PCEP Extension for Stateful Inter-Domain Tunnels

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draft-ietf-pce-stateful-interdomain-04
Update since previous versions

• Version 00:
  • Working Group adoption based on draft-dugeon-pce-stateful-interdomain-04.txt

• Version 01:
  • Take into account comments received during the WG call adoption
    • Except the comment about the implementation option

• Version 02:
  • Endorse Binding SID to transport Stitching Label within PCEP message

• Version 03:
  • Simple refresh

• Version 04:
  • Add new use cases (VPN & Intent-Based Networking)
  • Specify how PCE could modify their local path and enforce QoS
Stitching Label in action

- SL12: Stitching Label used by ASBR21 to identify the traffic coming from ASBR1 that stich the 2 tunnels
- SL23: Stitching Label used by ASBR3 to identify the traffic coming from ASBR22 that stich the 2 tunnels

Standard BRPC exchange as per RFC5441

- PKS2: ERO for the AS2 part mask with Path Key
- PKS3: ERO for the AS3 part mask with Path Key
Implementation requirements

• The stitching label principle requires at least a certain number of modifications in the current PCEP version
  • A new PCE Capability to announce the inter-domain behavior
  • A new PCE Association Group to associate the local paths identifier to the inter-domain identifier
  • A new PCEP Errors message to manage the Stitching Label exchange
  • A new flag for the TE-PATH-BINDING Object to convey the Stitching Label
Conclusion

• Propose to extend BSID and Association Group to inter-domain
  • To exchange Stitching Label between PCEs and PCE / PCCs
  • To automatically stitch / nest local LSP tunnel to form inter-domain LSP tunnel

• Applicability
  • Inter-domain LSP tunnels setup by RSVP-TE and/or Segment Routing
  • Allow stitching of Segment Routing paths and RSVP-TE LSP tunnels
  • Targeted use cases
    • inter-domain VPN,
    • Data Centre interconnection,
    • 5G Slicing,
    • Intent-Based Networking ...