RSVP-TE Extensions For Signaling GMPLS Restoration LSP
draft-gandhi-ccamp-gmpls-restoration-lsp.txt

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Outline

• Requirements and Use Cases
• Solution
• Next Steps
Transport Requirements for Restoration LSP (1+R Use case)

- Resources for failed LSP need to be remain intact in at least in control plane as:
  - The LSP follow a nominal path (minimum latency, minimum cost, etc.).
  - Deterministic behavior after failure is recovered (deterministic SLAs).
  - Revert operation to the failed resources is desirable.

- Restoration LSP is signaled after failure is detected.
Transport Requirements for Restoration LSP (1:1+R, 1+1+R Use cases)

- Same Requirements as outlined in previous slide.
- Restoration LSP is signaled **after** failure of working LSP **and/or** protecting LSP.
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PROTECTION Object with T Bit

• **T** bit – Res**T**oration LSP
• LSP Flags (Protection Types) are modified for signaling transport style restoration.
Working LSP is signaled with: \(P = 0, S = 0, T = 0\)
Restoration LSP for Working is signaled with \(P = 0, S = 0, T = 1\) (after the failure of working LSP)
Protecting LSP signaled with: \(P = 1, S = 0, T = 0\)
Restoration LSP for Protecting signaled with \(P = 1, S = 0, T = 1\) (after the failure of protecting LSP)
1. When red working LSP fails, it is re-signaled with $S = 1$ to free up resources in data plane (but still kept in control plane).

2. Signal green restoration LSP with $S = 0$ to use shared data plane resources (from red working LSP).

3. OXC4 and OXC3 share resources between red and green LSPs as $S$ bit is 1 and 0, respectively.

4. OXC5 and OXC4 do not share resources between green and purple LSPs as $S$ bit is 0 in both LSPs.

5. Once the failure is repaired, green restoration LSP is torn down, red working LSP is ressignaled with $S = 0$ to claim resources in data plane.
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- We would like to make this draft a WG Document.
Thank You.