

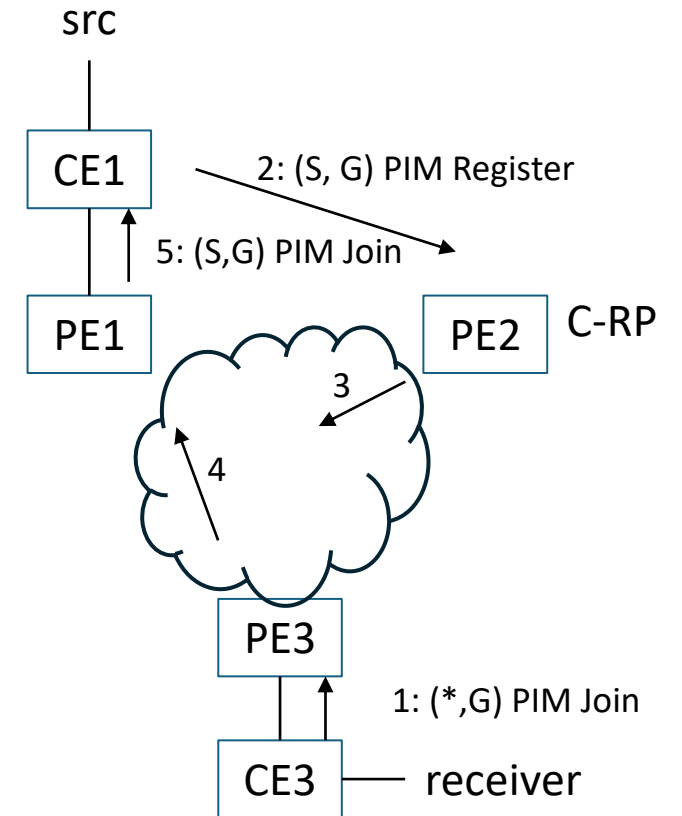
BGP-MVPN Source Active Routes for SPT-only Mode

Jeffrey Zhang, Juniper
Rishabh Parekh, Cisco

IETF119, Brisbane

BGP-MVPN SPT-only Mode

- RFC 6514, Section 14. “Supporting PIM-SM without Inter-Site Shared C-Trees”
- Egress PEs do not send (C-*, C-G) C-Multicast routes to the UMH PE connecting toward the C-RP
- Egress PEs do send (C-S, C-G) C-Multicast routes to the UMH PE connecting toward the C-S
 - When they receive (C-S, C-G) Source Active routes
- Source Active routes are originated by a PE with the C-RP or an MSDP speaker in the VRF
 - They are only for announcing sources
 - They do not announce the actual traffic arrival
 - They do not need to be announced by the UMH PE for the C-S
 - (C-S, C-G) C-multicast routes are targeted at the C-S UMH PE
 - Not at the originator of the SA route

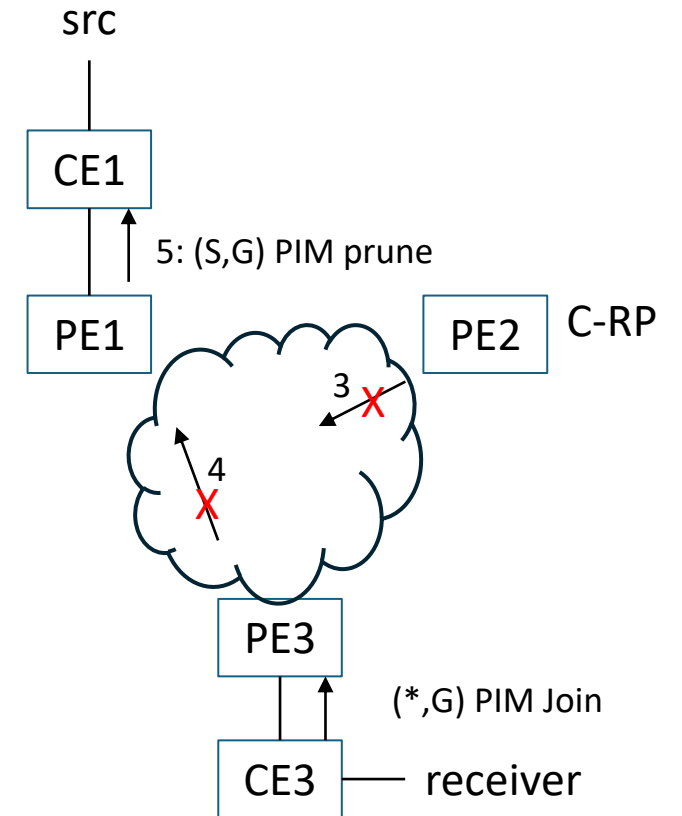


Step 3: (C-S, C-G) Source Active

Step 4: (C-S, C-G) C-Multicast

One Deficiency

- Suppose PE2's BGP session goes down and PE3 loses/invalidates the (C-S, C-G) Source Active route for some reason
- PE3 will withdraw its (C-S, C-G) C-multicast route, and PE1 will send (S, G) PIM prune and stop sending traffic
 - This is undesired because PE2 is not even in the traffic path



3: (C-S, C-G) Source Active

5: (C-S, C-G) C-Multicast

Solution

- PE1 can advertise the Source Active routes as well
 - Now PE3 has the Source Active routes from both PE1 and PE2 and won't withdraw the (C-S, C-G) C-Multicast route even if one is lost/invalidated
 - PE1 knows the source because of the (C-S, C-G) state triggered by the (C-S, C-G) C-Multicast route
 - It should withdraw its Source Active route if it stops receiving traffic for a while
- This aligned with the purpose of Source Active routes – announcing sources

A PE can obtain information about active multicast sources within a given MVPN in a variety of ways. One way is for the PE to act as a fully functional customer RP (C-RP) for that MVPN. Another way is to use PIM Anycast RP procedures [PIM-ANYCAST-RP] to convey information about active multicast sources from one or more of the MVPN C-RPs to the PE. Yet another way is to use MSDP [MSDP] to convey information about active multicast sources from the MVPN C-RPs to the PE.

Proposal

- A PE may learn sources via many methods and advertise Source Active routes after that:
 - It is a C-RP (anycast or not), or has MSDP sessions to C-RPs
 - It receives (C-S, C-G) C-multicast routes
 - It receives traffic as a First Hop Router
 - Possible other ways – provisioning, PFM-SD, etc.
- A PE **MUST** withdraw its SA route when the source is no longer active
 - Detection by C-RP or MSDP mechanisms
 - Detection by traffic statistics
 - Possible other ways corresponding to how it was learned before

Next Steps

- Comments appreciated!
- Progress the draft separately, or,
- Fold into a RFC6514bis draft?