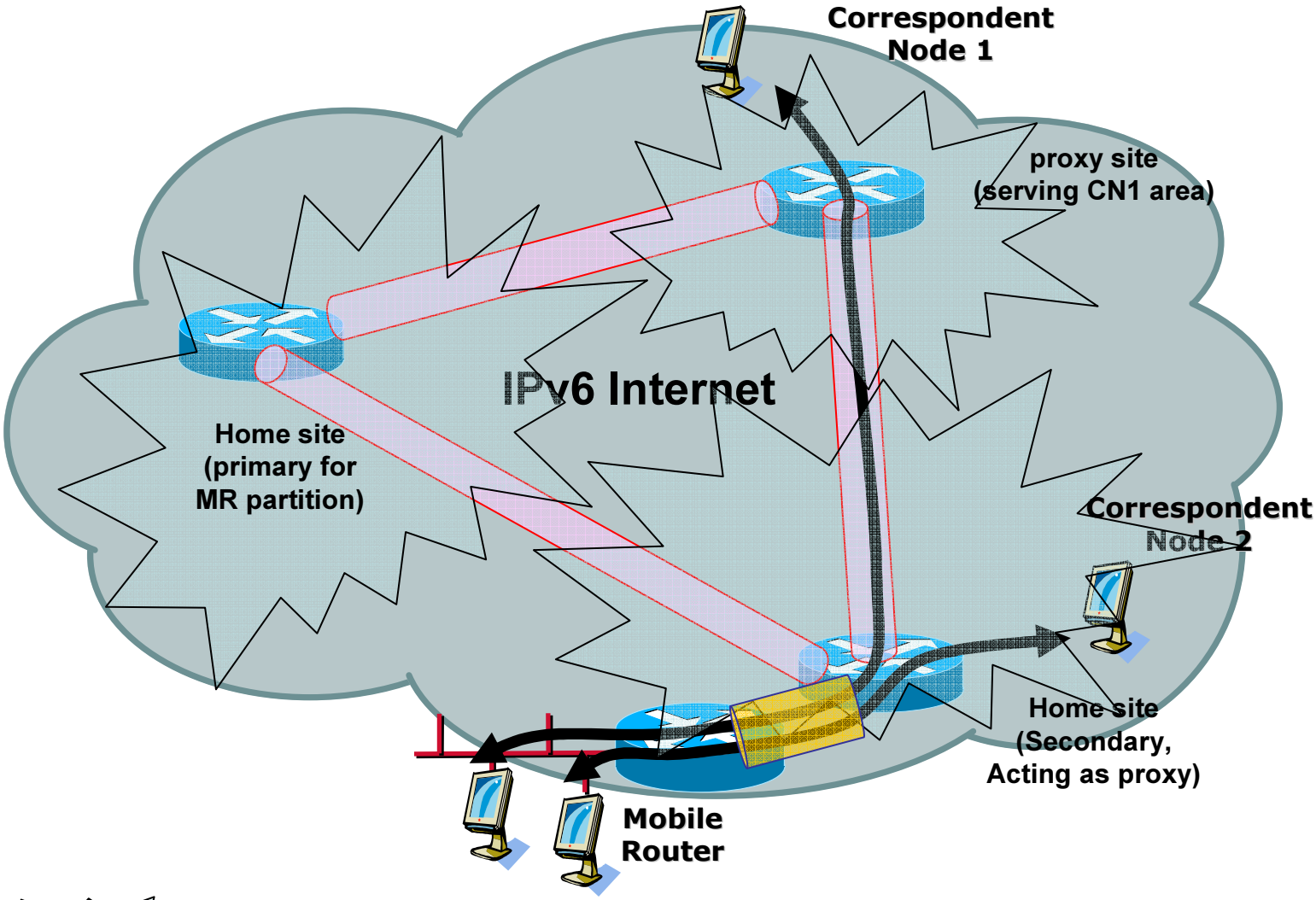
Resulting Path Improvement



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Mailing List issues

- ✓ None yet, please speak up