

Applicability of LDP Multi-Topology for Unicast Fast-reroute Using Maximally Redundant Trees draft-li-rtgwg-ldp-mt-mrt-frr-02

Zhenbin Li, Tao Zhou, Quintin Zhao (Huawei)

Tianle Yang (China Mobile)

IETF 87, Berlin, Germany

Introduction

- [I-D.ietf-rtgwg-mrt-frr-architecture] describes the architecture based on Maximally Redundant Trees (MRT) to provide 100% coverage for fast-reroute of unicast traffic.
- [I-D.ietf-mpls-ldp-multi-topology] has been proposed to provide unicast forwarding in the MRT FRR architecture.
- The draft is to provide the analysis of the applicability of LDP MT for MRT FRR
 - Procedures of LDP MT using for unicast MRT FRR
 - All possible scenarios are analyzed and typical examples are provided.
 - Applicability guidance is provided.

Updates

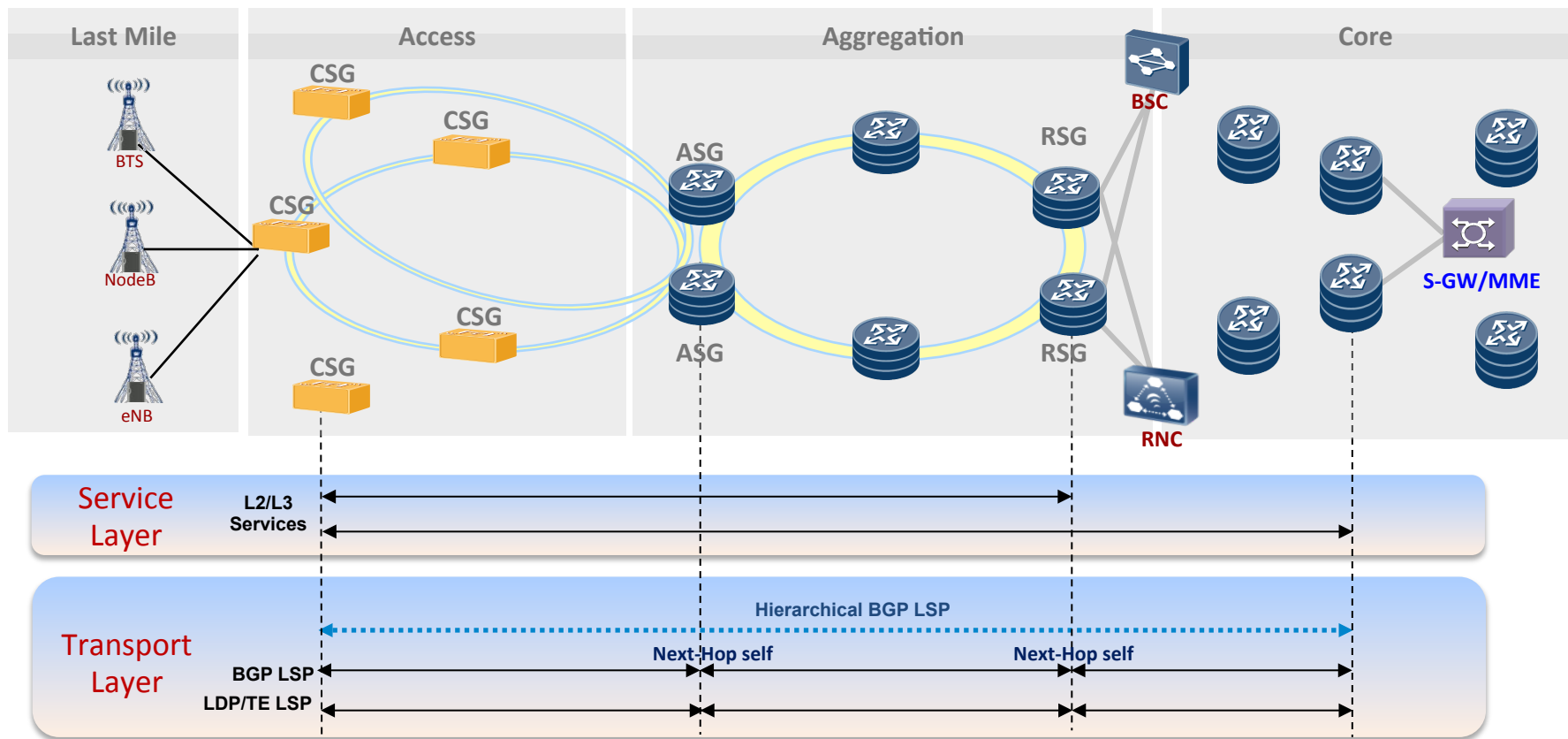
- Add one co-author: *Tianle Yang* from China Mobile
- Structure of the draft is re-organized:
 - Operation Procedures is to divide into two parts: Operation Procedures and Deployment Considerations.
- Revise according to the careful review comments from Alia.
- One new scenario is added: IGP Multi-process
- More Deployment Considerations on MT ID Reservation and Simplified Provision are discussed.

Discussion Result with Alia

- At the beginning, one object of the draft is to better understanding on MPLS LDP MT operations for scenarios which have been described in draft-ietf-rtgwg-mrt-frr-architecture-03.
- Usecases is more useful to complement the draft-ietf-rtgwg-mrt-frr-architecture-03 instead of detailed description of LDP MT operations.
- The possible usecases for MRT FRR:
 - LDP over TE networks
 - Seamless MPLS for mobile backhaul networks
 - etc.

User Case1: MRT FRR in Seamless MPLS for MBB

- Ring topology is adopted in mobile backhaul networks.
- Loop happens inevitable if IP LFA and LDP are adopted for the access ring and aggregation ring.
- MRT FRR based on LDP MT is a perfect solution for the scenario.



User Case 2: Loop Risk in IGP Multi-process

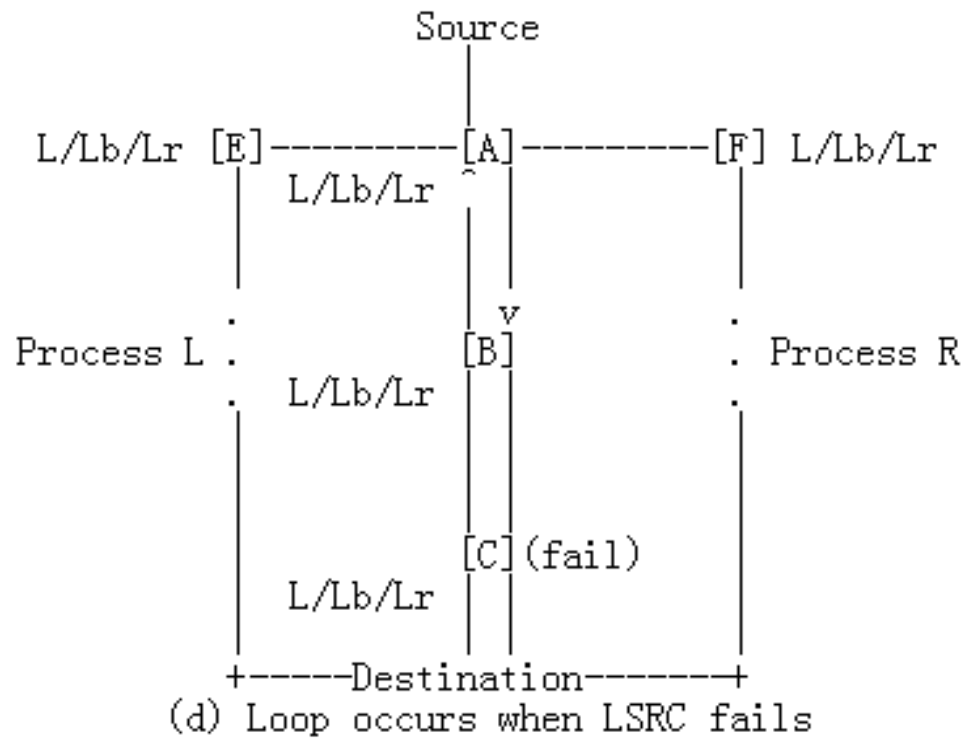


Figure 14: Loop Issue in IGP Multi-process

- If one pair of Red/Blue MT IDs are shared by multiple IGP processes, there exists possible loop issue.
- Uncommon scenarios which maybe caused by wrong configuration.

User Case 2: Loop Risk in IGP Multi-process (cont)

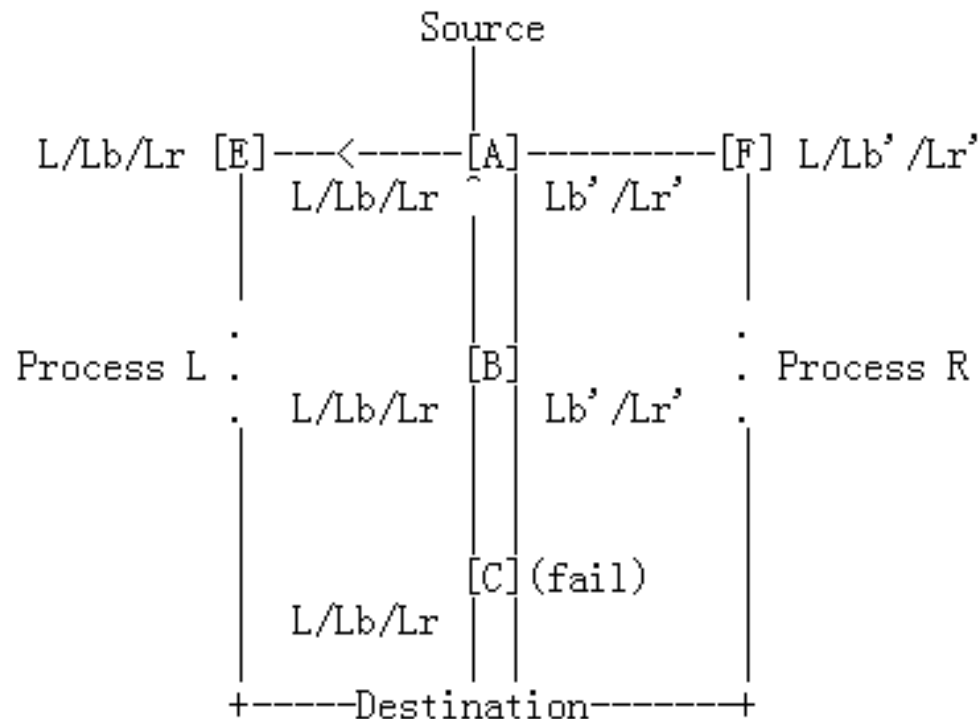


Figure 15: Separate MRT MT for Multi-process

- In order to avoid the loop risk in IGP multi-process, there could use different MRT MT IDs for different IGP processes.

Next Steps

- Incorporate more usecases in the draft to complement the architecture draft well.
- Solicit more comments and feedbacks.