2547 egress PE Fast Failure Protection
draft-minto-2547-egress-node-fast-protection-01

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• MPLS provides fast service restoration for link and node failure except egress node failure.
• This draft proposes rfc 2547 service restoration when egress node goes down.
• This proposal could be extended other mpls based services.
Egress PE node failure
Local-repair – requirements

Requires protecting service (or LSP) endpoint on primary node (PE3)
• But PLR (P3) does not hold any service state
• Protecting failed node requires PLR to divert the outer (transport) LSP to another backup node (PE4)
• Backup edge node needs to be able to interpret labels allocated by the primary edge node
• Protector PE4 maintains a “mirror image” of the protected PE3 service label table
• a context specific label space identified by a context-id (an IP address) present on both protected and protector PEs
• Protected PE3 “owns” the context-id address, advertising it in the BGP Next_Hop attribute (context-id is never used for control plane peerings)
• In case of protected PE3 failure, P3-PLR diverts the traffic destined to the context-id address to the protector PE4 using TE FRR or IP FRR procedures
• Protector PE4 looks up received packets in the context-specific label table for PE3 (identified by the label associated with PE3 context-id), and forwards packets to the right destination
Egress PE node failure
Local-repair – LSP tailend protection
Upon receiving a packet with the outer label equal to the context label, protector PE4 pops the outer label and performs a recursive MPLS lookup in the context specific label space identified by the context label.
Protector model

- Co-located protector
  The alternate PE and protector is same.
- Centralized protector
  One protector protecting more than one PE.
Service mirroring

The backup next-hop selection uses the following rules:

1. Exact matching route-target set (RD may be different)
2. Exact matching layer-3 Prefix part (excluding RD)
PLR transport FRR

- RSVP
  Uses \texttt{rsvp-egress-frr}
- LDP
  Uses LFA with tunneling to protector.
What next?

- Generalize to other Prefix based MPLS services (EVPN, BGP-LU)

- Questions and comments?