IS-IS Extensions for BIER-TE

draft-ietf-bier-te-isis-04


IETF 116
Overview

Thanks people below for their comments and suggestions

• Les Ginsberg
• Tony Przygienda
• Acee Lindem
• Toerless Eckert

Updates to previous versions (to address comments)

• Removed paddings and extra text, added references
• Some Editorial Changes
OSPF Extensions for BIER-TE

draft-ietf-bier-te-ospf-04

OSPFv3 Extensions for BIER-TE

draft-ietf-bier-te-ospfv3-04

Overview

Thanks people below for their comments and suggestions

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

Updates to previous versions (to address comments)

- Changed sub-sub-TLV, removed extra text, added references
- Some Editorial Changes
Next Steps

- Comments
BIER-TE for Broadcast Link

draft-chen-bier-te-lan-06

Huaimo Chen, Mike McBride (Futurewei)
Aijun Wang (China Telecom)
Gyan S. Mishra (Verizon Inc.)
Lei Liu (Fujitsu)
Xufeng Liu (IBM Corporation)

IETF 116
Overview

Issue: Duplicated Packets in Existing BIER-TE with Broadcast Links in Details

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
Issue in Details

Duplicated Packets in Existing BIER-TE with Broadcast Links

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
New BP Assignments for Broadcast Link

➢ 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.

➢ For lan-connected adjacency from Xi to Px, Xi acts as Px (i.e., after Xi “sends” packet to Px using main BIFT, Xi “sends” the packet to Px’s BFR-NBRs using secondary BIFT for Px)
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
Improved BIER-TE BIFT on BFR

For a BFR on broadcast link, its improved BIER-TE BIFT comprises:

- **main BIFT** containing a forwarding entry for *lan-connected* adjacency to Px.
- **secondary BIFT** for Px on BFR containing a forwarding entry for each of forward connected adjacencies from Px to BFRs attached to broadcast link *except* for the adjacency from Px to the BFR.

### Table 1: Adjacency BP

<table>
<thead>
<tr>
<th>Adjacency BP (SI:Bitstring)</th>
<th>Action</th>
<th>BFR-NBR (Next Hop)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5'(6:00010000)</td>
<td>fw-connected</td>
<td>B</td>
</tr>
<tr>
<td>12'(7:00001000)</td>
<td>fw-connected</td>
<td>F</td>
</tr>
<tr>
<td>16'(7:10000000)</td>
<td><em>lan-connected</em></td>
<td>Px</td>
</tr>
</tbody>
</table>

### Table 2: Main BIFT on BFR C

<table>
<thead>
<tr>
<th>Adjacency BP (SI:Bitstring)</th>
<th>Action</th>
<th>BFR-NBR (Next Hop)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17'(8:00000001)</td>
<td>fw-connected</td>
<td>G</td>
</tr>
<tr>
<td>19'(8:00000100)</td>
<td>fw-connected</td>
<td>H</td>
</tr>
<tr>
<td>21'(8:00010000)</td>
<td>fw-connected</td>
<td>D</td>
</tr>
</tbody>
</table>

### Table 3: Secondary BIFT for Px on BFR C

Figure A. Broadcast Link

Figure B. Improved BIER-TE BIFT on BFR C