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BMP Extension for Path Information TLV
draft-cppy-grow-bmp-path-info-tlv-00

Abstract

The BGP Monitoring Protocol (BMP) provides an interface for obtaining BGP path information. BGP Path Information is conveyed within BMP Route Monitoring (RM) messages. This document proposes an extension to BMP to convey additional path information that is not already encapsulated in the BGP Update PDU, e.g., BPG path status. This extension makes use of the TLV mechanisms described in [draft-grow-bmp-tlv](#) [[I-D.grow-bmp-tlv](#)].

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 RFC 2119](#) [[RFC2119](#)] [RFC 8174](#) [[RFC8174](#)] when, and only when, they appear in all capitals, as shown here.

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[1.](#) Introduction

BGP Monitoring Protocol (BMP) [RFC7854](#) [[RFC7854](#)] is used to monitor BGP sessions. Additional information is allowed to be carried in the format of TLV with the BMP Initiation, Peer Up, and Termination Messages [RFC7854](#) [[RFC7854](#)] [draft-ietf-grow-bmp-peer-up](#) [[I-D.ietf-grow-bmp-peer-up](#)]. [draft-grow-bmp-tlv](#) [[I-D.grow-bmp-tlv](#)] provides the capability of conveying optional data in TLV format in BMP Route Monitoring (RM) and Peer Down Messages, and such TLV types are to be defined for each application. This document defines the Path Information TLV, making use of the TLV mechanism defined for BMP RM Message [draft-grow-bmp-tlv](#) [[I-D.grow-bmp-tlv](#)]. The Path Information TLV is used to describe the path information, e.g., path status (best, best-external), out interface, and so on. Specific path information can be defined as sub-TLVs encapsulated within the Path Information TLV.

[2.](#) Path Information TLV for the RM Message

The Path Information TLV is defined as follows.

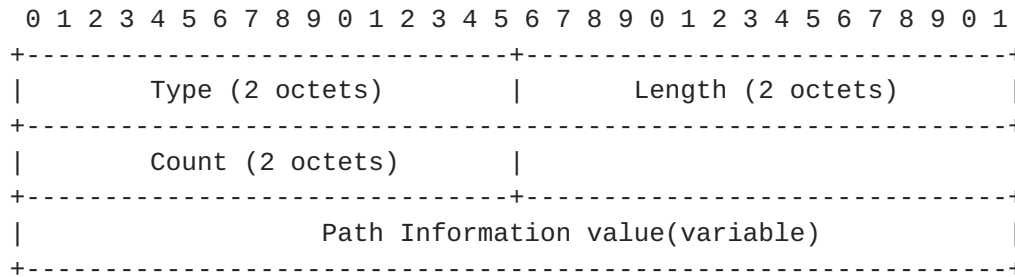


Figure 1: Path Information TLV

- o Type = TBD1 (2 Octets): indicates that it's the Path Information TLV.
- o Length (2 Octets): indicates the length of the value field of the Path Information TLV.
- o Count (2 Octets): indicates the number of sub TLVs followed in the Path Information Value field.
- o Path Information value (Variable): indicates the value of the Path Informtion TLV, which consists of one or multiple sub TLVs.

Each RM Message allows at most one Path Information TLV. As stated in [Appendix F.1 of RFC4271 \[RFC4271\]](#), multiple address prefixes (i.e., NLRI) with the same path attributes are allowed to be specified in one BGP message. However, such multiple prefixes may have different path information. Thus, to distinguish the sub-TLV for different prefixes, the order of the sub-TLVs MUST be in accordance with the prefix order encapsulated in the Update PDU.

3. IANA Considerations

This document requests that IANA assign the following new parameters to the BMP parameters name space.

Type = TBD1 (2 Octets): indicates that it's the Path Information TLV.

4. Security Considerations

It is not believed that this document adds any additional security considerations.

5. Normative References

[I-D.grow-bmp-tlv]

Lucente, P., Gu, Y., and H. Smit, "TLV support for BMP Route Monitoring and Peer Down Messages", [draft-grow-bmp-tlv-00](#) (work in progress), September 2019.

[I-D.ietf-grow-bmp-peer-up]

Scudder, J., "BMP Peer Up Message Namespace", [draft-ietf-grow-bmp-peer-up-00](#) (work in progress), July 2019.

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[RFC4271] Rekhter, Y., Ed., Li, T., Ed., and S. Hares, Ed., "A Border Gateway Protocol 4 (BGP-4)", [RFC 4271](#), DOI 10.17487/RFC4271, January 2006, <<https://www.rfc-editor.org/info/rfc4271>>.

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