Extensions to Path Computation Element Protocol (PCEP) to Support Resource Sharing-based Path Computation
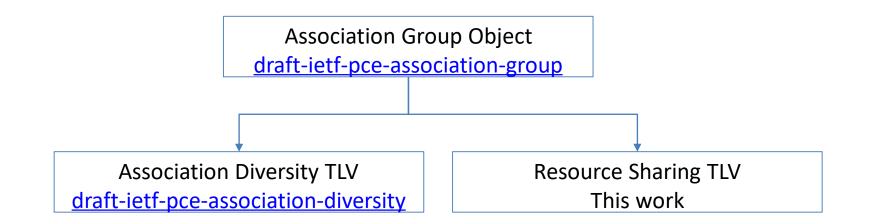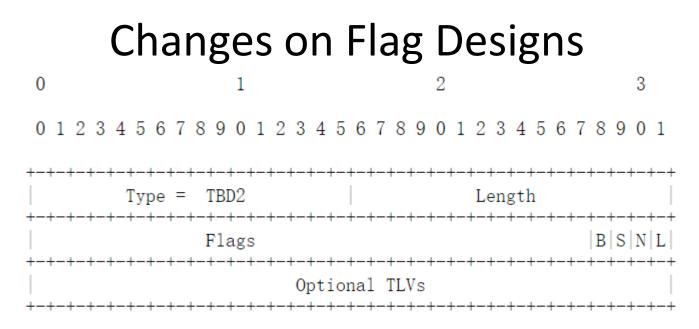
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Overview

- ✓ Scope:
    - ✓ Support specifying resource sharing strategy, especially when a new LSP is used to replace an existing LSP;
    - ✓ Support resource sharing between two LSPs with different parameters such as end points, bandwidth, etc. ;
- ✓ Proposal:
    - ✓ Reuse the Association group object
    - ✓ New association type: "sharing";
    - ✓ Resource Sharing TLV in Association Type Object

Association Group Object
draft-ietf-pce-association-group

Association Diversity TLV
draft-ietf-pce-association-diversity

Resource Sharing TLV
This work

Changes on Flag Designs

```
0                   1                   2                   3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|          Type =  TBD2         |              Length           |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                   Flags                               |B|S|N|L|
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                       Optional TLVs                           |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

- L bit: prioritize link share during path computation;
    - Firstly try to share link, if failed, try to find a path without link share, report failure if failed again; same below;
- N bit: prioritize node share during path computation
- S bit: prioritize SRLG share during path computation
- B bit: prioritize bandwidth sharing for bulk path computation;

Changes

- Updated the description in use case section, to harmonize with MBB and other documents;

- Updated error-code to be consistent with association error;

- Added the manageability Considerations;

- Other Editorial comments per:
  - https://mailarchive.ietf.org/arch/msg/pce/kH9gKq-t-CZB-QrkBMet-tf2NHM

Next Step

- Status review:

This is a queue of Individual I-D for which WG adoption call was issued in the past, but did not get adopted. The authors may request adoption call again once they have some more support for the work.

Draft	Remarks
draft-zhang-pce-resource-sharing	Adoption closed on 2018-10-13 because of limited response

- This draft have achieved:
  - More support from new authors;
  - More discussion/comments on the list;
  - Problem space consensus with harmonization with other association works;
- Request for 2nd round WG Adoption