PCEP Extensions for Establishing Relationships Between Sets of LSPs and Virtual Networks


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Background/Motivation

• As per [I-D.ietf-pce-association-group], LSPs are associated with other LSPs with which they interact by adding them to a common association group.

• In this draft, this grouping is used to define associations between a set of LSPs and a virtual network for a PCE to identify LSP under a VN.
Applicability: H-PCE and ACTN

- P-PCE computes paths and determines each domain paths and associate VN1 with LSPs for each Domain
- For each LSP Initiate, Use Association Object to associate VN ID with LSPs

PCInitiate for LSP1 (1.A-2.A), VN1
PCInitiate for LSP2 (1.A-2.B), VN1
PCInitiate for LSP1 (2.A-3.A), VN1
PCInitiate for LSP2 (2.B-2.D), VN1
PCInitiate for LSP3 (2.D-3.C), VN1
PCInitiate for LSP1 (3.A-3.B), VN1
PCInitiate for LSP3 (3.C-3.B), VN1

VN1 includes three e2e tunnel: (a-c; a-b; b-c)

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PCEP VN Association Group (VNAG)

- Thus this document defines one new association type called "VN Association Type" of value TBD1.
- The scope and handling of VNAG identifier is similar to the generic association identifier defined in [I-D.ietf-pce-association-group].
The VNAG Object formats (IPV4)

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| Reserved           | Flags                  |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| Association type=TBD1 | Association ID        |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| IPv4 Association Source |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

// Optional TLVs

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 (variable)    |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| / // Virtual Network Name  // |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

The VIRTUAL-NETWORK-TLV formats
Summary & Next Step

• An early multi-vendor implementation is in progress.
• Continue to refine the document.