

81st IETF, July 2011, Quebec City, Canada

PMIPv6 multicasting support using native infrastructure

draft-sijeon-multimob-direct-routing-pmip6-01.txt

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Definition

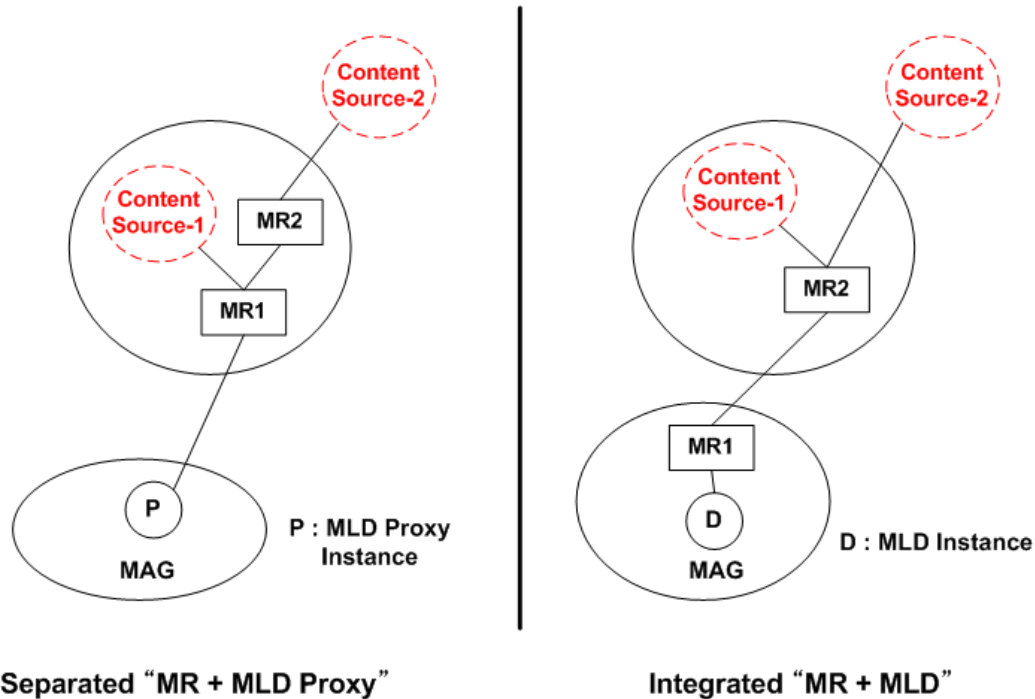
- Two kinds of terms (direct routing and local routing) confused so we define which is direct routing and local routing for PMIPv6 multicasting in our draft
- Direct Routing
 - Multicast data is transmitted to a MN using native multicasting infrastructure within operator's network
- Local Routing (Local Content Delivery)
 - Content source is directly connected to a MAG
 - There's no need of multicast routing protocol to retrieve multicast data
 - MLD proxy function is needed on a MAG to exchange MLD signaling and multicast data between an MN and source

Direct/Local Routing

- Base solution [RFC6424] introduces tunnel convergence problem in case a MAG receives the same multicast packets from more than one LMA
- To remove the issue, direct routing is one of the effective multicast data delivery approaches
- Local multicast data delivery mechanism is needed for ISPs having their own local contents

Direct Routing Solution

- The key idea is using native multicast infrastructure directly. The idea can be implemented as two cases
 - A “MLD proxy” or “MLD + MR” can be placed on a MAG
- Multicast data can be retrieved from a variety of content sources



Applicability

- If a multicast listener is in a visited network, the direct routing can be applied on the condition that there are some multicast peering entities in the visited network (i.e., CDN, inter-domain multicast routing protocol like BGM P [RFC3913] or MBGP [RFC4765])

Comparison

- PMIPv6 Extension vs. Direct Routing

	PMIPv6 Extension	Direct Routing
Multicast function on a MAG	MR on a MAG	MR function can be integrated in a MAG or separated from a MAG
Multicast Routing Protocol	PIM-SM	Any
Interface between LMA and MR	GRE	Any Tunnel
Complexity or Burden in a MAG	Complex and Heavy	Simple and Lightweight (when a MR is separated from a MAG)
Efficiency in Deployment	All MR functions are on a MAG	MLD Proxy on a MAG (when a MR is separated from a MAG)

Q & A

