Loopback detection for ECMP

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Loopback with ECT and ECMP

Examples:

ECT Mode

ECMP Mode
Option 1 for Loopback with ECMP

- Flow-based fault detection
- Destination MEP replies a LBR using the same Flow-ID as the LBM.
- Advantage: Process in node D is simple
- Shortage: LBM and LBR may take incongruent bidirectional path
Option 2 for Loopback with ECMP

- Flow-based fault detection
- Destination MEP replies a LBR using a (maybe) different Flow-ID from the LBM in order to keep the LBM and LBR co-routed.
- Advantage: LBM and LBR takes congruent bidirectional path
- Shortage: Process in node D is a bit more complicated than option 1

Node D needs to make sure LBR take the symmetric reverse path

LBM with Flow-ID X

LBR with Flow-ID Y

(Y == or != X)
Option 3 for Loopback with ECMP

- Network-based fault detection
- Source MEP sends one LBM, MIPs replicate the LBM to all ECPs, destination MEP replies as many as the square of the number of the LBMs.
- Advantage: LBM and LBR traverses all ECMPs at one time detection
- Shortage: All nodes need to support forwarding LBM/LBR to all possible output ports in the ECMP list
Discussions

• Do we need both flow-based loopback detection and network-based loopback detection?
• For flow-based loopback detection, which one (option 1 or option 2) is better?
• Any more options for loopback detection for ECMP?
Thank you!