Use Case

• An MVPN/EVPN deployment with enough P/P E routers capable of BIER to benefit from using BIER as provider tunnel
• We know how to deal with BIER incapable P routers
• What if some PE routers are not BIER capable?
BIER Incapable Egress PE

• A BIER capable Ingress PE would have to send traffic via BIER to BIER PEs and via traditional tunnels to incapable PEs
  – Complicated & inefficient
• What if an incapable egress PE pretends it supports BIER, but requests the upstream BFR to pop the BIER header?
  – Transparent to other PEs
BIER PHP

• A BIER incapable router signals BIER information but requests other BFRs to pop the BIER header and send traffic “natively”
  – Those BFRs do not have to be directly connected
    • There could be incapable P routers in between – traffic could be tunneled

• PHP requested via
  – PHP sub-sub-TLV in BIER sub-TLV
    • MPLS and non-MPLS encapsulation
  – Implicit Null Label as label range base
    • In MPLS Encapsulation sub-sub-TLV
Conditions for PHP

• Egress PE must be able to demultiplex the payload w/o the BIER header
  – IP payload: must be in the address space for the BIER routing underlay
  – MPLS payload: top of the label stack must be “downstream assigned” by the egress PE
    • DCB labels considered as “downstream assigned”
      – Draft-ietf-bess-mvpn-evpn-aggregation-label
  – VXLAN/NVGRE: should be fine
  – Others: For further study
BIER Incapable Ingress PE

• Have BIER capable PEs relay traffic from incapable Ingress PEs
  – MVPN: Virtual Hub & Spoke (RFC 7024)
  – EVPN-mpls: Virtual Hub & Spoke
    • draft-keyupdate-bess-evpn-virtual-hub
  – EVPN-overlay: Assisted Replication
    • draft-ietf-bess-evpn-optimized-ir
Next Steps

- Seek WG comments
- Seek WG adoption