Yang model for requesting Path Computation

draft-busibel-teas-yang-path-computation-03
IETF 99 – Prague

Italo Busi (Huawei)
Sergio Belotti (Nokia)
Daniele Ceccarelli (Ericsson)
Victor Lopez, Oscar Gonzales de Dios (Telefonica)
Michael Scharf (Nokia)
Anurag Sharma
Yan Shi (China Unicom)
Ricard Vilalta (CTTC)
Karthik Sethuraman (NEC)
Summary of changes from IETF 98

• Added considerations for stateless and stateful solutions
  – Addressing Dhruv comment at IETF 98
• Close cooperation with TE Tunnel model authors to resolve common issues
  – Groupings in yang-te-types updated accordingly
• YANG RPC updated
  – Re-defined as an augmentation of TE Tunnel RPCs
  – Aligned with the groupings in yang-te-types
  – Added support of multiple path computation requests (synchronization list)
GitHub Support

• GitHub Repository

• GitHub support used for
  – Developing and tracking YANG model for stateless RPC
  – Tracking Open Issues, discussions and resolutions linked to YANG model
    • 7 solved since IETF 98
    • 9 remained open and 1 added since IETF 98
      – 5 are being discussed jointly with TE Tunnel
Open Issues - 1

• Topology-id in path constraints [#27]
  – Closed this week via mail exchange with Tarek: any topology entity
    e.g. source and dst node IDs, are within a given topology namespa
    ce
  – A follow-up question is how the topology-id can be chosen and wh
    ether path computation can help in choosing it e.g., whether the
    MDSC can decide to request TE Tunnel setup in topology 1 or in to
    pology 2 after knowing from path computation RPC which paths w
    ould be computed in these two topologies and their characteristics

• Use a subset of tunnel-params_config grouping for a Path C
  omputation RPC [#31]
  – TE Tunnel model can regroup non-tunnel generic parameters in a s
    eparate grouping that can be reused by the path-computation mo
    dule: list of attributes to be moved still to be finalized
Open Issues - 2

• Residual BW [#30]
  – New metric for the minimum unreserved bandwidth over all the links traversed by the computed path
  – This is a generic TE concept: draft-lazzeri-pce-residual-bw provides a proposal also to update PCEP

• Relaxable constrains [#19]
  – As in PCEP, specify whether path computation must fail if a constraint is not met or whether the constraint could be relaxed
  – Needed also for path computation RPC. To discuss if we can bring this support to the TE tunnel model
Open Issues - 2

• Class Type [#25]
  – Currently defined for packet/MPLS TE Tunnels. We need an augmentation for packet/MPLS TE path computation RPC
  – In which document?

• Missing local protection [#24]
  – Use of L flag in the SESSION/ATTRIBUTE object (RFC3209, RFC 5440)
  – Covered in the RSVP-TE MPLS model
  – However, the scenario is to be able to request a controller (e.g., PNC) to setup a TE Tunnel or to perform Path Computation for a path supporting local protection without using the RSVP-TE MPLS model but using only the TE Tunnel model and Path Computation RPC
Next Steps

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

• Seeking further comments and feedbacks from WGs
  – How to reduce the number of path computation requests in networks with many domains
    • Implementation issue rather than a standardization issue: just needs to provide a complete toolset encompassing TE Topology, TE Tunnel and a Path Computation RPC

• Ready to become WG document