

BIER Prefix Redistribute

draft-zwzw-bier-prefix-redistribute-03

BIER WG
IETF106# Singapore

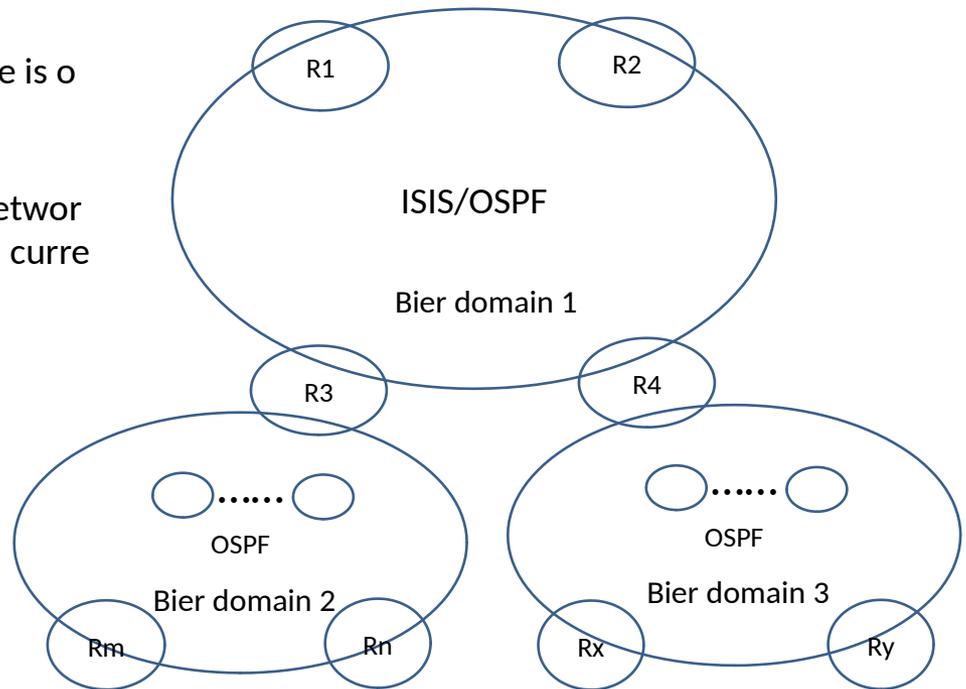
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Problem Statement

- Different routing protocols/areas run in different regions.
- Hybrid Network
- There are tens of routers in some regions. There is only one hop forwarding in some other regions.
- Multicast services are provided in this hybrid network by using protocol independent feature of PIM currently.

If we deploy BIER in this network:

- BIER is deployed in each IGP region.
- Border router needs to maintain overlay state.
- Border router must convert BIER encapsulation.
- Multiple BIER encap/decap functions lead to inefficient forwarding.

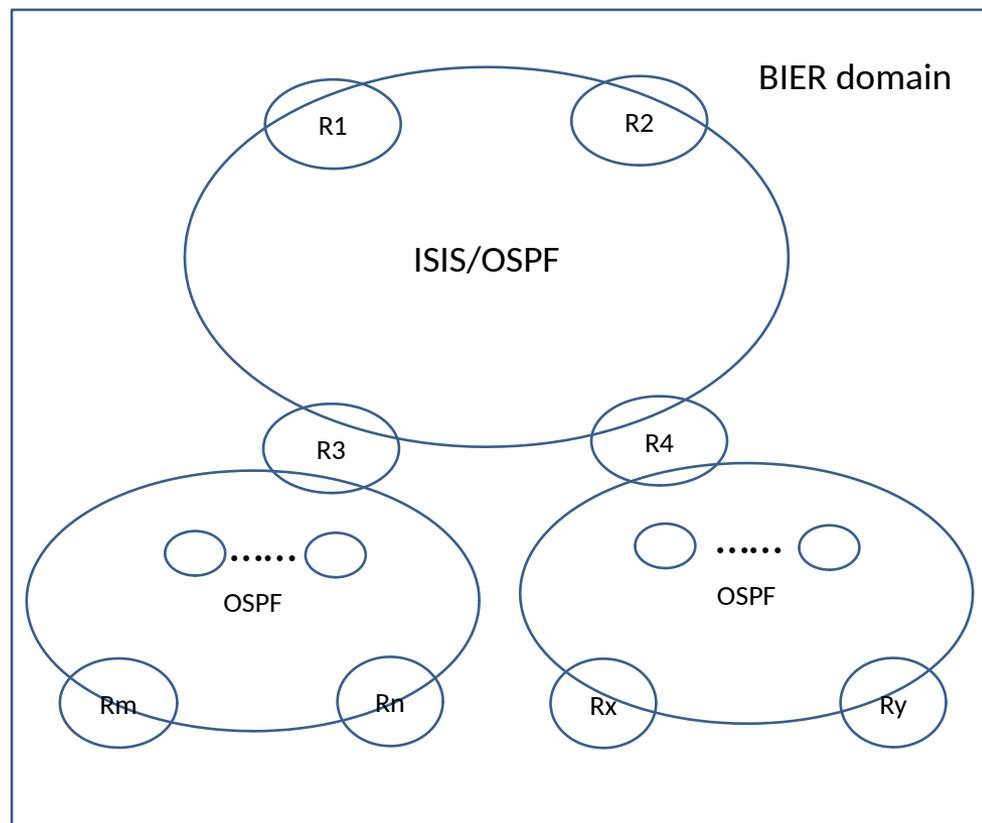


Problem Statement

In order to improve forwarding efficiency:

- Merge several regions into one BIER domain.
- Remove overlay state in border router.
- Decrease the times of BIER encap/ decap.

But how to build BIER forwarding
across multiple routing regions?

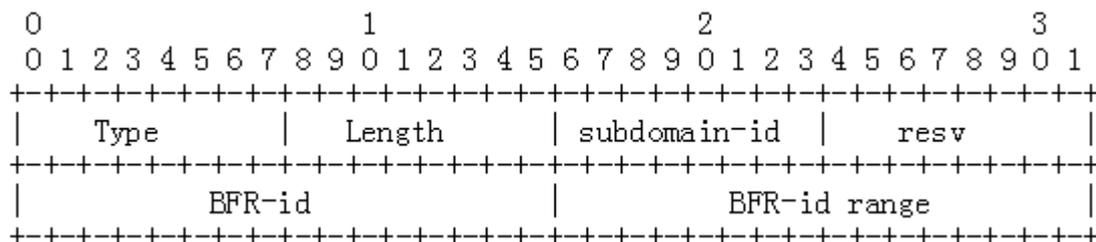


Solution

- BIER info advertisement associates with prefix redistribution in border router.
- BIER node information spreads in the whole BIER domain across multiple regions.
- The advertisement is aligned with the existed IGP/BGP definition.
- MPLS encapsulation has local significance. We need not, but MAY, advertise it to next routing area.
- Every node in the domain can build BIER forwarding plane.

Solution

- Because some prefixes in one region may be hidden when border router does prefix distribution function. Such as summarized / aggregated route, default route.
- A new extension is added for summarized/ aggregated prefix advertisement.



- The BFR-ids associated with the summarized prefix can be advertised individually in the BIER range sub-TLV.
- BIER proxy range sub-TLV can be used to improve advertisement efficiency if the BFR-ids are continuous.
- Multiple BIER proxy range sub-TLVs may be used if the BFR-ids covered by the prefix are allocated from different ranges. Necessary policy should be provided to guide the range generation of BFR-ids.

- Any comment ^ㄴ
- WG adoption?

Thanks!