Extensions to RSVP-TE for LSP Ingress Local Protection

draft-chen-mpls-p2mp-ingress-protection-09

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Updates from the last version

Merged the following two drafts into one

1. draft-chen-mpls-p2mp-ingress-protection-08
2. draft-torvi-mpls-rsvp-ingress-protection-00

Some Ingress Failure Detection Modes in details are added

1. Backup and Source Detect Failure (New)
2. Backup Detects Failure
3. Source Detects Failure
4. Next Hops Detect Failure

Covers On-path (backup ingress on path of LSP) cases (New)
Backup ingress (PE6) and source (CE3) detect ingress (PE5) failure and control the traffic delivery concurrently.

1. Ingress PE5 fails
2. Source CE3 detects it by BFD-1 and switches traffic to backup ingress PE6
3. Traffic merged into primary LSP at P1

Backup ingress (PE6) and source (CE3) detect ingress (PE5) failure and control the traffic delivery concurrently.
Backup and Source Detect Detect Failure (2/2)

Link PE5—PE6 fails: Traffic from source CE3 to ingress PE5 is transported by primary LSP to destinations as before, no traffic to backup ingress PE6 from source CE3

1. Link PE5—PE6 fails

2. Backup ingress PE6 detects it by BFD-2 and puts traffic from source CE3 into backup LSP, but no traffic from source CE3
On-path case (1/2)

Backup ingress (PE6) is a next hop of ingress (PE5), i.e., backup ingress (PE6) is on the path of primary LSP.

1. Ingress PE5 fails

2. Source CE3 detects failure and switches traffic to backup ingress PE6

2. Next hop PE6 of primary ingress as backup ingress detects failure and puts traffic into primary LSP.
Backup ingress (PE6) is a next hop of ingress (PE5), i.e., backup ingress (PE6) is on the path of primary LSP

1. Ingress PE5 fails

2. Source CE3 detects failure and switches traffic to backup ingress PE6

2. One next hop PE6 of primary ingress as backup ingress detects failure, multicasts traffic to its next hops (P2, P3) along primary LSP and imports traffic into backup LSP to the other next hops (PE7, P1) of primary ingress PE5

On-path case (2/2)
Next Step

- Welcome comments
- Request for working group adoption