LISP-MN Multicast Demo

draft-ietf-lisp-mn-05

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What We Are Demoing

• LISP-MN on an iPhone
• RTRs deployed in GCP
• LISP-MN to LISP CN behind NATs
• All multicast sources and receivers on LISP overlay
Some Magic Sauce

- LISP-MN is not running a LISP control-plane
- LISP-MN map-cache configured with:
  
  0.0.0.0/0 -> RTRs

- RTRs configured to glean xTR mappings
- NAT-traversal logic occurs in data-plane
- An effort to implement an even lighter-weight xTR

One that runs in a dash-cam perhaps
Some Multicast Magic

• LISP-MN as a Multicast Receiver
  • LISP-MN uses IGMP to join groups
  • LISP-MN encapsulates IGMP messages to RTRs
  • RTRs track group membership
  • RTRs replicate multicast packets to LISP-MN group members

• LISP-MN as a Multicast Source
  • LISP-MN send multicast packets like any other packet (to the RTRs)
  • RTRs replicate to CN and LISP-MN group members
  • LISP-MN maintains multicast session continuity
  • LISP-MN can roam across LTE and WiFi while sending/receiving multicast
**Demo Topology**

- **NAT**: 25.25.25.25
- **NAT**: 13.13.13.13
- **LISP Encap**

- **Video** multicast source to **224.1.1.1** (using VLC)
- **Ping** multicast source to **224.2.2.2**

- **Video** multicast receiver joined to **224.1.1.1**
- **Ping** multicast receiver joined to **224.2.2.2**
Live Video/Ping Demo

Observations

- Glean Latency **does not** exist as it does for unicast
  - For sender-only nodes, you don’t have to glean
  - For receiver nodes, gleaning happens when RTR processes IGMP report
- If members are spread across RTRs, LISP-MN needs to send to all RTRs
  - See LISP Replication Engineering (LISP-RE) Draft for other solutions
- By default, OOR hashes to one RTR
- An upstream RTR can replicate to downstream RTRs that have been IGMP joined by different LISP-MNs:
Multicast Todo List

• LISP-MN must send periodic IGMP reports, or:
  • RTRs must send periodic IGMP queries
  • LISP-RE to spread load and reduce replication cost
  • IPv6 Multicast Support (with HER over IPv4 or IPv6)
Questions/Reactions/Tomatoes?