

Simple Open Framing Header Technical Specification

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Based on a work at <https://github.com/FIXTradingCommunity/fix-simple-open-framing-header>

Document History

Revision	Date	Author	Revision comments
Release Candidate 1	September 10, 2014	FIX Global Technical Committee	Published for public review on the FIX Trading Community website.
Draft Standard	September 6, 2016	FIX Global Technical Committee	Promoted from Release Candidate 1 without changes.
	September 20, 2016	GTC Technical Support	Revised draft standard per direction from GTC Review.

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1 Introduction

FIX Simple Open Framing Header (SOF Header) permits message processors, such as network protocol analyzers and heterogeneous communication gateways, to determine an application message boundary and the encoding of a message without having to decode each message. SOF Header is a simple and primitive message framing header that communicates two pieces of information, the length of a message and the encoding type of that message. The FIX SOF Header specification makes the framing header open and available to support existing and future encoding types and has a reserved set of encoding types to permit user defined encodings.

1.1 Design Principles

- Provide a simple mechanism for message processing application to identify the length of a message.
- Provide a simple mechanism for message processing applications to identify the encoding of the message.
- Provide a mechanism to inventory and publish a list of encoding types.

1.2 Relevant and Related Standards

Related Standard	Version	Reference location	Relationship	Normative
SBE	1.0		SOF Header can be used with SBE	
FIX GPB	1.0		SOF Header can be used with FIX encoding using GPB	
FIX	4.2, 4.4, 5.0SP2		SOF Header can be used with FIX Tag=value encodings	
FAST	1.0, 1.1, 1.2		SOF Header can be used with FIX encoding using FAST	
FIX ASN.1	1.0		SOF Header can be used with FIX encoding using ASN.1	
FIXML	1.0, 1.1, 1.2		SOF Header can be used with FIXML	
FIX JSON			FIX plans a FIX standard encoding for JSON	
FIX BSON			FIX plans a FIX standard encoding for BSON	

1.3 Definitions

Term	Definition
CODEC	Encoder / Decoder – a processor that can encode and decode encoded messages.
Message	A stream of 1..n bytes of information of known length and identified encoding.
Network Byte Order	Integer values encoding using Big Endian byte order.

2 Simple Open Framing Header

The Simple Open Framing Header is six octets in length consisting of two fields, the Message_Length and Encoding_Type. The purpose of the Simple Open Framing Header will provide a simple mechanism to process messages from a stream that can have multiple encodings. Message processors are then able to skip over (ignore) any messages for which a CODEC is unavailable.

2.1 Simple Open Framing Header Fields

The Message Framing Header shall consist of two fields.

The Simple Open Framing Header is defined to contain the following information:

2.1.1 Message_Length field

The Message_Length shall be defined to be the length in octets (i.e. bytes) of a message inclusive of the length of the Simple Open Framing Header.

The Message_Length field shall be the first field in the Simple Open Framing Header.

The Message_Length field shall be four octets in length, permitting a maximum message size of 2^{32} .

2.1.2 Encoding_Type field

The Encoding_Type field shall be defined to be an integral enumeration whose value range shall be managed by the FIX Trading Community. The Encoding_Type shall include well known encodings. The Encoding_Type shall reserve a range of values for user defined encodings.

The Encoding_Type field shall be the second field in the Simple Open Framing Header.

The Encoding_Type field shall be two octets in length, permitting the identification of 2^{16} distinct encoding types.

The following encoding types are defined initially as part of the standard. Future encoding types will be defined as part of the standards process.

Simple Open Framing Header - Encoding_Types	
Encoding_Type	Values
Private User Defined	0x0001 through 0x00FF
FIX SBE Big Endian	0x5BE0
FIX SBE Little Endian	0xEB50
FIX GPB	0x4700
FIX ASN.1 PER	0xA500
FIX ASN.1 BER	0xA501
FIX ASN.1 OER	0xA502
FIXTV	0xF000
FIXML	0xF100
FIX FAST	0xFA00
FIX JSON	0xF500
FIX BSON	0xFB00

A new encoding type will only be added for a new FIX encoding, or a version of an encoding that is a breaking change with regards to decoding. Backward compatible versions will not be assigned a new encoding type.

2.1.3 Use of Private User Defined Encoding_Types

User defined values shall not be published.

User defined values shall not be considered to be unique and are to be implemented by counterparty agreement.

2.1.4 Registration of additional Encoding_Types

Encoding_Types will be reviewed and approved by the FIX Global Technical Committee. The intent of this standard is to provide open registration. The registration shall not be limited to only FIX encodings.

2.2 Encoding of the Simple Open Framing Header

The Simple Open Framing Header shall be encoded using unsigned binary integer values in Network Byte Order.

2.3 Visibility of Framing Header values

The Message_Length and Encoding_Type shall be made available to the CODEC.