

pop-count update

[draft-ietf-pim-pop-count-03](https://datatracker.ietf.org/doc/draft-ietf-pim-pop-count-03)

pop-count version 3 changes

- Mainly changes to message format
 - Allow for information fields to be optional
 - Allow for defining new fields in the future
- New format for link speeds
 - Exponent to allow a wide range of speeds to be specified
- Minor textual changes
 - Tried to make text a bit clearer

New message format

0	1	2	3
0 1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1
+-----+-----+-----+-----+			
F E Attr Type Length Effective MTU			
+-----+-----+-----+-----+			
Flags Options Bitmap			
+-----+-----+-----+-----+			
Options			
. . . .			
+-----+-----+-----+-----+			

The changes are the Options Bitmap and the Options

Options

Options bitmap:

0	1								
0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5								
+---+---+---+---+---+---+---+---+---+---+---+---+									
T s M d n D z	Unalloc/Rsrvd								
+---+---+---+---+---+---+---+---+---+---+---+---+									

The bits show which options are present

1 if corresponding option is present

0 if omitted

Included options MUST be in the same order as the bits

T Transit Oif-List Count
m Minimum Speed Link
d Domain Count
D Diameter Count

s Stub Oif-List Count
M Maximum Speed Link
n Node Count
z TZ Count

All Options Example

0	1	2	3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1			
+-----+			
F E Attr Type Length Effective MTU			
+-----+			
Flags 1 1 1 1 1 1 1 1 1 0			
+-----+			
Transit Oif-List Count Stub Oif-List Count			
+-----+			
Minimum Speed Link Maximum Speed Link			
+-----+			
Domain Count Node Count Diameter Count TZ Count			
+-----+			

Two Options Example

Min/Max Link Speed Format

0	1														
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5															
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+															
Exponent Significand															
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+															

Link speed: Significand * 10 ^ Exponent kbps

Allows 3 decimal digits precision

Speeds from 1 kbps to 10^{67} kbps

Examples:

Link Speed	Exponent	Significand
500 kbps	0	500
500 kbps	2	5
155 Mbps	3	155
40 Gbps	6	40

Next steps

- Questions?
- Ready for working group last call?
 - If not, what is missing?