Agenda – IETF 123 (GROW), 22 July 2025

1. Aggregated BMP Route Monitoring Messages within a RIB-view

- https://datatracker.ietf.org/doc/draft-liu-grow-bmp-rm-aggregated/
  - Authors: Yisong Liu (China Mobile), Changwang Lin (H3C), Mukul Srivastava (HPE), Narasimha Prasad (Cisco)
  - Improves BMP convergence for certain deployments

2. Common BMP Route Monitoring messages across RIB-views

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

3. 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

<draft-liu-grow-bmp-rm-aggregated>

Aggregated Route Monitoring Messages

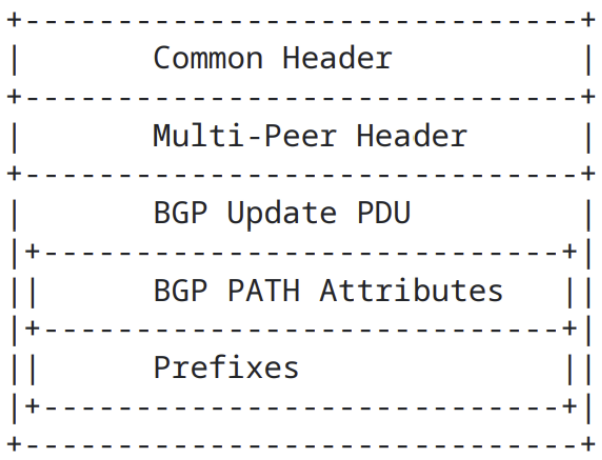
Authors

Yisong Liu (China Mobile), Changwang Lin (H3C)

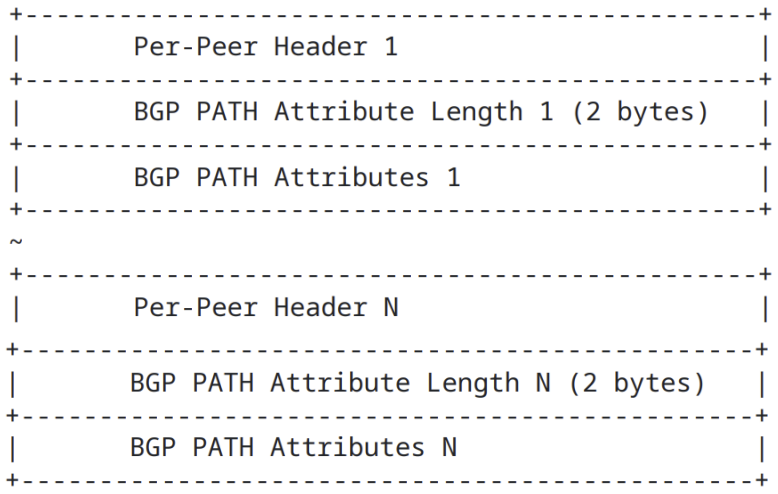
Mukul Srivastava (HPE), Narasimha Prasad (Cisco)

Introduction – Recap

- Aggregated Route Monitoring message type defined to group multiple Route Monitoring messages, **within** a given RIB-view via Multi-peer header
- Reduces number of BMP Messages sent, leveraging principles of proven BGP update group packing across peers



BMP Aggregated Route Monitoring Message Format



Multi-Peer Header Format

Updates introduced in version 3

- Version2 presented at IETF 120
- Narasimha Prasad joined as co-author
- Make the PATH attributes in the Multi-peer header optional
- Allowance for Multiple Aggregated RMon messages to be sent even for the same set of prefixes
- Mutual-exclusion with Route Monitoring type 0 message
- Support for various RIB-views
  - Documented how this message can be used for different RIB-views
  - Documented on how this draft complements the BMP Common updates draft – which is across RIB-views *(being presented later today),* and how they can used together as well
- Provided examples of 4 different types of Aggregated Route Mon messages for ease of understanding

Next Steps

Split the draft into foundational and application specific drafts

- *Multi-peer header draft :* Defines a more generic multi-peer header that allows for grouping. It will cover mechanisms to cater to all message types & wild card for peers.
- *Aggregated Route Monitoring draft :* Current draft, building on top of the above draft, defining specifics for Route Monitoring Message

- Address the feedback received from Luuk H on the v3 draft

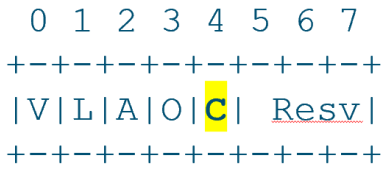
<draft-patki-grow-bmp-common-updates>

Common BMP Route Monitoring messages

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

Introduction – Recap

- Proposes a way to combine Route Mon messages **across** RIB-views to improve BMP/BGP convergence by reducing number of BMP messages
- Two solution options were presented and discussed of augmenting the Route Mon message
  - Method 1: Common Update Flag, or C flag, in the Per-Peer header for RMon
  - Method 2: Common Update TLV based on [I-D.ietf-grow-bmp-tlv] to go along with RMon



Peer flags in Per-Peer Header

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

Method1

Method2

Updates

Feedback received from the WG (Ben M, Jeff H, Luuk H, Paolo L, Thomas G)

- 2 options is good to foster discussion, but we should propose one option in the draft
- Not to try and squeeze things into peer-flags
- Keep extensibility for time-stamps in mind
- Potential use-cases for this draft

We analysed each of the options per above, across following parameters & shared/discussed with the WG members above

- Does it work with both BMPv3, v4
- Limited Peer Flags shared space in BMPv3 used
- Ability to allow aggregation of all the 4 RIB-views or across In and Out RIB-views
- Peer Header – Time stamp granularity per mode
- Backward compatibility consideration for BMP collector – if it does not support this draft yet
- Applicability of these flags to other Message Types

And all things considered, we propose to go ahead with

- Method 2: Common Update TLV based on [I-D.ietf-grow-bmp-tlv] to go along with RMon

Next-steps

Update the draft

- With the chosen solution (Method2)
- Clarify this new TLV can be used with both Route Mon messages and the new Aggregated Route Mon Messages to group messages across RIB-views
- Address the extensibility of time-stamps
- Expand the scope to other message types - investigate

<draft-spd-grow-bmp-purge>

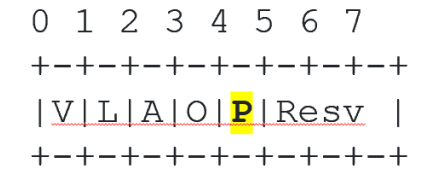
RIB Purge Message

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

Introduction – Recap

- Draft proposes a mechanism inform the BMP Collector to purge a certain RIB-view for a given AFI/SAFI
- A Purge flag was introduced in the Peer-header, to be sent with Route Monitoring Message
- The BGP update within the Route Mon messages, is similar to EoR marker in BGP, leverages the MP_UNREACH_NLRI attribute (RFC 2858) with no withdrawn routes for that <AFI, SAFI> similar to the End-of-RIB marker (RFC 4724)

- 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.

Updates - 1

Feedback received from the WG (Ben M, Jeff H, Luuk H)

- Not to try and squeeze things into peer-flags
- Avoid overloading leveraging EoR, which is already error prone
- Include purge reason
- Consider using a new message type
- Explore things that we find awkward to monitor when there's config changes and build our PDU/state machines afterwards

We analysed the three solution options (Peer flag, new TLV message, new message type), across following parameters & shared/discussed with the WG members above

- Does it work with both BMPv3, v4
- Limited Peer Flags shared space in BMPv3 used
- Backward compatibility consideration for BMP collector – if it does not support this draft yet
- Can we support optimization to support all AFI/SAFIs with 1 message
- Future Extensibility and expanding the scope of above message

Updates - 2

We decided on the following

- Expanded the problem scope and defined a more generic message to solve multiple such use-cases, starting with RIB-purge as the first one
- We refer to this as the Generic Event Notification (GEN) message type
- This message can be used to notify BMP servers about diverse operational events beyond standard route or peer status changes
  - such as policy triggers or administrative interventions, with clear indication of the action and its rationale.
- This will also help avoid overloading the Peer-down/Peer-Up and Route Mon messages
- Message Content: Fields would include an event type followed by event-specific messages / actions as required.
- RIB-purge event specific message will have AFI/SAFI, reason code and requested action to purge
- Will leverage the Multi-peer header draft for cases when the event spans across multiple peers / all peers etc

Next steps

- Update the draft with the details of the GEN message type
- Add the first use-case of RIB-purge to it

Thank you