Yang model for requesting Path Computation

draft-ietf-teas-yang-path-computation-03
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Credits

• Thanks to Carlo Perocchio and Francesco Lazzeri for their continuous feedback, review comments and model enhancement proposal

• Thanks to Tarek Saad, Igor Bryskin, Xufeng Liu, Pavan Beeran at al for updating the TE tunnel model resolving some of the common open issues

• Thanks to those who have participated to the mailing list discussion clarifying that the setup path may not be the same as the computed path

• Thanks Dhruv Dhody for his useful suggestion for path verification
Summary of changes from v02

• Added text to clarify that
  – the path being setup is not necessarily the same as the one returned by path computation
  – a path verification phase is needed to check that the actual path being setup meets the required end-to-end metrics and constraints

• Updated the YANG model to allow requesting the path srlgs and affinities among information being returned together with the result of path computation

• Corrected bugs, solved issues: https://github.com/rvilalta/ietf-te-path-computation
Open Issue: TE-Tunnel attributes

• Not all the te-tunnel attributes are needed for path computation
  – name, identifier, description, provisioning-state …

• Comment: those attributes could be used by “policy based” path computation (policy not specified yet)
  https://github.com/rvilalta/ietf-te-path-computation/issues/31

• Not clear outcome from the mailing list discussion:
  – shall we assume that policy is not needed and select a sub set of attributes needed for path computation?
  – set of attributes still to be discussed in details
Open Issue: Mandatory Constraints

• General question: shall we consider an alignment between PC EP and Yang models?
• Example for path computation:
  – PCEP offers the possibility to decide whether a constraint (almost any object actually in PCEP) must be considered by the path computation or may be ignored to permit path computation to relax a constraint in case it can be honored.
  – TE-tunnel model has a different mechanism to provide similar feature with an ordered list of paths computed with different constraints and then the possibility to choose one or the other depending of optimization purpose.

• Question to the TEAS WG: do we need to reconcile them? https://github.com/rvilalta/ietf-te-path-computation/issues/35
Proposed enhancement to RPC

• Different opinion in the mailing list about whether the path being setup should be the same as the path previously computed using path computation RPC:
  1. If network conditions do not change need to setup exactly the same path computed before
  2. In any case no need to setup the same path, provided that it has the same or even better metrics than the path computed before.
• Possible optional enhancement to request the setup of a path already computed using path computation RPC:
  – The server maintain a «temporary state» within the «state DS» for each computed path
  – The client can request the setup of a TE Tunnel using the same «tunnel name» of an existing path in the «state DS»: the server will setup that path, if still available
• The behavior would be similar to the stateful solution (compute-only te-tunnel) without relying on «permanent» state in the «config DS»
• Proposal described to the TEAS WG via e-mail on October 31, 2018
• Question to the TEAS WG: would such a solution be useful?
Open Issues status

• GitHub Repository
  [https://github.com/rvilalta/ietf-te-path-computation](https://github.com/rvilalta/ietf-te-path-computation)

• Tracking Open Issues, discussions and resolutions linked to YANG model
  • 4 closed since IETF 102
  • 9 open (only 2 new since IETF 102)
    – 4 specific for path computation RPC
    – 3 are being discussed jointly with TE Tunnel
    – 1 editorial (review terminology)
    – 1 pending the YANG model becoming stable
      (example of path computation request)
Next Steps

• Resolve current open issues
  – Continue cooperation with TE Tunnel and TE Topology model authors

• Provide guidance for technology specific augmentations
  – Synch up with OTN tunnel model authors, WSON and flex-grid tunnel authors