

BIER Fast ReRoute

draft-chen-bier-frr-02

Huaimo Chen, Mike McBride(Futurewei)

Aijun Wang (China Telecom)

Gyan S. Mishra (Verizon Inc.)

Yisong Liu (China Mobile)

Yanhe Fan (Casa Systems)

Lei Liu (Fujitsu)

Xufeng Liu (Volta Networks)

IETF 110

Overview

Thank people below for their comments and suggestions

- Jeffrey Zhang
- Daniel Merling
- Xuesong Geng

Updates to Previous Versions

- Intended status: Experimental
- Differences from merling-bier-frr
- Compressed FRR BIFT

Differences from merling-bier-frr

merling-bier-frr

- tunnel-based: NH fails, it tunnels packets to NNH
- BIFT has 2 forwarding entries for each BFER
 - ❖ Primary with NH-p and Mask-p
 - ❖ Backup with NH-b and Mask-b
- NH-p fails:
 - ❖ packet via NH-p is forwarded by backup
 - ❖ All other packets are forwarded by primary

Issue: Every Mask-p is computed before failure. After failure, it needs recomputed. Some packets may be forwarded incorrectly before every mask-p is recomputed and updated.

chen-bier-frr

- LFA-based: NH fails, uses LFA backup NH
- FRR BIFT for each NH, considering NH failure
- NH fails: FRR BIFT for NH is used for all packets

Resolves the issue

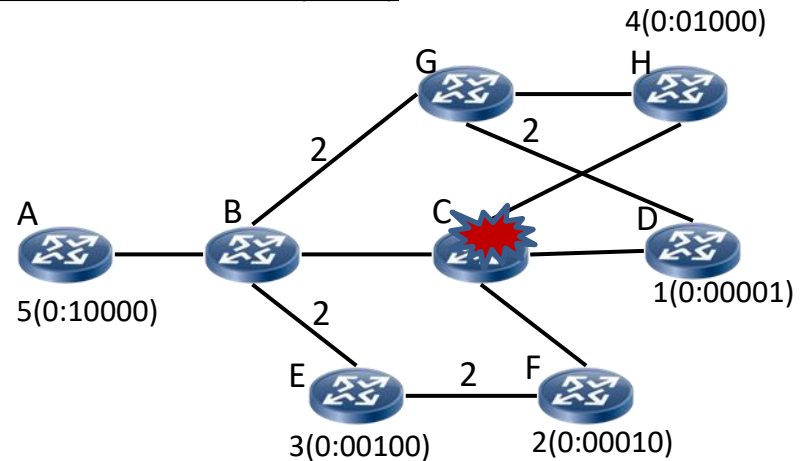
May use more memory, but compressed

Compressed FRR BIFT

FRR-BIFT for C on B

BFR-id (SI:Bitstring)	F-BM	BFR-NBR (Next Hop)
1(0:00001)	01001	G
2(0:00010)	00110	E
3(0:00100)	00110	E
4(0:01000)	01001	G
5(0:10000)	10000	A

entries = # BFRs (NBs)



Compressed FRR-BIFT for C on B

BFR-id (SI:Bitstring)	F-BM	BFR-NBR (Next Hop)
1, 4 (0:01001)	01001	G
2, 3 (0:00010)	00110	E
5 (0:10000)	10000	A

entries = # neighbors (NNs) - 1

Memory usage
on a BFR

merling-bier-frr	chen-bier-frr
NBs x 2	NNs x (NNs - 1)

NBs: Number of BFRs in a domain
 NNs: Number of Neighbors of a BFR

Next Steps

- Comments
- Adoption