

MIF vs Other IETF Efforts

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Gabriel Montenegro

How is MIF different from other efforts

- MIF: how to cope with multiple different interfaces
- Address Selection and RFC3484 Design Team efforts
- Handling multiple interfaces via one address or identifier
 - SHIM6
 - SCTP
 - Mobile IP
 - HIP
 - RRG and LISP
- Handling multiple interfaces via aggregation at Transport or above
 - Trilogy and Resource Pooling
- Proxy MIP and address sharing across interfaces
- Link Aggregation, Load-balancing and failover (LBFO)

Default Address Selection and RFC3484

- RFC3484 (and bis) only provide ***Default*** address selection. Specific scenarios or protocols beyond this may depart from the default
- RFC3484 is currently being revised via a 6MAN design team
 - Their focus is more on the site/enterprise perspective.
- MIF focuses on the node with multiple interfaces case.
- Revision to RFC3484 should reflect both of these (and perhaps other) perspectives.
- RFC3484 revision is in scope of proposed MIF WG
 - Including policy injection from multiple interfaces
 - MIF would work with 6man towards this
- But MIF also deals with other issues (e.g., DNS, default gateway)

Handling multiple addresses or interfaces

- Many efforts to better handle multiple interfaces, addresses, RLOCs (“routing locators”), etc
- Two main approaches
 - via one address or identifier: SHIM6, SCTP, Mobile IP, HIP, RRG and LISP
 - as aggregated paths at the Transport Layer or above: Trilogy and Resource Pooling at Transport layer
- They all *share* with MIF:
 - how to choose src/dst pair to talk with peer, so all can benefit from RFC3484 discussions (including better policy injection)
 - But in doing so, each of the above efforts may depart from the RFC3484 default.
- BUT: MIF does NOT assume anything about the peer
 - whereas SCTP, SHIM6, etc assume the peer also implements that protocol

Proxy MIP and address sharing across interfaces

- Proxy MIP allows **sharing a single IP address** across multiple interfaces (e.g., WiMAX and CDMA, LTE and HSPA, etc) to disparate networks
- Expected scenario in wireless broadband deployments, specified in 3GPP, WiMAX, NETLMM
- In usual Internet and MIF model, interfaces on disparate networks have different addresses
- A single address across interfaces is only possible due to additional mobility support within the network, and already departs from MIF's usage of multiple interfaces.
- This scenario is out of scope for MIF

Link Aggregation under IP

- Link Aggregation often done under IP to provide load-balancing and failover (LBFO), NIC Teaming
 - assumed in L2VPN's (RFC 4655)
 - IEEE 802.3ad-2000 or 802.1AX-2008
- Multi-mode NICs have similar mechanisms to provide mobility (e.g., HSPA to LTE, or WiMAX to EV-DO)
 - this is the Proxy MIP case discussed previously
- If implementations hide this under a virtual interface (no multiplicity) MIF does not apply
- If implementations show these as identical interfaces (no differentiation) MIF does not apply