BIER PIM SIGNALLING

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UPDATE

• New co-authors
• A BIER WG document now
• Technical changes
  • Details on Discovery of EBBR (Egress Boundary BIER Router) on control plane
LEAN Core
No Multicast states or BG

Source C(S1,G1)

Host IPv4 C(S1,G1)

Datapath No Change

BFIR

BIER DATAPATH

BFER

Multicast Data

Multicast Data

New-- BIER Signaling Of S,G As of now PIM Join/Prune packet

P1 100.0.0.21
P2 100.0.0.2
P3 100.0.0.8
P4 100.0.0.4
P5 100.0.0.14

PIM Domain
BIER Domain
PIM Domain

Signaling Extended

EBBR Boundary Router(EBBR)

PIM Join (PE1, G2)
PIM Join (PE1, G3)

PIM Boundary Router(IBBR)

PIM Join (PE1, G2)
PIM Join (PE1, G3)
The solution PIM signaling over a BIER Core

- PIM signaling through a BIER core.
  - This draft is not proposing PIM neighboring through a BIER core
  - Much like mLDP In-Band Signaling (RFC6826)
  - Concentrating on SSM and extending to ASM.

- Control plane
  - PIM is terminated at BIER Boundary Routers (BBR), PIM adjacency between routers toward the PIM Domain.
  - If the source resides on the other side of BIER Domain, PIM Joins/Prunes are signaled via BIER Domain
  - The Egress BBR keeps track of all (S,G)s arriving and the BFR-ID which has forward the Joins/Prunes for specific (S,G).
  - The Egress BBR will build a multicast tree with IIF as PIM interface and OIF as <SD, BRF-ID>

- No Changes to Data plane
  - Multicast encapsulated in BIER header
EBBR resolution

- Resolution of EBBR on IBBR can be achieved via
  - Static route, adding a static route to Source on IBBR with next-hop EBBR
  - BGP, BGP neighboring between EBBR and IBBR. BGP re-distributing the Source with next-hop EBBR
  - Route summarization at EBBR, EBBR and IBBR acting as Area Boundary Router (ABR) generating summarize routes and/or generate new routes with advertising router field set to EBBR bier prefix-id.
  - CSPF, Using the BIER extension TLV to find the EBBR, IBBR can do a lookup for the source and ask for the closest EBBR on the path to the source.
Next Steps

• Solution considered complete
• Seeking Comments
• Intend to go LC after next IETF