

PBB-EVPN ISID-based CMAC-Flush

draft-snr-bess-pbb-evpn-isid-cmacflush-00

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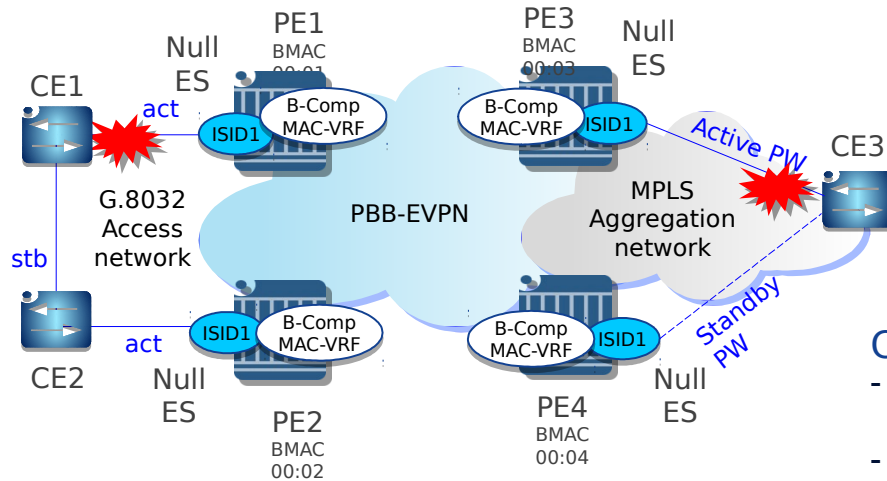
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IETF 96, July 2016

Berlin, Germany

Problem statement and requirements

The need for extending CMAC Flush



PBB-EVPN requires CMAC-Flush to avoid black-holes

- CMACs are learned in the data plane and subject to age-time.
- Logical or physical access failures require forcing a CMAC-flush at remote PEs to avoid black-holes
- RFC7623 defines a CMAC-flush mechanism for single-active multi-homed non-zero Ethernet-Segments, but not for other use-cases

CMAC-Flush requirements

- Must work independently of the ES, e.g. G.8032, A/S PW on null Ethernet-Segments
- CMAC-flush at BMAC and ISID granularity
- Enabled/disabled on a per ISID basis
- Co-exist with RFC7623 and RRs

BGP CMAC-flush notification

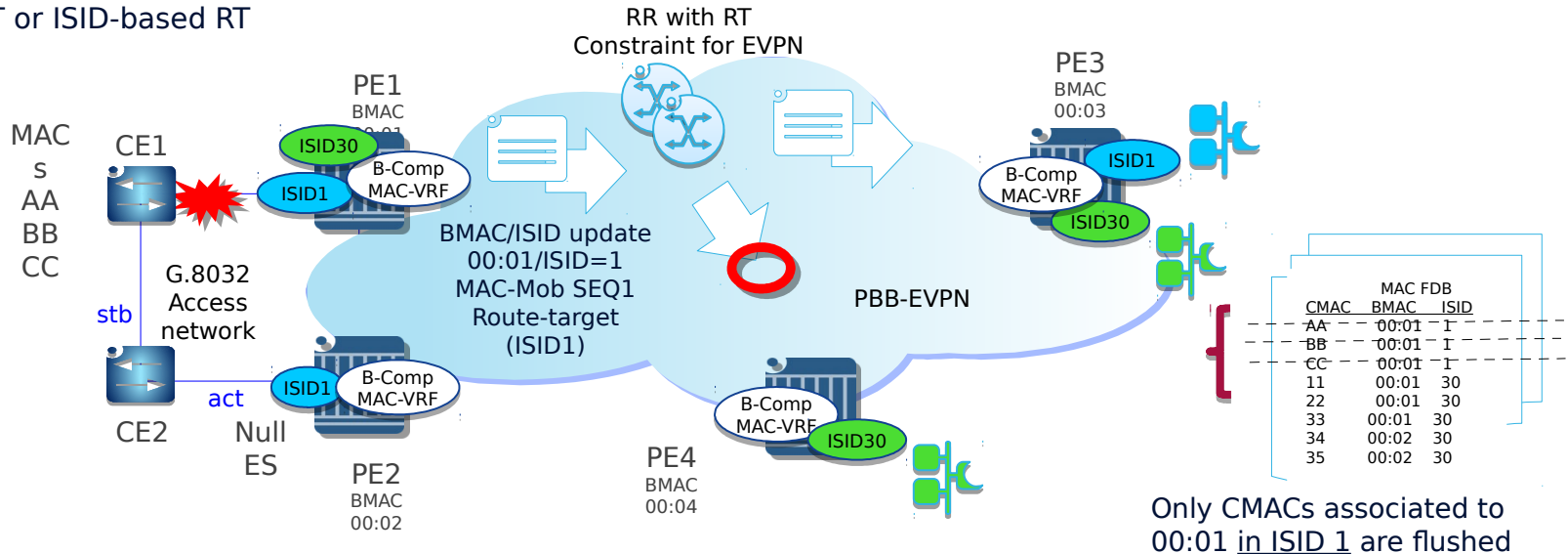
Reusing existing RFC7623 mechanisms

CMAC-Flush notification

- Triggered by any mac-flush notification, e.g. G.8032 mac-flush, PW status change, etc.
- Based on a BMAC route update with SEQ number delta and ISID encoded in the Ethernet-Tag field (i.e. BMAC/ISID route)
- EVI RT or ISID-based RT

CMAC-Flush reception process

- BMAC/ISID updates don't create BMAC forwarding state (only BMAC/0 does, as per RFC7623)
- A SEQ number delta triggers CMAC-flush for the indicated BMAC and ISID (a baseline is created first)
- A BMAC/ISID withdraw triggers CMAC-flush for the BMAC/ISID.
- RFC7623 CMAC-flush procedures still honored



Conclusions and next steps

ISID-based CMAC-Flush:

- Solves black-hole scenarios independently of the ES definition
- Flushes CMACs at BMAC and ISID granularity without disruption for non-affected ISIDs or PEs
- Coexists with existing PBB-EVPN procedures

The authors request feedback from the WG

Thank you