Resource ReserVation Protocol-Traffic Engineering (RSVP-TE) Signaling Procedure for Resource Sharing-based LSP Setup/Teardown

CCAMP WG, IETF 89th, London, UK

draft-zhang-ccamp-gmpls-resource-sharing-proc-00.txt

Xian Zhang (zhang.xian@huawei.com)

Haomian Zheng (zhenghaomian@huawei.com)

Scope and Problem Statement

Scope: RSVP-TE signaling procedure for LSP setup/teardown with resource sharing for circuit networks (i.e., OTN, WSON etc.)

Objective: Informational, to clarify the following points that are not discussed in current RFCs.

- ✓ Explaining that traffic may be interrupted;
- ✓ Elaborating the node behaviors during the LSP setup and teardown process;
- ✓ Summarizing all types of resource sharing and adding some detailed description;

Scenarios and Discussion (1)

- LSPs with the Identical Tunnel ID
  - Using SE + ASSOCIATION object [RFC4872]
  - Original LSP should explicit carry SE to allow resource sharing
  - For MPLS networks, [RFC3029] covers the signaling flow; but for GMPLS-controlled circuit networks, the following factor should be considered
    - The label in the control plane matches the resource in the data plane and cross connection

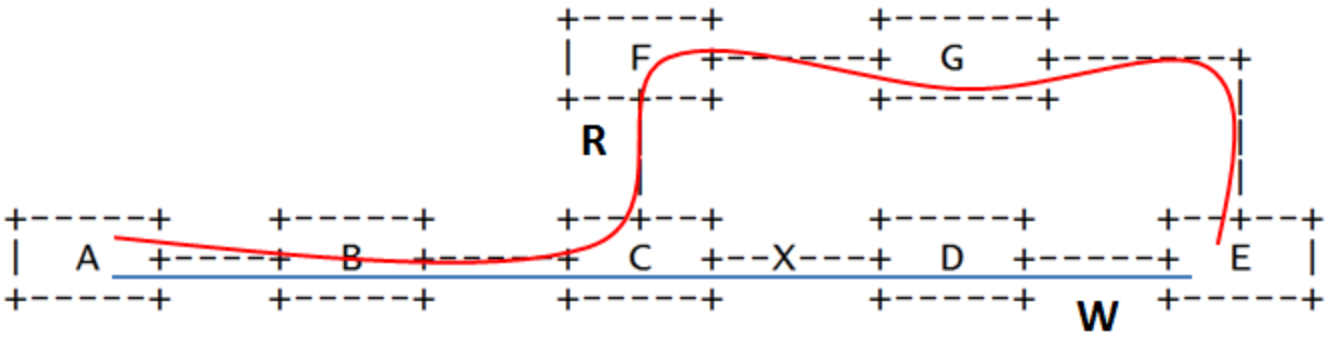

Figure 1: A Simple OTN Network

Scenarios and Discussion (2)

- LSPs with the Identical Tunnel ID
  - ✓LSP Restoration Setup and Reversion

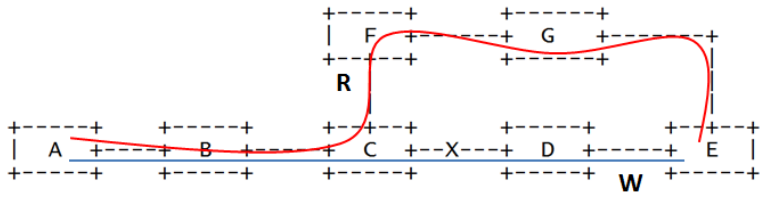

Figure 1: A Simple OTN Network

Restoration LSP Setup:

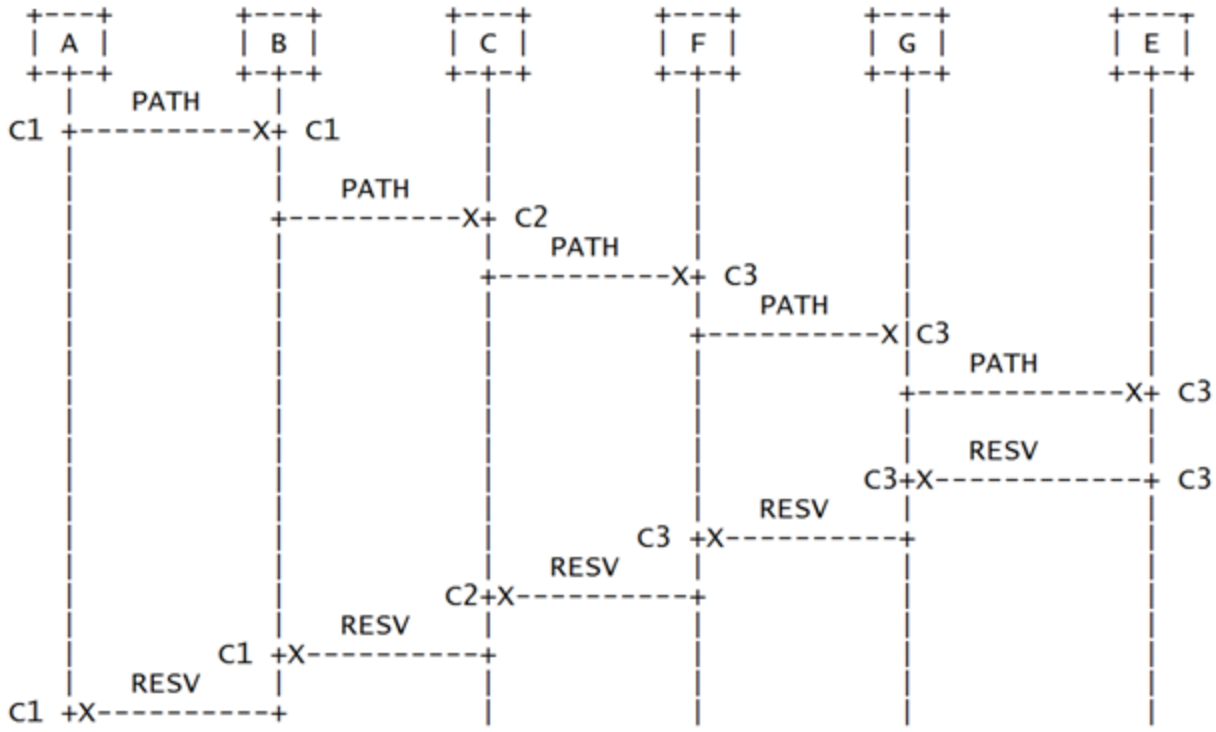

Figure 2: Restoration LSP Setup Signaling Procedure for LSP Restoration

C1: re-use resources on both interfaces
No need to reconfig. XC.

C2: re-use resources on One interfaces
Need to reconfig. XC.

C3: use new resources
Need to config. XC.

Scenarios and Discussion (3)

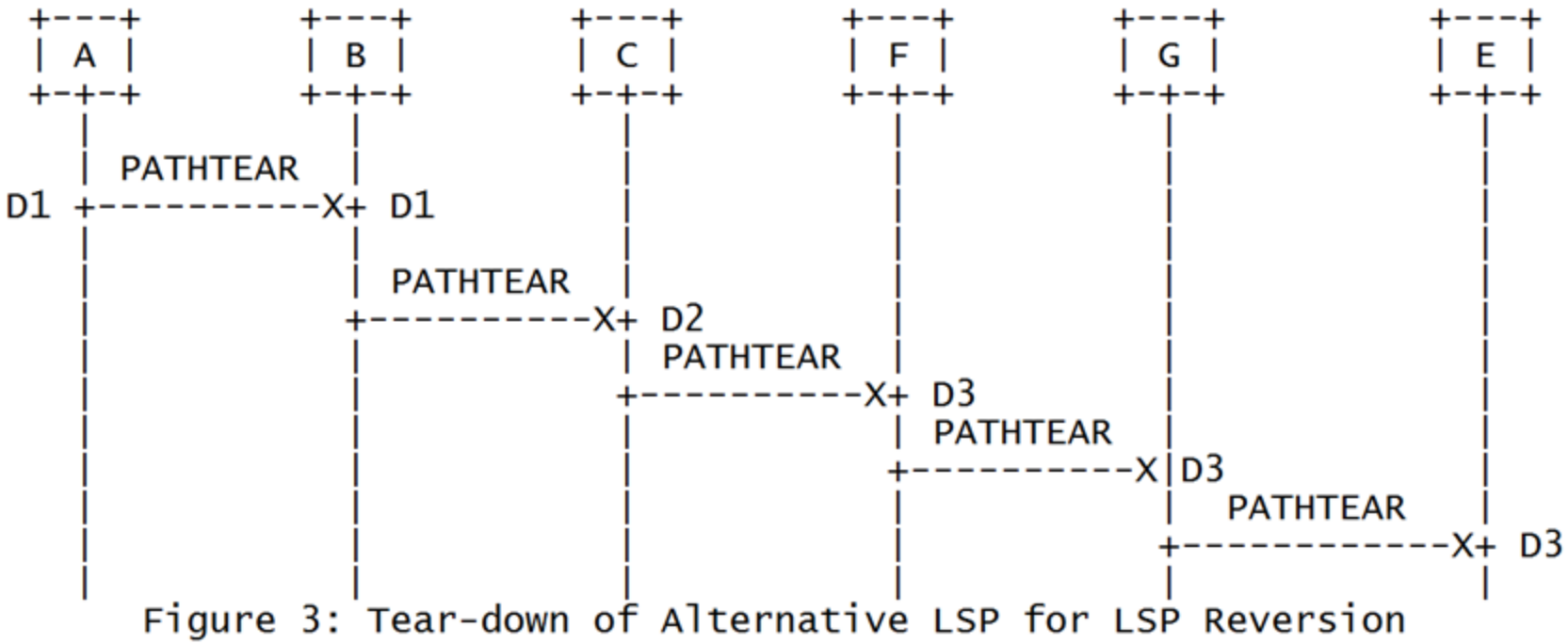

Figure 3: Tear-down of Alternative LSP for LSP Reversion

D1: re-use resources; do not release XC;

D2: re-use resources on one interface, need to re-configure XC;

D3: need to release XC.

Note: For reversion, it is not Make Before Break, but rather **Make While Break** due cross-connection (re)configuration action.

Scenarios and Discussion (4)

- LSPs with the Identical Tunnel ID
  - ✓LSP Restoration Setup and Reversion
  - ✓LSP Re-optimization Setup and Reversion
    - ✓ Signaling flow: same as described before.
    - ✓ "Make while break"
- LSPs with the Different Tunnel IDs
  - Segment recovery: using Association Object (T=2), covered by RFC4873
  - General case, i.e., two LSPs sharing resource: using Association Object (T=3), uniqueness of LSP association should be guaranteed, especially in multi-layer/domain context.
  - Signaling flow: same as before. May be "make while break"

Next Step

- Comments?
- Anyone interested in contributing to this draft?