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

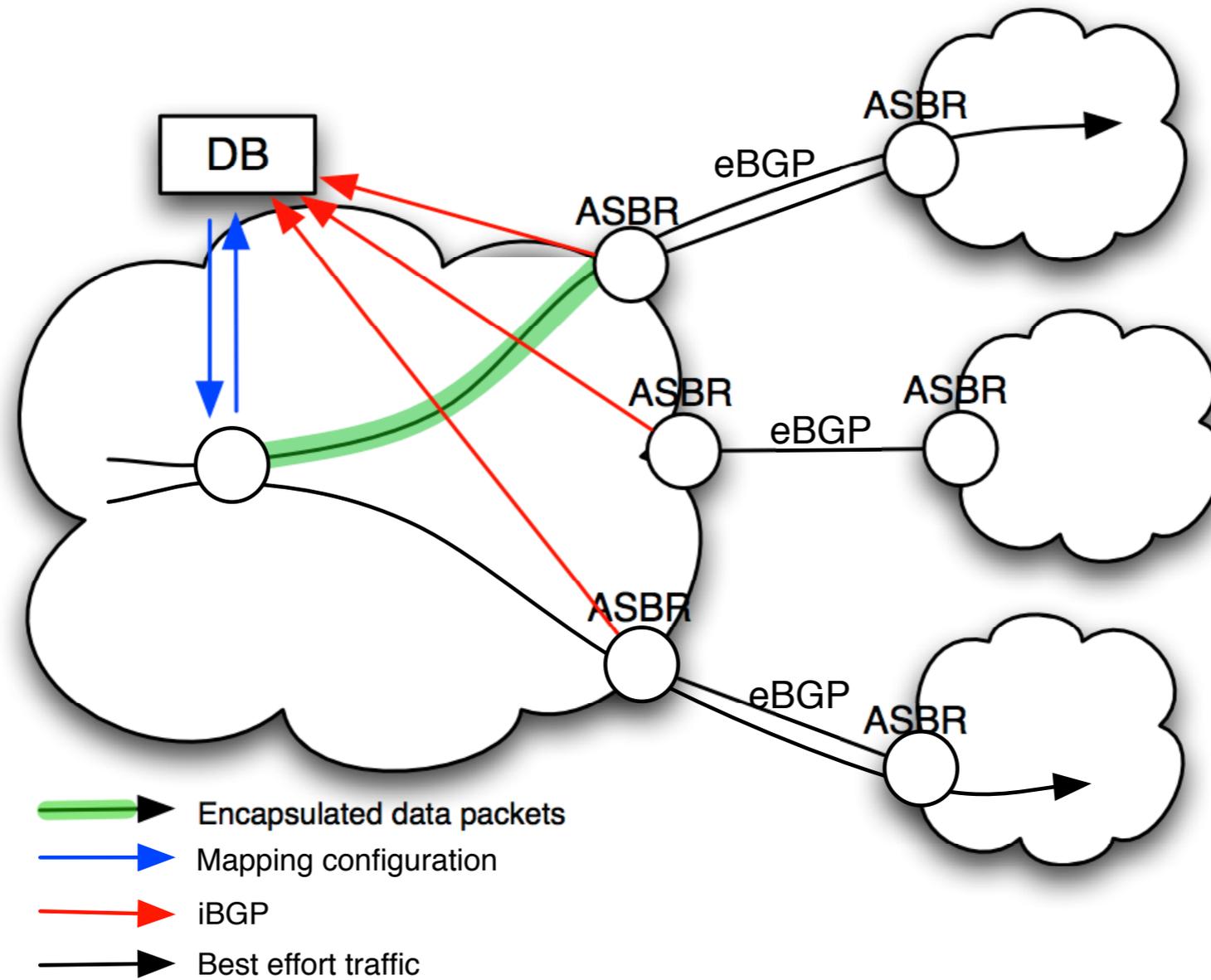- How can we use this lost diversity in the forwarding?

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
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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