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Extended Message support for BGP
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Abstract

The current BGP specification mandates a maximum BGP message size of 4096 octets. As BGP is extended to support newer AFI/SAFIs, there is a need to extend the maximum message size beyond 4096 octets. This draft provides an extension for BGP to extend its current message size for BGP messages from 4096 octets to 65535 octets.

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 RFC 2119 [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 September 11, 2011.

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1. Introduction

The current BGP specification [RFC4271] mandates a maximum BGP message size of 4096 octets. As BGP is extended to support newer AFI/SAFIs and newer capabilities (e.g., [I-D.lepinski-bgpsec-overview], there is a need to extend the maximum message size beyond 4096 octets. This draft provides an extension for BGP to extend its current message size for BGP messages from 4096 octets to 65535 octets.

2. Extended message Capability for BGP

To advertise BGP Extended Message Capability to a peer, a BGP speaker uses BGP Capabilities Advertisement [RFC3392]. By advertising the BGP Extended message Capability to a peer, a BGP speaker conveys to that peer that the speaker is capable of receiving and properly handling BGP Extended Messages.

This is an asymmetric capability. I.e. one speaker could signal the capability and the other not, so that extended messages could flow only in the direction toward the speaker which advertised the capability.

The BGP Extended Message Capability is a new BGP Capability [RFC3392] defined with Capability code TBD and Capability length 0.

3. Operation

A BGP speaker that is willing to receive BGP Extended Messages from its peer should advertise the BGP Extended Message Capability to its peer using BGP Capabilities Advertisement [RFC3392]. A BGP speaker may send extended messages to its peer only if it has received the Extended Message Capability from its peer.

All BGP extended messages have maximum message size of 65535 octets. The smallest message that may be sent consists of a BGP header without a data portion (19 octets). All multi-octet fields are in network byte order.

4. Acknowledgements

The authors thank John Scudder for his input.

5. IANA Considerations

This document defines the Extended Message Capability for BGP. The new Capability code needs to be assigned by IANA.

6. Security Considerations

This extension to BGP does not change BGP's underlying security issues.

7. References

7.1. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[RFC3392] Chandra, R. and J. Scudder, "Capabilities Advertisement with BGP-4", RFC 3392, November 2002.

[RFC4271] Rekhter, Y., Li, T., and S. Hares, "A Border Gateway Protocol 4 (BGP-4)", RFC 4271, January 2006.

7.2. Informative References

[I-D.lepinski-bgpsec-overview] Lepinski, M. and S. Turner, "An Overview of BGPSEC", draft-lepinski-bgpsec-overview-00 (work in progress), March 2011.

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