

LFA RSVPTE COOPERATION

draft-litkowski-rtgwg-lfa-rsvp-
cooperation-01

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Agenda

- Facts and Goals
- Sample blocking situation
- Proposed specifications
- Next steps

Facts and Goals

- Facts :

- LFA and RSVP-TE are not mutually exclusive. Both can be used on the same network/node. E.g.
 - Using LFA to complement RSVP-TE FRR (if not fully deployed)
 - Using RSVP-TE tunnels to complement LFA coverage
- Interactions between LFA and RSVP-TE are not clear and cause issues/limitations/discussions in multi-vendor networks
- Hard for service provider to design consistent solutions in multivendor networks

- Goals :

- Providing guidelines when LFA and RSVP-TE are activated on a single node
- We do not want to make a revolution in RSVP-TE

- Proposed tradeoff :

- Keep each process as much independent as possible
- Keep flexibility on using both mechanism on the same interface

Sample blocking situation

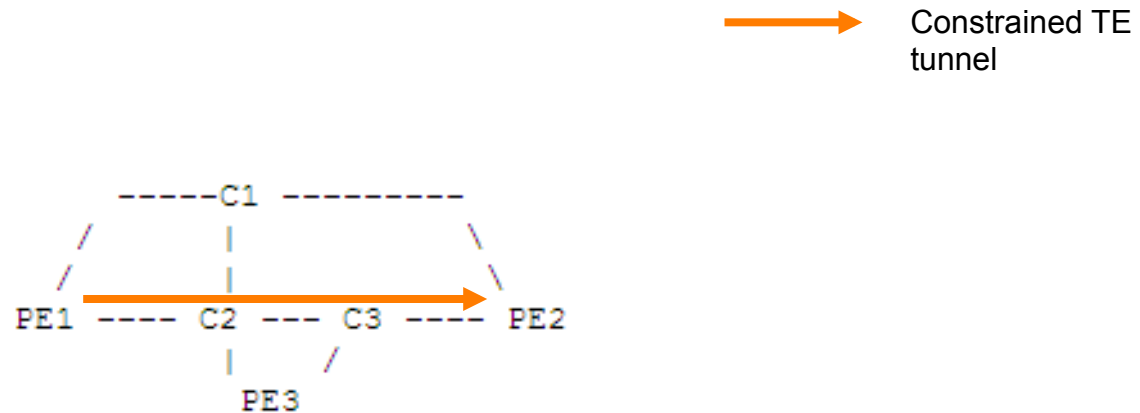


Figure 2

PE to Cx metrics are 50, Cx to Cx are 1

PE1 should be able to enable LFA on PE1-C2, even in the presence of the TE LSP.

Otherwise, PE1 will not be able to provide protection for destination PE3

Ingress TE LSP as LFA candidate

→ Constrained TE tunnel

- Widely implemented scenario :

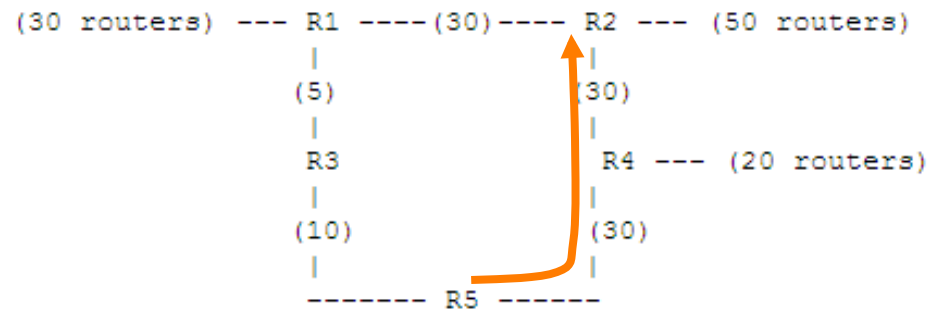


Figure 1

R5 has no LFA to reach R1,R2,R3

R5 can use R2 as a virtual neighbor, R2 would be an LFA to reach R1,R2,R3

A TE LSP can be used as a virtual interface to reach a LFA if :

- Tunnel has been configured as LFA candidate
- Tunnel does not use the protected interface

Ingress : having both a physical interface and TE tunnels towards an alternate

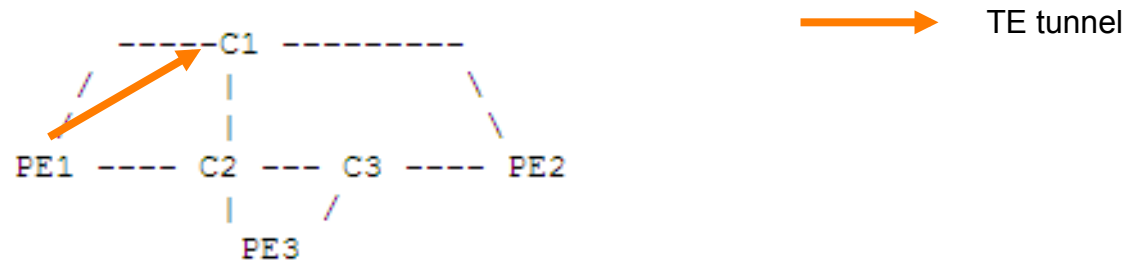


Figure 2

PE to Cx metrics are 50, Cx to Cx are 1

- C1 is LFA for PE1 to reach PE3
- C1 is reachable through native IP path and also through a TE tunnel
- An implementation SHOULD use the physical interface to reach the alternate unless :
 - The TE tunnel is configured as LFA candidate
 - The tunnel use the protected interface

Ingress : independence between TE FRR and IP FRR



Figure 2

PE to Cx metrics are 50, Cx to Cx are 1

Selection of the FRR mechanism (LFA or RSVP-TE) is per prefix rather than per protected interface :

- If an IP prefix is reachable through a TE tunnel, LFA MUST NOT protect it
- If an IP prefix is reachable through a native IP path, LFA MUST compute a protection for such prefix disregarding the presence of a tunnel on the primary interface

Transit : independence between TE FRR and IP FRR

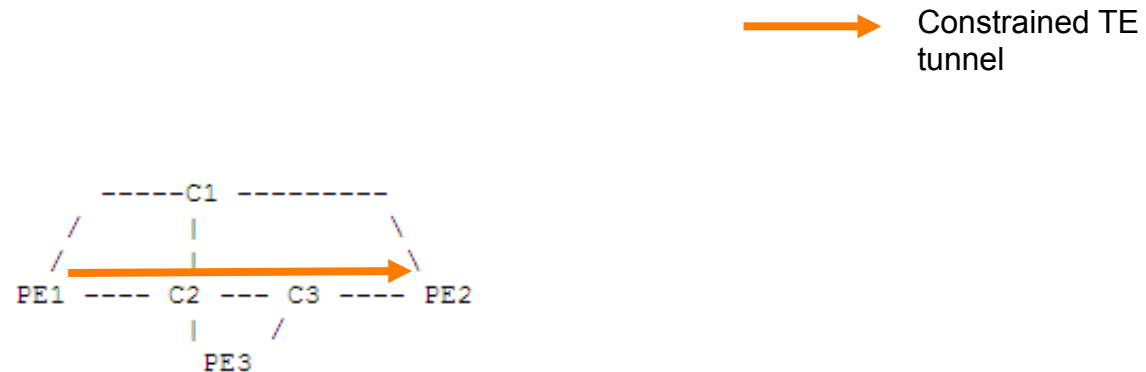


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PE to Cx metrics are 50, Cx to Cx are 1

Proposed guidelines for TE midpoint (C2) :

- MPLS TE forwarding entries MUST NOT be protected by LFA
- IP forwarding entries MUST be protected by LFA disregarding the presence of &a TE tunnel transiting through the primary interface to the destination

Operational guidelines

- Section 3 discuss operational considerations when deploying both LFA and RSVP-TE :
 - Deploying both LFA and RSVP-TE
 - Extending LFA coverage through TE LSP

Next steps

- v01 improved through private discussions, mainly with vendors
- For v02, we are soliciting comments from a wider audience (vendors and service providers)

thank you