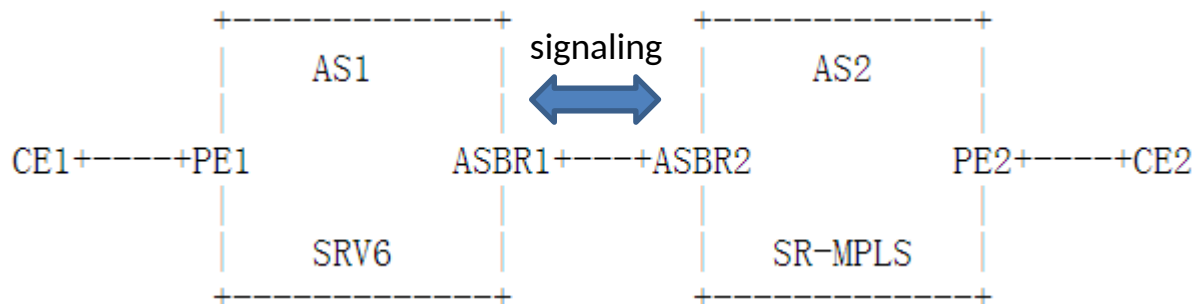# SRv6 and MPLS interworking for VPN service
draft-pzm-bess-spring-interdomain-vpn-00

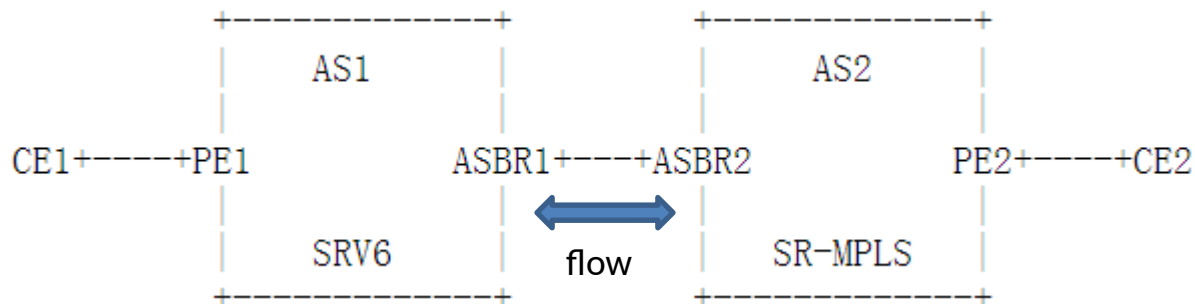BESS WG

IETF106# Singapore

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```
          +-------------+  signaling  +-------------+
          |             |             |             |
          |     AS1     |    <--->    |     AS2     |
          |             |             |             |
CE1+----+PE1           ASBR1+---+ASBR2           PE2+----+CE2
          |             |             |             |
          |    SRV6     |             |   SR-MPLS   |
          |             |             |             |
          +-------------+             +-------------+
```

Using IntraAS Option B

- Only ASBR need to do the stitching work between two ASes.
- PEs in both ASes need not support both SRv6 and SR-MPLS.
- ASBR1 supports both SRv6 and SR-MPLS capabilities, but ASBR2 supports SR-MPLS capability only.

- SRv6 to SR-MPLS domain signaling

  - ASBR1 assigns an MPLS label for the prefix received from PE1 and advertises it to ASBR2.
  - The MPLS label has local significance that indicates this packet is associated with an SRv6 SID or a SID list which leads the packet from ASBR1 to PE1.

- SR-MPLS to SRv6 domain signaling

  - ASBR2 assigns label for the prefix received from PE2 and advertises it to ASBR1.
  - When ASBR1 advertises this prefix to PE1, ASBR1 assigns an SRv6 SID for it.

```
+-------------+          +-------------+
|    AS1      |          |    AS2      |
|             |          |             |
CE1+----+PE1         ASBR1+----+ASBR2          PE2+----+CE2
|             |   <------->   |             |
|   SRV6      |    flow   |   SR-MPLS   |
+-------------+          +-------------+
```

Data Flow Scenario

- When a data flow packet which has the destination to CE1 is received by ASBR1, ASBR1 recognizes the MPLS label which is the bottom label, removes the label and adds an IPv6 header with or without SRH to the packet, then forwards it to PE1.

- When a data flow packet, which has the destination to CE2, is received by ASBR1, ASBR1 recognizes the SRv6 SID which the SL is set to 0 or without SRH, removes IPv6 header + SRH and adds a label or label stack in the packet, and forwards it to PE2.

- Any comment ^^

Thanks!