

# SRv6-based BGP Service Capability

draft-lz-bess-srv6-service-capability

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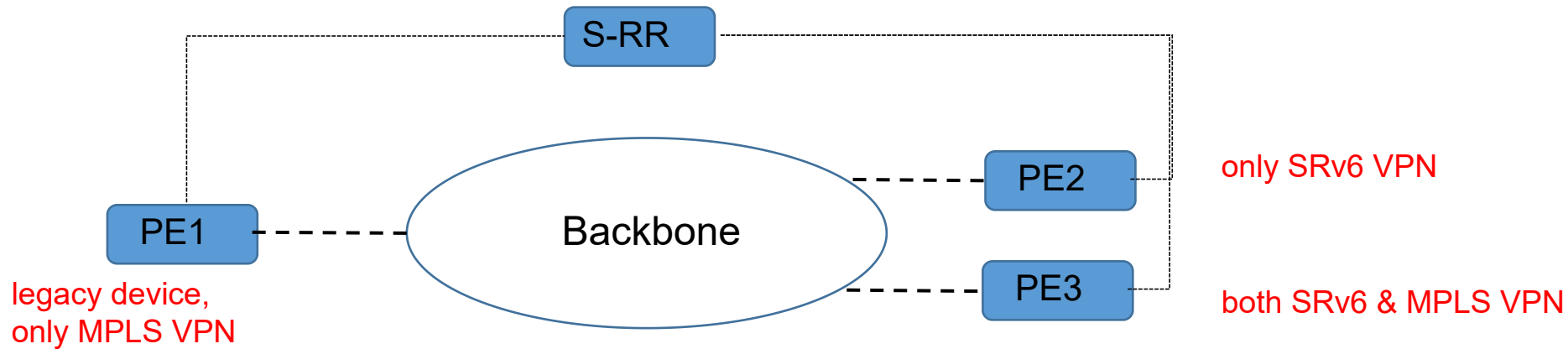
# Background

- SRv6 based BGP services [RFC9252]
- leverages the existing AFI/SAFIs of MPLS-based services

MP-BGP NLRI  
BGP Prefix-SID Attribute  
SRv6 Service TLV(SRv6 Service SID or part of the SID)

- Encoding of SRv6 service SIDs:
  - SRv6 Service SIDs encoded as a whole in the SRv6 Services TLVs, the MPLS Label field(s) of the NLRI set to Implicit NULL
  - locator carried in SRv6 Services TLV, function and/or argument in the MPLS Label field of the NLRI

# the Co-existence Scenario



Advertising SRv6-based service routes to legacy devices may result in service failure and/or abnormal extra traffic flows in the network.

PE1----PE3

- Control Plane
  - PE3: advertises both SRv6 VPN route and MPLS VPN route
  - PE1: discards the SRv6 Service TLV--->treats the SRv6-based route as a MPLS-based route ---> two MPLS VPN routes for the same service on PE1
- Data Plane
  - PE1: chooses the wrong route and uses the label field in the NLRI of SRv6 route as MPLS VPN label
  - PE3: sends packets to the wrong service instance/ drops them

# Control Advertisement of SRv6 Service Routes

[RFC9252]: Implementations MUST provide a mechanism to control advertisement of SRv6-based BGP service routes on a per neighbor and per service basis.

General configuration steps :

- Get each PE's capability for SRv6-based service routes.
- Config on PEs or S-RR based on their capabilities (per neighbor).
  - PEs: Specify which neighbors can the SRv6 service routes be advertised to when configuring SRv6 services on the PEs.
  - S-RR: SRv6 service routes would not be reflected to legacy devices that don't support SRv6.

Disadvantages :

- Per neighbor configurations need to vary with the device capability.
- Additional steps increase the possibility of faults and the difficulty of troubleshooting.
- Possible interconnection problems among multiple vendors.

# New SRv6-based BGP Service Capability

- The Capabilities Optional Parameter [RFC5492] in the BGP OPEN message allows BGP speakers to communicate capabilities.
- A new Capability Code for SRv6-based BGP service capability.
  - A BGP speaker MUST NOT send any UPDATE message that includes the SRv6 service TLVs, unless it has sent the SRv6-based BGP service capability in its BGP OPEN message, or it has received the SRv6-based BGP service capability in the BGP OPEN message from its peer.
  - If the capability for SRv6-based services is enabled or removed, an established session needs to be reset to resend the OPEN message.

service route controlled automatically & easy to implement

# Next Steps

- Request feedbacks and comments

**Thank You !**