

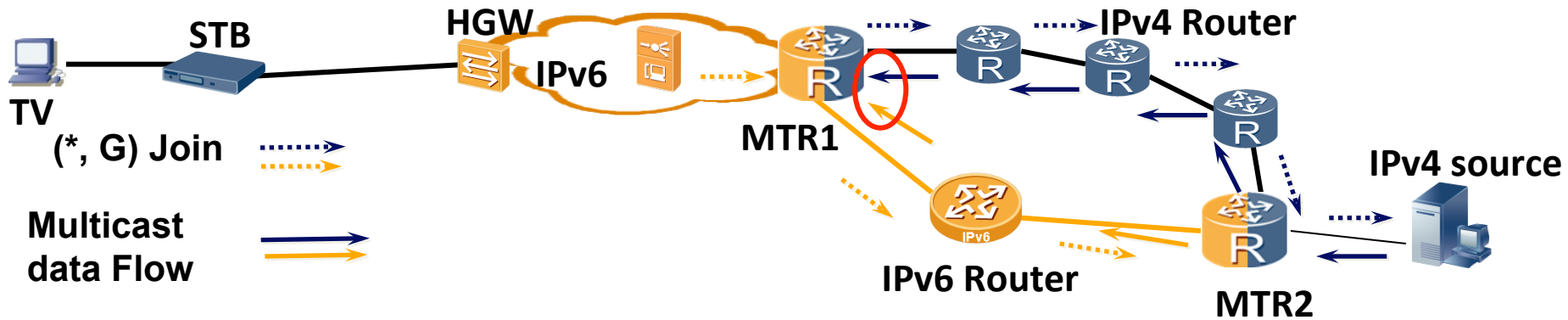
Multicast path optimization in IPv4 and IPv6 networks

draft-zhou-mboned-multtrans-path-optimization
IETF 83-Paris, March 2012

Cathy ZHOU, Qiong SUN

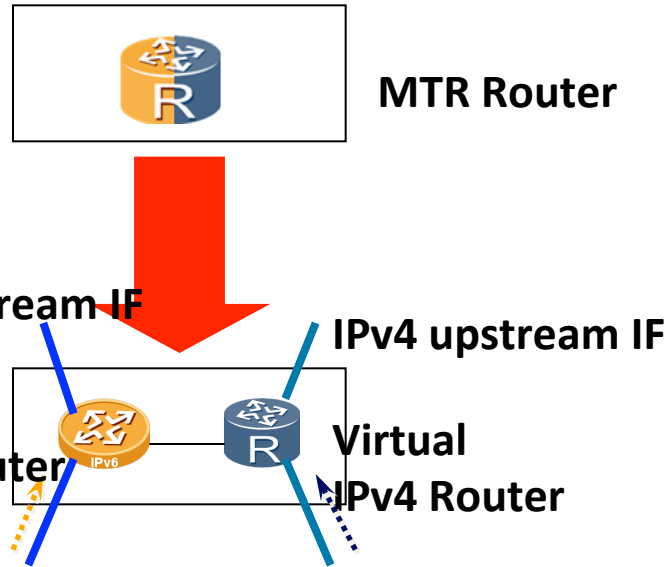
Problems

MTR(Multicast Translation Router) can be mXlate and mAFTR



- MTR1 has two upstream routers
- MTR1 can receive both IPv4 and IPv6 (*.G) Join request.
- Problems
 - MTR1 needs to select a best path to RP or Source in both IPv4 and IPv6 networks.
 - MTR1 needs to send Prune Messages to the worse path, when it receives two multicast data flows in IPv4 and IPv6 interface.

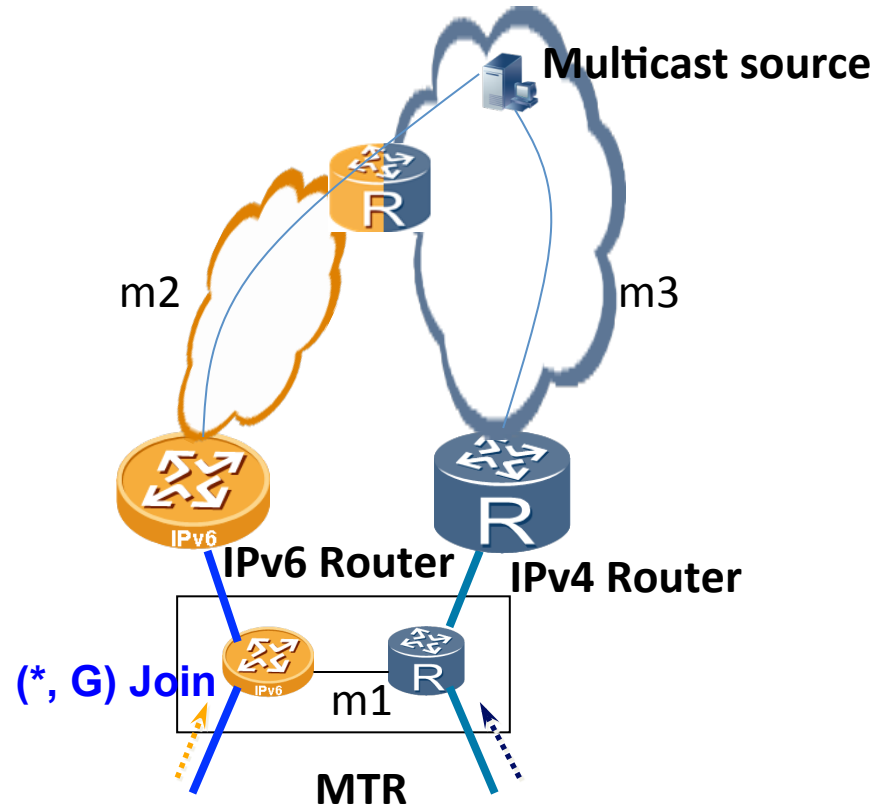
Proposed Solution



**For simplification,
we use two virtual
Routers to replace MTR
Router**

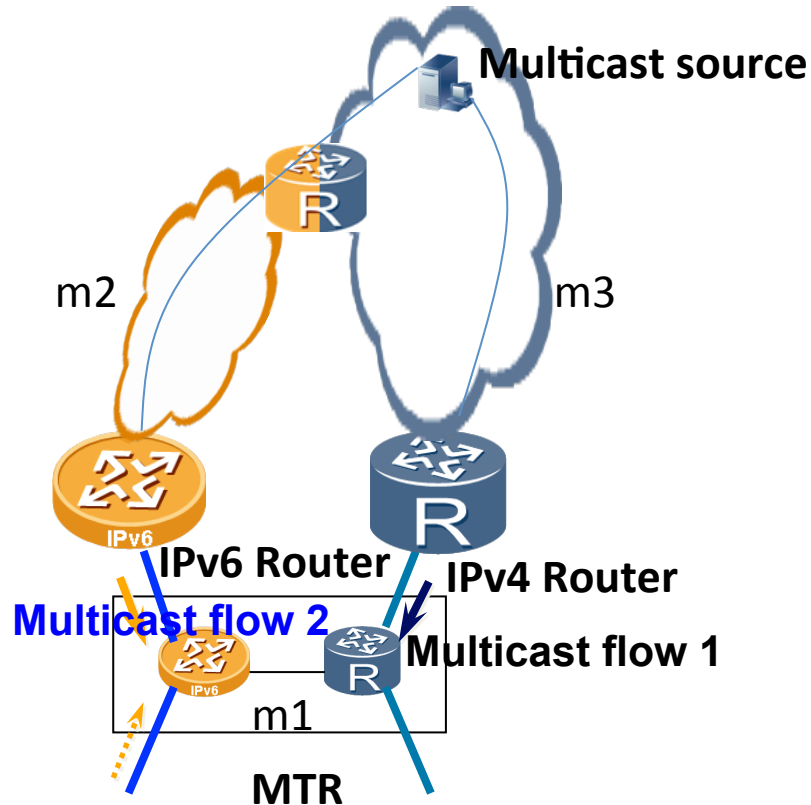
- When MTR receives two multicast data flows (one from IPv4 interface and the other from IPv6 interface), it compares two flows according to draft-boucadair-behave-64-multicast-address-format to confirm whether they are the same multicast data flow. If they are the same data flows, select one or two.
- When MTR receives an IPv6 (S, G) or (*, G) Join, virtual IPv6 Router selects an interface to send Join message. The interface can be IPv6 upstream IF or IPv4 upstream IF (via interface between virtual IPv6 Router and virtual IPv4 Router)

Select an Interface to the Source



- If $m2 > m3 + m1$, sending PIM Join message from IPv4 interface;
- If $m2 < m3 + m1$, sending PIM Join message from IPv6 interface;

Select A Multicast Data Flow From Upstream IF



- If $m2 > m3 + m1$, MTR will send PIM Prune Messages to IPv6 interface;
- If $m2 < m3 + m1$ MTR will send PIM Prune Messages to interface of two virtual Routers. MTR will not translate or encapsulate multicast data from IPv4 to IPv6.

Main Changes to the Multicast Router

- MTR sends PIM Assert message from IPv4 and IPv6 interfaces with different Metric value.
- MTR may stop translating or encapsulating IPv4 to IPv6 multicast flow or send Prune Messages to stop receiving IPv6/IPv4 Multicast flow

References



- Thanks Ronald Bonica, Stig Venaas and Yiu Lee for their valuable comments on the mailing list.

