

Adaptive Stateless TE Multicast

draft-chen-pim-adaptive-te-02

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IETF 118

Overview

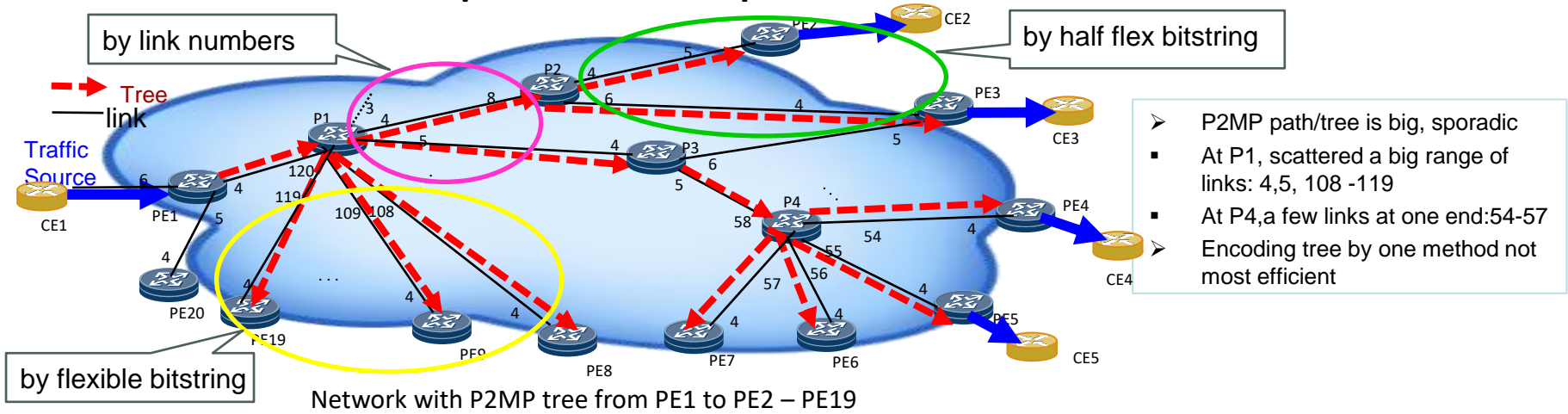
Thank people below for their comments

- Jeffrey Zhang
- Toerless Eckert

Updates to previous versions

- Added Simplified Adaptive TE Multicast
- Made Comparisons

Simplified Adaptive TE Multicast



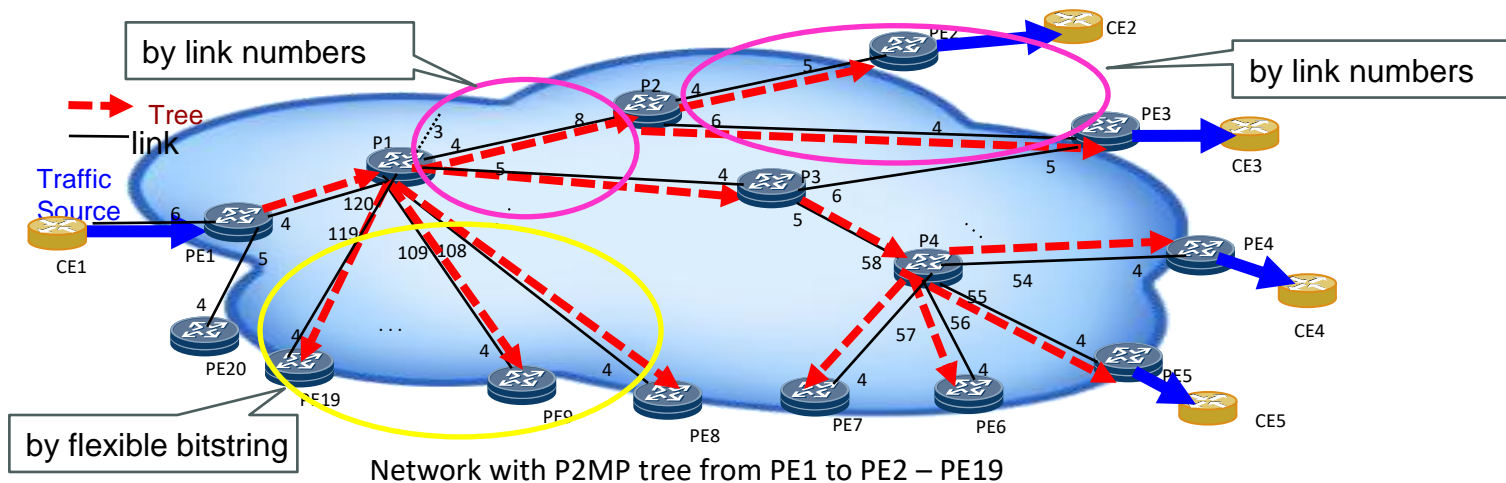
Full version of Adaptive TE Multicast:

Encoding each tree portion by a most efficient method among **multiple** methods

✓ Overhead is minimal (e.g., 23 (bytes) vs 33, 35, 38)

Simplified Adaptive TE Multicast:

Encoding each tree portion by a more efficient method from **two** methods



Encoding Tree (Each Portion)

Encoding tree (each portion):

link PE1 to P1 by link number in 3 bytes (byte 23 - 21)

links from P1 are split into groups G1 and G2 using SB links (in 4 bytes: 20 - 17)

G1 by link numbers (in 4 bytes: 16 - 13), G2 by flexible bitstring (in 4 bytes: 12 - 9)

links from P2 to PE2 - PE3 by link number (in 2 bytes: 8 - 7)

link P3 to P4 by link number (in 3 bytes: 6 - 4).

links from P4 to PE4 - PE7 by flexible bitstring (in 3 bytes: 3 - 1)

0: by link number

0: by link number

1: by flexible bitstring

1: by flexible bitstring

```

Size+++++ link from PE1 to P1
23 |0| 1 | 4 | P-BranchP1=20 | (by link number)
+++++
20 |0| 2 | 3 | P-BranchG1=16 | | 2 SB links split
+++++ | links from P1
| 3 | P-BranchG2=12 | | into 2 groups:
+++++ +++++ G1 and G2
|B|N-Links| Link-No |<--P-Branch -->|
+++++ -----+ Group G1:
16 |0| 2 | 4 | P-BranchP2 = 8| | Links from P1
+++++ | to P2-P3 (by
| 5 | P-BranchP3 = 6| | link numbers)
+++++ -----+
108...119 Group G2:
+++++ Links from P1
12 |1| 108 | 2 |1|...|1|0|0|0|0| to PE8-PE19
+++++ (by flexible
|B|<-- Start-BitNo -->| S-Bits |<- Bitstring ->| bitstring)
+++++ Links from P2
8 |0| 2 | 4 | to PE2-PE3
+++++ (by link number)
| 6 |
+++++
|B|N-Links| Link-No |<--P-Branch -->|
+++++ -----+ link from P3 to P4
6 |0| 1 | 5 | P-BranchP4 = 3| (by link number)
+++++ Links from P4
3 |1| 0 | 54 | 1 |1|1|1|1|0|0|0|0| to PE4-PE7
+++++ (by flexible
|B|<-- Start-BitNo -->| S-Bits |<- Bitstring ->| bitstring)

```

Encoding Tree (Each Portion of Tree by link number or flexible bitstring)

Comparisons

Simplified vs Single Encoding

- ✓ Simplified is much more efficient
- ✓ Single Encoding is a little bit simpler.

	Simplified	Half Flex Bitstring	Flexible Bitstring	Link Number
Encoded Tree Size	23	35	33	38
More% $((\text{size} - 23)/23)$	0	52%	43%	65%

Overall, Simplified is better than Single Encoding

Simplified vs Full version of Adaptive TE Multicast

- ✓ Simplified is simpler
- ✓ Full version is more extensible
- ✓ Encoding tree by Full version is optimal
- ✓ Encoding tree by Simplified is very close to optimal

	Full	Simplified
Encoded Tree Size	23	23
More% $((\text{size} - 23)/23)$	0	0%

Next

Comments