

BIER in IPv6

draft-zhang-bier-bierin6-03

BIER WG

IETF105# Montreal

Sandy Zhang
Tony Przygienda
IJsbrand Wijnands
Hooman Bidgoli
Mike McBride

- The advantage of BIER: Achieving multicast by hop-by-hop (BIER capable) forwarding.
- RFC8296 defines two BIER encapsulation ways: MPLS and non-MPLS.
- Ethernet type for BIER is 0xAB37, the silicon support is needed.
- In order to achieve BIER forwarding in IPv6 situation, a new “next protocol” (BIER) in an IPv6 frame is introduced.
- “Next protocol” (BIER) of an IPv6 frame provides a general and simplest way for both “fast forwarding path” and “slow/software forwarding path”.
- **Multiple encapsulation supporting**
 - In order to indicate that the IPv6 encapsulation is required, a router MUST advertise the BIER IPv6 encapsulation transportation sub-TLV.
 - The router MUST accept all encapsulations that it advertised.

IPv6 header

- For directly connected neighbor
 - The destination address in IPv6 header SHOULD be the neighbor's link-local address on this router's outgoing interface.
 - the source address SHOULD be this router's link-local address on the outgoing interface.
 - the IPv6 TTL MUST be set to 1.
- For non directly connected neighbor
 - The destination address SHOULD be the BIER prefix of the BFR neighbor.
 - The source address SHOULD be this router's BIER prefix.
 - The TTL MUST be large enough to get the packet to the BFR neighbor.
- The Flow-ID in the IPv6 packet SHOULD be copied from the entropy field in the BIER encapsulation.

BIER header

- Aligned with the format defined in RFC8296 for a non-mpls version.
- [dhanaraj-bier-lsr-ethernet-extensions] and [zwzw-bier-prefix-redistribute] can be used for IPv6 encapsulation transportation advertisement associated with BFR-prefixes across IGP areas and protocol boundaries.

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- Thanks Jeffrey Zhang!
- Comments are welcome ^{^^}

Thanks!