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Support for BMP RIB Purge Notification  
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## Abstract

This document describes a mechanism to notify a BMP collector of the need to purge the state associated with a RIB view of a specific peer. This is useful, for example, when the BMP sender decides to stop exporting a specific RIB view after providing an initial export. The BMP collector can use the per-peer Purge message to take appropriate action to remove the stale state and avoid holding on to irrelevant network data.

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## Table of Contents

1. Introduction . . . . .	2
1.1. Terminology . . . . .	3
2. Per-Peer Header . . . . .	3
3. BMP Messages . . . . .	4
4. Security Considerations . . . . .	4
5. IANA Considerations . . . . .	4
5.1. Addition to BMP Peer Flags Registry . . . . .	4
6. Normative References . . . . .	5
Authors' Addresses . . . . .	6

## 1. Introduction

The BGP Monitoring Protocol (BMP) defines means to access and monitor multiple Routing Information Base (RIB) views on per peer of a router. [RFC7854] and [RFC8671] define mechanisms to export the pre and post policy views of the (Adj-RIB-In and Adj-RIB-Out), while [RFC9069] defines the mechanisms to access the Loc-RIB view.

The BMP sender (e.g. router) uses the flags present in the Per-Peer Header of the BMP message to distinguish whether the BMP updates are for the pre-policy or post-policy of the Adj-RIB-In, or Adj-RIB-Out views. For the Loc-RIB updates, the BMP sender uses the Peer Type field in the BMP Peer Header to indicate updates are for the Loc-RIB view.

A BMP sender can stop exporting a RIB view to a BMP collector at any time after the initial export. For example, the BMP sender might decide to halt the export of the Adj-RIB-Out view of a specific peer to the BMP collector due to a policy or configuration change. Currently, the BMP collector is not informed about these changes in the RIB view export policy and continues to maintain the stale state, which may no longer be relevant to the current network situation. To address this, the BMP sender can terminate and restart the BMP session, prompting the BMP collector to rebuild the BMP RIB views based on the new policies. However, doing so each time such changes occur may be undesirable or impractical, especially in high-scale environments, where rebuilding the BMP views after a session restart could take several minutes.

This document defines a new flag from the per peer header flags that is used in a BMP message to notify the BMP collector to purge any previously exported state for a specific RIB view of a peer. The BMP sender can use the per peer Purge notification at anytime after the BMP session is established to purge any previously stored state for the specific peer and RIB view.

This document introduces a new flag within the per-peer header flags to be used in a BMP message to notify the BMP collector to purge any previously exported state for a RIB view of a peer. The BMP sender can utilize the per-peer Purge notification message at any time after the BMP session is established to remove the previously stored state for the specific peer and RIB view on the BMP collector.

### 1.1. Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

The terminology for describing YANG data models is found in [RFC7950].

## 2. Per-Peer Header

The per-peer header was initially defined [RFC7854]. It includes a set of flags that are defined in [RFC7854] and [RFC8671].

This document extends the per-peer header to include a new flag, the P flag, to indicate that the BMP sender is requesting the BMP collector to purge the state associated with the specific RIB view of the peer. The P flag is defined as follows:

```

0 1 2 3 4 5 6 7
+---+---+---+---+
|V|L|A|O|P|Resv|
+---+---+---+---+

```

Figure 1: The BMP per-peer header flags.

- \* The P flag, when set, indicates that a purge is requested for the specific RIB view of the peer. In combination with the O and L flags, the BMP collector can determine which RIB view is being purged.

The remaining bits are reserved for future use and MUST be set to 0 by the BMP sender and ignored by the BMP collector.

### 3. BMP Messages

The per-peer header follows the common header for most BMP messages. A Purge BMP message is a BMP Route Monitoring or Route Mirroring message that has the P flag set in the per-peer header. The Purge message MUST only contain the MP\_UNREACH\_NLRI attribute [RFC2858] with no withdrawn routes similar to the End-of-RIB marker in Section 2 of [RFC4724].

For other BMP messages that contain the per-peer header, the P flag MUST be set to 0.

### 4. Security Considerations

The considerations in Section 11 of [RFC7854] apply to this document. Implementations of this protocol SHOULD require establishing sessions with authorized and trusted monitoring devices. It is also believed that this document does not add any additional security considerations.

### 5. IANA Considerations

IANA has assigned the following new parameters to the "BGP Monitoring Protocol (BMP) Parameters" registry (<https://www.iana.org/assignments/bmp-parameters/>).

#### 5.1. Addition to BMP Peer Flags Registry

IANA is requested to assign a new flag to the "Per-Peer Header Flags" registry as follow:

Flag	Description	Reference
4	P flag	this document

Table 1: Addition to the "BMP Peer Flags" Registry

## 6. Normative References

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