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       The Shutdown Communication BGP Cease Notification Message subcode
                       draft-ietf-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].

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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:

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| Error code 6  |  subcode TBD  |            ...                |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                 ... Shutdown Communication ...                |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                          ...                                  |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

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:

o ExaBGP

8. References

8.1. Normative References

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8.2. Informative References

   [RFC5424] Gerhards, R., "The Syslog Protocol", RFC 5424,
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Appendix A. Acknowledgements

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