Multi-Interface Routing for Mobile Terminals (MIR)

Author

K. Srinivasa, Architect

Net-Mobile India Ltd.

Draft

http://www.ietf.org/internet-drafts/draft-srinivasa-mip4-mir-00.txt

Requirements

- Simultaneously use multiple connected network interfaces on the Mobile for the routed traffic between the home agent and the mobile terminal so as to obtain higher aggregated bandwidth.

- Allow provisions to define load balancing weights across all the connected interfaces.
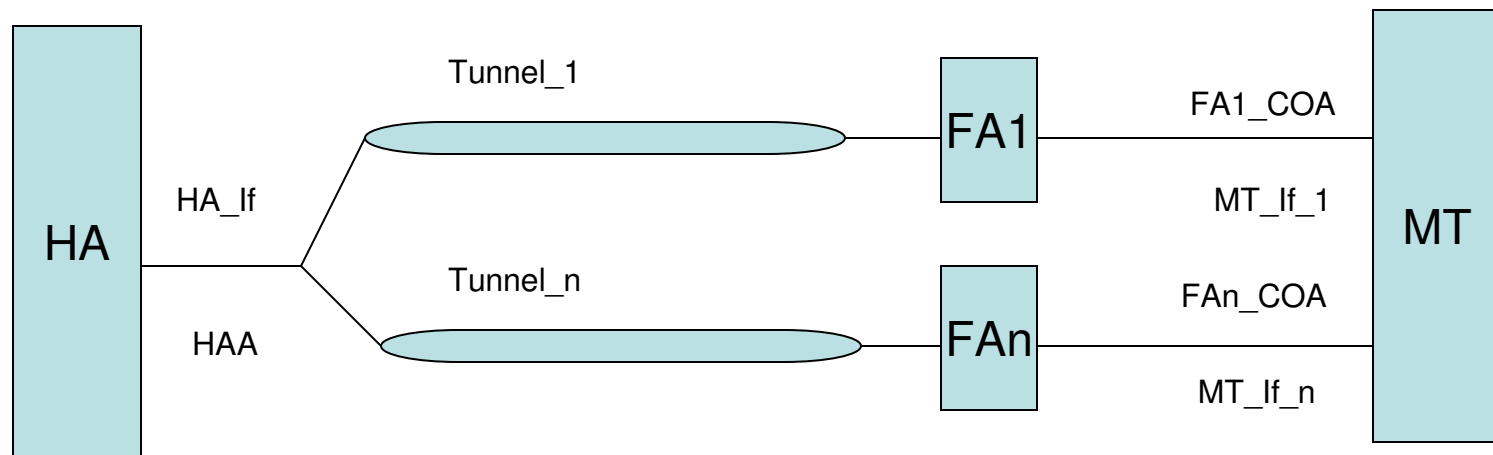
Case-1: Mobile Terminal Registering Directly (No foreign agents)

Refer: Section 5.1

HA

HA_If,

HAA

Tunnel_1

Tunnel_n

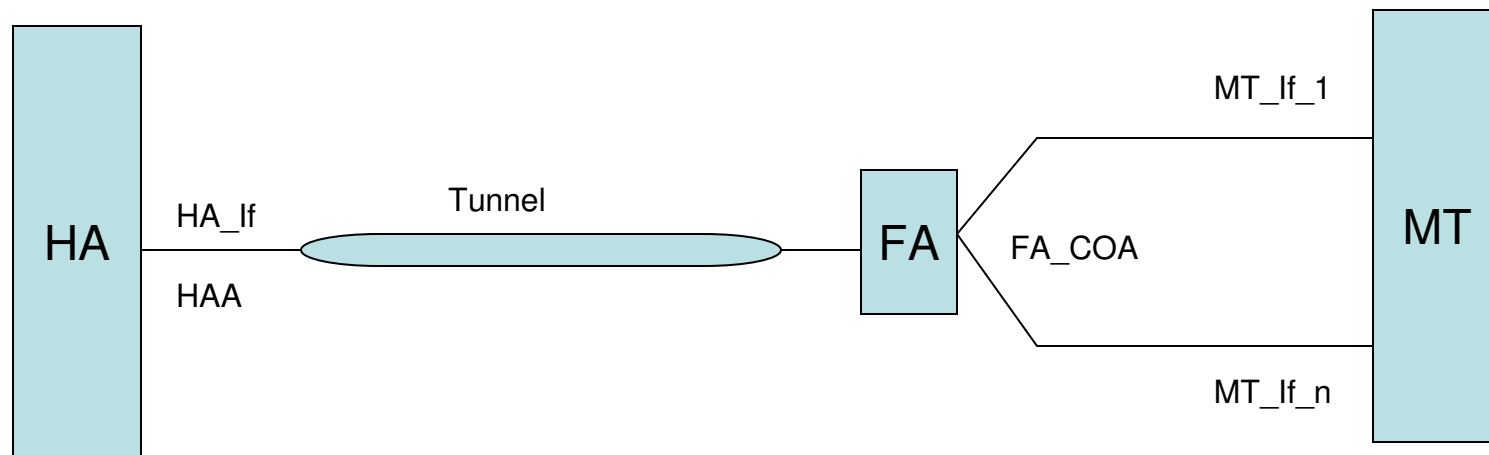MT_COA_1

MT_If_1

MT_COA_n

MT_If_n

MT
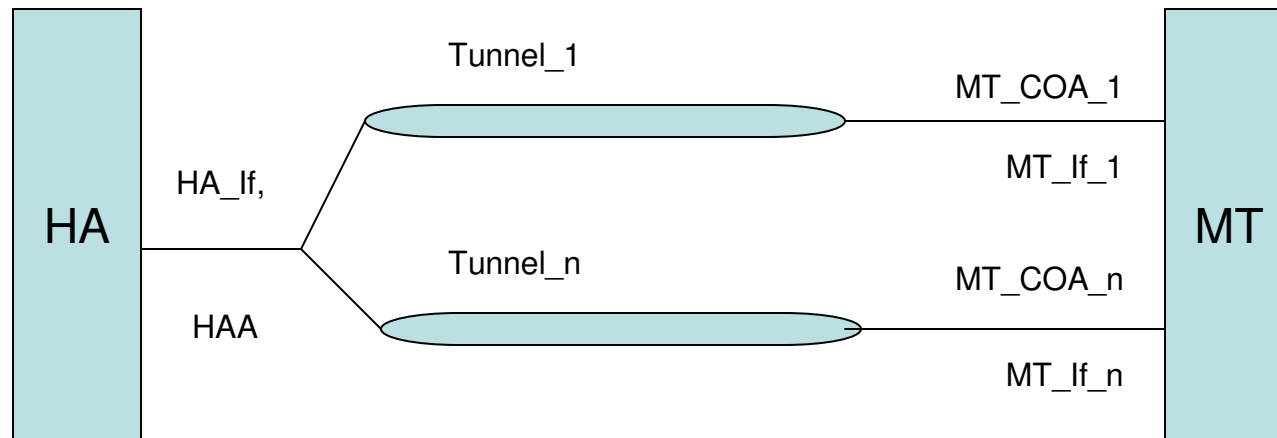
Case-2: Mobile Terminal Registering through multiple foreign agents
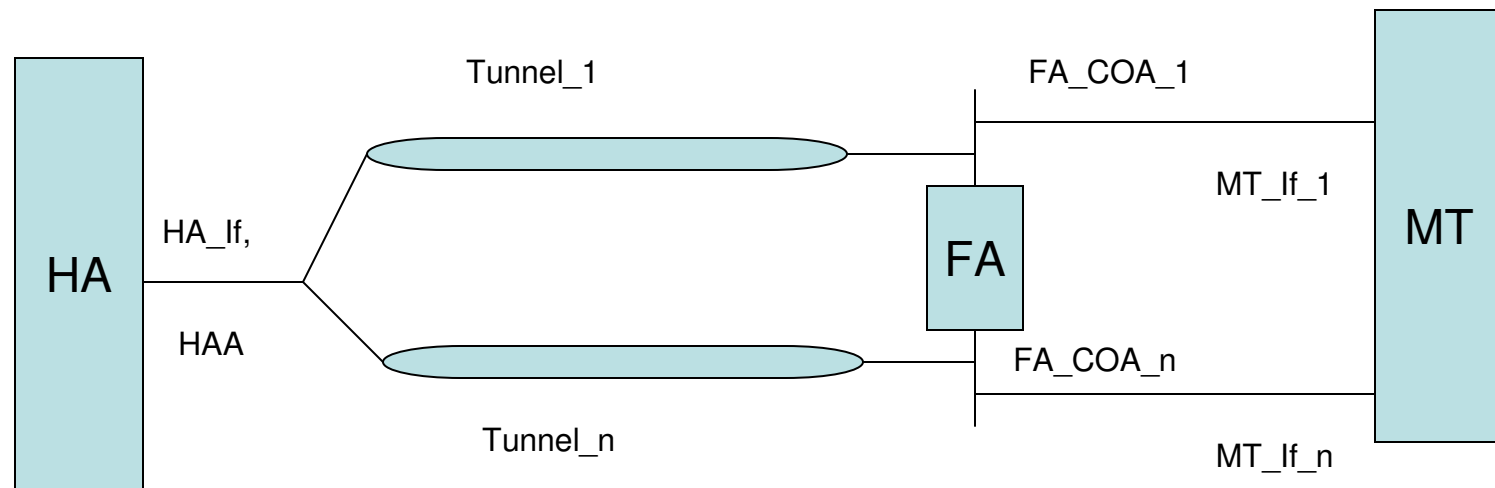
Refer: Section 5.2

Case-3: Mobile Terminal Registering multiple interfaces with all on the same FA interface
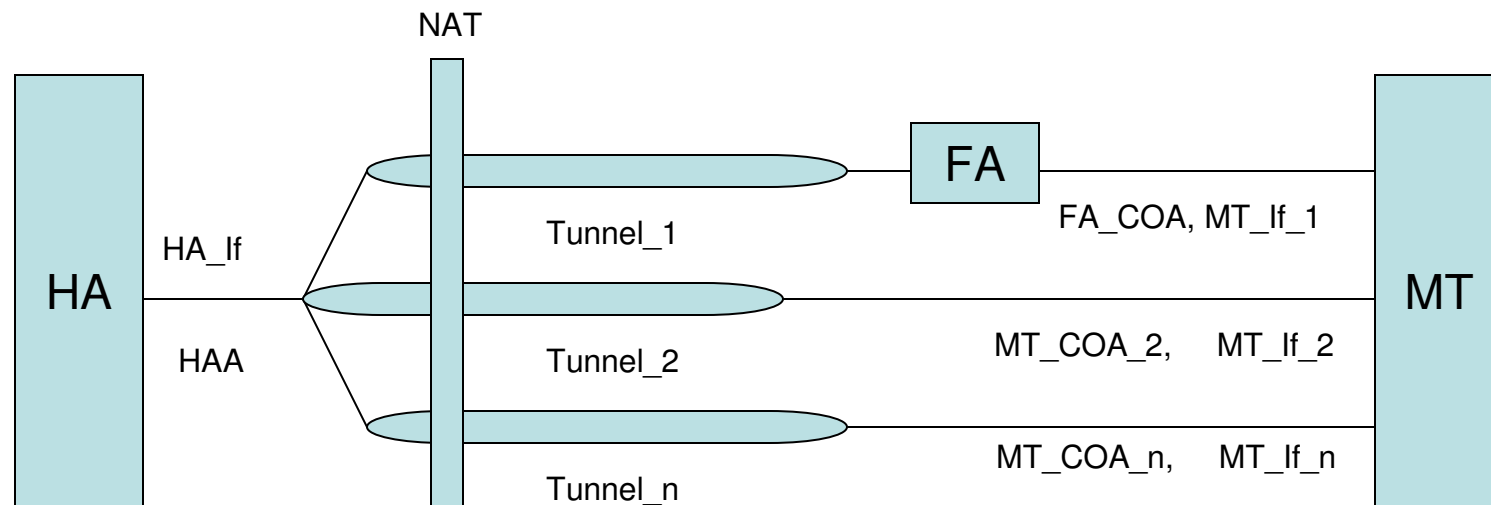
Refer: Section 5.3

Case-4: Mobile Terminal Registering through the same FA with each interface connected to a different FA interface

Refer: Section 5.4

Case-5: Mobile Terminal behind a NAT

Refer: Section 5.5

NAT

HA

HA_If

HAA

FA

FA_COA, MT_If_1

Tunnel_1

MT_COA_2,   MT_If_2

Tunnel_2

MT_COA_n,   MT_If_n

Tunnel_n

MT

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MIR RRQ Extension

- A Simple extension that can be added to the RRQ. The extension has the interface identifier, optional link weight and flow continuity flag.

MIR Extension Bits

- What is "Flow continuity flag (F)" in the extension ?

  A flow once originated through a given interface should always take the same path. We have noticed issues when a flow is spread out across many interfaces. Issues are specific to Jitter and latency.

Implementations

- We have extended a open source Mobile IPv4 stack for supporting this feature on Linux 2.6 Kernel.

- We plan to release some parts of the kernel source changes to the open source community at a later date after sufficient testing.

Questions to the WG ?

- Are the scenarios listed in Section 5 sufficient ?

- Should we separate the traffic shaping or the load balancing from the base multi-interface ? The draft does support the application of implicit and explicit load balancing techniques.

Next Steps …

- Request the Chairs and the WG to accept this document as a Working group document

- We are willing to work on this and make it sufficiently generic to meet the WG consensus.

THANK YOU

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