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N. Geng
S. Zhuang
H. Wang
Huawei
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Log More Routing Events in the BGP Monitoring Protocol (BMP)
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Abstract

The Route Event Logging (REL) message is defined in [I-D.ietf-grow-bmp-rel] and is used to report event-driven data to the BMP Server from the monitored routers.

This document defines more event-driven data for BGP FlowSpec RFC8955 [RFC8956] and BGP SR Policies [I-D.ietf-idr-sr-policy-safil].

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1. Introduction

The generation of BGP Adj-RIB-In, Loc-RIB and Adj-RIB-Out comes from BGP route exchange and route policy processing. BGP Monitoring Protocol (BMP) provides the monitoring of BGP Adj-RIB-In [RFC7854], BGP Loc-RIB [RFC9069], and BGP Adj-RIB-Out [RFC8671]. The Route Event Logging (REL) message is defined in [I-D.ietf-grow-bmp-rel] and is used to report event-driven data to the BMP Server from the monitored routers.

This document defines more event-driven data for BGP FlowSpec RFC8955 [RFC8956] and BGP SR Policies [I-D.ietf-idr-sr-policy-safi].

1.1. Requirements Language

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.

2. Log some routing events for BGP Flowspec

Log Action TLV is defined in [I-D.ietf-grow-bmp-rel], the first byte defines the nature of the logging, depending on the code point additional data may follow. the following code points are defined for BGP Flowspec in this document:

- * TBD1 = Redirect-to-VRF-Fail. The BGP flowspec redirect to VRF action is defined in [RFC8955]. It is used to redirect the specified traffic into a Virtual Routing and Forwarding (VRF) instance that matched the flow specification's Network Layer Reachability Information (NLRI). The VRF instance may fail due to various reasons. As a result, the BGP FlowSpec will fail to redirect the matched traffic to the specific VRF instance. Data contains a UTF-8 string whose value can be organized freely by an implementation and is meant to give additional information about why the log was made.
- * TBD2 = Redirect-to-Nexthop-Fail. The BGP flowspec redirect to IP action is defined in [I-D.ietf-idr-flowspec-redirect-ip]. It is used to redirect the specified traffic to a target IPv4 address or a target IPv6 address that matched the flow specification's Network Layer Reachability Information (NLRI). The destination IPv4 address or destination IPv6 address may fail for a variety of reasons. Data contains a UTF-8 string whose value can be organized freely by an implementation and is meant to give additional information about why the log was made.
- * TBD3 = Redirect-to-SR-Policy-Fail. Data contains a UTF-8 string whose value can be organized freely by an implementation and is meant to give additional information about why the log was made.
- * TBD4 = Flowspec Validation Fail. The BGP Flowspec Validation Procedure is defined in [RFC8955]. Data contains a UTF-8 string whose value can be organized freely by an implementation and is meant to give additional information about why the log was made.

3. Log some routing events for BGP SR Policies

Log Action TLV is defined in [I-D.ietf-grow-bmp-rel], the first byte defines the nature of the logging, depending on the code point additional data may follow. the following code points are defined for BGP SR Policies in this document:

- * TBD5 = Invalid Candidate Path. Data contains a UTF-8 string whose value can be organized freely by an implementation and is meant to give additional information about why the log was made.

4. Operations

Network devices from other devices (can be a network controller, Flowspec server, router, switch, etc.) When receiving the Flowspec route that carries the Flowspec Redirect-to-vrf Action, it is detected that the target VRF instance is in the faulty state, and the network device reports the fault information to the BMP Server via BMP REL message.

5. Security Considerations

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

6. IANA Considerations

TBD

7. Normative References

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Authors' Addresses

Nan Geng
Huawei
Beijing
China
Email: gengnan@huawei.com

Shunwan Zhuang
Huawei
Beijing
China
Email: zhuangshunwan@huawei.com

Haibo Wang
Huawei
Beijing
China
Email: rainsword.wang@huawei.com