OSPF-TE Extensions for General Network Element Constraints

CCAMP WG, IETF 82nd, Taipei, Taiwan
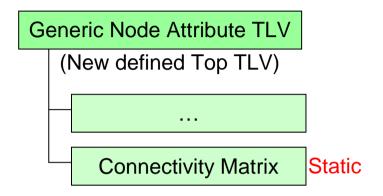
draft-ietf-ccamp-gmpls-general-constraints-ospf-te-02

Fatai Zhang   zhangfatai@huawei.com

Young Lee   ylee@huawei.com

Jianrui Han   hanjianrui@huawei.com

Greg Bernstein   gregb@grotto-networking.com

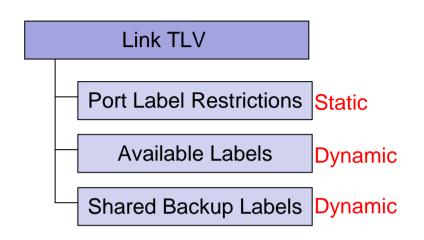Yunbin Xu   xuyunbin@mail.ritt.com.cn

Changes from Version 00&01

- Added a new section (Section 5) to describe the consideration of Scalability and Timeliness
    - Separation of static and dynamic information
    - Decomposing a Connectivity Matrix

Consideration of Scalability and Timeliness

Generic Node Attribute TLV

(New defined Top TLV)

…

| Connectivity Matrix | Static |

Link TLV

| Port Label Restrictions | Static |

| Available Labels | Dynamic |

| Shared Backup Labels | Dynamic |

- If the Connectivity Matrix is so large* that it results in exceeding the IP MTU:
  - □ It can be decomposed into multiple sub-matrices, which MAY be carried in different Top TLVs

* This would be an extremely rare occurrence based on modern switch designs and concerns of switch viability.
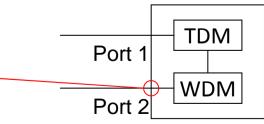
- Static sub-object and dynamic sub-objects can be carried in different Link TLVs separately
- Lower the frequency of advertising the static information

Discussions on Mailing-List

- Do we need to separate the static link info from dynamic link info? (from Jonathan Harrison and Acee Lindem)
  - Only the Port Label Restriction information is static
  - The Port Label Restriction sub-TLV won't become too large
    - We can use "Inclusive Range", "Exclusive Range", "Bitmap Set" to compress the size
  - Using multiple Link TLVs for the same link is not well defined in existing RFCs
  - Consensus: No need separation. ie., to include both static and dynamic in one single Link TLV for one link.

- How to interpret different types of G-labels in case of a hybrid node which supports multiple switching capabilities? (from Cyril)
  - Add some text to address this

| ISCD #1 sub-TLV: DWDM |
| ISCD #2 sub-TLV: TDM, G.709 ODUk |
| Available Labels : ODU Label Set |
| Available Labels : Lambda Label Set |

- ISCD #1 sub-TLV: DWDM
- ISCD #2 sub-TLV: TDM, G.709 ODUk
- Available Labels : ODU Label Set
- Available Labels : Lambda Label Set

Port 1

Port 2

TDM

WDM

Next Steps

- – Remove the description of separation of static and dynamic link information

- – Add some text to describe the relationship between ISCDs and labels

- – Refine the draft using RFC2119 conformance language