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The Shutdown Communication BGP Cease Notification Message subcode draft-snijders-idr-shutdown-00

Abstract

This document defines the BGP Cease NOTIFICATION message "Shutdown Communication" subcode for operators to transmit a short freeform message to describe why a BGP session was shutdown.

Requirements Language

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119].

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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This Internet-Draft will expire on May 19, 2017.

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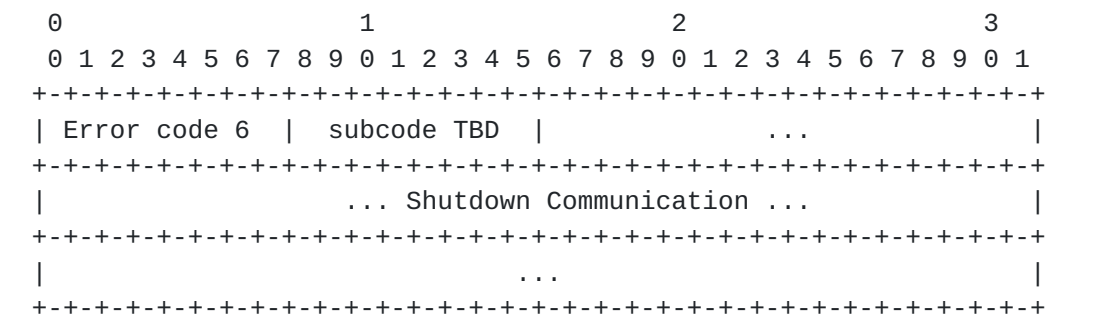
1. Introduction

It can be troublesome for an operator to correlate a BGP-4 [RFC4271] session teardown in the network with a notice that was transmitted via off-line methods such email or telephone calls. This document specifies a mechanism to transmit a short freeform UTF-8 [RFC3629] message as part of a Cease NOTIFICATION message [RFC4486] to inform the peer why the BGP session is being shutdown.

2. Shutdown Communication

If a BGP speaker decides to terminate its session with a BGP neighbor, then the BGP speaker MAY send to the neighbor a NOTIFICATION message with the Error Code "Cease" and the Error Subcode TBD "Shutdown Communication" followed by a freeform UTF-8 encoded string with a REQUIRED maximum length of 128 octets. The contents of the string are at the operator's discretion.

The Shutdown Communication Cease NOTIFICATION message is encoded as following:



To support international characters, the Shutdown Communication field MUST be encoded using UTF-8.

The sending BGP speaker SHOULD avoid octet values below 32 (control characters), however these values are legal. Following UNICODE TR36 [UTR36], Sec 3.1, the sending BGP speaker MUST encode messages in the "shortest form" and MUST NOT interpret messages in the "non shortest form". A receiving BGP speaker MUST NOT interpret invalid UTF-8 sequences.

It is RECOMMENDED that a BGP speaker receiving a Shutdown Communication observe retry behaviour in line with the RFC4486 [RFC4486] behaviour for "Administrative Shutdown" (sec 4.0).

Mechanisms concerning the reporting of information contained in the Shutdown Communication are implementation specific but SHOULD include methods such as SYSLOG [RFC5424].

3. Operational Considerations

Operators are encouraged to use the Shutdown Communication to inform their peers with a reference and reason as to why the BGP session is shut down. An example of a useful Shutdown Communication would be:

"[VNOC-1-1438367390] software upgrade, back in 2 hours"

"[VNOC-1-1438367390]" is a ticket reference with significance to both the sender and receiver, followed by a brief human readable message regarding the work triggering the BGP session shutdown followed by an indication about the length of the maintenance. The receiver can now use the string 'VNOC-1-1438367390' to search in their email archive to find more details.

4. Error Handling

Any erroneous or malformed Shutdown Communication received SHOULD be logged for the attention of the operator and then MAY be discarded.

5. IANA Considerations

Per this document, IANA is requested to assign a subcode named "Shutdown Communication" in the "Cease NOTIFICATION message subcodes" registry under the "Border Gateway Protocol (BGP) Parameters" group.

6. Security Considerations

This document uses UTF-8 encoding for the Shutdown Communication. There are a number of security issues with UNICODE. Any implementer and operator is advised to review UNICODE TR36 [UTR36] to learn about these issues. This document guards against the technical issues outlined in UTR36 by REQUIRING "shortest form" encoding. However, the visual spoofing due to character confusion still persists. This document tries to minimize the effects of visual spoofing by allowing UNICODE only where local script is expected and needed, and by limiting the length of the Shutdown Communication.

7. Implementation status - RFC EDITOR: REMOVE BEFORE PUBLICATION

This section records the status of known implementations of the protocol defined by this specification at the time of posting of this Internet-Draft, and is based on a proposal described in [RFC7942]. The description of implementations in this section is intended to assist the IETF in its decision processes in progressing drafts to RFCs. Please note that the listing of any individual implementation here does not imply endorsement by the IETF. Furthermore, no effort has been spent to verify the information presented here that was supplied by IETF contributors. This is not intended as, and must not be construed to be, a catalog of available implementations or their features. Readers are advised to note that other implementations may exist.

As of today these vendors have produced an implementation of the Shutdown Communication:

- ExaBGP

8. References

8.1. Normative References

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

[RFC3629] Yergeau, F., "UTF-8, a transformation format of ISO 10646", STD 63, RFC 3629, DOI 10.17487/RFC3629, November 2003, <http://www.rfc-editor.org/info/rfc3629>.

[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, <http://www.rfc-editor.org/info/rfc4271>.

[RFC4486] Chen, E. and V. Gillet, "Subcodes for BGP Cease Notification Message", RFC 4486, DOI 10.17487/RFC4486, April 2006, <http://www.rfc-editor.org/info/rfc4486>.

8.2. Informative References

[RFC5424] Gerhards, R., "The Syslog Protocol", RFC 5424, DOI 10.17487/RFC5424, March 2009, <http://www.rfc-editor.org/info/rfc5424>.

[RFC7942] Sheffer, Y. and A. Farrel, "Improving Awareness of Running Code: The Implementation Status Section", BCP 205, RFC 7942, DOI 10.17487/RFC7942, July 2016, <http://www.rfc-editor.org/info/rfc7942>.

[UTR36] Davis, M. and M. Suignard, "Unicode Security Considerations", Unicode Technical Report #36, August 2010, <http://unicode.org/reports/tr36/>.

Appendix A. Acknowledgements

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