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Authors: J. Scudder, *Juniper Networks*; P. Lucente, *NTT*

RFC 9736
The BGP Monitoring Protocol (BMP) Peer Up Message Namespace

Abstract

RFC 7854, the BGP Monitoring Protocol (BMP), uses different message types for different purposes. Most of these are structured as Type, Length, Value (TLV). One message type, the Peer Up message, lacks a set of TLVs defined for its use, instead sharing a namespace with the Initiation message. Experience has shown that this namespace sharing was a mistake, as it hampers the extension of the protocol.

This document updates RFC 7854 by creating an independent namespace for the Peer Up message. It also updates RFC 8671 and RFC 9069 by moving defined codepoints into the newly introduced registry. Compliant implementations of RFC 7854, RFC 8671, and RFC 9069 also comply with this specification.

Status of This Memo

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in Section 2 of RFC 7841.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at https://www.rfc-editor.org/info/rfc9736.

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Table of Contents

1. Introduction

[RFC7854] defines a number of different BMP message types. With the exception of the Route Monitoring message type, these messages are TLV-structured. Most message types have distinct namespaces and IANA registries. However, the namespace of the Peer Up message overlaps that of the Initiation message. As the BGP Monitoring Protocol has been extended, this oversight has become problematic. In this document, we create a distinct namespace for the Peer Up message to eliminate this overlap, and create the corresponding missing registry.

Compliant implementations of [RFC7854], [RFC8671], and [RFC9069] also comply with this specification.

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. String Definition

A string TLV is a free-form sequence of UTF-8 characters whose length in bytes is given by the TLV's Length field. There is no requirement to terminate the string with a null (or any other particular) character -- the Length field gives its termination.

3. Changes to Existing RFCs

[RFC7854] is updated as detailed in the following subsections.

3.1. Revision to Information TLV, Renamed as Initiation Information TLV

The Information TLV defined in Section 4.4 of [RFC7854] is renamed "Initiation Information TLV". It is used only by the Initiation message, not by the Peer Up message.

The definition of Type = 0 is revised to be:

- Type = 0: String. The Information field contains a string (Section 2). The value is administratively assigned. If multiple string TLVs are included, their ordering **MUST** be preserved when they are reported.
- Type = 1: sysDescr. The Information field contains an ASCII string whose value **MUST** be set to be equal to the value of the sysDescr MIB-II [RFC1213] object.
- Type = 2: sysName. The Information field contains an ASCII string whose value **MUST** be set to be equal to the value of the sysName MIB-II [RFC1213] object.

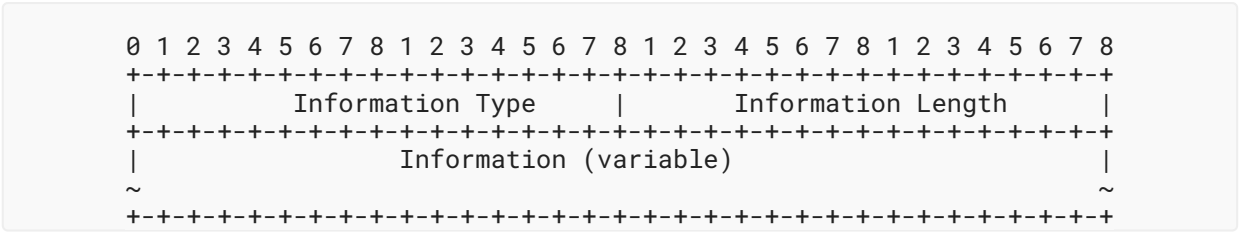
3.2. Revision to Peer Up Notification

The final paragraph of Section 4.10 of [RFC7854] references the Information TLV (which is revised above (Section 3.1)). That paragraph is replaced by the following:

- Information: Information about the peer, using the Peer Up Information TLV format defined in Section 3.3 of RFC 9736. The String type may be repeated. Inclusion of the Information field is **OPTIONAL**. Its presence or absence can be inferred by inspection of the Message Length in the common header.

3.3. Definition of Peer Up Information TLV

The Peer Up Information TLV is used by the Peer Up message.



- Information Type (2 bytes): defined types are:
  - Type = 0: String. The Information field contains a string (Section 2). The value is administratively assigned. If multiple strings are included, their ordering **MUST** be preserved when they are reported.
  - Type = 3: VRF/Table Name. The Information field contains a UTF-8 string whose value **MUST** be equal to the value of the VRF or table name (e.g., RD instance name) being conveyed. The string size **MUST** be within the range of 1 to 255 bytes.
  - Type = 4: Admin Label. The Information field contains a free-form UTF-8 string whose byte length is given by the Information Length field. The value is administratively assigned. There is no requirement to terminate the string a with null or any other character.
- Information Length (2 bytes): The length of the following Information field, in bytes.
- Information (variable): Information about the monitored router, according to the type.

4. IANA Considerations

IANA has created the "BMP Peer Up Message TLVs" within the "BGP Monitoring Protocol (BMP) Parameters" registry group and listed this document as the reference.

Registration procedures for this registry are:

Range	Registration Procedures
0, 3-32767	Standards Action
32768-65530	First Come First Served
65531-65534	Experimental
1-2, 65535	Reserved

Table 1

The initial values for this registry are:

Type	Description	Reference
0	String	RFC 9736
1	Reserved	RFC 9736

Type	Description	Reference
2	Reserved	RFC 9736
3	VRF/Table Name	RFC 9736
4	Admin Label	RFC 9736
65535	Reserved	RFC 9736

Table 2

IANA has also renamed the "BMP Initiation and Peer Up Information TLVs" registry to "BMP Initiation Information TLVs" and populated it with the following values:

Type	Description	Reference
0	String	RFC 9736
1	sysDescr	RFC 9736
2	sysName	RFC 9736
3	Reserved	RFC 9736
4	Reserved	RFC 9736
65535	Reserved	RFC 9736

Table 3

5. Security Considerations

This document does not alter the security considerations of [RFC7854] that continue to apply.

6. Normative References

[RFC1213] McCloghrie, K. and M. Rose, "Management Information Base for Network Management of TCP/IP-based internets: MIB-II", STD 17, RFC 1213, DOI 10.17487/RFC1213, March 1991, <https://www.rfc-editor.org/info/rfc1213>.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/RFC2119, March 1997, <https://www.rfc-editor.org/info/rfc2119>.

[RFC7854] Scudder, J., Ed., Fernando, R., and S. Stuart, "BGP Monitoring Protocol (BMP)", RFC 7854, DOI 10.17487/RFC7854, June 2016, <https://www.rfc-editor.org/info/rfc7854>.

[RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words", BCP 14, RFC 8174, DOI 10.17487/RFC8174, May 2017, <https://www.rfc-editor.org/info/rfc8174>.

[RFC8671] Evens, T., Bayraktar, S., Lucente, P., Mi, P., and S. Zhuang, "Support for Adj-RIB-Out in the BGP Monitoring Protocol (BMP)", RFC 8671, DOI 10.17487/RFC8671, November 2019, <https://www.rfc-editor.org/info/rfc8671>.

[RFC9069] Evens, T., Bayraktar, S., Bhardwaj, M., and P. Lucente, "Support for Local RIB in the BGP Monitoring Protocol (BMP)", RFC 9069, DOI 10.17487/RFC9069, February 2022, <https://www.rfc-editor.org/info/rfc9069>.

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Authors' Addresses

John Scudder
Juniper Networks
1194 N. Mathilda Ave
Sunnyvale, CA 94089
United States of America
Email: jgs@juniper.net

Paolo Lucente
NTT
Veemweg 23
3771 MT Barneveld
Netherlands
Email: paolo@ntt.net