

Multrans Path Optimization

draft-zhou-mboned-multrans-path-optimization-03

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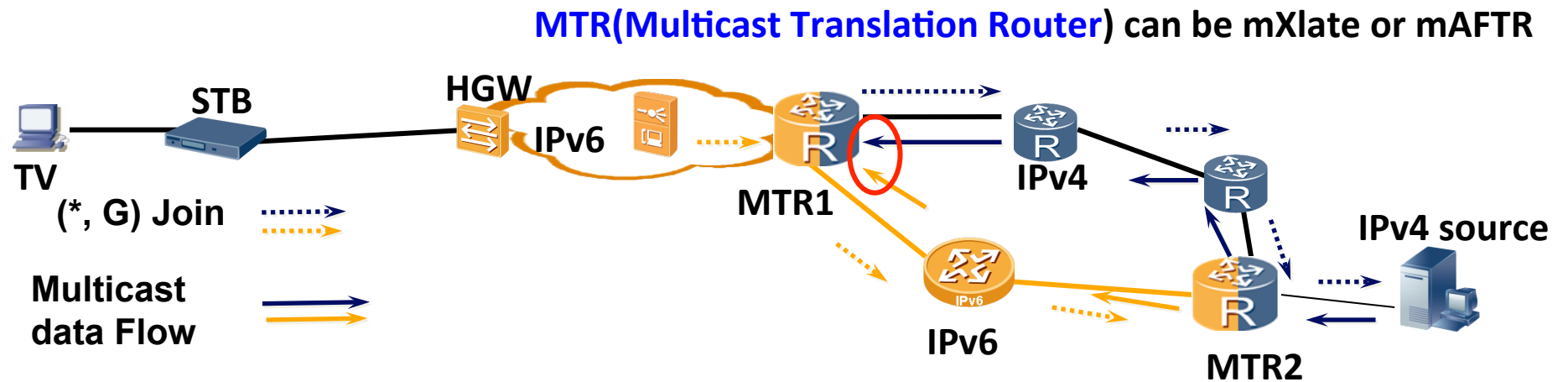
Qiong SUN <sunqiong@ctbri.com.cn>

IETF 86, Orlando

Background

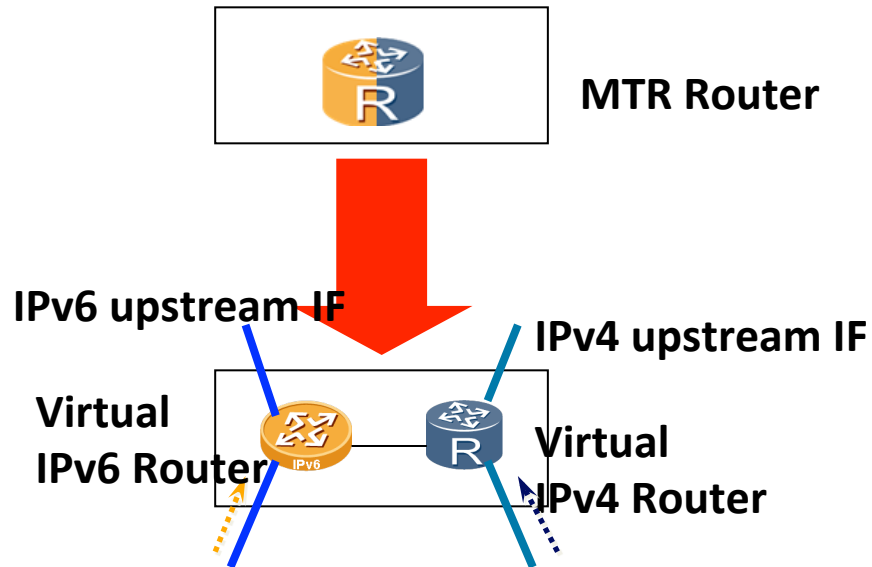
- Presented in IETF 84 Vancouver meeting
- Feedback from the meeting
 - It is an optimization for use cases that have not yet been agreed
 - The problem statement needs to be refined
- The use cases are based on section 3 of draft-ietf-mboned-v4v6-mcast-ps-01 which was accepted by the WG

Scenario and Problem Statement



- Use cases: section 3 of draft-ietf-mboned-v4v6-mcast-ps-01
- MTR1 has two upstream routers, receiving 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.

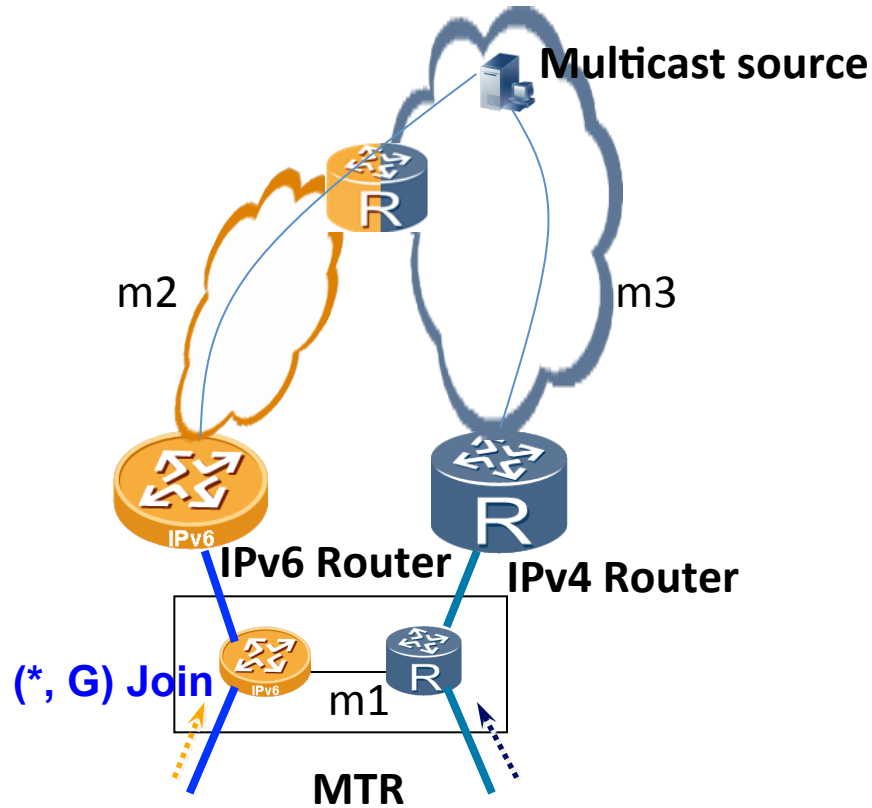
Possible Solution



**For illustration,
two virtual Routers are
used to represent MTR
Routers**

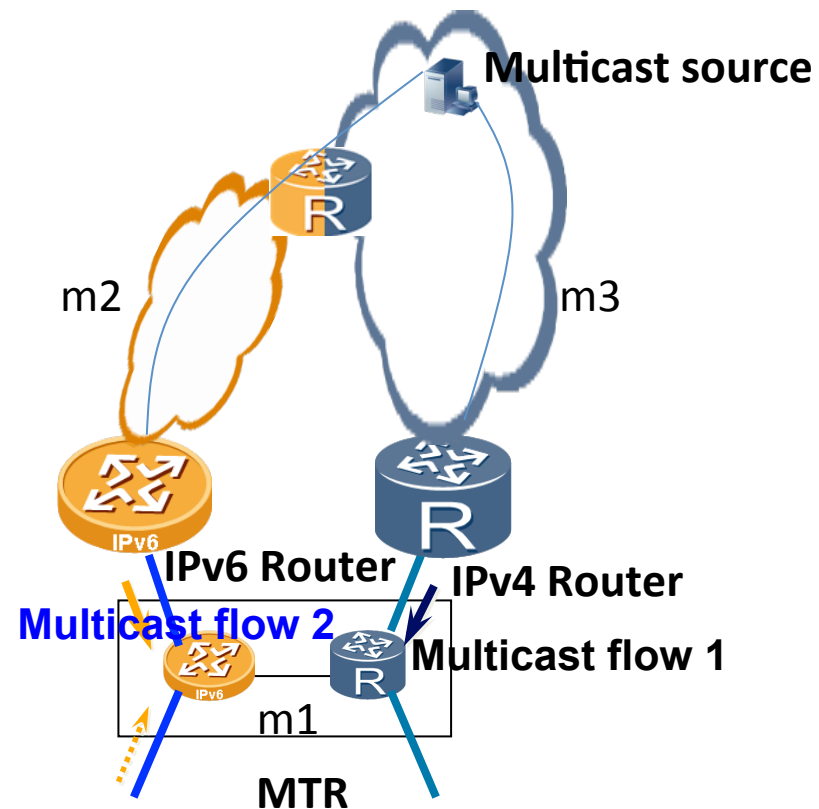
- MTR compares two multicast data flows (one from IPv4 interface and the other from IPv6 interface). If they are the same data flows, select one or two.
- When MTR receives an IPv6 (S, G) or (*, G) Join, virtual IPv6 Router selects an interface to send Join message. The interface can be IPv6 upstream 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.

Requirements to the Multicast Router

- Check multicast data flow from IPv4 and IPv6 interfaces to determine whether they are the same multicast data flows.
- Send PIM Assert message from IPv4 and IPv6 interfaces with different Metric value.
- May stop translating or encapsulating IPv4 to IPv6 multicast flow or send Prune Messages to stop receiving IPv6/IPv4 multicast flow.

References

- RFC4601
- draft-lee-behave-v4v6-mcast-fwk
- draft-ietf-softwire-dslite-multicast
- draft-ietf-mboned-64-multicast-address-format

Next Steps

- Adopt?
- Need more reviews.