LSP Fast-Reroute Using RSVP Detours

Ping Pan (presenter)
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Motivation

• Flexible
• Protect user traffic from both link and node failure.
• Minimize user intervention and configuration.
Operation

Fast-reroute Request

Detour Setup

Fast Reroute
Operation (detour merging)

Detour Merging: Merging all detour reservations that come from different ingress, but have the same egress and next-hop. Goal: To shrink the states.
Protocol Issues

• Fast-Reroute Request
  – Inside Path messages
  – FAST-REROUTE object
    • Detour path parameters (e.g. bandwidth, etc.)

• Detour Setup
  – Use IGP/TE to setup a new LSP
  – DETOUR object
    • Detour destination (learnt from RRO)

• Process detour LSP’s independently
Summary

• Flexible and extensible
  – Guarantee CoS and b/w per LSP.
• Single solution for both node and link protection.
• Adaptive:
  – Does not require all nodes to support it.
• Minimal user intervention.
• Operational.
• Require IGP/TE and RRO support.
Scaling Issues

- Designed to protect selective LSP’s.
- Support detour LSP merging to reduce the total number of LSP’s.
- Refresh reduction helps!