LISP L2/L3 EID Mobility Using a Unified Control Plane
draft-ietf-lisp-eid-mobility-13

M. Portoles
V. Ashtaputre
V. Moreno
F. Maino
D. Farinacci

IETF 118
Nov, 2023
Scope of the document

• Methods for using a common control plane to concurrently support:
  • Layer 3 overlays with eid-mobility
    • EID-prefix mobility across sites
  • Layer 2 overlays with eid-mobility
    • Unicast and multi-destination
    • Non-IP and IP intra-subnet
    • LISP assisted ARP/ND resolution
    • Multihoming support (new in version 13)
• Providing L2 multihoming requires additional mechanisms on top of the ones specified in [RFC9300] and [RFC9301]
Site-ID as identifier of multihomed sites

• After discussion in mailing list we settle with site-ID as identifier

The site-ID, as defined in [RFC9301], is used as the identifier that enables logical grouping of multiple xTRs that provide multihomed access to a L2 domain.

• Site-ID must be used in all registrations from multihomed sites

All EID-to-RLOC mappings from ETRs in a L2 multihomed site MUST be registered with the site-ID, by setting bit I in the Map-Register message.
Peer xTR discovery

- xTRs multihoming access to a L2 site need to discover each other
  - Broadcast forwarder selection, split horizon filtering
- xTRs register a special EID for this purpose
  - Use Predefined DN: “L2-xTRs-<site-ID>”
  - Use reserved IID for this registration
  - MUST set merge-request bit (a bit)
  - MUST set want-map-notify bit (M bit)
- Mapping System
  - Stores EID registration with merged RLOC set
  - Sends Map-Notify with updated list to all xTRs

Mapping-Database:
EID: "L2-xTRs-A" → RLOCs: IP_A1, IP_A2
Designated Forwarder Selection

• Designated Forwarder responsible to send broadcast traffic to and from remote sites.

• We use the M-priority in the RLOC records to establish a priority of xTRs.

• DF is the one with best M-priority amongst all active RLOCs.

• RLOC address in ascending order is the tie-breaker with equal M-priority values.
Split Horizon

• All xTRs in multihomed L2 site MUST implement proper *split horizon* mechanisms to avoid duplication of broadcast traffic and protect against loops.

• Use the list of RLOCs collected through site-ID registration to build filters.

• Recommended: only DF to join the L2 replication list (as defined in section 5.2.5 in the draft).
L2 multihoming and mobility

- The Mapping System distinguishes between mobility events and multihomed registrations based on site-ID in the registration:
  - Same site-ID (and merge-request bit set), merge with existing
  - Different site-ID, replace locator-set

- xTRs use RLOC list learned in site-ID registration to identify roamed away events
Comments, Questions?

• Just uploaded the last version -13 for review by WG.
• Specification in production for some years.