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draft-agrawal-bess-bgp-srv6-mpls-interworking-00

Swadesh Agrawal, Cisco Systems (swaagraw@cisco.com) – Presenter
Zafar Ali, Cisco Systems (zali@cisco.com)
Clarence Filselfs, Cisco Systems (cfilself@cisco.com)
Daniel Voyer, Bell Canada (daniel.voyer@bell.ca)
Gaurav dawra, LinkedIn (gdawra.ietf@gmail.com)
Zhenbin Li, Huawei (lizhenbin@huawei.com)
Dhananjaya Rao, Cisco Systems (dhrao@cisco.com)

Purpose

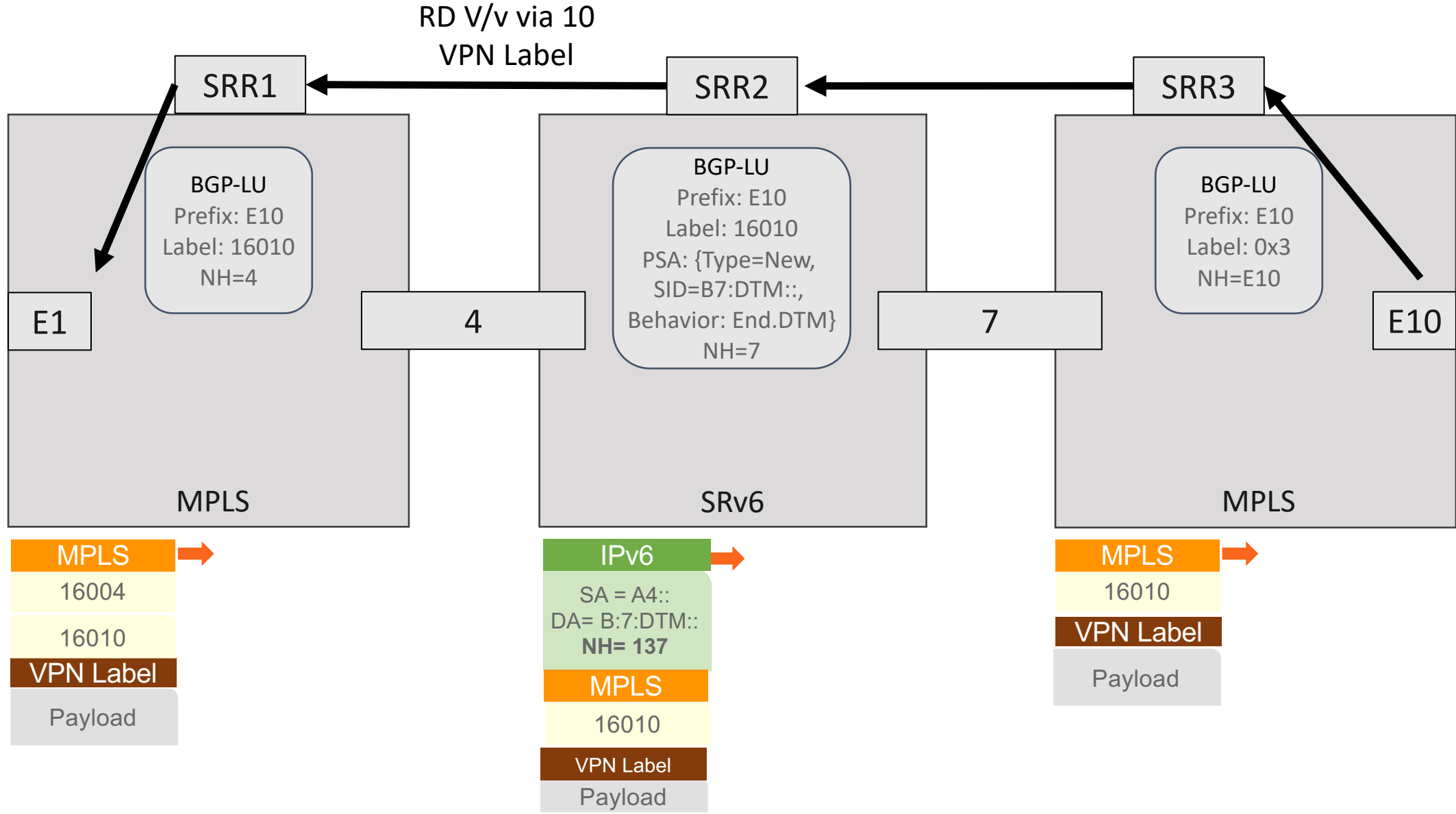
Draft [I-D.agrawal-spring-srv6-mpls-interworking] describes SRv6 and MPLS interworking architecture in multi domain network where each domain run SRv6 or MPLS data plane independently.

This drafts extract the BGP protocol extensions proposed in [I-D.agrawal-spring-srv6-mpls-interworking] to signal SRv6 SID. This is done to independently state BGP protocol extensions and future applicability of them for other use cases.

“SRv6 tunnel for label route” Prefix SID attribute TLV

- Document introduces a NEW tlv called "**SRv6 tunnel for label route**" of the BGP Prefix-SID Attribute to signal SRv6 SIDs along with MPLS label bound to prefix in NLRI
- "SRv6 tunnel for label route" TLV signals AND semantics i.e. push label signaled in NLRI and perform H.Encaps with DA as SRv6 SID signaled in TLV
- "SRv6 tunnel for label route" TLV is encoded exactly like SRv6 Service TLVs in Prefix-SID Attribute [RFC9252] without transposition
- SID Behavior that may be encoded but not limited to is End.DTM

Tunnel BGP LU LSP across SRv6 C domain

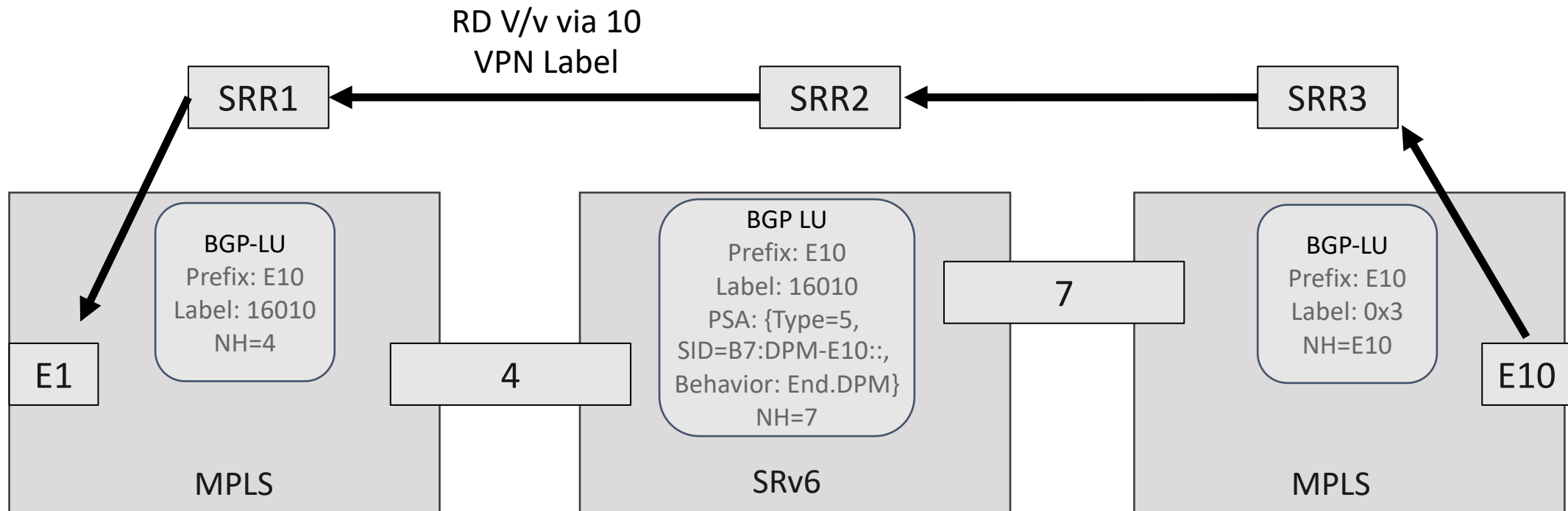


SRv6 SID bound to prefix in NLRI

- Bound the SRv6 SID of DPM behavior to PE loopback address signal in SAFI 4/1
- Receiving node perform H.Encaps, where destination of IPv6 header is set to SRv6 SID for traffic destined to address in NLRI
- Signal SRv6 SID of DPM behavior either in SAFI 4 or SAFI 1.

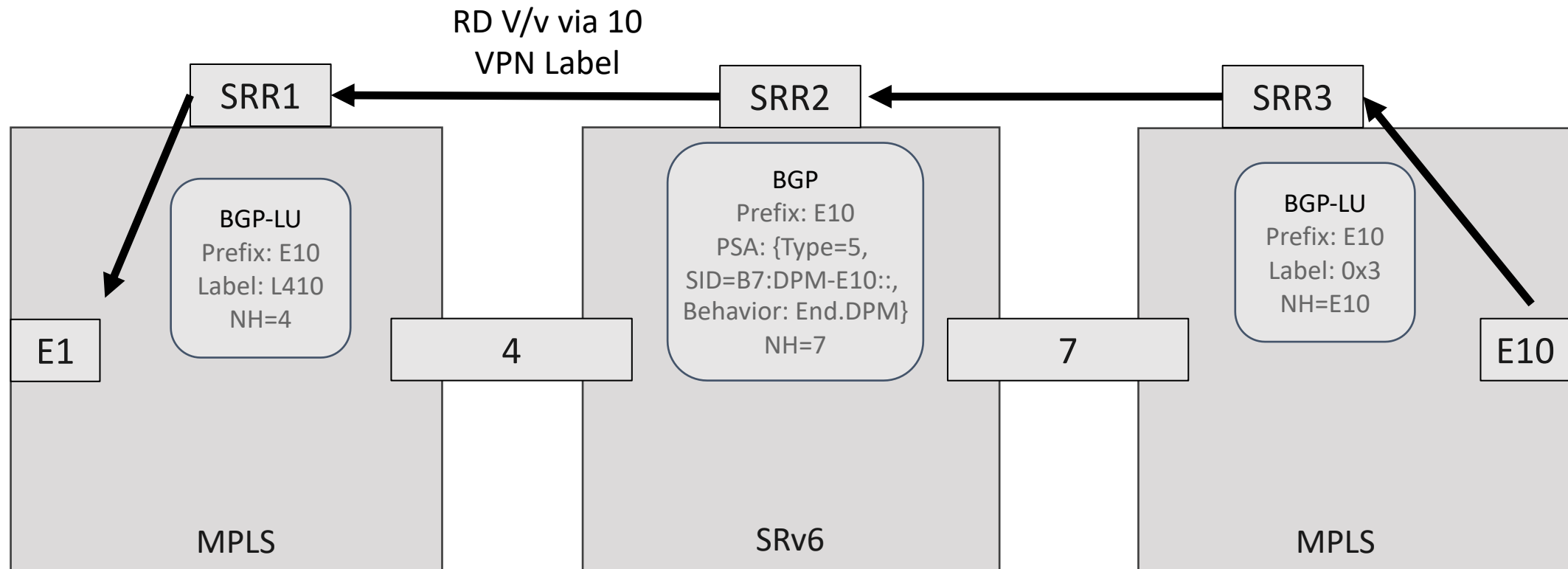
Address in NLRI is bound to SRv6 SID & MPLS

1. Border node allocates both Label and SRv6 SID bound to prefix
2. Document extends the BGP Prefix-SID attribute [RFC8669] to carry "SRv6 L3 Service TLV" defined in [RFC9252] with AFI=1,2 and SAFI 4.
3. TLV is encoded exactly like SRv6 Service TLVs in Prefix-SID Attribute without transposition.
4. Such an update can be processed by both legacy MPLS ABR and SRv6 capable ABR and use relevant encapsulation.



Address in NLRI is only bound to SRv6 SID

1. Border node allocates only SRv6 SID.
2. SRv6 SID is advertised in SAFI 1 as per section 5.3 and 5.4 of [RFC9252] as there is no label bound to NLRI.



Next Steps

The authors would like BESS WG review and comments.