IS-IS Extensions for BIER-TE

draft-ietf-bier-te-isis-08

Overview

Thanks people below for their comments and suggestions

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

Updates to previous versions (to address comments)

• Removed paddings and extra text, added references
• Added Sub-TLV and Sub-Sub-TLVs for routed and localdecap BPs
• Some Editorial Changes
### Sub-TLV and Sub-Sub-TLVs

#### Node BPs Sub-TLV:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+--------------------------+
| Type (TBD2) | Length |
+--------------------------+
| BAR | IPA | sub-domain-id |
+--------------------------+
| Sub-Sub-TLVs |
+--------------------------+
| (Routed-BP Sub-Sub-TLVs or Localdecap-BP Sub-Sub-TLV) |
+--------------------------+

- Contains: **Routed BP** Sub-Sub-TLVs and/or **Localdecap BP** Sub-Sub-TLV.

#### Routed-BP Sub-Sub-TLV:

<table>
<thead>
<tr>
<th></th>
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<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
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<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+--------------------------+
| Type (1) | Length |
+--------------------------+
| BitPosition | BFR-id |
+--------------------------+

- BitPosition: BP configured on a BFR for a routed adjacency to a remote BFR.
- BFR-id: BFR-id of remote BFR.

#### Localdecap-BP Sub-Sub-TLV:

<table>
<thead>
<tr>
<th></th>
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<th>2</th>
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<tbody>
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<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+--------------------------+
| Type (2) | Length |
+--------------------------+
| BitPosition |
+--------------------------+

- BitPosition: **Localdecap BP** configured on a BFR.
OSPF Extensions for BIER-TE

draft-ietf-bier-te-ospf-06

OSPFv3 Extensions for BIER-TE

draft-ietf-bier-te-ospfv3-06

Overview

Thanks people below for their comments and suggestions

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

Updates to previous versions (to address comments)

- Changed sub-sub-TLV, removed extra text, added references
- Added TLV and Sub-TLVs for routed and localdecap Bit Positions
- Some Editorial Changes
# TLV and Sub-TLVs

**Node BPs TLV:**

<table>
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</tbody>
</table>

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**Routed-BP Sub-TLV:**

<table>
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</tbody>
</table>

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**Localdecap-BP Sub-TLV:**

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</tr>
</tbody>
</table>

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**In RI Opaque LSA**

- Contains: **Routed BP Sub-TLVs and/or Localdecap BP Sub-TLV.**
- BitPosition: BP configured on a BFR for a routed adjacency to a remote BFR.
- BFR-id: BFR-id of remote BFR.
- BitPosition: Localdecap BP configured on a BFR.
Next Steps

- Comments
BIER-TE for Broadcast Link

draft-chen-bier-te-lan-06

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Aijun Wang (China Telecom)
Gyan S. Mishra (Verizon Inc.)
Lei Liu (Fujitsu)
Xufeng Liu (IBM Corporation)
Overview

Updates to previous versions
  • Details in example to illustrate issue
  • Some Editorial Changes
Example showing Issue

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\}

![Diagram](image.png)

**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)

Figure A. BIER-TE Topology with new BPs on Broadcast Link
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\}

1) \{2',4',6',12', 14',18',19',2,4,6\}Pkt

2) \{4',6',12', 14',18',19',2,4,6\}Pkt

3) \{12', 14',18',19',2,4,6\}Pkt

4) \{12',2,4,6\}Pkt

5) \{12',2,4,6\}Pkt

6) \{14',18',19',2,4,6\}Pkt

Broadcast Link

Px

K

6

14'

13'

17'

18'

19'

H

4

G

10'

7'

8'

9'

11'

12'

13'

14'

15'

16'

17'

18'

19'

20'

21'

22'

D

1

A

5

E

3

F

2
Next Steps

- Comments