

Connect IPv4 Islands over IPv6 Core (4PE)

draft-mishra-idr-v4-islands-v6-core-4pe-00

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IETF-111, July 27th 2021

Motivations & Goals of this draft

RFC 4798 (6PE) Connect IPv6 Islands over IPv4-Only core

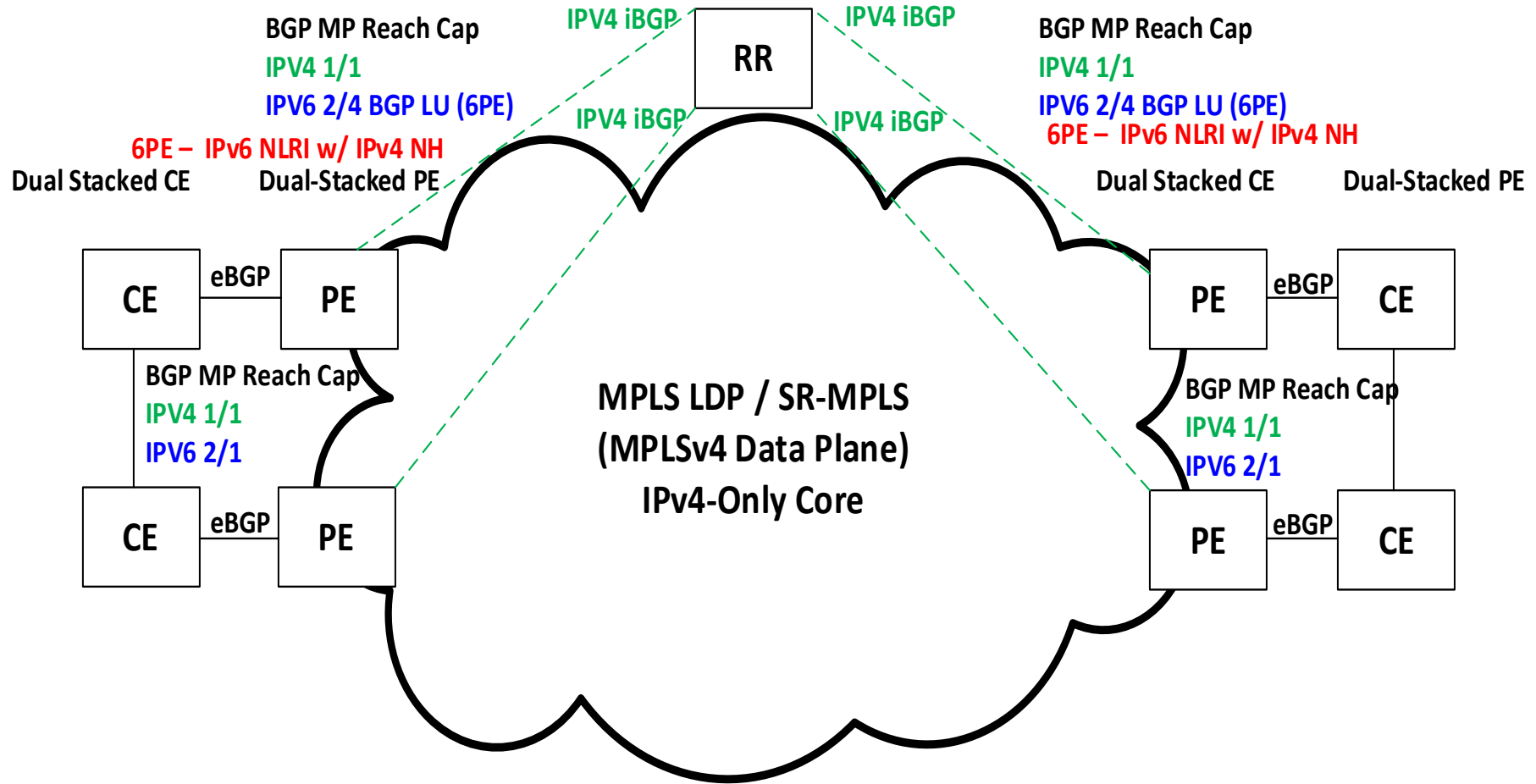
- Mechanism using BGP labeled unicast RFC 3107 to connect IPv6 islands over an IP4 core.
- Based on softwire mesh framework RFC 5565 6to4 softwire where IPv6 packets are tunneled over an IPv4-Only core.
- Ingress PE signals to egress PE for BGP IPv6 labeled unicast to carry IPv6 prefixes.
- BOS S-bit set for service label, added to the stack to carry IPv6 labeled prefixes

New Draft (4PE) Connect IPv4 Islands over IPv6-Only core

- Mechanism using BGP labeled unicast RFC 3107 to connect IPv4 islands over an IP6 core.
- Based on softwire mesh framework RFC 5565 6to4 softwire where IPv4 packets are tunneled over an IPv6-Only core.
- Utilizes MP-BGP to dynamically discover if the peer can exchange IPv4 NLRI over an IPv6 next hop and utilizes IPv6 next hop encoding per RFC 8950.
- Ingress PE signals to egress PE for BGP IPv4 labeled unicast to carry IPv4 prefixes.
- BOS S-bit set for service label, added to the stack to carry IPv4 labeled prefixes
- Extending draft to support IPv6-Only PE scenario to carry IPv4 packets using 4PE per draft-ietf-bess-deployment-guide-ipv4nlri-ipv6nh-02.
- 4PE is applicable to Segment routing architecture SR-MPLSv6 & SRv6 core.

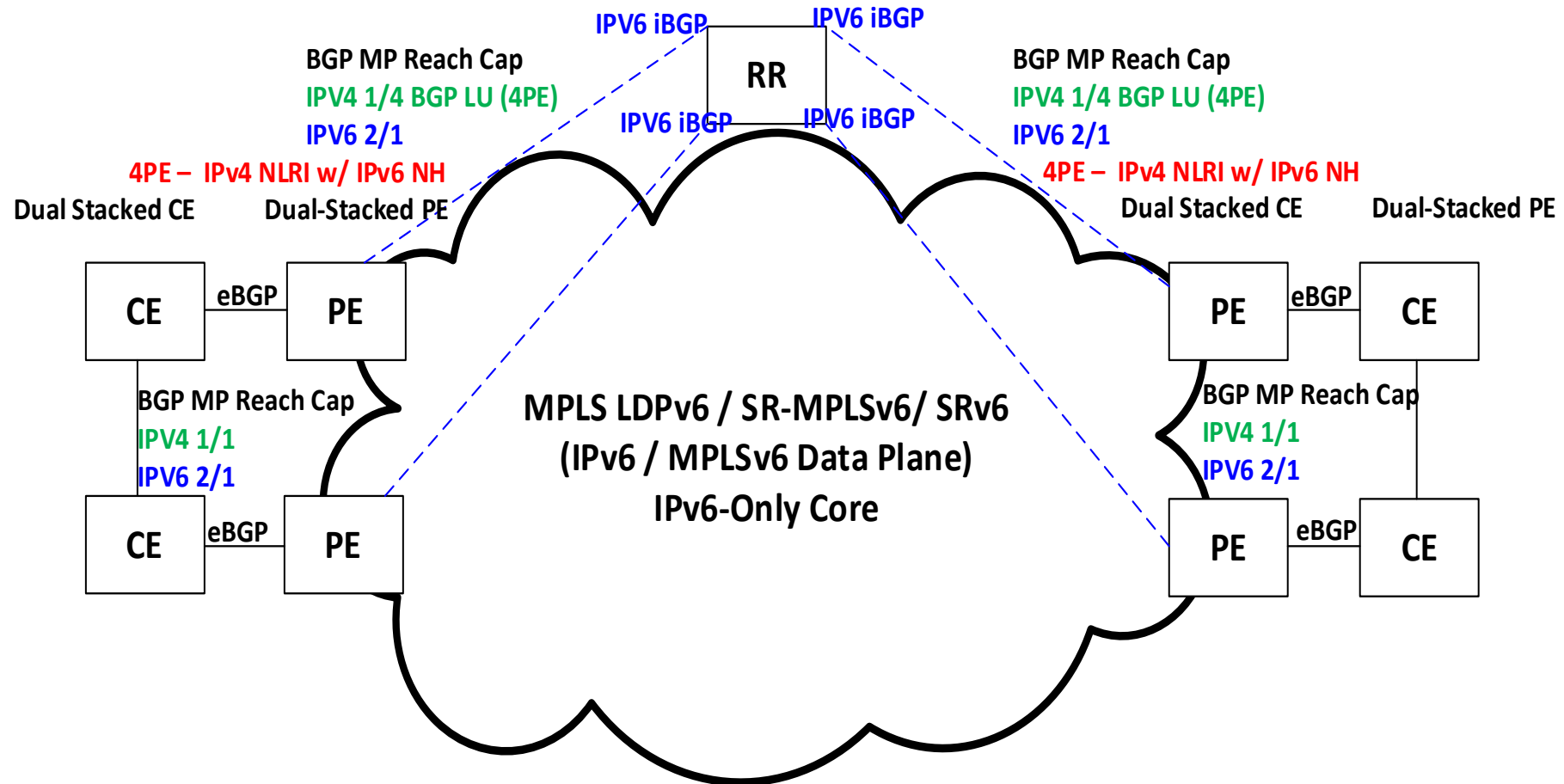
RFC 4798 –Connecting IPv6 islands over IPv4 MPLS using IPv6 Provider Edge Routers (6PE)

(MPLS / SR-MPLS Core – Software Mesh Framework 6to4 (6PE)
 “Dual Stacked PE” ⇔ New draft adopted by BESS

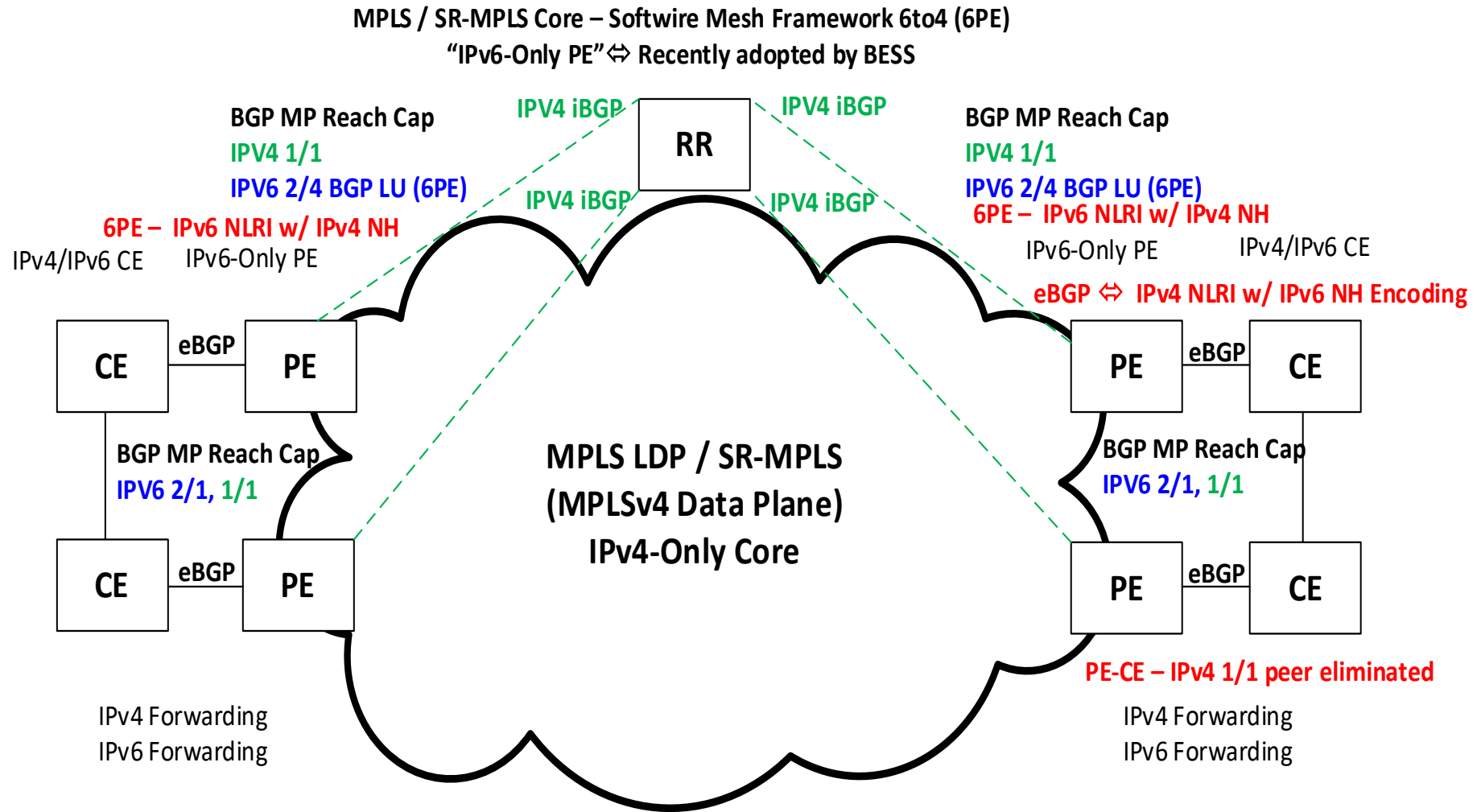


Connecting IPv4 Islands over IPv6-Only Core using IPv4 Provider Edge Routers (4PE)

MPLS LDPv6 / SR-MPLSv6 / SRv6 – Softwire Mesh Framework 4to6 (4PE)
“Dual Stacked PE”

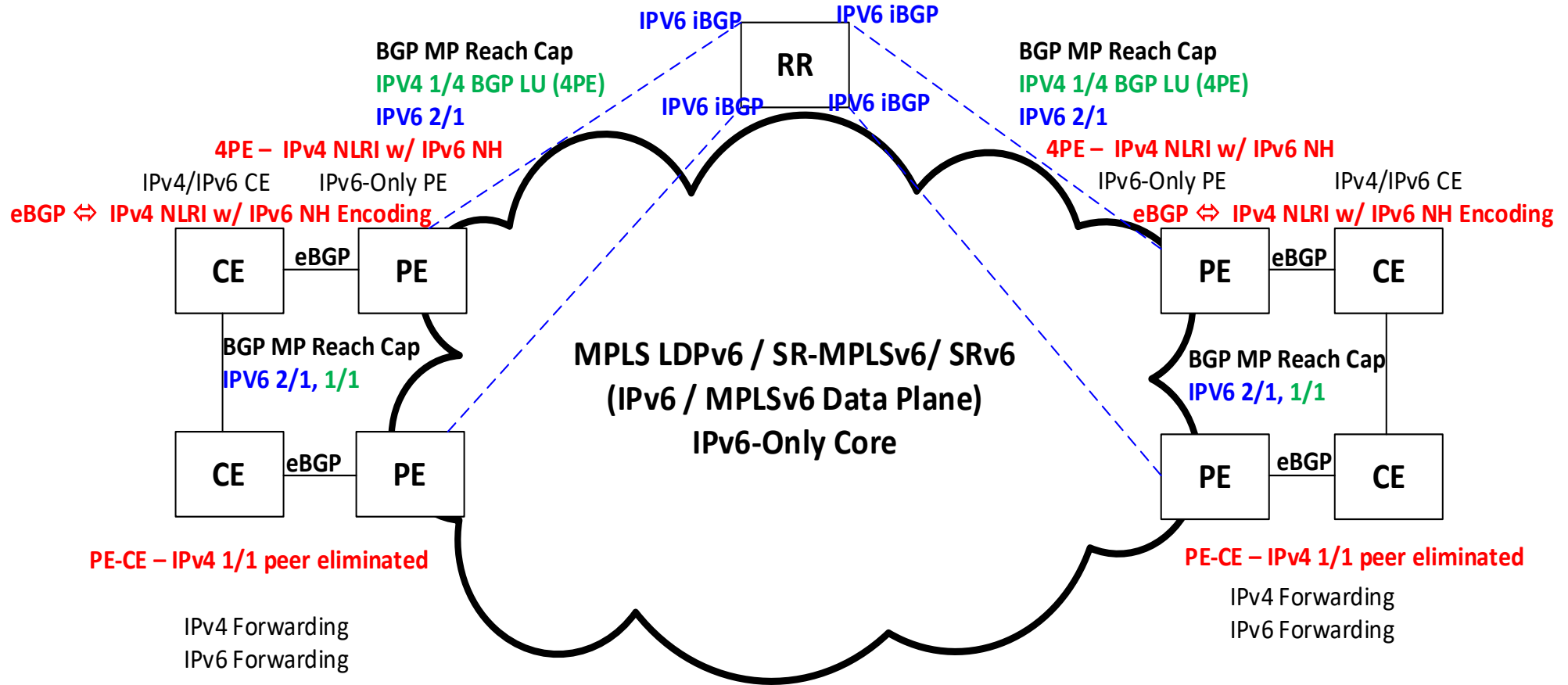


Test Case #1 E2E IPv6-Only PE-CE, Global Table over IPv4-Only Core (6PE) Software mesh framework 6to4 software



Test Case #1 E2E IPv6-Only PE-CE, Global Table over IPv4-Only Core (6PE) Software mesh framework 6to4 software

MPLS LDPv6 / SR-MPLSv6 / SRv6 – Software Mesh Framework 4to6 (4PE)
 “IPv6-Only PE” Draft ⇔ Recently adopted by BESS



Q&A

THANK YOU