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Stitching LSP Association
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Abstract

This document defines the stitching LSP association type and stitching LSP association TLV for the inter-domain Segment Routing MPLS-TP network.

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[1.](#) Introduction

[I-D.hu-mpls-sr-inter-domain-use-cases] provides stitching path label to indicate the the packet from the border nodes to forward to another AS domain. The border nodes should install the following MPLS data entries:

incoming label: Sticking Path Label

outgoing label: the SID list of the next AS domain + next Stitching Path label

[I-D.xiong-pce-stateful-pce-sr-inter-domain] introduces the procedure and the PCEP extension to form the inter-domain MPLS-TP MPLS data entries. This document proposes the related LSP association group extension.

[2.](#) Conventions used in this document

[2.1.](#) Terminology

[2.2.](#) Requirements Language

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [BCP 14](#) [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

3. Operation Overview

[I-D.ietf-pce-association-group] introduces a generic mechanism to create a grouping of LSPs. This grouping can then be used to define associations between sets of LSPs or between a set of LSPs and a set of attributes. This document proposes a new optional association object type called "stitching Association LSP type" and the related TLV called "stitching association LSP TLV" to form the inter-domain MPLS forwarding entry for the border nodes.

As defined in [I-D.ietf-pce-association-group], stitching LSP Association could be created dynamically or configured by the operator when operator-configured association is needed.

4. Stitching LSP Association Group

4.1. Stitching LSP Association Object

A new Association Type for the Association Object is defined in this document,

Association Type (TBD) = Stitching Path Segment LSP Association Group.

The Association Types is operator-configured associations in nature and statically created by the operator on the PCEP peers. The LSP belonging to these associations is conveyed via PCEP messages to the PCEP peer. Operator-configured Association Range TLV [I-D.ietf-pce-association-group] MUST NOT be sent for this Association Type, and MUST be ignored, so that the entire range of association ID can be used for it.

The Association ID, Association Source, optional Global Association Source and optional Extended Association ID in the Stitching Path Segment LSP Association Group Object are initialized using the procedures defined in [I-D.ietf-pce-association-group] and [RFC7551].

4.2. Stitching TLV format

The format of the Stitching LSP Association Group TLV is shown in Figure 1.

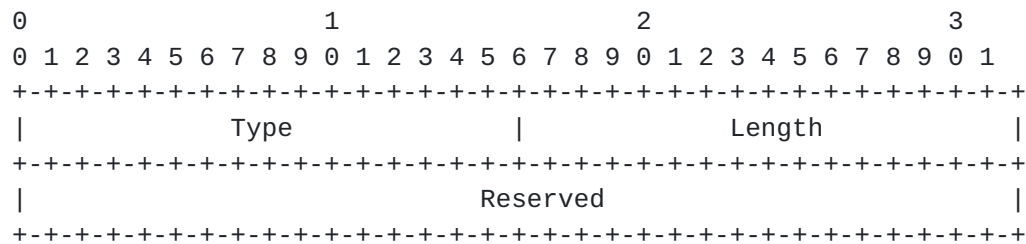


Figure 1: Stitching LSP Association Group TLV

The fields of the Stitching LSP Association Group TLV are following:

Type:16bits, it indicates the stitching LSP Association Group TLV(TBD2, the value is assigned by IANA).

Length: the value is 4, it indicates the length of the TLV is 4 bytes.

Reserved: it is reserved for future use.

5. Security Considerations

6. Acknowledgements

7. IANA Considerations

7.1. Association Types

IANA is requested to make the assignment of values for the sub-registry "ASSOCIATION Type Field" as follows:

Value	Reference
TBD1	[this document]

Table 1

7.2. Stitching Association TLV

This document defines a new TLV for carrying additional information of LSPs within a Stitching LSP Association Group. IANA is requested to add the assignment of a new value in the existing "PCEP TLV Type Indicators" registry as follows:

Type	Description	Reference
TBD2	Stitching LSP Association Group TLV	[this document]

Table 2

8. Normative References

[I-D.cheng-spring-mpls-path-segment]

Cheng, W., Wang, L., Li, H., Chen, M., Gandhi, R., Zigler, R., and S. Zhan, "Path Segment in MPLS Based Segment Routing Network", [draft-cheng-spring-mpls-path-segment-03](#) (work in progress), October 2018.

[I-D.hu-mpls-sr-inter-domain-use-cases]

hu, f., Xiong, Q., Mirsky, G., and W. Cheng, "Segment Routing in MPLS-TP Inter-domain Use Cases", [draft-hu-mpls-sr-inter-domain-use-cases-00](#) (work in progress), December 2018.

[I-D.ietf-pce-association-group]

Minei, I., Crabbe, E., Sivabalan, S., Ananthakrishnan, H., Dhody, D., and Y. Tanaka, "PCEP Extensions for Establishing Relationships Between Sets of LSPs", [draft-ietf-pce-association-group-06](#) (work in progress), June 2018.

[I-D.xiong-pce-stateful-pce-sr-inter-domain]

Xiong, Q., hu, f., Mirsky, G., and W. Cheng, "Stateful PCE for SR-MPLS-TP Inter-domain", [draft-xiong-pce-stateful-pce-sr-inter-domain-00](#) (work in progress), December 2018.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/RFC2119, March 1997, <<https://www.rfc-editor.org/info/rfc2119>>.

[RFC7551] Zhang, F., Ed., Jing, R., and R. Gandhi, Ed., "RSVP-TE Extensions for Associated Bidirectional Label Switched Paths (LSPs)", [RFC 7551](#), DOI 10.17487/RFC7551, May 2015, <<https://www.rfc-editor.org/info/rfc7551>>.

[RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in [RFC 2119](#) Key Words", [BCP 14](#), [RFC 8174](#), DOI 10.17487/RFC8174, May 2017, <<https://www.rfc-editor.org/info/rfc8174>>.

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