OSPF Extensions for BIER-TE
draft-ietf-bier-te-ospf-07

OSPFv3 Extensions for BIER-TE
draft-ietf-bier-te-ospfv3-06


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Overview

Thank people below for their comments and suggestions

- Acee Lindem
- Les Ginsberg
- Tony Przygienda
- Jeffrey Zhang
- Toerless Eckert

Updates to previous version

- Merged two documents into one: draft-ietf-bier-te-ospf-07
- Some Editorial Changes
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Next Steps

- Comments
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BIER-TE for Broadcast Link

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Overview

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• Greg Shepherd
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Updates to previous versions

• Added reasons for duplicated packets
• Some Editorial Changes
A bit position is local to a node (i.e., for a link connected to the node).

Every node $X$ processes only the bit positions in a packet that are local to node $X$ (i.e., the bit positions for the links connected to node $X$). E.g.,

1): A processes only BP $2'$ for link from A to B. A removes $2'$ and sends packet to B according to $2'$.
2): B processes only BPs $4'$ and $6'$ for links from B to G and C. B removes $4'$ and $6'$ and sends packet to G and C according to $4'$ and $6'$ respectively.
3): G processes only BPs $14'$ and $19'$ for links from G to K and H. G removes $14'$ and $19'$ and sends packet to K and H according to $14'$ and $19'$ respectively. NOTE: H receives packet once.
6): C processes only BPs $12'$ and $19'$ for links from C to F and H. C removes $12'$ and $19'$ and sends packet to F and H according to $12'$ and $19'$ respectively. NOTE: H receives packet again.

Path A to K, H, F: \{2',4',6',12',14',19',2,4,6\}

Figure 1. BIER-TE Topology with BPs on Broadcast Link
Reasons for Duplicated Packets (2/2)

➢ **Missing** or **no enough information** for broadcast link (LAN).

There is a pseudo node for a LAN in IGP (DR in OSPF and DIS in IS-IS) and the pseudo node is connected to each of the nodes on the LAN. The bit positions for these links are missing.

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**Figure A. Topology with Pseudo node for Broadcast Link (LAN)**

- **BP for fw-con adjacency**
- **Pseudo node for broadcast link**

- $i'$ (i=1, ...,22)
  - BP for fw-con adjacency

- **1,2,3,4,5,6 BFER D,F,E,H,A, K’s ID**
New BP Assignments for Broadcast Link (LAN)

- For a broadcast link connecting X1, X2, ..., Xm, assuming they are connected a pseudo node Px (e.g., DR in OSPF or DIS in IS-IS).
- For connection between Px and X1, X2, ..., Xm, two BPs are assigned.
  - One is for lan-connected adjacency from Xi (i=1, 2, ..., m) to Px,
  - the other is for forward connected adjacency from Px to Xi.

Figure B. BIER-TE Topology with new BPs on Broadcast Link (LAN)
Example Application of Improved BIER-TE

➢ No Duplicated Packets in Improved BIER-TE with Broadcast Links

Path A to K, H, F: \{2', 4', 6', 12', 14', 18', 19', 2, 4, 6\}
Next Steps

- Comments
- Adoption