draft-malhotra-bess-evpn-irb-extended-mobility-01

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Recap

**Problem:**
- Extend EVPN MAC mobility solution to IRB scenarios that allow MAC-IP bindings to change across host move:
  - **Scenario A:** Fixed MAC <-> IP binding across move
  - **Scenario B:** Host IP moves to a different MAC binding
  - **Scenario C:** Host MAC moves to a different IP binding

**Solution:**
- Sequence number is ONLY assigned and managed on local MAC route
- Local MAC-IP route simply uses corresponding MAC route’s sequence number
- Some simple rules need to be followed to assign local MAC route sequence number on Local MAC-IP learning:
  - Rule 1 - MUST be higher than existing remote MAC route, as per RFC 7432.
  - Rule 2 - If IP is associated with a different remote MAC, MUST be higher than remote MAC sequence number
Key Updates

- Collaboration - contributions from additional co-authors
- Expanded scope to include IP mobility for a Routed EVPN Overlay (based on RT-5)
  - Section 8 extends RFC7432 MAC mobility to RT-5 / IP routes
- Duplicate Host Detection (section 9) re-written
  - to include Routed EVPN overlays
  - Addresses duplicate MAC and duplicate IP detection across various IRB mobility scenarios
  - Duplicate Host Recovery (section 9.4) expanded to specify behavior for each IRB mobility scenario
  - Duplicate Host Detection content reconciled with draft-ietf-bess-evpn-proxy-arp-nd-02
Thank You

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Backup
Problem - Allow MAC-IP binding to change across move in EVPN-IRB

Scenario B: Host IP moves to a different MAC binding
- How do we assign sequence number for new MAC-IP route [IP-a, MAC-b]?
- New sequence number 0 results in IP-a move not taking effect

Scenario C: Host MAC moves to a different IP binding
- How do we assign sequence number for new MAC-IP route [IP-b, MAC-a]?
- New sequence number 0 results in MAC-a move not taking effect

MAC-IP sequence number assignment procedure needs to be defined further
**Scenario A: Fixed MAC – IP Binding**

- **Rule 1 applies** – Local MAC-a sequence number must be higher than existing Remote MAC-a sequence number “N”
- Local [IP-a, MAC-a] simply inherits Local MAC-x sequence number “N+1”
- [IP-a, MAC-a] can be probed out on Leaf-1
**Scenario B: Host IP moves to a different MAC binding**

- Rule 2 applies – if IP-a is associated with a different remote MAC-a, MAC-b sequence number MUST be higher than remote MAC-a sequence number
- Local [IP-a, MAC-b] simply inherits Local MAC-b sequence number “N+1”
- [IP-a, MAC-a] can be probed out on Leaf-1
**Scenario C: Host MAC moves to a different IP binding**

- **Rule 1 applies** – Local MAC-x sequence number must be higher than existing Remote MAC-a sequence number “N”
- Local [IP-b, MAC-a] simply inherits Local MAC-a sequence number “N+1”
- [IP-a, MAC-a] can be probed out on Leaf-1
Additional Topics Covered in draft-malhotra-bess-evpn-irb-extended-mobility-00

- MAC Sharing – Multiple IPs with the same MAC binding
- Duplicate IP detection – duplicate IPs provisioned with different MACs
- Sequence number synchronization across redundant PEs