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Subcodes for BGP Cease Notification Message

draft-chen-bgp-cease-subcode-00.txt

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2. Abstract

This document defines several subcodes for the BGP Cease NOTIFICATION message that would provide more information to aid network operators in co-relating network events and diagnosing BGP peering issues.

3. Introduction

This document defines several subcodes for the BGP Cease NOTIFICATION message that would provide more information to aid network operators in co-relating network events and diagnosing BGP peering issues.

4. Subcode Definition

The following subcodes are defined for the Cease NOTIFICATION message:

Subcode	Symbolic Name
1	Maximum Number of Prefixes Reached
2	Administratively Shutdown
3	Peer Unconfigured
4	Administratively Reset
5	Connection Rejected
6	Other Configuration Change

5. Subcode Usage

If a BGP speaker decides to terminate its peering with a neighbor because the number of address prefixes received from the neighbor exceeds a locally configured upper bound (as described in [BGP-4]), then the speaker must send to the neighbor a NOTIFICATION message with the Error Code Cease, and the Error Subcode "Maximum Number of Prefixes Reached". The message may optionally include the Address Family information [BGP-MP] and the upper bound in the "Data" field with the following format:

```
+-------------------------------+
| AFI (2 octets)                |
+-------------------------------+
| SAFI (1 octet)                |
+-------------------------------+
| Prefix upper bound (4 octets) |
+-------------------------------+
```

where the meaning and use of the <AFI, SAFI> tuple is the same as defined in [BGP-MP, sect. 7].

If a BGP speaker decides to administratively shut down its peering with a neighbor, then the speaker should send a NOTIFICATION message with the Error Code Cease, and the Error Subcode "Administratively Shutdown".

If a BGP speaker decides to unconfigure a peer, then the speaker should send a NOTIFICATION message with the Error Code Cease, and the Error Subcode "Peer Unconfigured".

If a BGP speaker decides to administratively reset the peering with a neighbor, then the speaker should send a NOTIFICATION message with the Error Code Cease, and the Error Subcode "Administratively Reset".

If a BGP speaker decides to dis-allow a BGP connection (e.g., the peer is not configured locally) after the speaker accepts a transport protocol connection, then the BGP speaker should send a NOTIFICATION message with the Error Code Cease, and the Error Subcode "Connection Rejected".

If a BGP speaker decides to administratively reset the peering with a neighbor due to a configuration change other than the ones described above, then the speaker should send a NOTIFICATION message with the Error Code Cease, and the Error Subcode "Other Configuration Change".

It is recommended that a BGP speaker implement a backoff mechanism in re-trying a BGP connection after the speaker receives a Cease NOTIFICATION message with subcode of "Administratively Shutdown", or "Peer Unconfigured", or "Connection Rejected". An implementation may impose an upper bound on the number of consecutive automatic retries. Once this bound is reached, the implementation would stop re-trying any BGP connections until some administrative intervention.

6. Security Considerations

This extension to BGP does not change the underlying security issues.

7. Acknowledgments

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8. References

[BGP-4] Y. Rekhter, and T. Li, "A Border Gateway Protocol 4 (BGP-4)", <draft-ietf-idr-bgp4-14.txt>, September 2001.

[BGP-MP] Bates, T., Chandra, R., Katz, D. and Y. Rekhter, "Multiprotocol Extensions for BGP-4", RFC 2858, June 2000.

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