Using Flex-Algo for Segment Routing based VTN

draft-zhu-lsr-isis-sr-vtn-flexalgo-01

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Background

• A VTN is a virtual underlay network with the required topology and resource characteristics
  • Introduced in draft-ietf-teas-enhanced-vpn

• Resource-aware SID is defined in draft-ietf-spring-resource-aware-segments
  • SR SIDs can represent different sets of resources allocated for packet processing

• SR for VPN+ is described in draft-dong-spring-sr-for-enhanced-vpn
  • Describes the mechanism to build SR based VTN with resource-aware SIDs

• This document proposes Flex-Algo based control plane mechanism for SR VTN
  • To distribute the per-VTN topology and resource information to network nodes and controller
Mechanism in this draft

• Flex-Algo ID is reused as the control plane identifier of a VTN
  • Use Flex-Algo to describe the topology constraints of a VTN
  • Use IS-IS SR extensions to advertise algorithm-specific prefix SIDs/SRv6 Locators

• Extend IS-IS L2 bundle to advertise the TE attributes associated with VTN
  • IS-IS L2 bundle is extended for both physical and virtual member links

  ![Diagram]

  V flag: indicates the member links are virtual links

• Each VTN is associated with one or more physical or virtual member links in a bundle
  • Use admin-group/extended admin-group to correlate a Flex-Algo and the member links
  • TE attributes and SIDs advertised for the member links belong to the corresponding VTN
Updates in -01 version

- No significant change
  - The mechanism is stable since -00 version

- Add descriptions about the forwarding plane behaviors on VTN-specific prefix-SIDs and adj-SIDs

- Add reference to draft-ietf-spring-resource-aware-segments
  - Resource-aware SIDs are used in the data plane of SR VTN

- Some editorial changes
Next Steps

• The mechanism and content of this draft is stable

• Authors would like to ask for WG adoption of this document
Thank You