OSPF-TE Extensions for General Network Element Constraints

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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

• 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.

[Diagram]

- Link TLV
  - Port Label Restrictions: Static
  - Available Labels: Dynamic
  - Shared Backup Labels: Dynamic

• 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
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