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MVPN UMH Procedure Based on Source Active A-D Route
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Abstract

This document define new procedures to use Source-Active A-D routes to influence the UMH selection procedures at a downstream PE in certain deployments. These procedures allow some greater flexibility to influence the UMH selection based on more than just the unicast route to the source.

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[1.](#) Introduction

It may be desirable to influence the UMH selection result for a given customer multicast group, without influencing the UMH procedures for all the other customer groups with the same source. For example, if it is desirable for traffic to be chosen for S1,G1 from ingress PE, and for S1,G2 for a different ingress PE, it is not possible to accomplish with the existing UMH procedures that are based solely on the Source address.

Consider the case when an Anycast source address is being used to source the content from two headends. If the content were preferred from one headend for certain groups, and the other headend for other groups based on some policy on the ingress PEs depending on the particular groups, then this would not be possible with a source based UMH method.

This document define new procedures to use Source-Active A-D routes to influence the UMH selection procedures at an egress PE, taking both the Source and Group into account to allow greater flexibility in the UMH procedures.

As defined in [RFC 6514](#), An ingress PE will advertise a (C-S,C-G) Source Active A-D route if it receives a PIM Register message or MSDP message saying that C-S is a source for C-G. When advertising the Source-Active A-D route, a policy can be applied at the ingress PEs

(e.g., BGP communities) to help influence the BGP route selection of the egress PEs. The ingress PE can be configured to include some communities to the Source-Active A-D routes based on that policy. The egress PEs can then be configured to set the route preference based on the received communities. The exact details on procedures

to influence BGP route selection are outside the scope of this document. The selected Source Active A-D route will then be used to influence the UMH selection.

[2.](#) Applicability

These procedures are applicable only when procedures in [Section 10 of RFC 6513](#) are being used to "Eliminate PE-PE Distribution of (C-*,C-G) State". Furthermore, the procedures in this document are restricted to the case when the ingress PEs are configured either MSDP or as RP. The typical use-case would be an IPTV deployment when a headend is located behind a set of PEs and those PEs can be configured as RPs or MSDP peers. These procedures are not applicable for groups in the SSM range.

[3.](#) Procedure Details

[RFC 6513](#) describes procedures to build the "UMH Route Candidate Set" and then select the single route from the set to be the "Selected UMH Route". The procedures are modified to prefer, from the "UMH Route Candidate Set", the Upstream PE that has advertised the best (as determined by the BGP route selection procedures) Source-Active A-D route.

It may not be obvious on how to match the UMH candidate to the originator of the Source-Active A-D route since the NLRI of the Source Active A-D route does not specify the originator of the route. For MVPN procedures, refer to the extranet draft [\[I-D.ietf-bess-mvpn-extranet\]](#) ([section 7.4](#)). For Global Table Multicast (GTM) procedures, refer to the GTM draft [\[I-D.ietf-bess-mvpn-global-table-mcast\]](#) ([section 2.8.1](#)).

If the UMH is selected solely based on best Source Active A-D route without considering the UMH Route Candidate Set as defined in [RFC 6514](#), then it would have the drawback that a UMH may be chosen which does not have reachability to the source through a vrf interface.

Also, it may take some time for an RP to determine that the source has stopped sending traffic and the unicast reachability may converge before the Source Active A-D routes are withdrawn. As a result, using the UMH Route Candidate Set as the base can improve the convergence on the egress PEs.

[4.](#) IANA Considerations

None

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[5.](#) Security Considerations

There are no security considerations for this design other than what is already in the base MVPN specifications.

[6.](#) Acknowledgements

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[7.](#) Normative References

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