Yang model for requesting Path Computation

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

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Credits

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Thanks to Michael Scharf for his review comments.

Thanks to Tarek Saad, Igor Bryskin, Xufeng Liu, Pavan Beeran et al for updating the TE tunnel model resolving some of the common 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 individual request other specific metrics types that can be applied to a set of synchronized 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 could 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 requested between all the ingress/egress pairs, with the option to synchronize 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

In which topology is the best optimal path?

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 multiple topologies?
Next Steps

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