Agenda – IETF 124 (GROW), 06 Nov 2025 (3:30-5.30am IST)



1. BMP Generic Event Notification (GEN)

- https://datatracker.ietf.org/doc/draft-sp-grow-bmp-gen/
  - Authors: Tarek Saad (Cisco), Narasimha Prasad (Cisco)
  - Generic Event Notification message

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. BMP Multi-peer Header

- https://datatracker.ietf.org/doc/draft-liu-grow-bmp-multiple-peer-header/
  - Authors: Yisong Liu (China Mobile), Changwang Lin (H3C), Narasimha Prasad (Cisco), Mukul Srivastava (HPE),
  - Mechanism to bulk per-peer BMP messages

4. 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

<draft-sp-grow-bmp-gen>

1. BMP **G**eneric **E**vent **N**otification (GEN) Message

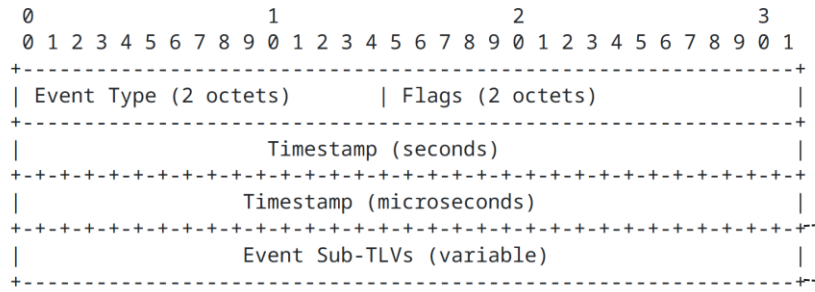
Authors: Tarek Saad (Cisco), Narasimha Prasad (Cisco)

Introduction - Recap

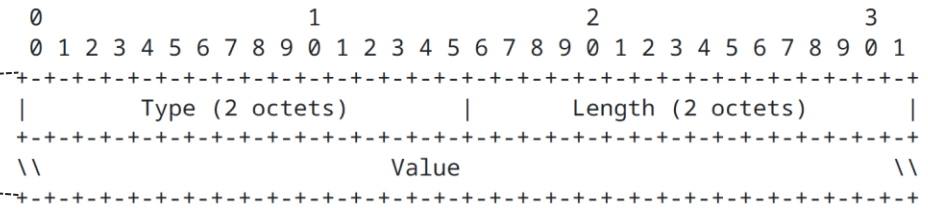
- At IETF122, we proposed a new message type to inform the BMP Collector to purge a certain RIB-view for a given AFI/SAFI.
- We got good engagement from the WG & heard about other/similar use-cases, and saw a need to expand the scope of the draft to address them
- At IETF123, we proposed, introducing a new message type - BMP GEN (Generic Event Notification) message to handle such use cases
  - This message can be used to notify BMP collectors about diverse events beyond standard route or peer status changes
    - such as policy triggers, administrative interventions, state related notifications, with clear indication of the action and its rationale.
  - This will also help avoid overloading the Peer-down/Peer-Up and other messages
  - Anything Route/path specific should try to be addressed by draft-ietf-grow-bmp-rel (Route Event Logging).
- Above proposal got support from the WG, so
  - we have updated the draft with the new GEN message type
  - along with 3 events / use-cases

GEN Message type & Event Sub-TLVs

BMP GEN message header follows the BMP Common Message header



Event Sub-TLVs – For any given event, one of more Sub-TLVs can be attached, which either provide more context or act as AND filters to the event



Type=0 : RIB View Unmonitor Event (renamed RIB-purge) - sent when a particular RIB-view is no longer monitored on the Router (Eg: Globally at router level or for a given AFI/SAFI or for a set of BGP peers).

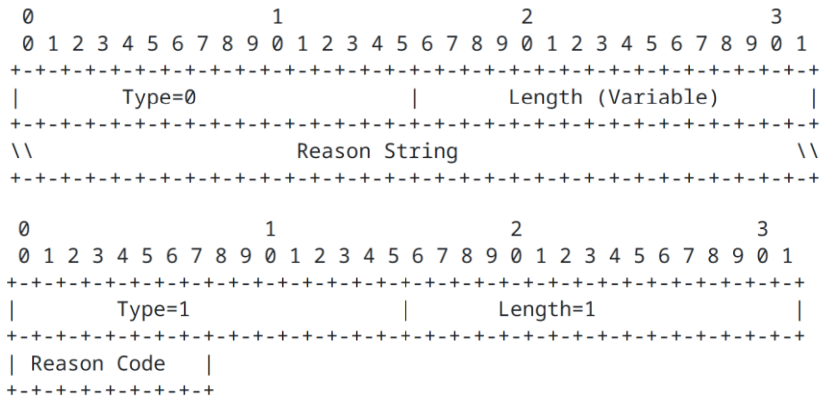
Type=1 : Route Import Complete Event - sent when import of Routes is completed (Eg: Globally at router level or for a given Table). – *use-case from Jeff*

Type=2 : Peer Configured is Down Event - sent when configured monitored BGP peer on the router has never come up (down time configurable) – *use-case from Luuk*

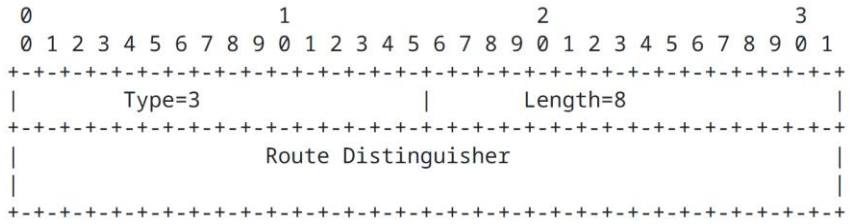
Type	Length (octets)	Description
0, 1	Variable, 1	Reason String, Reason Code
2	2	RIB View (Filter)
3	8	Route Distinguisher (Filter)
4	4 or 16	Peer Address (Filter)

Event Sub-TLVs

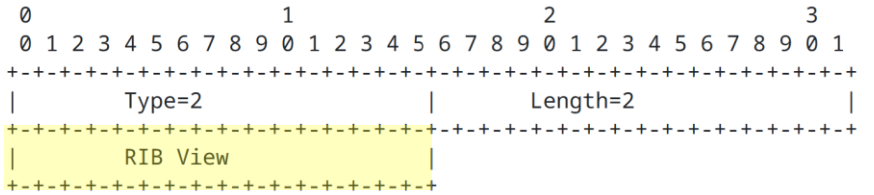
Reason String and Code Sub-TLVs (Context)

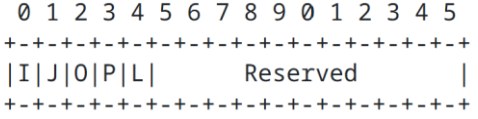


Route Distinguisher Sub-TLV (Filter)



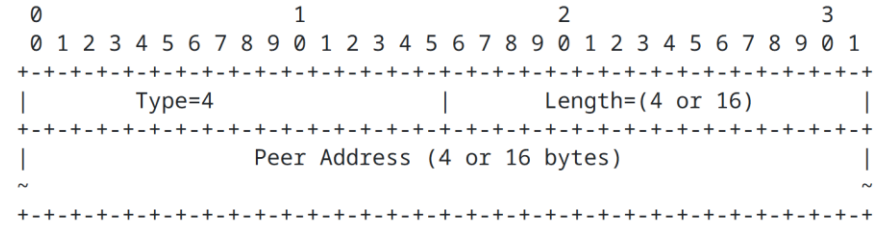
RIB-View Sub-TLV (Filter) – *leverage common-update-draft*





I	In-Pre
J	In-Post
O	Out-Pre
P	Out-post
L	Local-RIB

Peer Address Sub-TLV (Filter)



Examples

RIB-view unmonitor Event (with filter for RIB-View)

The router sends a BMP GEN message to the BMP collector to notify that the Adj-RIB-Out view export is stopped for all peers and that any associated state should be purged.

```
{
  "eventType": 0,                           // RIB View Unmonitor
  "eventTimestampSeconds": 1712959200,      // Seconds
  "eventTimestampMicroseconds": 123,        // Microseconds
  "eventSubTLVs": [
    { "type": 0, "value": "Operator triggered for maintenance" },
                                            // Reason String
    { "type": 2, "value": [0, 0, 1, 0, 0, 0, 0, 0] }
                        // RIB View (bitmap for Adj-RIB-Out Pre)
  ]
}
```

Route Import Completed Event (no filter)

The router sends a BMP GEN message to the BMP collector to notify that import activity has completed.

```
{
  "eventType": 1,                         // Route Import Complete
  "eventTimestampSeconds": 1712959200,    // Seconds
  "eventTimestampMicroseconds": 123       // Microseconds
}
```

Peer Configured but never Up (with filter for RD+Peer)

The router sends a BMP GEN message to the BMP collector to notify that the BGP peer (RD=198.51.100.1:10, 198.51.100.2) is in DOWN state.

Note: The Route Distinguisher is encoded as an 8-octet value per [RFC4364]. The value shown is a hexadecimal representation for illustration.

```
{
  "eventType": 2,                             // Peer in Down
  "eventTimestampSeconds": 1712959200,        // Seconds
  "eventTimestampMicroseconds": 123,          // Microseconds
  "eventSubTLVs": [
    { "type": 0, "value": "Peer remains in down state" },
                                              // Reason String
    { "type": 3, "value": [0, 1, 198, 51, 100, 1, 0, 10] },
          // Route Distinguisher (8-octet value per RFC4364,
          // example: 198.51.100.1:10)
    { "type": 4, "value": "198.51.100.2" }    // Peer Address
  ]
}
```

Next-Steps

- Discussion
  - Are there other use-case/events you would like to add?
  - *Peer-Address TLV Filter:* Since the peer-address is optional and peer-header is bulky, we defined a new TLV
- Plan to evaluate how we can leverage
  - multi-peer peer header draft, time-stamp TLV draft
- Request Review / Feedback from the WG
  - Thanks to Luuk for the review of current draft *(updated & uploaded newer revision earlier this week)*
- **Request WG Adoption**

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

2. Common BMP Route Monitoring messages

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

Introduction – Recap

- At IETF 122, proposed couple of ways to combine Route Mon messages **across** RIB-views to improve BMP/BGP convergence by reducing number of BMP messages '**across**' RIB-views
  - Extension to the Route-Mon Message
- Evaluated our options based on the feedback received from the WG
- At IETF 123, we proposed going ahead with Common Update TLV option along with the reasoning (TLV attached to RMon message)



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

- Comments received
  - Got support for going ahead with above proposal
  - 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 with time-stamps (when required)

Updates to the draft

- Updated with the chosen method of going ahead with TLV method (and not flags)
- Updated how this complements the Route-Mon Aggregation draft and how both can be used together to improve convergence
- Extensibility with granular time-stamps
  - Clarified how we can leverage the Adj-RIB-In and Adj-RIB-Out timestamp TLV defined in draft-younsi-grow-bmp-snts

Next steps

- Discussion
  - *Common Update TLV / RIB-View TLV* – Plan to Leverage this for both GEN message and Route Mon message
- Request further Review / Feedback from WG
- **Request WG Adoption**

<draft-liu-grow-bmp-multiple-peer-header>

3. BMP Multi-peer header

Authors

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

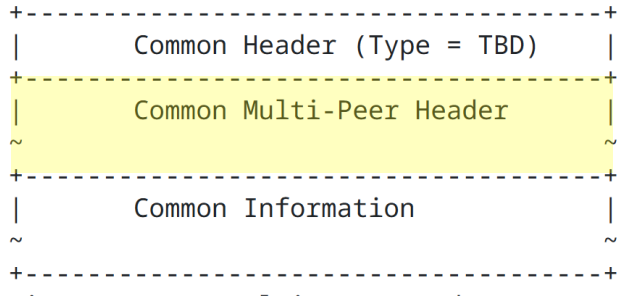
Narasimha Prasad (Cisco), Mukul Srivastava (HPE)

Overview

- While working on Route-Mon Aggregation & GEN draft, saw a need for a generic Multi-peer header to support other message types + also make other extensions (Eg: wild card peer header)
- Proposed above idea at IETF 123
  - Have now published a new draft
- Introduces a new message type – Multi-peer message type
  - Messages from multiple peers can be combined into 1 or more
  - Wild carding of Peers supported
  - Allowance for custom extensions per message type
  - Aggregated Route-Mon message draft leverages above message type

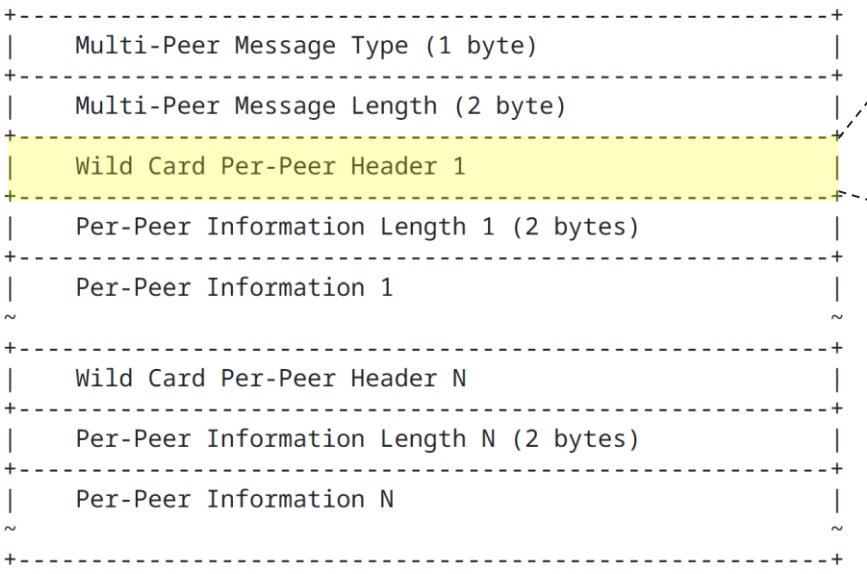
Overview..

Overall BMP Message



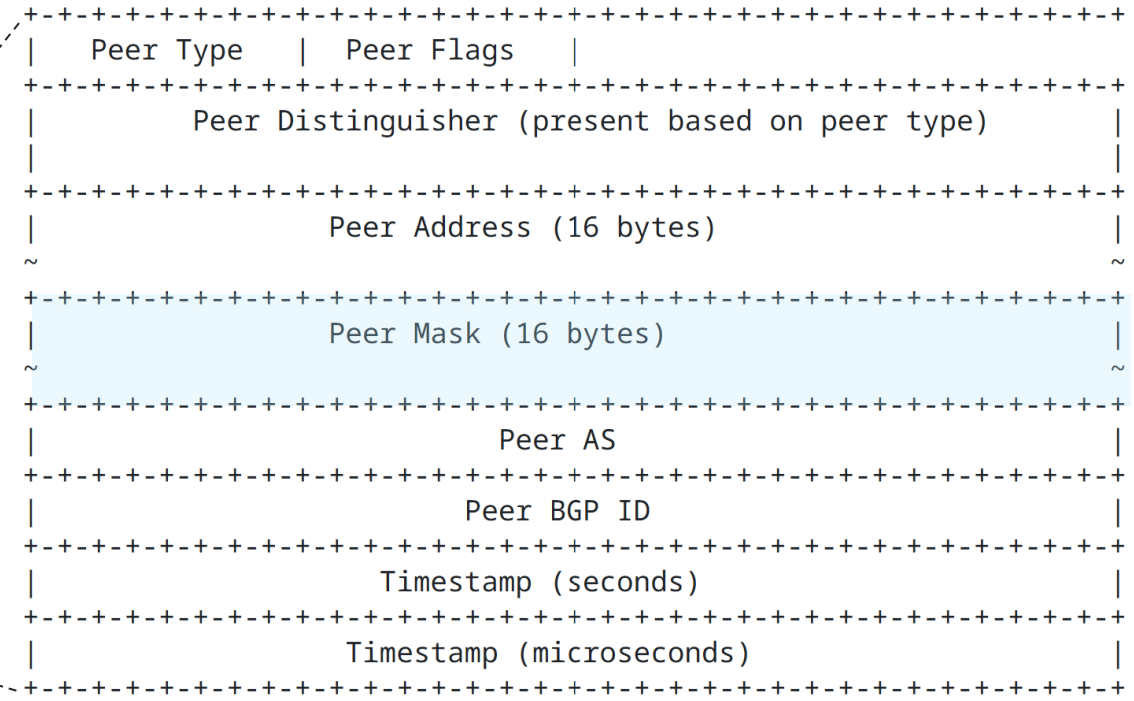
Common Information is message type specific

Common Multi-Peer header



Message-type: Can be any of the BMP Per Peer Message types.

Wild-Card Per-peer header



Same as BMP Per-peer header, except for Peer-mask

Next-Steps

- Discussion
  - Do you see other use-cases to use the Multi-peer header ?
  - Shall we replace the current v3 BMP Per-peer header with Wild card-peer header + few other changes to it
- Request Review / Feedback from the WG

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

4. Aggregated Route Monitoring Messages

Authors

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

Mukul Srivastava (HPE), Narasimha Prasad (Cisco)

Introduction - Recap

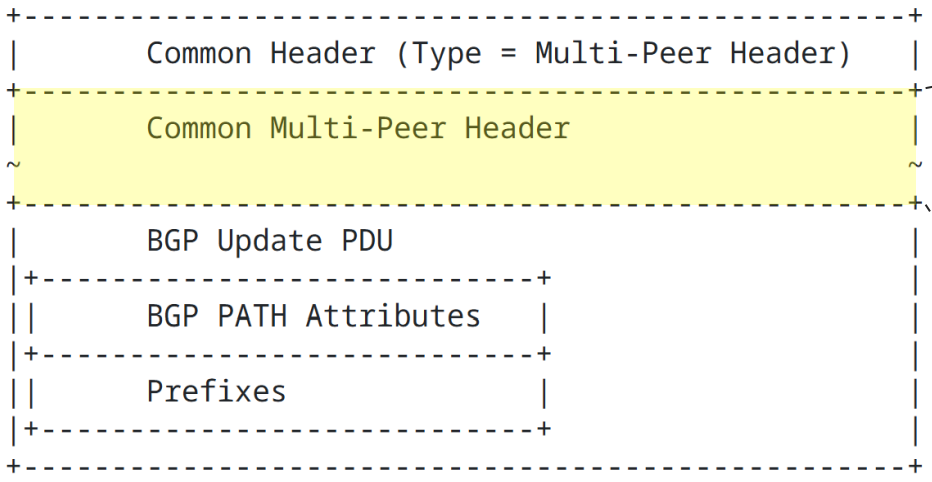
- Aggregated Route Monitoring message type defined to group multiple Route Monitoring messages, **within** a RIB-view
- Reduces number of BMP Messages sent, leveraging principles of proven BGP update group packing across peers
- Presented at IETF 119, 120
- At IETF 123 - Multiple updates to draft shared
  - Optional PATH attributes, multiple RIB-views, Mutual-exclusion with Route Monitoring type 0 message, Multiple Aggregated RMon messages to be sent even for the same set of prefixes
  - Proposed to make the Multi-peer header generic & incorporate that header in this draft

Updates

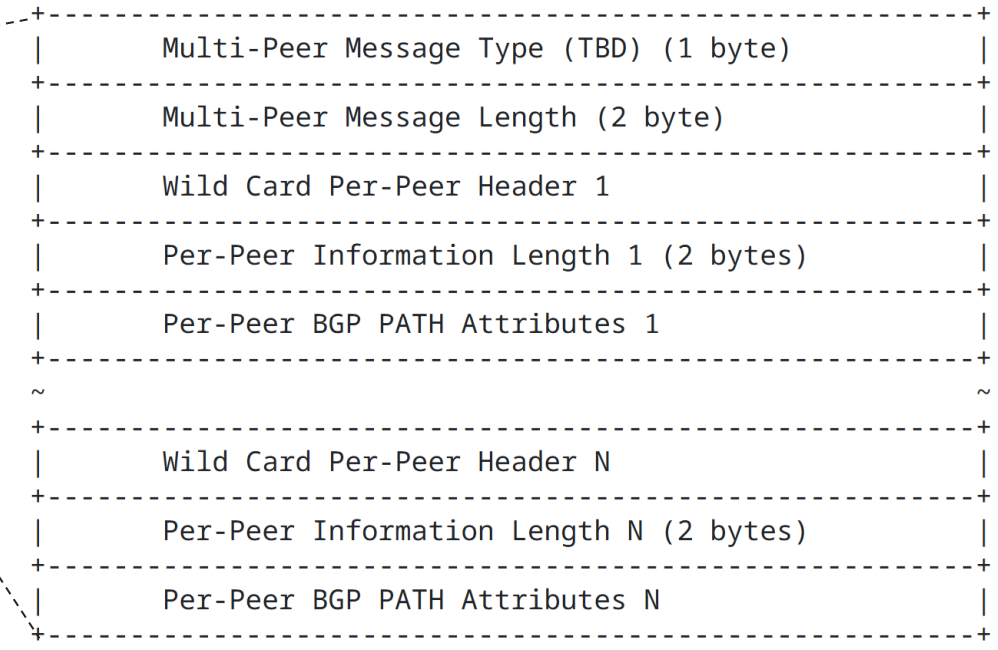
Leveraged the Multi-peer header draft for Route-Mon Aggregated message

Addressed feedback received from Luuk H (thank you)

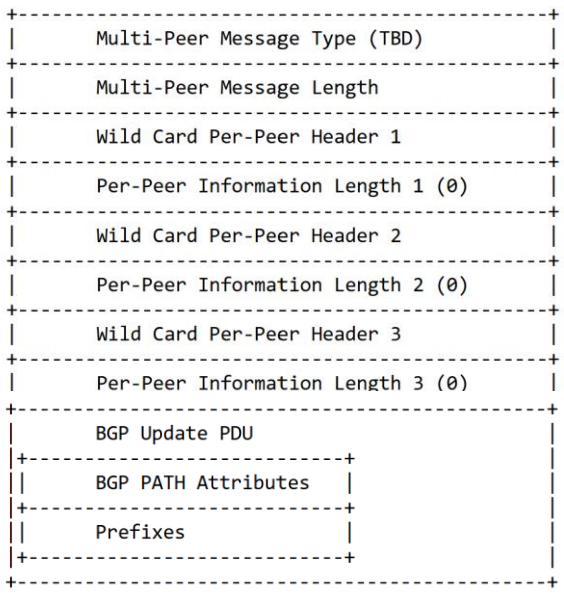
Route-Mon Aggregated Message Format



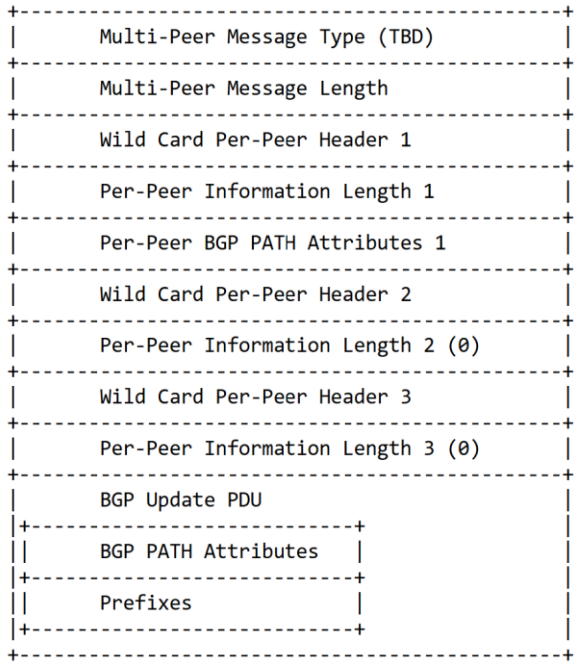
Common Multi-peer header for Route Monitoring



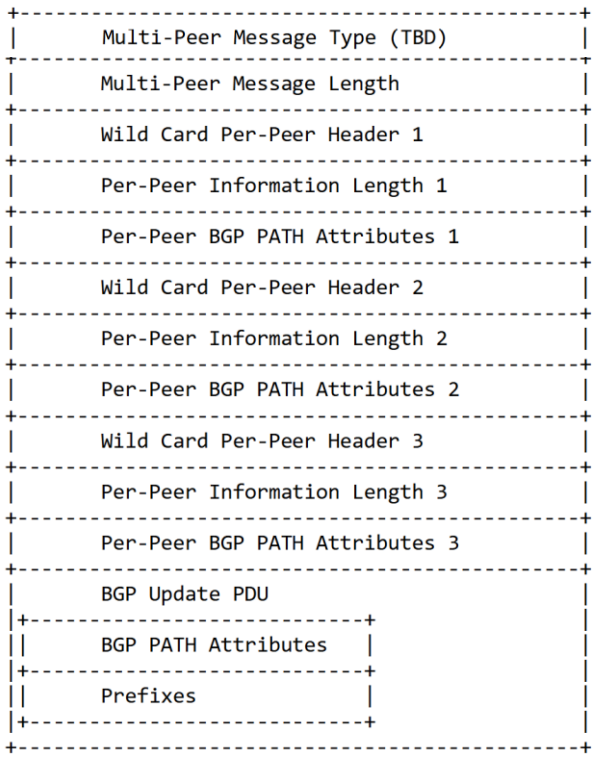
Examples



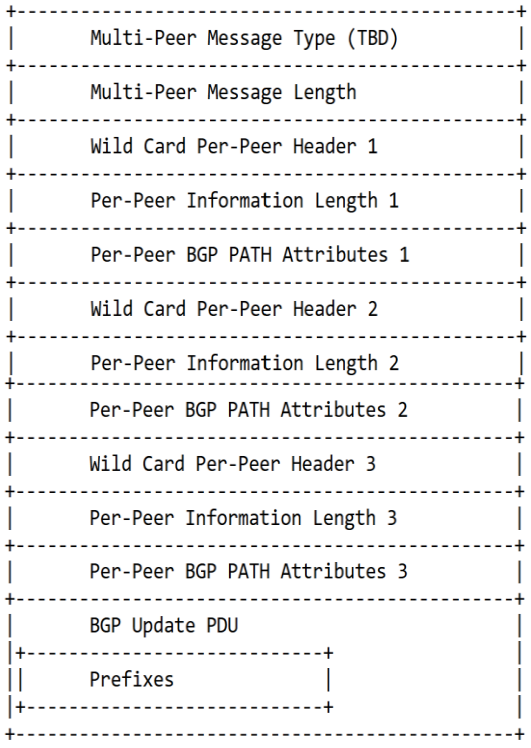
- no per-peer specific path attrs
- shared path attrs
- shared prefixes



- one per-peer specific path attrs
- shared path attrs
- shared prefixes



- 3 (all) per-peer specific path attrs
- shared path attrs
- shared prefixes



- 3 (all) per-peer specific path attrs
- no shared path attrs
- shared prefixes

Next-Steps

- Request Review / Feedback from the WG
- **Request WG Adoption**



Thank you