Agenda – IETF 122 (GROW), 17 Mar 2025

1. Support for BMP RIB Purge Notification

- https://datatracker.ietf.org/doc/draft-spd-grow-bmp-purge/
  - Authors: Tarek Saad (Cisco), Narasimha Prasad (Cisco)
  - Keep BMP collector in sync with Router in certain scenarios

2. Common BMP Route-Monitoring messages for Routes Unchanged by Policy

- https://datatracker.ietf.org/doc/draft-patki-grow-bmp-common-updates/
  - Authors: Dhananjay Patki (Cisco), Narasimha Prasad (Cisco)
  - Improve BMP convergence for certain deployments

<draft-spd-grow-bmp-purge-00>

Keeping BMP collector in sync with Router in certain scenarios

Authors: Tarek Saad (Cisco), Narasimha Prasad (Cisco)

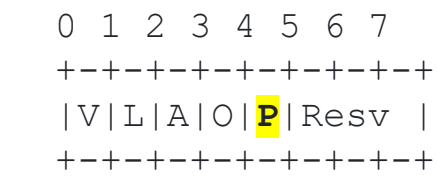
Problem Statement

- Router may decide to stop exporting a certain RIB-view (for a sub-set or all of the BGP peers) to the BMP collector
  - e.g.: when the BMP export RIB-view configuration is changed on the Router
- No mechanism exists today to inform the BMP Collector
- BMP Collector(s) go out of sync with the routers
- Draft proposes a way to address above

Solution

- Extend the Per-peer header to include a P (purge) flag
- The peer flag when set, indicates purge is requested for the specific view of the peer
- In the Route Mon Purge Message - the Purge message MUST only contain the MP_UNREACH_NLRI attribute (RFC 2858) with no withdrawn routes for that <AFI, SAFI> similar to the End-of-RIB marker (RFC 4724)
- Peer Flags (1 byte): flags that provide more information about the peer.

  - In combination with the O and L flags, the BMP collector can determine which RIB view is being purged.
  - Purge granularity - BMP Collector + Peer + RIB-view + AFI



The BMP per-peer header flags.

<draft-patki-grow-bmp-common-updates>

Improve BMP convergence for certain deployments

Authors: Dhananjay Patki (Cisco), Narasimha Prasad (Cisco)

Problem Statement

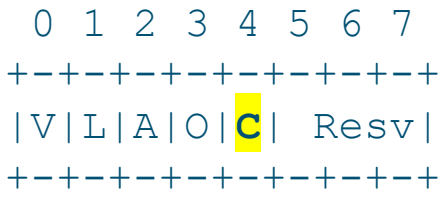
- The Inbound and Outbound Route-policy modify a subset of the incoming or outgoing routes *(in certain deployments, say 10% for this presentation).*
- When multiple BMP RIB-views are enabled on the routers
  - Say Adj-RIB-In Pre and Adj-RIB-In Post views
  - Full table for both the RIB-views get sent to the BMP collector
  - But 90% of the data is shared between them
- This impacts number of BMP messages generated, the CPU load on the device and eventually the overall convergence
- Draft proposes a way to optimize above

Solution

- To avoid sending duplicate unmodified routes in the Post-Policy Route-Monitoring messages, we introduce 2 alternate methods
  - Method 1: Common Update Flag, or C flag, in the Per-Peer header
  - Method 2: Common Update TLV based on [I-D.ietf-grow-bmp-tlv]

- This enables, sharing of messages between these In/Out views and hence reducing BMP messages and improving overall Convergence times

Solution : Method 1 – C flag in peer flags

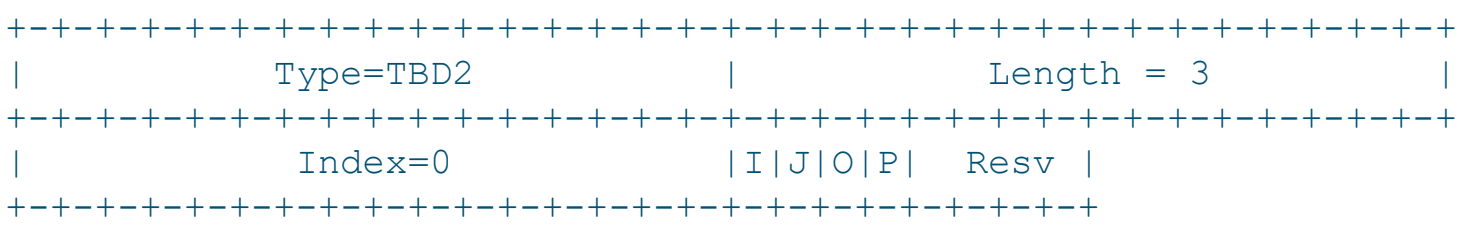


Peer flags in Per-Peer Header

C	O	L	
0	0	0	BGP Update for Adj-RIB-In Pre-Policy only
0	0	1	BGP Update for Adj-RIB-In Post-Policy only
0	1	0	BGP Update for Adj-RIB-Out Pre-Policy only
0	1	1	BGP Update for Adj-RIB-Out Post-Policy only
1	0	X	Common BGP Update for Adj-RIB-In Pre-Policy and Post-Policy
1	1	X	Common BGP Update for Adj-RIB-Out Pre-Policy and Post-Policy

Sharing of BGP Update only within Inbound or Outbound views is supported

Solution : Method 2 – Common Update TLV



New Common Update TLV

I – Adj-RIB-In Pre-Policy

J – Adj-RIB-In Post-Policy

O – Adj-RIB-Out Pre-Policy

P – Adj-RIB-Out Post-Policy

- Any combination of I, J, O and P flags is allowed
- BGP Update is shared across views corresponding to the above flags that are set

Q/A..

- Use-cases / Deployments
  - What percentage of the updates get modified for your deployments in Adj-RIB-In and Adj-RIB-Out views, what node-roles ?

Thank you