Packet Network Slicing using Segment Routing

draft-peng-lsr-network-slicing-00
Problem Statement

• draft-ietf-teas-enhanced-vpn-01 specifies the layered architecture of enhanced VPN.
• Based the layered architecture of enhanced VPN, This document specifies the solution to create virtual networks in a packet network.
Introduction

• Explicit virtual network identification (Administrative Instance Identifier, AI) to meet the different service in entire network, which is not only in IGP domain but also in cross-domain Scenarios.
• All is one of constraint criteria of the color template (draft-ietf-spring-segment-routing-policy), and color template with All provides a more flexible control.
• Virtual network-based MP2P SR-BE for best-effort service and P2P SR-TE for traffic engineered service respectively.
• Uniform Color template (Centralized and distributed, intra and inter domain) for overlay service mapping to underlay resource.
• There is no modification to the forwarding table (dataplane).
The solution to create virtual networks in a packet network.

**Resource Allocation**
Base on the link.

**Flexible Service Overlay**
All is one of constraint criteria in the color template .CSPF for SR-BE/TE with color including All and other constraint criteria to satisfied different service.
**Multi-Domain Deployment**

**Colored BGP-LU without SDN**

**Option B Inter-area**

- **color 1000 is:**
  - **All 1 SPF**
  - **VPN lsp need <color=1000>**

- **color 1001 is:**
  - **All 1**
  - **bandwidth 1G delay 10ms**
  - **VPN lsp need <color=1001>**

- **sub-if1 belong to All-1**
Multi-Domain Deployment Cont.

E2E SR-TE with SDN
Combined with SR Flex-algorithm

- Color template with All could map to the FA-id for label stack optimization.
- When the algorithm value advertised is a Flex-Algorithm value, the Prefix SID is associated with paths calculated using that Flex-Algorithm in the associated topology All specific.
Next Step

• Comments welcome.

Thanks!