Outgoing link selection with LISP

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Motivation

• ASes receive a large inter-domain route diversity in the control plane...

• ... but can only use a small inter-domain diversity in their forwarding plane

• How can we use this lost diversity in the forwarding?
Requirements

- Local route diversity management (operator policies)
- Path enforcement
- Incremental and local deployment
Concept: use LISP :-)

- Transmit eBGP learned routes to a *Local Mapping Distributor* (LMD)
- Let the LMD apply black magic to convert these routes into mappings
  - EID prefix = BGP prefix
  - RLOCs = next-hop addresses
- Activate LISP (xTR) on ASBRs
Architecture

- Encapsulated data packets
- Mapping configuration
- iBGP
- eBGP
- Best effort traffic
Generalized Architecture
Technical discussion

• *best-external* to directly go to the appropriate ETR

• *add-path* to distribute all (or at least some) eBGP learned routes

• Use loopback address to avoid leaking (part) the Internet in the IGP
Examples of policies

- ALL
  - all the routes
- LP
  - all the routes with the highest local-pref
- ASPL
  - all the routes with the shortest AS path length
- LP + ASPL
- Disjoint
  - two routes with the most disjoint AS path
- BGP
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