Yang model for requesting Path Computation

draft-ietf-teas-yang-path-computation-01

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Credits

Thanks to Carlo Perocchio, Francesco Lazzeri et. Al for their fe edback , review comments and model enhancement proposal

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

Summary of changes from v00

- The draft has been modified to address Michael's comment and re-structured accordingly:
  - New introduction and abstract
  - Use Cases: terminology clarified
  - Motivations section
    - Why a YANG model for Path Computation
    - Interaction with TE Topology
    - Stateless and Stateful Path Computation
  - Path Computation and Optimization for multiple paths
  - YANG model description and new features
  - YANG tree and model

Summary of changes from v00

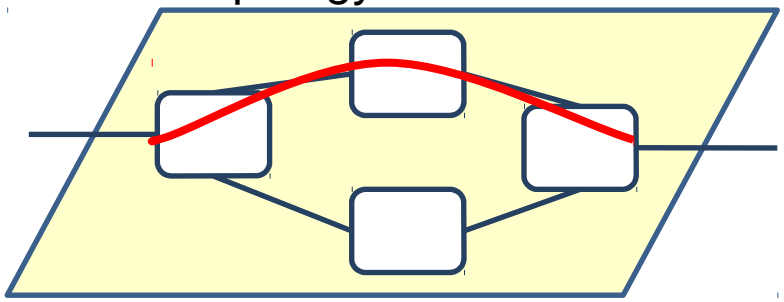
- The YANG model has been updated to
  - Add support for synchronization of multiple path computation requests e. g. in case of computation of multiple diverse paths
  - Add to the metrics, defined in [TE-TUNNEL], which applies to each individu al request other specific metrics types that can be applied to a set of synchr onized requests
  - Add the capability to return the values of the metrics computed by the path computation as output of RPC ␣ permitting path computed comparison by Orchestrator (closed open issue #32)
  - Added IRO and XRO using the grouping <path-route-object> defined in [TE _TUNNEL] (closed issue #29)
  - Clarified that in the context of a typical multi-domain TE network, there cou ld be multiple choices for the ingress/egress points of a domain. In order to select the best pair of ingress/egress point, path computation needs to be r equested between all the ingress/egress pairs, with the option to synchroniz e requests among them. (closed open issue #16)

Open Issues status

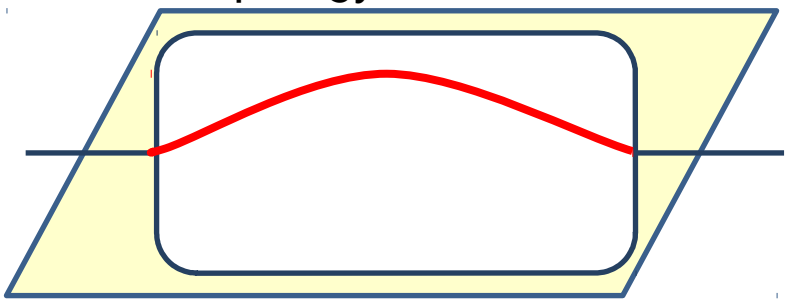
- GitHub Repository
  - https://github.com/rvilalta/ietf-te-path-computation
- Tracking Open Issues, discussions and resolutions linked to YANG model
  - After IETF 100
    - 6 closed
    - 9 new: 4 closed and 5 still open
  - 11 remained open
    - Only 2 specific for path computation RPC
    - 8 are being discussed jointly with TE Tunnel
    - 1 related to future enhancement in the draft with an example of path computation request

Open Issue - include/exclude topology

Topology#1

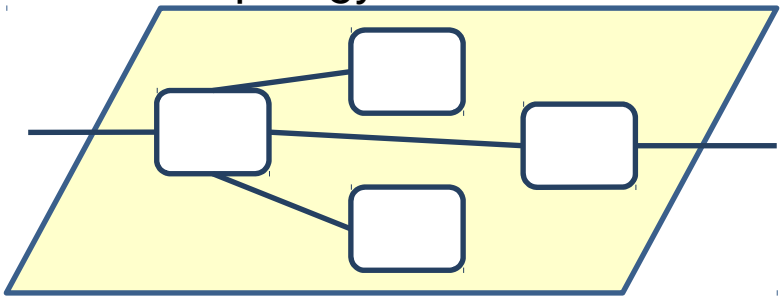


Topology#2



In which topology is the best optimal path?

Topology#3



No interest in setting up the path in Topology#3: no need to compute any path here

Open Issue - include/exclude topology

- TE Tunnels are setup in a given topology
  - context to the references to the topological entities (e.g. node-id, ttp-id, ltp-id)
- Path Computation can be used to select which topology
  - need to request path computation within a sub-set of topologies
- Two possible options:
  A. Multiple requests (one for each topology)
  B. One request returning multiple paths (one for each topology)
- **Any advantage with option B?**
  - The include/exclude topology could be used to request the path computation on a limited sub-set of the available topologies
    - How to reference the various topological entities across multlple topologies ?

Next Steps

- Resolve current open issues
  - Continue cooperation with TE Tunnel model authors
- Seeking further comments and feedback s from WGs
- Request YANG Doctor review
- Ready for WG LC after IETF 102