

Mobile Multicast Sender Support in PMIPv6 Domains

draft-ietf-multimob-pmipv6-source-02

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Objective of the Draft

➤ Define Multicast Source Mobility for PMIP

➤ Three Basic Multicast Scenarios:

1. Base-line approach compliant to RFC 6224:

- Simple, directly reflects PMIP routing

2. Direct Multicast Distribution

- Based on Proxies, PIM-S(S)M or BIDIR PIM

3. Optimized Source Mobility

- Extended Proxies for traffic optimization

Document History

- o Version draft-ietf-multimob-pmipv6-source-01
 - Presented in Vancouver
 - Some WG feedback, pointers on issues by Stig
- o Current version draft-ietf-multimob-pmipv6-source-02
 - Added clarifications in response to WG feedback.
 - Fixed issues.
 - Completed specification of multiple upstream proxy.
 - Clarified proxy peering operations.
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3. Optimized Source Mobility

- o Scenario: Proxies at MAGs
- o Objective: Optimize traffic exchange from a local MAG - including policy implementations
- o Requirements:
 - Unique coverage of receivers
 - Prevention of Routing Loops
- 1. Multiple upstream proxy for sources (MUIIMP)
 - Traffic forwarded to multiple LMAs
- 2. Proxy Peering Interface (PPI)
 - Horizontal traffic exchange between proxy instances

3.1 Multiple Upstream Proxy

- o Single Proxy instance with multiple upstreams deployed at MAG
- o Objectives:
 - Distribute Multicast services according to local policies
 - Unambiguously guide traffic to upstream interfaces
- o Approach:
 - Route according to a filter table

3.1 Filter Table for MUIIMP

Multicast State	Upstream Interface
(S1 _{local} , *)	UP-IF1
(* ,G1)	UP-IF2
(S2,G2)	UP-IF3
(* ,*)	UP-IF1

Policy-based Upstream Routing

Group / Channel Specific Routing

Remaining Default

- o Processing: Apply first matching filter
- o For Sources:
 - Can express PMIP policy-based routing
- o For Receivers:
 - Can sort according to Groups/Channels, but not policies

3.1 Filter-based Routing for MUIIMP – Typical Use Cases

- o Express PMIP policies (for sources only)
- o Separate local and remote services:
 1. Have selected local channels, keep default remote, or
 2. Provide default services locally, provide selected channels from the remote
- o Can do many more complicated things ... but the goal is to support straight-forward needs

3.2 Proxy Peering (update)

- o Defines new interface type: Peering
 - Established between any two proxy instances for shortcutting traffic
 - Silent virtual link in regular proxy operations
- o Fixed MLD details:
 - IGMP2/MLD1: Install incoming filter at MAGs, only
 - IGMPv3/MLDv2: Source-specific traffic selection (ASM and SSM)
- o Source-specific signaling will avoid duplicate traffic

Future Steps

- o Some (few) editorial improvements needed
- o Improve according to WG feedback
- o Elaborate security section
- o Add source operations for fast handover solutions ? ... (in case the WG will identify a reasonable path to do fast handovers 🖐)

Questions?