

draft-malhotra-bess-evpn-irb-extended-mobility-00

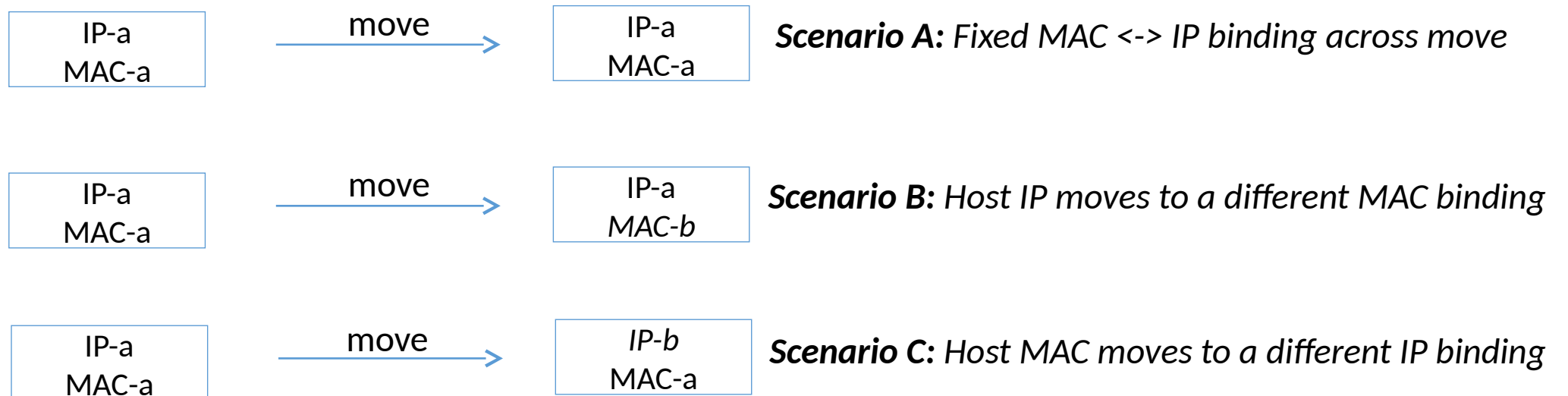
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Objective - define mobility procedures for MAC and IP for EVPN-IRB use cases

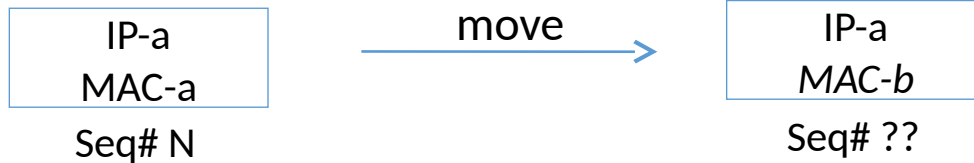
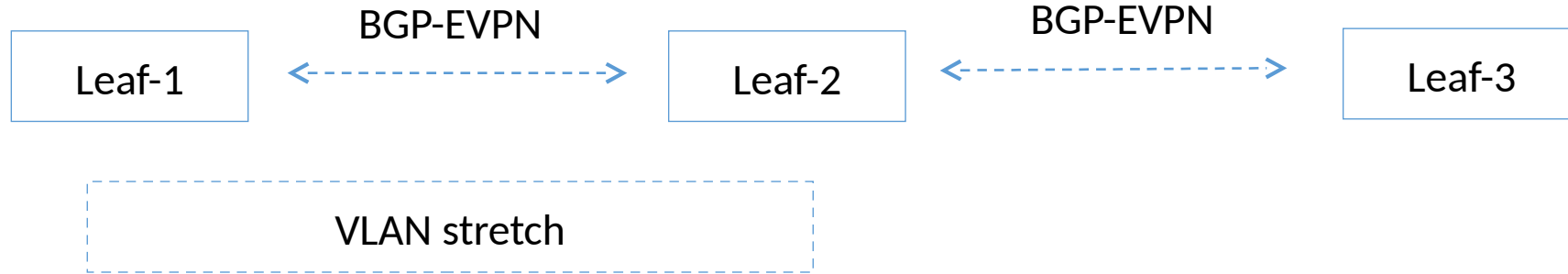
- **Prior Art:** RFC 7432 defines EVPN MAC mobility procedures

Extended Mobility Procedures for EVPN-IRB – Use Cases



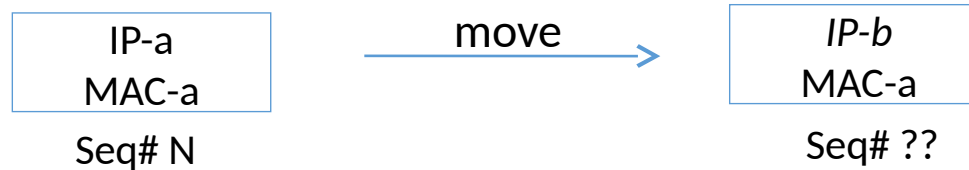
MAC and IP reachability advertised via combined MAC+IP RT-2 (no separate MAC only RT-2)

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

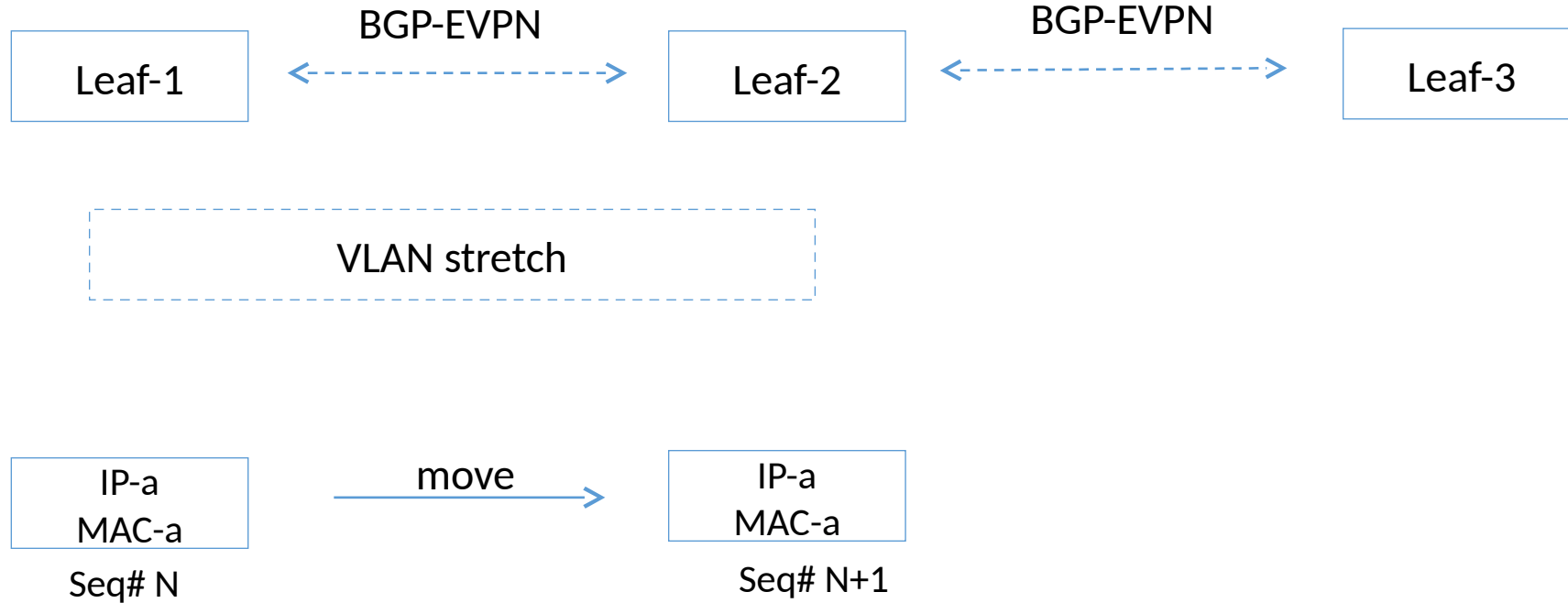
- How do we assign sequence number for new MAC-IP route [IP-b, MAC-a]?
- New sequence number 0 results in **MAC-a** move not taking effect

MAC-IP sequence number assignment procedure needs to be defined further

Solution - MAC-IP uses inherited sequence number from parent MAC

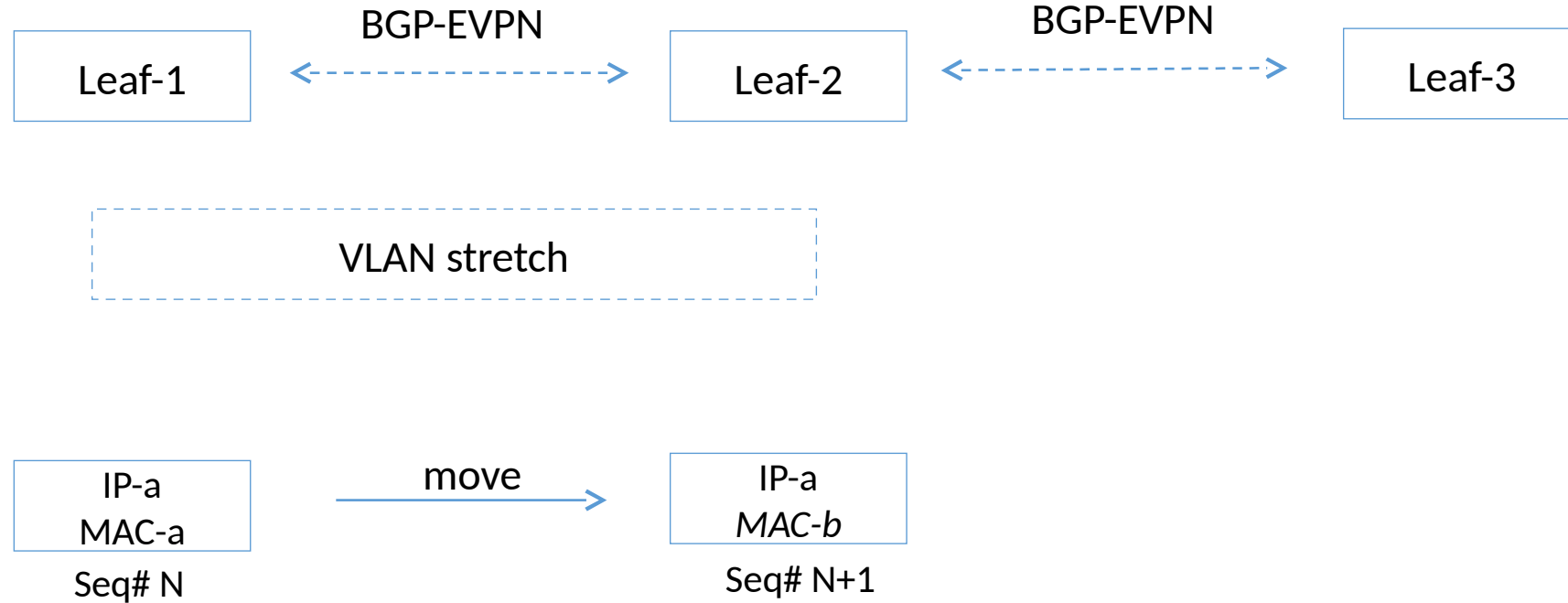
- Sequence number is ONLY assigned and managed on local MAC route
- Local MAC-IP route simply uses corresponding MAC route's sequence number
- Some simple rules need to be followed to assign local MAC route sequence number on Local MAC-IP learning:
 - Rule 1 - MUST be higher than existing remote MAC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

Scenario A: Fixed MAC – IP Binding



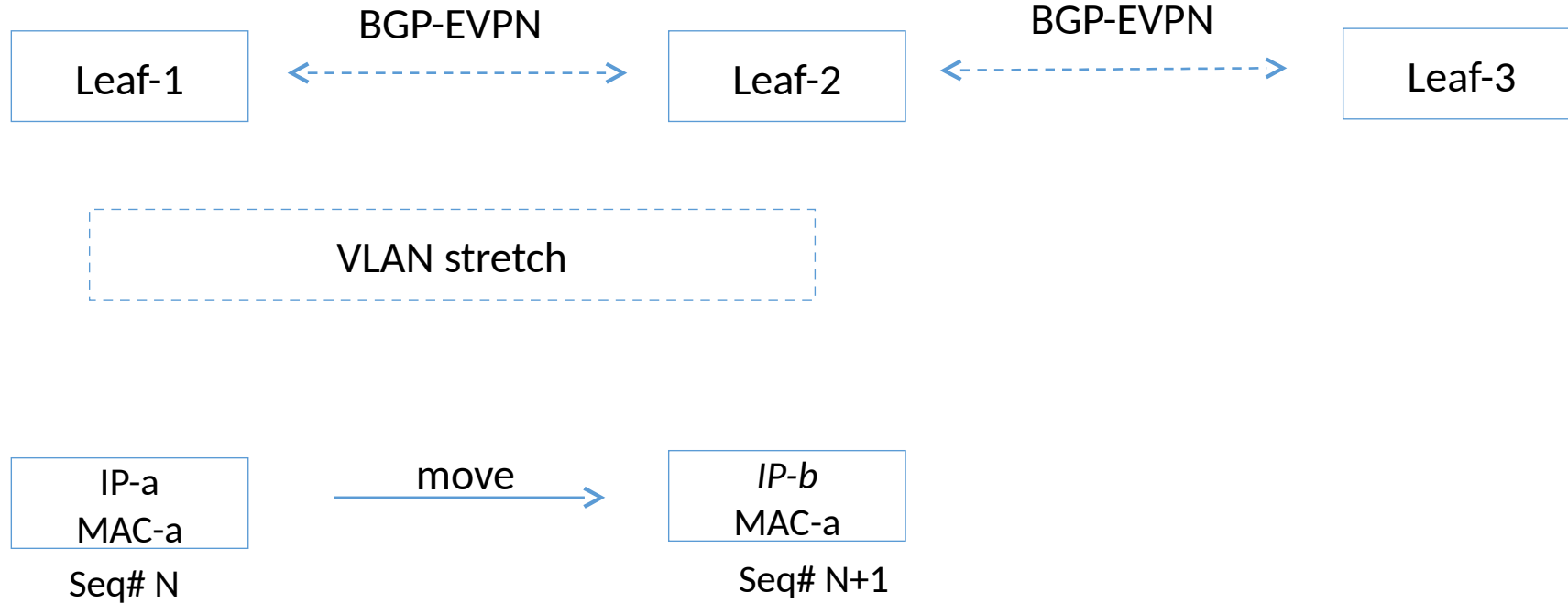
- **Rule 1 applies** – Local MAC-a sequence number must be higher than existing Remote MAC-a sequence number “N”
- Local [IP-a, MAC-a] simply inherits Local MAC-x sequence number “N+1”
- [IP-a, MAC-a] can be probed out on Leaf-1

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
- Appendix A – alternative approach using two sequence numbers

Extended Mobility Procedures for EVPN-IRB

(draft-malhotra-bess-evpn-irb-extended-mobility-00)

Thank You

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