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**Extended Length Message Support for IP Flow Information Export (IPFIX)
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Abstract

The specification of the IP Flow Information Export (IPFIX) Protocol [[RFC7011](#)] defines an IPFIX Message length of 16 bits. As new Information Elements (IEs) are introduced in IPFIX to export long information, such as the BGP community information [[I-D.ietf-opsawg-ipfix-bgp-community](#)], an IPFIX Message no longer has sufficient space to fit all the information of a specific flow. This document updates the IPFIX specification by extending the IPFIX Message length from 16 bits to 32 bits. For backwards compatibility, a new version of IPFIX (i.e., 11) is introduced to support the 32-bit Message length.

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[1.](#) Introduction

The IP Flow Information Export (IPFIX) Protocol [[RFC7011](#)] provides network administrators with traffic flow information using the Information Elements (IEs) defined in IANA's IPFIX registry [[IANA-IPFIX](#)]. [[RFC7011](#)] specifies an IPFIX Message length of 16 bits. As new IEs are introduced in IPFIX to export long information, such as the BGP community information [[I-D.ietf-opsawg-ipfix-bgp-community](#)], one IPFIX Message no longer has sufficient space to fit all the information of a specific flow. The maximum IPFIX message size needs to be extended beyond 65535 octets. This document updates the IPFIX specification by extending the IPFIX Message length from 16 bits to 32 bits, which means the maximum IPFIX message size is 4 giga bytes. For backwards compatibility, a new version of IPFIX (i.e., 11) is introduced to support the 32-bit Message length.

[2.](#) Terminology

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](#)].

The IPFIX Set Header with a 32 bits length field is called the IPFIX Extended Length Set Header, whose format is shown in Figure 2. The meanings and other specifications of the fields in the Extended Length Set Header are in accordance with [RFC7011]. Please refer to Figure I in [RFC7011].

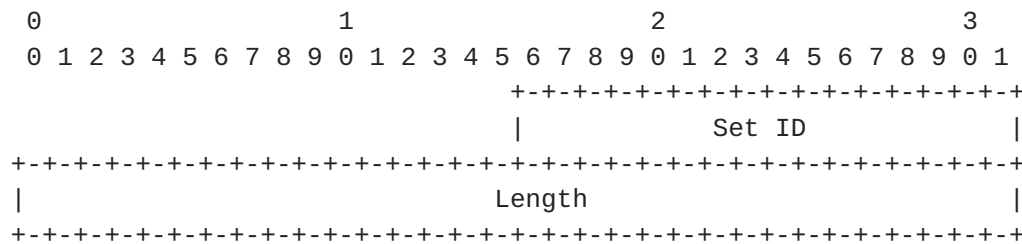


Figure 2: Extended Length Set Header Format

3.3. IPFIX Extended Variable-Length IE

The Extended Variable-Length IE allows export of variable-length IEs with size greater than or equal to 65535 octets, the length field of which is extended to 32 bits as shown in Figure 3. The meanings and other specifications of the fields in the Extended Variable-Length IE are in accordance with [RFC7011]. Please refer to Figure S in [RFC7011].

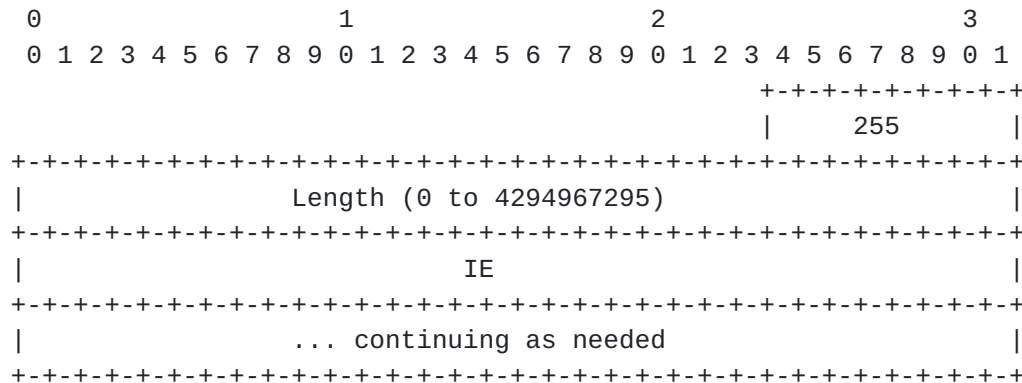


Figure 3: Extended Variable-Length IE

4. Transport Protocol Considerations

As per [section 10 of RFC7011](#), the IPFIX Protocol is transport protocol independent. SCTP [RFC4960] using the Partially Reliable SCTP (PR-SCTP) extension as specified in [RFC3758] MUST be implemented by all compliant implementations. UDP [RFC768] MAY also be implemented by compliant implementations. TCP [RFC793] MAY also be implemented by compliant implementations. The Collecting Process of a compliant implementation supporting IPFIX Extended Length Message MUST be able to handle IPFIX Message lengths of up to 4294967295 octets.

5. Security Considerations

This extension to IPFIX does not change IPFIX's underlying security issues, please refer to [RFC7011](#).

6. IANA Considerations

A new IPFIX Version Number value of 11 is reserved in IANA's IPFIX registry [[IANA-IPFIX](#)] for the IPFIX Extended Length Message specified in this document.

7. Acknowledgements

The authors would like to thank Ignas Bagdonas and Stewart Bryant for their constructive discussion.

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