PIM Join/ Prune Attributes for LISP Environments using Underlay Multicast

(draft-vgovindan-pim-jp-extensions-lisp-01)
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Vengada Prasad Govindan (venggovi@cisco.com)
Stig Venaas (svenaas@cisco.com)
Updates since last IETF

• draft-vgovindan-pim-jp-extensions-lisp-00 was presented in PIM WG @ IETF-110, action items:
  • Need to present this draft to LISP: Will be done at IETF-111
  • Evaluate the need to have a new attribute versus reuse existing PIM J/P attribute [RFC8059]:
    • Extensive discussions were held offline.
    • Decided to reuse the existing Receiver ETR RLOC attribute[RFC8059], extending the scope of the definition of the Receiver RLOC field of the attribute.
    • draft-vgovindan-pim-jp-extensions-lisp-01 version proposing the extended scope of the existing attribute submitted.
  • Security considerations section is still work-in-progress.
Problem statement

• IP Multicast Source(s) and receiver(s) in different (and same) LISP sites [RFC6831]
  • ASM, SSM and BIDIR modes supported in overlay

• IP-multicast based underlay

• ‘m’ Overlay IP multicast groups mapped to ‘n’ underlay IP multicast groups, where m >> n (Sec 8.1.2 of RFC 6831)
  • Problem compounded for IP multicast flowing across multisite
  • Special case: 1 overlay mapped to 2 or more underlay groups for flexibility
  • Use different underlay groups (G-u1 and G-u2) for (S1, G-o) and (S2, G-o)

• Border nodes play a special role:
  • They participate in the PIM signaling of upto three different PIM domains: Two in the underlay and one in the overlay.
Illustration

IP Multicast capable LISP core

Site-1 (R1)
Site-2 (R2)
Site-3 (R3)
Site-4 (R4)
Receiver ETR RLOC attribute [RFC8059]

The scope of the receiver RLOC field is now expanded to include Multicast addresses
  • Receiver RLOC: Can include the underlay group address (G-u) used for transporting the overlay multicast stream to which the downstream router is sending a join

• Definition of F, E, Type, Length and Address Family same as RFC8059
Next Steps

• Get comments from WG and request WG adoption