BGP Extensions for Routing Policy Distribution (RPD)

draft-li-idr-flowspec-rpd-04

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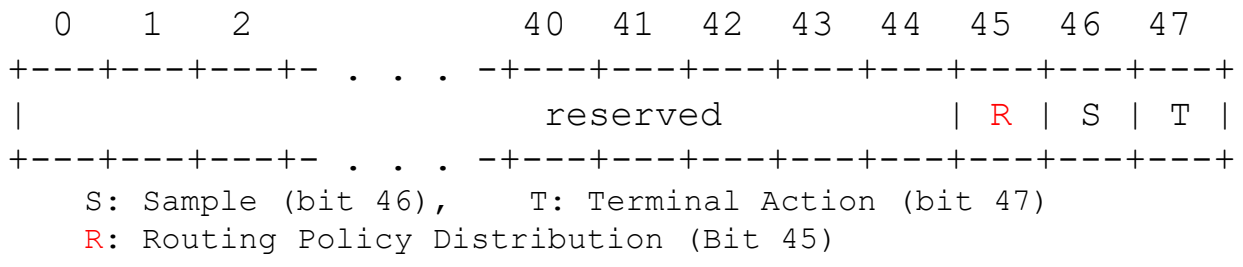
Overview

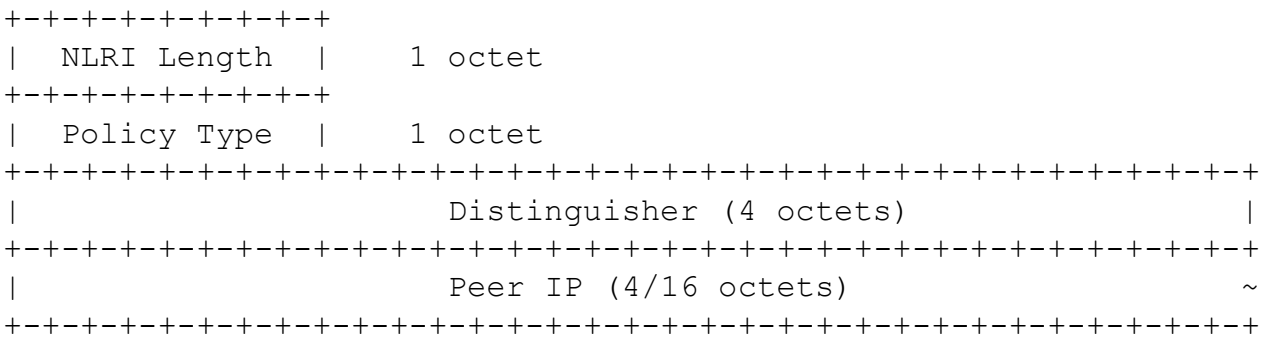
- Traffic-actions extended for RPD below



Traffic-actions with RPD (R) flag

BGP Wide Community for Routing Policy

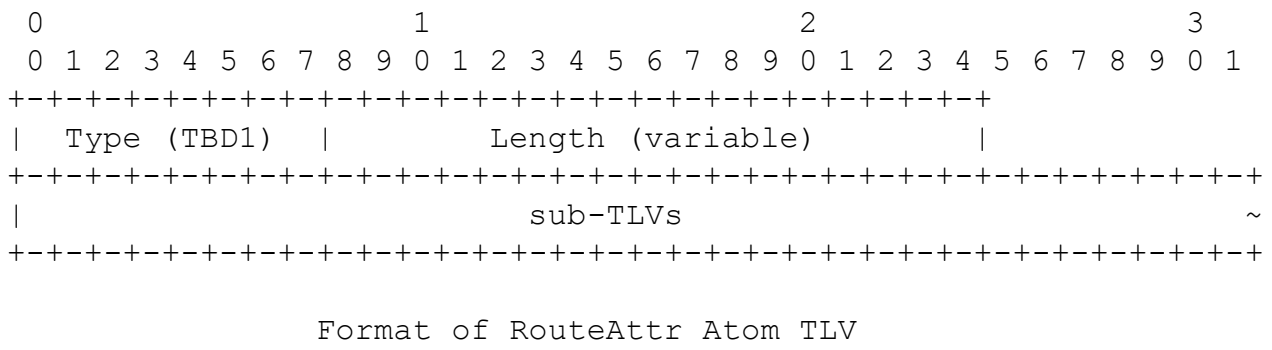
- A new AFI and SAFI uses a new NLRI below



BGP Wide Community for Routing Policy

Updates on BGP Wide Community: RouteAttr Atom

- A RouteAttr Atom TLV (or RouteAttr TLV/sub-TLV for short) is defined in Target TLV

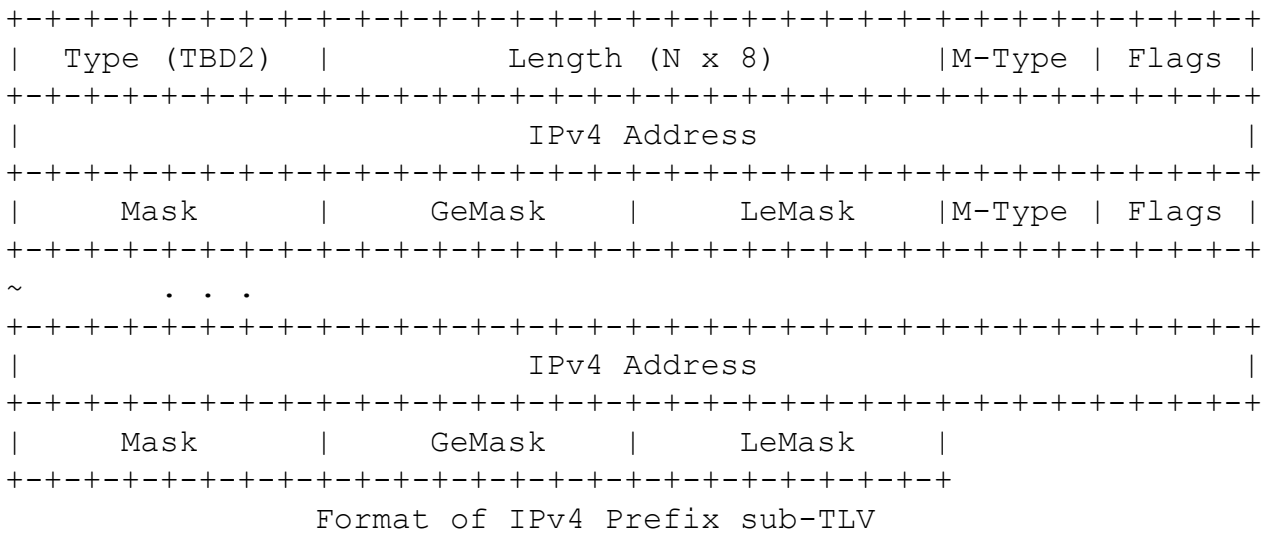


Format of RouteAttr Atom TLV

3 sub-TLVs: IP Prefix, AS-Path and Community

Updates on BGP Wide Community: IPv4 Prefix sub-TLV

- It represents a matching criteria on IPv4 prefixes



Format of IPv4 Prefix sub-TLV

M-Type for match type: 0 for exact match, 1 for match prefix >= given mask, 2 for match prefix <= given mask, 3 for match prefix in given range

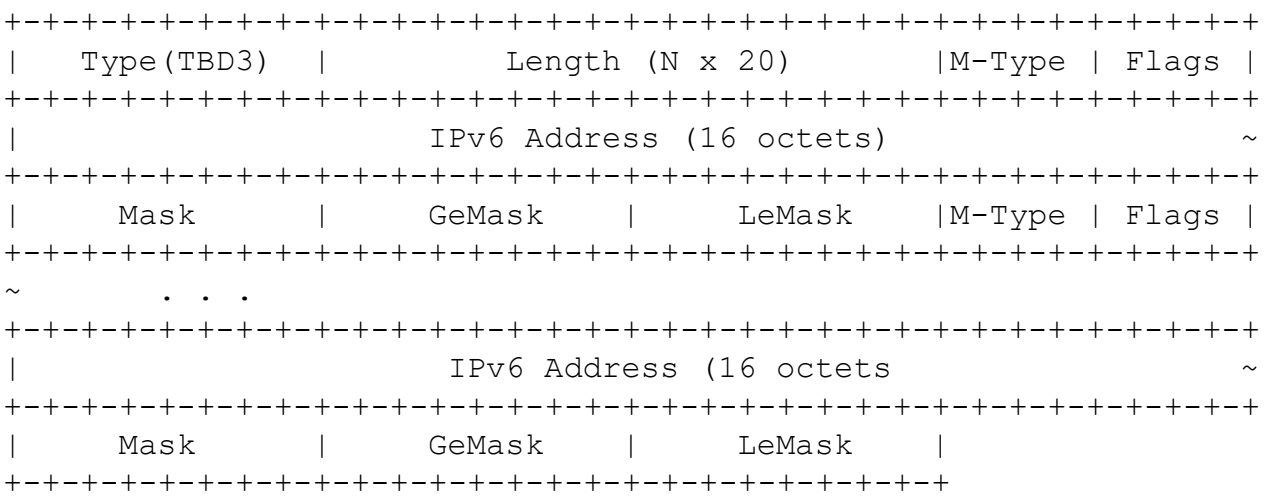
E.g., <M-Type=0, IPv4Addr=1.1.0.0, Mask=22, GeMask=0, LeMask=0>: IP prefix exact match 1.1.0.0/22

<M-Type=1, IPv4Add=16.1.0.0, Mask=24, GeMask=24,LeMask = 0> represents match IP prefix 1.1.0.0/24 >= 24.

<M-Type=3, IPv4Addr=18.1.0.0, Mask=24, GeMask=24,LeMask=32> represents match IP prefix 18.1.0.0/24 >= 24 and <= 32

Updates on BGP Wide Community: IPv6 Prefix sub-TLV

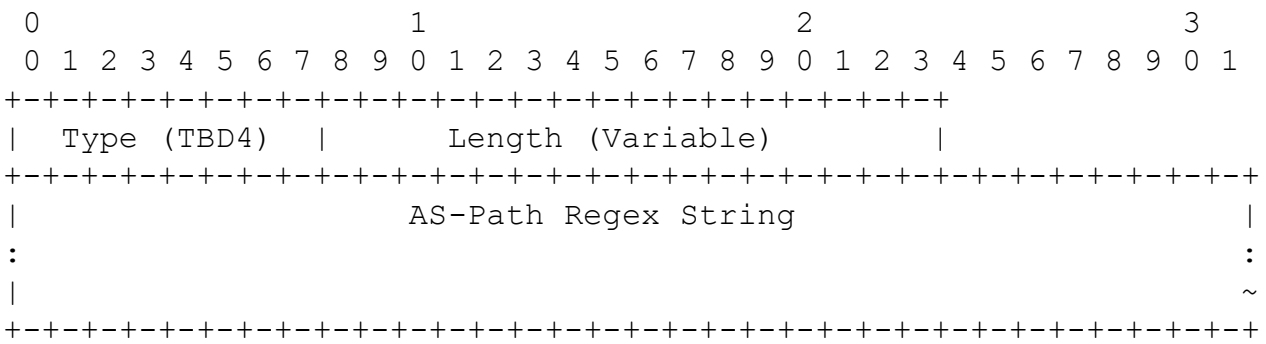
- It represents a matching criteria on IPv6 prefixes



Format of IPv6 Prefix sub-TLV

Updates on BGP Wide Community: AS-Path sub-TLV

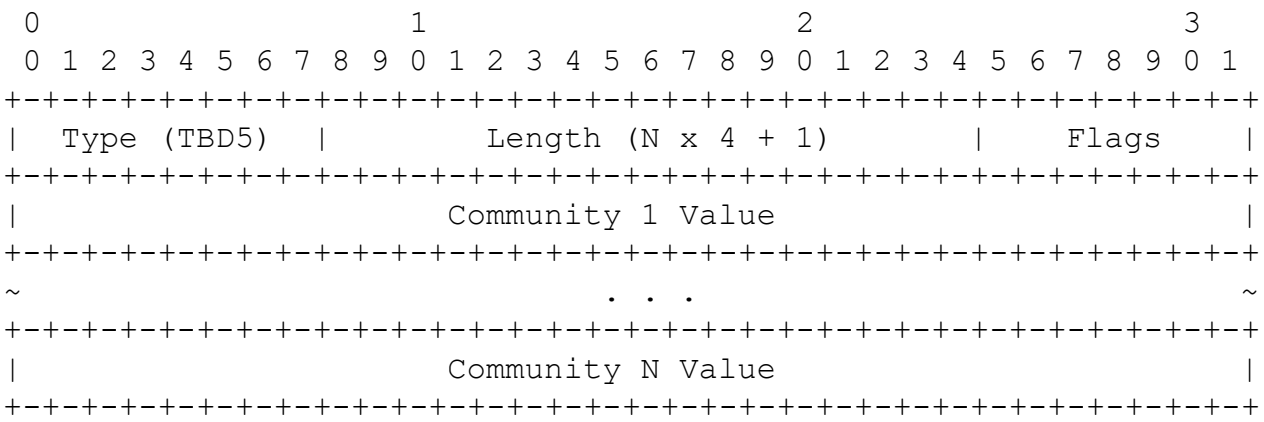
- It represents a AS-Path matching criteria in a regular expression string



Format of AS Path sub-TLV

Updates on BGP Wide Community: Community sub-TLV

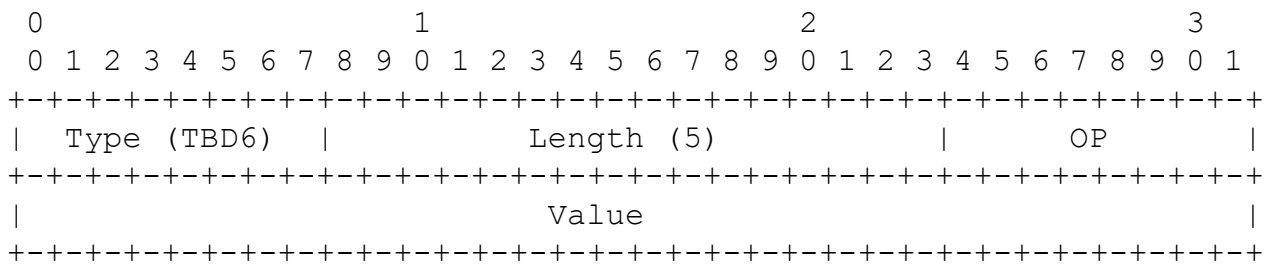
- It represents a list of communities to be matched all



Format of Community sub-TLV

Updates on BGP Wide Community: MED and AS-Path change

- In Parameter TLV, 2 new sub-TLVs: MED change and AS-Path change are defined



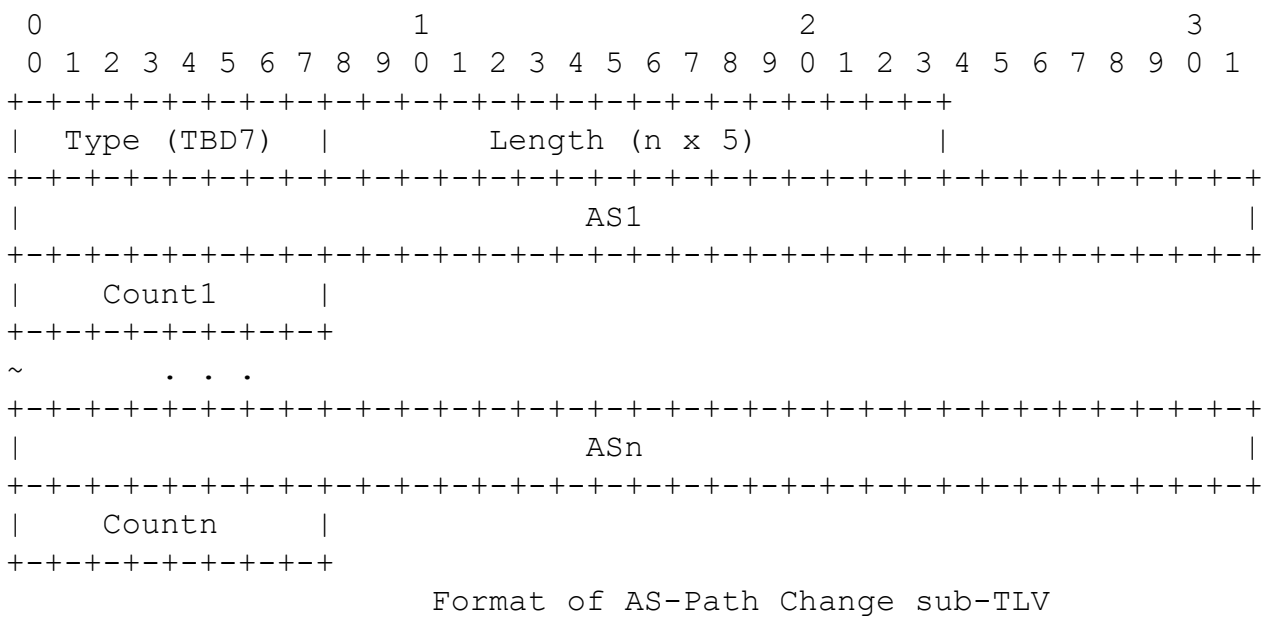
Format of MED Change sub-TLV

OP=0: assign the Value to the existing MED

OP=1: add the Value to the existing MED

OP=2: subtract the Value from the existing MED

Updates on BGP Wide Community: AS-Path change



Format of AS-Path Change sub-TLV

ASi: 4 octet. An AS number

Counti: 1 octet. ASi repeats Counti times

The sequence of AS numbers are added to the existing AS Path

Next Step

Comments