LISP-MN Multicast Demo

draft-ietf-lisp-mn-05

IETF Singapore LISP WG & MBONED WG

November 2019

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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

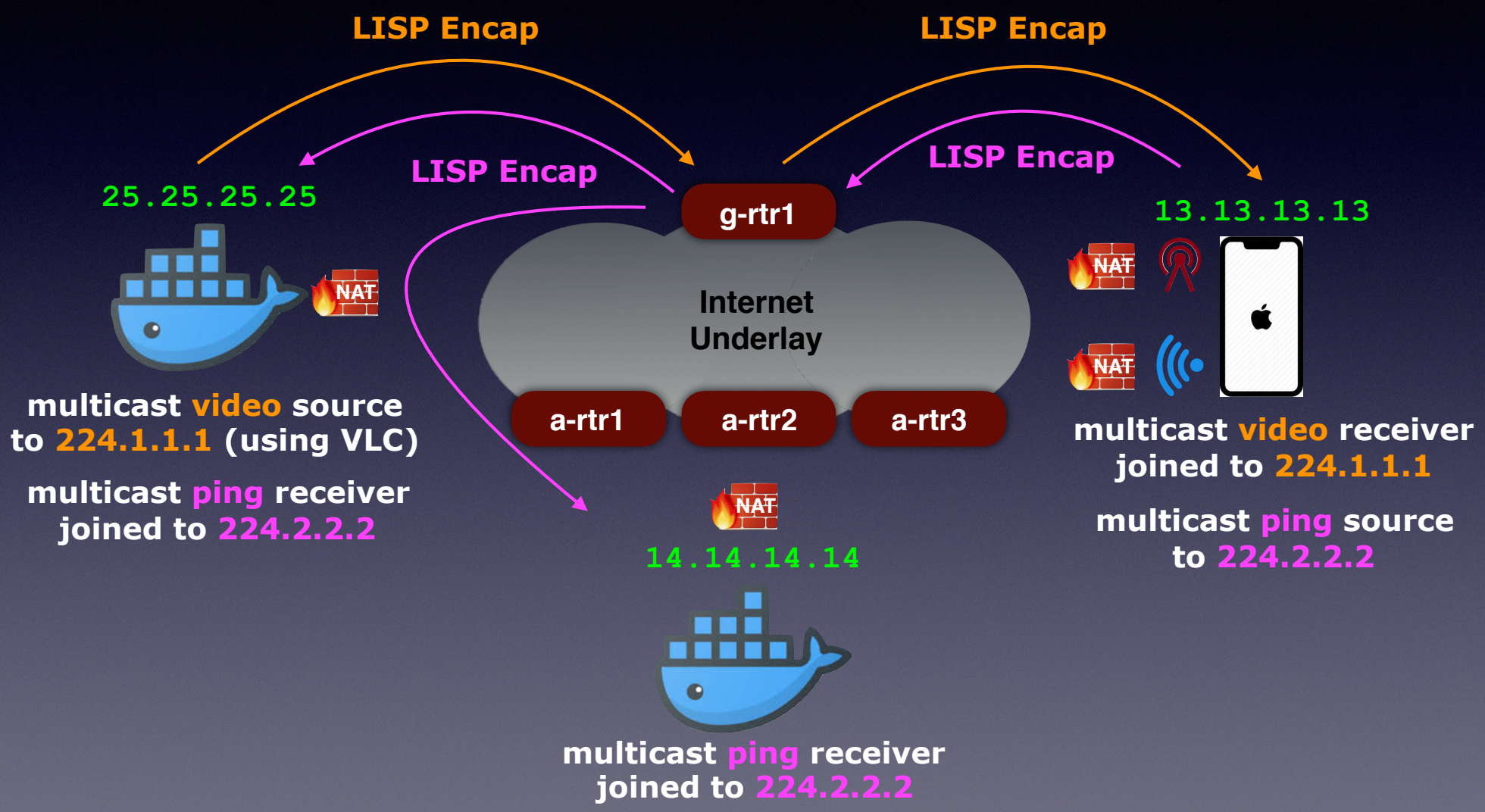
- RTRs configured to **glean** xTR mappings
- NAT-traversal logic occurs in data-plane
- An effort to implement an even **lighter-weight** xTR

  One that runs in a dash-cam perhaps

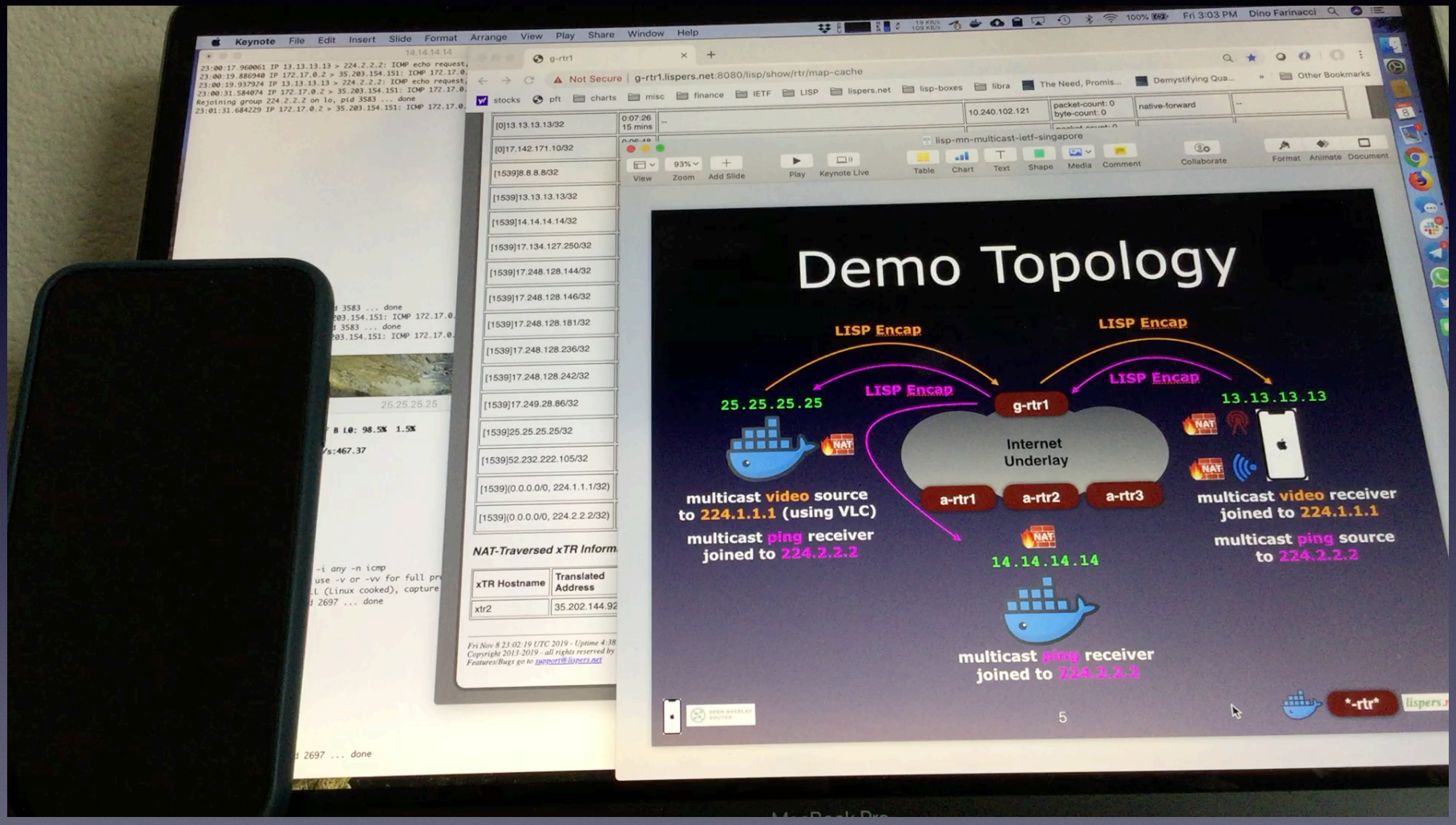
Some Multicast Magic

- 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



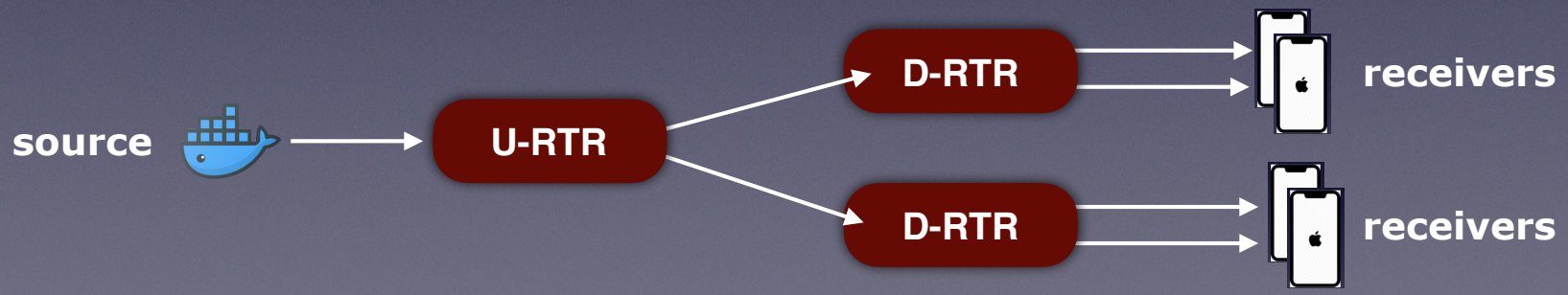
Live Video/Ping Demo



https://www.dropbox.com/s/kan6wijkvjk9khy/lisp-mn-multiicast-demo.MOV

Observations

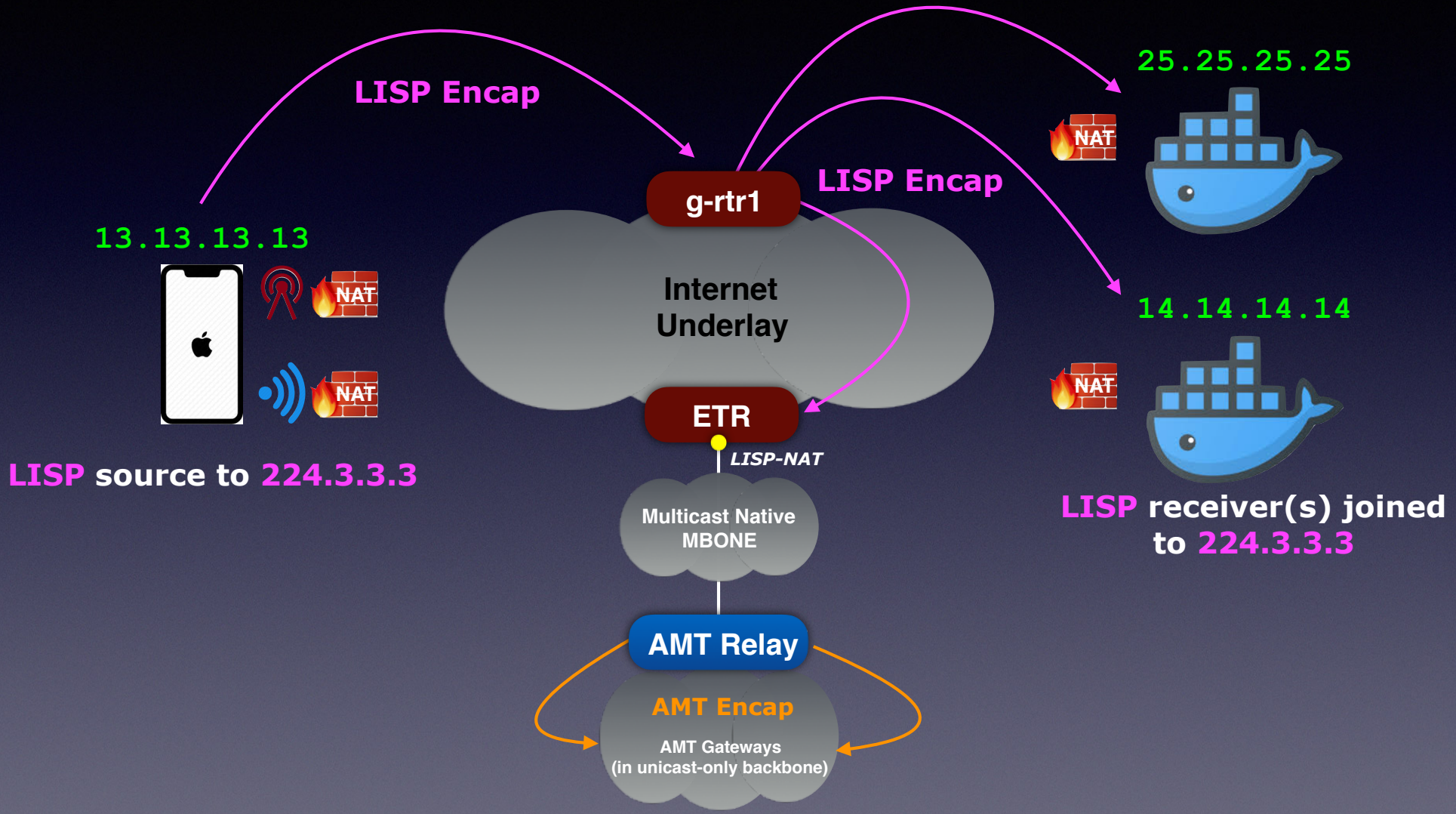
- Glean Latency **does not** exist as it does for unicast
  - For sender-only nodes, you don’t have to glean
  - For receiver nodes, gleaning happens when RTR processes IGMP report
- If members are spread across RTRs, LISP-MN needs to send to all RTRs
  - See LISP Replication Engineering (LISP-RE) Draft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

LISP/AMT Interoperability



Questions/Reactions/Tomatoes?