Metropolitan Stock Exchange of India Ltd.

Currency Derivatives

FIX Connect Application Programming Interface

Version 11.29
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Revision History

Version No.	Description	Revision Date
5.9	Addition of Delivery Start Date & Delivery End Date added as part of tag 58 in Security Definition	30/09/2009
5.10	Description of Remarks is changed in Logon Request for Triple DES algorithm.	02/04/2010
5.11	Currency Info Conversion Rates UMS is removed	02/03/2010
5.12	Tag 9264 (Split Number) is introduced in the following messages – Execution Report – Trade Modify Instruction Request – Trade Modify Instruction Report – Institution Trade Acceptance Report – Institution Trade Rejection Report – Resubmit Institution Trade For Approval Request – Resubmit Institution Trade Confirmation – Resubmit Institution Trade Rejection Tag 9228 (Fill Status) description is updated in Execution Report.	16/03/2010
5.13	1. Order Type (Tag 40) field description changed for Multi Leg Order Request	02/09/2010
5.14	2. Security Definition Information Tag 9265 (Product Month) added Tag 9266 (Underlying Product Month) added – Rule For Terminal Info added in Description part of New Order – Single	12/10/2010
5.15	Tag 76 added in the following messages: 1. New Order – Single 2. Order Cancel/Replace Request 3. Cancel Request 4. Multi Leg Order Request 5. Trade Modify Instruction Request 6. Resubmit Institution Trade Approval Request 7. Position Maintenance Request 8. Trade Modify Instruction Report 9. Institution Trade Acceptance Report 10. Institution Trade Rejection Report 11. Resubmit Institution Trade Confirmation 12. Resubmit Institution Trade Rejection 13. Position Maintenance Report	15/10/2010
11.00	All transactional messages are optimized to remove unnecessary or redundant fields. One of the examples being henceforth, system will function with SecurityID only instead of whole	23/10/2010

Version No.	Description	Revision Date
	Security related information viz. Symbol, SymbolSfx, Security Type, MaturityMonthYear, MaturityDay, StrikePrice, PutOrCall and OptAttribute.	
11.10	1. Execution Report will be sent as Trade Cancellation Report 2. ExecRefId added in Execution Report 3. New values for ExecTransType	24/10/2010
11.20	1. Following tags are introduced in Security Definition Information a. Tag 9267 (Pre-Open) added b. Tag 9268 (Group Id) added c. Tag 9269 (Matching Type) added d. Tag 9270 (Spread Type) added 2. Following tags are introduced in Trading Session Status a. Tag 9271 Added b. Tag 9268 added c. Tag 9272 added 3. Description with new value (Pre-Open) for Order Type (Tag 40) is added. 4. Notes of Execution Report is updated.	01/12/2010
11.21	1. Description of Terminal Info for Execution Report is changed. 2. Tag 9273 added in Security Definition Information. 3. Security Type in Mass Order Cancellation Request is updated to accommodate RollOver instrument. 4. Following messages are introduced. 1. Security Status. 5. RawData is updated in Logon Request. 6. Remarks is updated in Logon Request. 7. Tag 332 and Tag 333 added in Security Definition Information. 8. Limit Download Request and Limits Download Response added. 9. New value “Cancelled Fill” added in Fill Status in Execution Report	21/12/2010
11.22	1. Spread Type related changes made 2. Rule For Terminal Info in Description part of New Order – Single updated 3. Auction Market Rules in Description part of New Order – Single updated 4. Block Deal has been removed.	19/01/2011
11.23	1. Text Field has been removed from Order	04/02/2011

Version No.	Description	Revision Date
	Cancel request. 2. Order Retransmission is updated with Transaction Retransmission.	
11.24	– Description and Note is removed from Trade Modify Instruction Request.	08/03/2011
11.25	1. Following changes have been done in the Execution Report: a. Tags 9351, 9368, 9370 & 9372 have been added. b. Field Name of Tag 198 is modified c. Description modified for Tag 336 d. Notes are updated 2. Note regarding Tag 440 has been removed from Order Cancel / Replace Request 3. Description of Tag 54 changed in Position Maintenance Request 4. Following tags are introduced in Trading Session Status a. Tag 9345 b. Tag 9346 c. Tag 9347 5. Following tags are introduced in Security Definition Information a. Tag 9350 b. Tag 9352 c. Tag 9353 d. Tag 9354 6. Description of Tag 393 has been updated in Security Definition Information 7. Following tags are introduced in New Order Single a. Tag 9351 b. Tag 9366 c. Tag 9367 d. Tag 9368 8. Tag 167 has been introduced in a. Open Interest Violations Download Response b. Open Interest Violations UMS Response c. Open Interest Alerts Download Response d. Open Interest Alerts UMS Response 9. Tags 9366 and 9367 have been introduced in a. Order Cancel / Replace Request b. Multi Leg Order Request c. Order Cancel Request d. Mass Order Cancellation Request	20/12/2012

Version No.	Description	Revision Date
	10. Tags 9368 has been introduced in a. Order Cancel / Replace Request b. Multi Leg Order Request 11. Notes for Multi Leg Order Request have been updated.	
11.26	1. In Security Definition message, new tag 9392 has been added.	16/02/2016
11.27	1. Self-Match Prevention Rules added in Notes for New Order - Single 2. New Tag 9724 for SMPFOrderIdentifier has been introduced in: a. New Order – Single b. Order Cancel / Replace Request c. Execution Report 3. Additional value 103 and 104 added in Tag 378 in Execution Report	20/03/2017
11.28	Rules For Terminal Info have been updated for identification of orders emanating from Colocation	19/03/2018
11.29	In Security Definition message, new tag 63 has been added Description of Remarks is changed in Logon Request	08/03/2022

Section A: Introduction

1. Background

This document describes the FIX API specifications for communicating with FIX Connect. FIX API specifications are based on the FIX protocol and cover transaction handling only. FIX Connect currently provides for translation of FIX messages only and does not provide the complete functionality provided by a FIX engine.

The exchange requires that the vendor/exchange's member undergo a conformance test upon completing development of the interface. The vendor/exchange's member must contact the exchange to schedule an appropriate period for testing.

The vendor/exchange's member may contact the Information Technology Division of the exchange to seek clarification at:

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3. Target Audience

This document is generated for information technology personnel, especially system designers and programmers of user organizations and third party software developers (referred as vendor/exchange member). Users of this document are expected to be familiar with the FIX protocol and have sound understanding of its meaning and implications.

4. Common Standards for the Document

- The gateway application will only support interactive private channel for interfacing with the exchange Trading System. The gateway will act as a TCP – Server and third party applications are expected to connect over stream based TCP protocol on the IP address and the IP port – as specified by the exchange.

- The broadcast channel interface (UDP) will not be supported by the gateway application.

- Inbound and outbound are with reference to the gateway. Inbound therefore refers to messages received by the gateway application and outbound means messages sent by the gateway application.

- All price related inbound fields must be multiplied by the value received in Tag 9211 in Security Download Information.

  E.g. If the value received in Tag 9211 is 100 and if the actual order price is 700.58, then the expected order price value to be sent is 70058

- All price related outbound fields must be divided by the value sent in Tag 9211 in Security Download Information.

  E.g. If the value received in Tag 9211 is 100 and the received price value is 70058, then the actual price value is 700.58.

- This standard applies to all price related fields, unless stated otherwise.

5. Assumptions and Dependencies

- The gateway application will only support version 4.2 of the FIX protocol. Tag 8 of the standard message header should always have a value of “FIX.4.2”.

- Each message is constructed of a stream of ‘<tag>=<Value>’ pairs. A delimiter character terminates each tag-value pair in a FIX message.

- Each message should have the standard message header followed by a message body and a standard message trailer.

- The gateway will send a session level reject to the client followed by disconnection if any leading/trailing spaces are present in any of the tag-values.

- The gateway will send a session level reject to the client followed by disconnection if any of the required tags are missing.

- A business message reject will only be sent when the message has passed integrity checks and the message sequence number has passed the session level rules.

- The client will be disconnected without error messages if the value of either the body length or check sum fields is incorrect.

- Both session level reject and business message reject messages will be sent to the client only if it has successfully logged in. These rejection messages will not be sent to the client if the logon message fails the session or business level rules.

6. System Behavior and Exceptions

- If the order price of the outstanding orders of any validity goes beyond the daily price band during the next startup, such orders are cancelled on the next startup of the system.

- The client applications are expected to send transaction requests (interactive application messages) only after successful logon and after they receive a Heartbeat Message with Tag#112 as “DNLDCOMPLETE”. Transaction requests prior to this will not be accepted by the system.

  This special heartbeat is not in response to any test request and will be sent irrespective of the keep alive settings.

Section B: FIX Messages

7. List of Messages Supported

The interface supports the following messages:

Message Type	Description	Originating Source
0	*Heartbeat*	*Gateway and Client*
1	*Test Request*	*Gateway and Client*
2	*Resend Request*	*Gateway and Client*
3	*Reject – Session Level*	*Gateway and Client*
4	*Sequence Reset – Gap Fill*	*Gateway and Client*
5	*Logout Request and Response*	*Gateway and Client*
8	*Execution Report*	*Gateway*
9	*Order Cancel Reject*	*Gateway*
A	*Logon Request and Response*	*Gateway and Client*
D	*New Order – Single*	*Client*
F	*Order Cancel Request*	*Client*
G	*Order Cancel / Replace Request*	*Client*
c	*Security Definition Request*	*Client*
d	*Security Definition Information*	*Gateway*
g	*Trading Session Status Request*	*Client*
h	*Trading Session Status Information*	*Gateway*
j	*Business Message Reject*	*Gateway and Client*
U1	*Position Maintenance Request*	*Client*
U2	*Position Maintenance Report*	*Gateway*
U3	*Trade Modify Instruction Request*	*Client*
U4	*Trade Modify Instruction Report*	*Gateway*
U5	*Institution Trade Acceptance Report*	*Gateway*
U6	*Institution Trade Rejection Report*	*Gateway*
U7	*Resubmit Institution Trade For Approval Request*	*Client*
U8	*Resubmit Institution Trade Confirmation*	*Gateway*
U9	*Resubmit Institution Trade Rejection*	*Gateway*
U10	*Participant Master Request*	*Client*
U11	*Participant Master Response*	*Gateway*
U12	*Mass Order Cancellation Request*	*Client*
U13	*Mass Order Cancellation Response*	*Gateway*
U14	*Multi Leg Order Request*	*Client*
U15	*Currency Info Download Request*	*Client*
U16	*Currency Info Master Download*	*Gateway*
U17	*Currency Info Pair Download*	*Gateway*
U18	*Currency Info Conversion Rates Download*	*Gateway*
U20	*Asset Master Download Request*	*Client*
U21	*Asset Master Download Response*	*Gateway*
U22	*Asset Underlying Mapping Download Request*	*Client*
U23	*Asset Underlying Mapping Download Response*	*Gateway*
U24	*Open Interest Violations Download Request*	*Client*
U25	*Open Interest Violations Download Response*	*Gateway*
U26	*Open Interest Violations UMS Response*	*Gateway*
U27	*Open Interest Alerts Download Request*	*Client*
U28	*Open Interest Alerts Download Response*	*Gateway*
U29	*Open Interest Alerts UMS Response*	*Gateway*
f	*Security Status*	*Gateway*
U33	*Limits Download Request*	*Client*
U34	*Limits Download Response*	*Gateway*

If the client application sends a message not supported by the gateway application, but supported by the FIX protocol, then the gateway will send a business message reject to the client. If the client

application sends a message not supported by the gateway application or the FIX protocol, then the gateway will send a session level reject to the client followed by disconnection.

8. Standard Message Contents

The structures here are standard contents in every message.

8.1. Standard Message Header

This header must be appended to every message sent to the gateway and will be part of every message received from the gateway.

Tag	Field Name	Req'd	Data Type	Max Size	Description
8	BeginString	Y	String	7	Describes the FIX version no. being supported by the particular FIX session. This is always FIX 4.2 Note: This must be the first field in the message. If not present, the client will be disconnected.
9	BodyLength	Y	Int		Must be the second field in the message. If it is not numeric value and if not present, then session level rejection will be send to the client followed by disconnection.
35	MsgType	Y	String	5	Message type to identify a message. Refer to List of Messages Supported for valid values that each peer can send. In case of messages not included in the list mentioned above that the client can send, the following behaviour is implemented: If message type is supported by the compatible FIX protocol, business level rejection will be send. In case the message is not supported by the compatible FIX protocol, session level rejection will be send to the client followed by disconnection.
49	SenderCompID	Y	String	32	Identifier of the firm sending the message.
50	SenderSubId	N	String	32	Identifier of the specific originator of the message.
56	TargetCompID	Y	String	32	Identifier of the firm receiving the message.
57	TargetSubId	N	String	32	Identifier of the specific receiver of the message.
90	SecureDataLen	N	Int		Required only in case of Logon Request. Required to identify length of encrypted section of message. (Always unencrypted)
91	SecureData	N	data	512	Required only in case of Logon Request. Triple DES (CBC mode) encrypted field containing comma separated Password, New Password For more details refer Remarks description of Logon Request.
34	MsgSeqNum	Y	Int		If the message sequence number contains any alphabetic or special characters or is negative, then session level rejection will be send to the client followed by disconnection.
122	OrigSendingTime	N	UTC TimeStamp		Required for message resends. If value is not in UTC format, then session level rejection will be send to the client followed by disconnection.
43	PossDupFlag	N	Boolean		Indicates possible retransmission of message with this sequence number. Valid values are Y = Possible duplicate, N = Original transmission.

Tag	Field Name	Req'd	Data Type	Max Size	Description
					If this Flag is other than 'Y'/ 'N', then session level rejection will be send to the client followed by disconnection.
52	SendingTime	Y	UTC TimeStamp		UTC Timestamp If value is not in UTC format, then session level rejection will be send to the client followed by disconnection.

8.2. Standard Message Trailer

This trailer must terminate every message sent to the gateway and will terminate every message received from the gateway.

Tag	Field Name	Req'd	Data Type	Max Size	Description
10	Checksum	Y	String	3	Byte Sum. If the value is negative or contains any alphabets or special characters, then the client will be disconnected.

9. Administrative Messages

These messages cover standard procedures for establishing and maintaining the FIX session.

9.1. Heartbeat

The Heartbeat message is used to monitor the status of the communications link. During periods of message inactivity, FIX applications are expected to generate heartbeat messages at regular time intervals.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = 0
112	TestReqId	N	String	15	Identifier included in Test request message. This ID is to be echoed back in the resulting Heartbeat.
	Standard Trailer	Y			

9.1.1. Notes

- Heart Beat messages will be sent to the client from the gateway, if no incoming messages are received from the client for preset time interval.

9.2. Test Request

The test request message forces a heartbeat from the peer application. The test request message checks the sequence numbers and / or verifies communication line status. The peer application is expected to respond with a Heartbeat containing the TestReqID.

The TestReqID verifies that the peer application is generating the heartbeat as the result of Test Request and not a normal timeout.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = 1
112	TestReqId	Y	String	15	Identifier included in Test request message to be returned in resulting Heartbeat.
	Standard Trailer	Y			

9.2.1. Notes

- Any string can be used as the TestReqID (one suggestion is to use a timestamp string).

- The gateway will send a test request to the client application if no message is generated from the peer application within a predefined heartbeat interval + transmission buffer time,

The connection will be terminated if the peer still fails to respond within the heartbeat interval + transmission buffer time.

9.3. Logon Request

This message is sent by the client for establishing a FIX session. The Gateway will authenticate the client by examining the logon message and respond with a Logon confirmation message. In the event of an unsuccessful logon attempt by the client, for example, password expired; the FIX gateway will send the logon response with error message to the client and disconnect the socket connection.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = A
98	EncryptMethod	Y	Int		Should be 0 If other than zero, then the client will be disconnected.
108	HeartBtInt	Y	Int		Used to synchronize the heartbeat interval in seconds. If negative / alphabetic or contains special characters, then the client will be disconnected.
95	RawDataLength	Y	Int		Length of RawData If negative / zero / alphabetic or special character, then the client will be disconnected.
96	RawData	Y	data	128	Should contain UserId, TradingMemberId with comma separated values. e.g. : 12632,12630,"Exchange Provided Number" For individual comma separated values please refer remarks below.
141	ResetSeqNumFlag	Y	Boolean		If value is other than 'Y'/ 'N' or numeric then the client will be disconnected without any explanatory message. Currently the value of this field is not considered and on each new trading day, Sequence no. is expected to start from 1.
	Standard Trailer	Y			

9.3.1. Notes

- The first message over a FIX session must be a logon request.
- The client will be disconnected without any error message if any required tags are missing.
- If any of the DealerId / MemberId / Password is missing, then the client will be disconnected without any error message. It is not mandatory to specify the new password. However new password is to be specified when password reset is required.
- The comma character (',') will not be allowed as a valid character in id or password information since it is used as a data delimiter.
- The format of the raw data & secure data (of Standard Message Header) field in logon request message (sent by client) should be as follows :
  - User id and trading member ids must have a length between 1 and 5 characters
  - User id and trading member id should be numeric only
  - Exchange Provided Unique Number will be appended to User Id, Trading Member Id.
  - Password related rule:
    - Must be between 8 and 10 characters long
    - Must be composed of following character sets:
      - Case insensitive alphanumeric [a-z, A-Z, 0-9]
      - Special Characters: [`~!@#$%^&*()_+-={ } | [ ] \ : " ; ' < > ? . /]

- The password will be checked against Login ID. The numeric part of the password should not be fully composed ONLY of numbers that are in the Login ID.
  If the login id is "21356", the following are INVALID passwords:
  min653? [digits are only from "21356"]
  KM5P6T% [digits are only from "21356"]
  "ADP17:", "PO~ad159", "A$$8MC" etc. would be strong passwords.

- For more information on Triple DES implementation please refer Annexure 1.
- An encrypted password must be sent to the gateway as a sequence of two digit (fixed) string converted hexadecimal representation of ASCII value of each encrypted character.

9.4. Logon Response

Logon response is sent by the gateway in response to the logon request. Clients should only send messages after receipt of successful logon response and download complete handshake.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = A
98	EncryptMethod	Y	Int		Refer to the tag definition as in Logon Request.
95	RawDataLength	Y	Int		Refer to the tag definition as in Logon Request.
96	RawData	Y	Data	255	Contains error code and error description separated with pipe character. For successful authentication error code will be '0' (char) and message will be contain Logon Status, Logon Time, Logon Id, Trading Member Id, Trading Member Name, Clearing Member Id, User Status, Exchange Start Time, Current Trading Date with comma as information separator. e.g. 96=0|0,816703334,12632,12630,MSE-Trade,12630,A,17-11-2005 : 14-2-14, 17-11-2005 : 00-00-00 or 96=-1|Login/Password Incorrect
108	HeartBtInt	Y	Int		Refer to the tag definition as in Logon Request.
141	ResetSeqNumFlag	Y	Boolean		Refer to the tag definition as in Logon Request.
15	Base Currency Code	Y	String	3	
9249	Exchange Name	Y	String	128	Exchange Name
	Standard Trailer	Y			

9.4.1. Notes

- A logon response with the appropriate error message will be sent to the client if the user is already connected or the user ID is not found. The client will then be disconnected. In these two cases the sequence number will be echoed back and the outgoing sequence number of the FIX gateway will not be incremented.
- If there is any problem in the FIX message header related fields or any required tags are missing or if a value of any tag is in incorrect data format, then the client will be disconnected without any error message.

9.5. Resend Request

This message is used to synchronize information between the gateway and the client.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = 2
7	Begin Sequence No	Y	Int		First message sequence no. of the desired range. To request a single message, Begin Sequence

Tag	Field Name	Req'd	Data Type	Max Size	Description
					No. as well as End Sequence No. should be same and it cannot be 0. If value is zero or negative or contains alphabets, then session level rejection will be send to the client followed by disconnection.
16	End Sequence No	Y	Int		Last message sequence no. of the desired range. To request all messages after a particular message, set End sequence No. to 0. If value is negative or contains alphabets, then session level rejection will be send to the client followed by disconnection.
	Standard Trailer	Y			

9.5.1. Notes

- If Begin Sequence number is greater than End Sequence number (except when End Sequence number = 0), then a session level reject will be sent to the client followed by disconnection.
- If the user logs in with an incoming message sequence number greater than expected and passes the session level checks, but fails due to invalid login credentials, then the resend will be generated to the client only on next successful login.

9.6. Reject (Session Level Reject)

This message is sent when the message received by the gateway is not supported, invalid or cannot be parsed. The gateway will disconnect the socket connection after sending the session level reject.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = 3
45	RefSeqNum	Y	Int		MsgSeqNum of the rejected message - if interpreted. In case there is an issue in this field, the next expected sequence number is filled in this tag.
372	RefMsgType	N	String	5	The message type of the FIX message being referenced – if interpreted.
371	RefTagID	N	String	5	The tag number of the FIX field being referenced – if interpreted.
373	SessionRejectReason	N	Int		0 = Invalid tag number 1 = Required tag missing 2 = Tag not defined for this message type 3 = Undefined Tag 4 = Tag specified without a value 5 = Value is incorrect (out of range) for this tag 6 = Incorrect data format for value 7 = Decryption problem 8 = Signature problem 9 = CompID problem 10 = SendingTime accuracy problem 11 = Invalid MsgType 13 = Tag appears more than once 15 = Repeating group fields out of order
58	Text	N	String	128	This will contain the error message text.
	Standard Trailer	Y			

9.7. Logout Request

A logout request message must be sent for a normal and graceful termination. Termination without sending a logout request message will be treated as an abnormal termination.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = 5
58	Text	N	String	25	Only 25 characters are allowed. No special characters are allowed. If more than 25 characters are present or text contains special characters, then session level rejection will be send to the client followed by disconnection.
	Standard Trailer	Y			

9.8. Logout Response

A logout response message is sent in response to the logout request. The client should wait for the logout response message before terminating the session. The gateway will disconnect the socket connection after sending the logout response.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = 5
58	Text	N	String	128	If this message is sent in response to Logout Request, then the String received in Request will be echoed back. If this message is unsolicited, this will contain the reason for Logout.
	Standard Trailer	Y			

9.9. Sequence Reset (Gap Fill)

The sequence reset message is used by the sending application to reset the incoming sequence number on the peer side. This message has two modes: "Sequence Reset-Gap Fill" when GapFillFlag is 'Y' and "Sequence Reset-Reset" when GapFillFlag is 'N' or not present. The "Sequence Reset-Reset" mode should ONLY be used to recover from a disaster situation which cannot be otherwise recovered via "Gap Fill" mode.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = 4
123	Gap Fill Flag	N	Boolean		Y = Gap fill message, message sequence no. field is valid. N = sequence reset, ignore the message sequence no.
36	New Seq No	Y	Int		New msg sequence no.
	Standard Trailer	Y			

9.9.1. Notes

If an attempt is made to decrease the next incoming message sequence number compared to the current incoming message sequence number, then a logout message, with appropriate reason text, will be sent to the client followed by a disconnection.

- If the value of the Gap Fill flag is other than Y/N then a session level reject will be sent to the client and the client will be disconnected.
- If nothing is sent for the Gap Fill flag then the session should work normally.
- If the value of the new incoming message sequence number is negative, then a session level reject will be sent to the client and the client will be disconnected.

10. Interactive Messages

These messages cover application level behaviour when using the FIX session.

10.1. Business Message Reject

The business message reject message is sent to reject an application-level message which fulfills session-level rules and cannot be rejected via any other means. If the message fails a session-level rule, a session level reject message should be issued.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = j
45	Ref Seq No	N	Int		Refer to the tag definition as in Reject (Session Level Reject)
372	Ref MsgType	Y	String	5	The MsgType of the FIX message being referenced.
380	BusinessRejectReason	Y	Int		Code to identify reason for a Business Message Reject message 0 = Other 1 = Unknown ID 2 = Unknown Security 3 = Unsupported Message Type (receive a valid, but unsupported MsgType) 4 = Application not available 5 = Conditionally Required Field Missing
58	Text	N	String	160	Reject messages In case of MsgType = D,G,F,U1,U3 58 = "ValueEnteredInRequest" + "|" + "Error Message" For all other request 58 = "ValueEnteredInRequest" Note : if ValueEnteredInRequest is empty then 58 = 0|Error message
	Standard Trailer	Y			

10.1.1. Notes

- The client won't be disconnected after a Business Message Reject. The client will just receive a message with the rejection reason.

10.1.2. New Order - Single

This message is sent by the client application to the gateway to submit fresh orders. A confirmation, rejection or unsolicited update to the order will be notified through an appropriate execution report message.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = D
11	Client Order Id	Y	String	15	Unique identifier for the order.
22	IDSource	N	String	1	Identifies class of Security Valid value 8 = Exchange provided If IDSource is not provided, then system will consider default as Exchange provided If value is other than '8', then Business Message reject would be generated.
48	SecurityID	Y	String	12	Security ID provided by the exchange
54	Side	Y	Char		Indicates whether the intention of the order is to buy or sell.

Tag	Field Name	Req'd	Data Type	Max Size	Description
					Valid values: 1 = Buy 2 = Sell If the value is negative or contains any alphabet or special character, then session level rejection will be send to the client followed by disconnection. If value is other than 1 or 2, then business level rejection would be generated.
40	OrderType	Y	Char		Indicates the type of the order. Valid values are: 1 = Market 2 = Limit 3 = Stop 4 = Stop Limit W = Auction Buy In X = Auction Sell Out Y = Auction Trading Buy In Z = Auction Trading Sell Out N = Negotiated Deal Order P = Pre-Open Order Note: OrderType 'N' and 'P' are not applicable in Exchange For any other value business rejection message will be sent.
111	Disclosed Quantity	N	Qty		Disclosed quantity should be in Multiple of marketable lots and should not be in weights. If value is negative or contains alphabet or special characters, then session level rejection would be generated.
38	Order Quantity	Y	Qty		Order quantity should be in Multiple of marketable lots and should not be in weights. If value is negative or contains alphabet or special characters, then session level rejection would be generated.
44	Price	N	Price		(Please refer General Rules given below)
204	CustomerOrFirm	Y	Int		0=Customer 1= Firm
1	Account	N	String	10	This signifies the customer Id in case the order is a Customer order
99	TriggerPrice	N	Price		Required in case of Stop, Stop Limit Orders. (Please refer General Rules given below)
60	TransactTime	Y	UTC Timestamp		In case of new order, the client should fill timestamp as 0. e.g NewOrder TransactTime = 0 UTC Timestamp also allowed. If value is other than zero and not in UTC format, then session level rejection will be send to the client followed by disconnection.
59	TimeInForce	N	Char		Specifies how long the order remains in effect.

Tag	Field Name	Req'd	Data Type	Max Size	Description
					Absence of this field is interpreted as DAY. Valid values: 0 = Day 1 = Good Till Cancel (GTC) 3 = Immediate or Cancel (IOC) 6 = Good Till Date (GTD) 7 = End of Session (EOS) (Additional value other than FIX supported) If value is negative or alphabetic, then session level rejection will be send to the client followed by disconnection. If value is other than 0 or 1 or 3 or 6 or 7, then business level rejection would be generated.
432	ExpireDate	N	LocalMktDate		Date of order expiration Format is YYYYMMDD. Conditionally required if TimeInForce = GTD. If value is not in LocalMktDate format, then session level rejection will be send to the client followed by disconnection.
21	HandInst	Y	Char		1 – Automated execution For any other value session level rejection will be send to the client followed by disconnection.
58	Text	N	String	25	Only 25 characters are allowed. No special characters are allowed. If more than 25 characters are present or text contains special characters, then session level rejection will be send to the client followed by disconnection.
440	Clearing Account	N	String	12	Participant Code as provided by the exchange.
76	Exec Dealer(Broker Id)	N	String	5	The Trading Member ID of the user who has (or on whose behalf), the order is entered.
9227	Terminal Info	N	String	15	Must be Numeric. Range being from 1 to 999999999999999 Presence of non-numeric character will cause session level rejection Refer Rules for Terminal Info.
9231	Counter Party Broker ID	N	String	5	Conditionally required when OrderType value is 'N'.
9351	SLBMIdentifier	N	Char		Not Applicable. Value should be "0"
9366	StrategyId	N	Int		Refer Algorithm Trading Identifier Rules
9367	StrategyTriggerSeqNumber	N	String	17	Refer Algorithm Trading Identifier Rules
9368	MktProtectionPercentage	N	Int		Market Protection percentage for the request. Refer Market Price Protection Rules
9724	SMPFOrderIdentifier	Y	Char		Indicates whether Active or Passive order cancellation to be done on account of SMPF. Valid values: 1 = Passive 2 = Active

Tag	Field Name	Req'd	Data Type	Max Size	Description
					If the value is negative or contains any alphabet or special character, then session level rejection will be send to the client followed by disconnection. If value is other than 1 or 2, then business level rejection would be generated.
	Standard Trailer	Y			

10.1.3. Notes

- For TimeInForce = 'GTD', if 'ExpireDate' is not present, then a Business Message Reject will be sent to the client.
- For OrderType = W, X, Y, Z, TimeInForce value must be 7 (EOS).
- Terminal Info may be used to identify the Terminal ID behind the connecting entity at the members' end as there may be multiple entities connecting to the Order Routing Server at the members' end.

10.1.4. General Rules for Order Entry

- Order Entry is not allowed in the following conditions:
  - Product has expired
  - Product does not exist in the system

- Order Quantity
  - Order Quantity should be greater than zero
  - Order Quantity should be in multiples of lots

- Disclosed Quantity
  - Disclosed Quantity should not be more than the ordered Quantity
  - Disclosed Quantity should be >= zero
  - Disclosed Quantity should be in multiples of lots
  - If Disclosed Quantity is zero, it will be treated as if no disclosed quantity is specified and the entire order quantity shall be visible to the market.
  - The minimum disclosed quantity percentage shall be validated by the exchange. The order would be rejected by exchange if this condition is not fulfilled.

- Order Price
  - Order Price should be >= zero for non-spread products. In case of Spread instrument and Spread IOC order, negative and zero price are allowed
  - In case order price is zero, it will be treated as market order, for non-spread order. For spread instruments and Spread IOC order, zero will be taken as valid price.
  - The validation of the Daily Price Range shall be done by the exchange system.
  - Order Price should be in multiples of the tick size.
  - If OrderType (Tag 40) has value 1 (RL Market) or 3 (SL Market) then Price (Tag 44) is not mandatory. Absence of Price (Tag 44) in this case will be treated as default value of 0.

- Trigger Price
  - Trigger Price is mandatory for Stop and Stop Loss Orders.
  - Trigger Price should be greater than zero
  - Trigger Price should be <= Order Price for Buy Order
  - Trigger Price should be >= Order Price for Sell Order

- Text
  - Only 25 characters are allowed.
  - Only alphabets, digits and space is allowed.

- Clearing Account
  - Required for Institutional Trading. If Tag 204 = 0, Tag 1 = Customer ID and Tag 440 = PartID then the order is treated as Institution Order.

10.1.5. Auction Market Rules

- The provision for Auction Trading for Buy In and Auction Trading Sell Out is also made in the structure; the business interpretation shall be circulated separately whenever the exchange plans to implement the same.
- In case of Auction, the exchange will not allow order cancellation n seconds before the close of Auction session. Also during the last n seconds, order modification is allowed only for betterment of price or quantity i.e. for the sell order, price can be decreased but cannot be increased while for buy order, price can be increased but cannot be decreased. For both the buy and sell order, quantity can be increased but cannot be decreased. The exact value for n seconds shall be communicated by the exchange through the circular at the appropriate time.

10.1.6. Post Close Session Rules

- In post close session, the best five market depth levels of the instrument will get cleared off on first order request of that instrument. The pending GTD orders will not be considered for matching in post close. Only market orders may be entered during the post close session. All the pending orders of post close session will get cancelled at the end of the session. Market close statistics will not have post close trade data.

10.1.7. Rule For Terminal Info

The Terminal Info should be a 15 digit number Unique number where

- first 12 digits should be
  - For order generated through CTCL mode it should be valid Exchange CTCL Unique code with first 6 digits as Pin Code of the Terminal Location, next 3 digits as Branch ID of the Terminal Location and next 3 digits as Running Serial number of the Terminal within the Branch
  - For order generated through IBT mode it should be “111111111111”
  - For order generated through DMA mode it should be “222222222222”
  - For order generated through wireless technology mode it should be “333333333333”
- 13th digit should be
  - If order is not generated through program trading software, it should be “0”.
  - For order generated through program trading software it should be “1”
  - For order generated through Smart Order Routing without program trading software it should be “2”
  - For order generated through Smart Order Routing with program trading software it should be “3”

  - For order generated through program trading software emanating from Colocation it should be “4”
  - For order generated through Smart Order Routing with program trading software emanating from Colocation it should be “5”
- 14th and 15th digit should be valid Vendor Code / In-House CTCL Code for member

10.1.8. Market Price Protection Rules

- Market Price Protection (%) must be >= 0.00 and <= 99.99%
- The Market Price Protection (%) should be multiplied by 100. For e.g. if in a particular request Market Price Protection (%) is to be sent as 2% then in the message 200 should be sent. Similarly, response would be sent as 200 indicating that 2% Market Price Protection was applied to the respective request.
- Order Type must be Regular Lot or Stop Loss
- Price must be 'Market'
- Order must be placed in Normal Trading Session
- If Market Price Protection % Functionality is not applicable at exchange and if Market order with Specific Market Price Protection % is placed then that Market order would get processed considering Market Price Protection % as not applicable
- If Market Price Protection % is defined at exchange and
  - If the Market Price Protection % <= the Market Price Protection % applicable at the exchange, the request will be accepted at the Market Price Protection % mentioned in the request
  - If the Market Price Protection % > the Market Price Protection % applicable at the exchange, the request will be accepted at the Market Price Protection % applicable at the exchange
- Buy Market Price Protection Limit would get computed as ‘Counter side Touch Line/Same side Touch Line/LTP/Close Price/Base Price * (1 + Market Price Protection %)’ and Rounded to Price Tick and within Product’s DPR Range. Sell Market Price Protection Limit would get computed as ‘Counter side Touch Line/Same side Touch Line/LTP/Close Price/Base Price * (1 - Market Price Protection %)’ and Rounded to Price Tick and within Product’s DPR Range.
- Order Response would be send at Derived Market Price Protection Limit
- Order Matching –
  - BUY Market Order would get executed with Trade Price upto Market Price Protection Limit or below
  - SELL Market Order would get executed with Trade Price upto Market Price Protection Limit or above
- Partially Traded Market Order with Market Price Protection Limit would get Converted To Passive Order at that Order’s Last Traded Price. In case of 0 trades, Market Order with Market Price Protection Limit would get Converted To Passive Order at that Product’s Same side Touch Line/LTP/Close Price/Base Price

10.1.9. Algorithm Trading Identifier Rules

The Strategy that a member wants to implement through Algorithm Trading shall be approved by the Exchange. Post Approval Exchange will allocate particular Strategy ID to specific User ID (ATS User) for the approved strategy.

- All Order entry / modification / cancellation requests coming through third party applications should contain the Strategy Id. If the Order Entry / Modification / Cancellation request contains a Strategy ID other than assigned to the User the respective Order Entry / Modification / Cancellation request shall be rejected by the system.
- The users can create product specific strategies with different parameters and definition for strategy approved by the exchange and assign Number as 'NN' (say 01 for product 1 and 02 for product 2 etc;). All parameters of the user defined strategies should be stored by the third party applications.
- Apart from the Strategy Id, the third party application is expected to send 'Strategy Trigger Sequence Number (STSN)' with each of the entry / modification / cancellation request.
- The format of STSN should be yymmddNNnnnnnnnnn; where
    - yymmdd should be the current date
    - 'NN' is Number stored by third party applications for product specific strategy
    - Small n's are running sequence numbers that should be incremented with every request.

  Thus, the first part yymmddNN shall represent user defined strategies for a particular date.
- Each time there is need of sending entry or modification or cancellation request to exchange, third party application is expected to generate new STSN.
- The STSN should also be stored with relevant values of Trigger / Opportunity (Say member strategy is – 'Sync near month prices to far month' then for each of the order entry / modification / cancellation for far month, member should send STSN and also store values of near month prices against each STSN and values defined by user also i.e. spread).
- Third party applications should also have the provision for complete audit trail of values defined by user against a strategy. As part of exchange inspection / system audit, this data will be verified with actual orders and values sent.

10.1.10. Self-Match Prevention Rules

- Self-Match refers to trades where both buyer and seller client are same. Such Self-Match does not serve any economic purpose of Members/Clients instead Members/Clients have to incur additional expenses like Transaction charges, CTT, etc.
- Self-Match Prevention refers to a mechanism by which Exchange restricts execution of self-match trades whereby when an active order gets potentially matched with a passive order resulting in Self-Match Trade, system cancels the active or passive order as per SMPF Order Identifier received with order instead of executing the self-match trade.
- Buy and Sell Orders having the same combination of 'Trading Member Id – User Id – CTCL Id – Client Code' or PAN are considered as self – match orders and will not be matched with each other.
- Active FOK order is cancelled when after excluding self-match orders full quantity is not available to fill the FOK order.
- Self-Match Prevention is made applicable on RL and triggered SL orders received during the normal session.
- Self-Match Prevention is not applicable on the following type of orders:
    - Spread IOC and Multi leg Orders

10.2. Order Cancel/Replace Request

The Order cancel / replace message is used to modify an existing order. Only certain fields marked with '*' are allowed to be modified. The remaining fields are expected to contain the same values as the original order.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = G
11	Client Order Id	Y	String	15	Refer to the tag definition as in New Order - Single Message
41	Original Client Order Id	Y	String	15	Client Order ID (Tag 11) of the previous order as assigned by the institution, used to identify the previous order in cancel and cancel/replace requests.
22	IDSource	N	String	1	Refer to the tag definition as in New Order - Single Message
40	*OrderType	Y	Char		Refer to General Rules for Order Modification below and the the tag definition as in New Order - Single Message.
111	*Disclosed Quantity	N	Qty		Refer to the tag definition as in New Order - Single Message
38	*Order Quantity	Y	Qty		Refer to the tag definition as in New Order - Single Message This is the pending qty desired which also includes any fills executed today. Also refer to section "General Rules for Order Modification"
44	*Price	N	Price		Refer to the tag definition as in New Order - Single Message and General Rules for Order Modification below
99	*TriggerPrice	N	Price		Refer to the tag definition as in New Order - Single Message
60	TransactTime	Y	UTC Timestamp		Gateway provided timestamp has to be used Modify Order TransactTime = YYYYMMDD-HH:MM:SS If value is not in UTC format then Session level Rejection would be generated with explanatory text and then the client will be disconnected.
59	*TimeInForce	Y	Char		Refer to the tag definition as in New Order - Single Message
432	*ExpireDate	N	LocalMktDate		Refer to the tag definition as in New Order - Single Message
21	HandInst	Y	Char		Refer to the tag definition as in New Order - Single Message
37	Order Id	Y	String	15	Exchange order number.
58	Text	N	String	25	Refer to the tag definition as in New Order - Single Message
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in New Order - Single Message
9366	StrategyId	N	Int		Refer Algorithm Trading Identifier Rules
9367	StrategyTriggerSeqNumber	N	String	17	Refer Algorithm Trading Identifier Rules
9368	MktProtectionPercentage	N	Int		Market Protection percentage for the request. Refer Market Price Protection Rules.
9724	SMPFOrderIdentifier	Y	Char		Indicates whether Active or Passive order cancellation to be done on account of SMPF. Valid values: 1 = Passive 2 = Active

Tag	Field Name	Req'd	Data Type	Max Size	Description
					If the value is negative or contains any alphabet or special character, then session level rejection will be send to the client followed by disconnection. If value is other than 1 or 2, then business level rejection would be generated.
	Standard Trailer	Y			

10.2.1. Notes

- For OrderType = W, X, Y, Z, TimeInForce value must be 7 (EOS).

10.2.2. General Rules for Order Modification

- For Order Modification, OriginalClientOrderId (41) should be equal to ClientOrderId (11) of previous order and ClientOrderId (11) should be next unique number.

  In case of multiple Order modification, following is expected:
  - Order Entry: ClientOrderId(Tag 11) = A1000
  - Order Modification: ClientOrderId(Tag 11) = B2000, OriginalClientOrderId (Tag 41)=A1000
  - Order Modification: ClientOrderId(Tag 11) = C3000, OriginalClientOrderId (Tag 41)= B2000

  The same example is applicable for cancel request (MsgType = F).

- For Modification of Order Price, if OrderType (Tag 40) is 1 or 3, then Price tag is optional, and if OrderType (Tag 40) is 2 or 4, then Price tag is compulsory.

- Specific rules for GTD / GTC order modification:
  - In case of GTD/GTC order (entered today) modification, the OrderQty field (Tag 38) has to be considered similar to normal day orders i.e. it is the desired pending qty including all fills executed today.
  - In case of GTD/GTC order (entered on previous business day) modification, the OrderQty field (Tag 38) has to consider desired pending qty for today - not Accounting for any fills prior to current business day, but considering all fills executed on the business day when modification is desired.

- The following values are allowed for modification for outstanding orders:
  - *Order Price*
  - *Trigger Price (in case of Stop Loss Order)*
  - *Pending Quantity*
  - *Disclosed Quantity*
  - *Type of Order (only from Stop Loss to Regular Order)*
  - *TimeInForce*
  - *Expiry Date*
  - *Text*

10.3. Order Cancel Request

The order cancel request message requests the cancellation of all of the remaining quantity of an existing order.

Tag	Field Name	Req'd	Data Type	Max Size	Description

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = F
11	Client Order Id	Y	String	15	Refer to the tag definition as in New Order - Single Message
41	Original Client Order Id	Y	String	15	Refer to the tag definition as in Order Cancel/Replace Request Message
22	IDSource	N	String	1	Refer to the tag definition as in New Order - Single Message
60	TransactTime	Y	UTC Timestamp		Gateway provided timestamp has to be used Cancel Order TransactTime = YYYYMMDD-HH:MM:SS If value is not in UTC format then Session level Rejection would be generated with explanatory text and then the client will be disconnected.
37	Order Id	Y	String	15	Refer to the tag definition as in Order Cancel/Replace Request Message
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in Order Cancel/Replace Request Message
9366	StrategyId	N	Int		Refer Algorithm Trading Identifier Rules
9367	StrategyTriggerSeqNumber	N	String	17	Refer Algorithm Trading Identifier Rules
	Standard Trailer	Y			

10.4. Order Cancel Reject

The order cancel reject message is issued upon receipt of a cancel request or cancel / replace request message, which cannot be honored. When rejecting a request, the Cancel Reject message will provide the ClOrdID and OrigClOrdID values, which were specified in the corresponding request message for identification.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = 9
11	Client Order Id	Y	String	15	Refer to the tag definition as in Order Cancel Request Message
41	Original Client Order Id	N	String	15	Refer to the tag definition as in Order Cancel Request Message
39	OrderStatus	Y	Char		Valid Values used are: 0 – New 1 – Partially Filled 2 – Filled 4 – Cancelled 5 – Replaced 6 – Pending Cancel 7 – Stopped (for orders frozen at the exchange) 8 – Rejected A – Pending New E – Pending Replace
60	TransactTime	Y	UTC Timestamp		Refer to the tag definition as in Order Cancel/Replace Request Message
37	Order Id	Y	String	15	Exchange Order Number
434	CxlRejResponseTo	Y	Char		Identifies the type of request that a Cancel Reject is in response to. Valid values: 1 - Order Cancel Request 2 - Order Cancel/Replace Request
102	RejectReason	N	Int		Exchange generated Reason Code
58	Text	N	String	160	Displayable text explaining reason for reject.

Tag	Field Name	Req'd	Data Type	Max Size	Description
					58 = "ValueEnteredInRequest" + "|" + "Error Message" Note : if ValueEnteredInRequest is empty then 58 = 0|Error message
76	Exec Dealer(Broker Id)	N	String	5	The Trading Member ID of the user who has (or on whose behalf), the order is entered.
	Standard Trailer	Y			

10.5. Multi Leg Order Request

With Multi Leg Order facility user can place orders for up to three different products simultaneously. Multi Leg Order Request is also used to place Spread IOC functionality. For each product, order confirmation, order cancellation, trade confirmation (fill confirmation) is sent to the client with respective Execution Report (MsgType = 8).

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U14
11	Client Order Id	Y	String	15	Unique identifier for the order. The value of the field will be in consonance with New Order – Single field.
9233	MLOrderAttributes	Y	Int		0 – Spread IOC order 1 – Multi Leg Order In case of non-numeric value, session level rejection will be generated. For numeric value, if any other value other than specified above, business level rejection will be generated.
146	NoOfSecurities	Y	Int		No of Securities for whom orders are to be placed. Depends upon the value of Tag 9233. For Tag 9233 value 0, Tag 146 value should be 2. For Tag 9233 value 1, Tag 146 value should be 2 or 3. If the above rule is violated, business level rejection will be sent. For non-numeric value, session level rejection will be generated.
→48	SecurityID	Y	String	12	Refer to the tag definition as in New Order - Single
→54	Side	Y	Char		Refer to the tag definition as in New Order - Single
→38	Order Quantity	Y	Qty		Refer to the tag definition as in New Order - Single
→44	Price	N	Price		Refer to the tag definition as in New Order - Single
→40	OrderType	Y	Char		Refer to the tag definition as in New Order - Single Valid values are 1 and 2.
59	TimeInForce	Y	Char		Refer to the tag definition as in New Order - Single 3 = Immediate/Cancel(IOC) is the only valid value.
204	CustomerOrFirm	Y	Int		Refer to the tag definition as in New Order - Single Message

Tag	Field Name	Req'd	Data Type	Max Size	Description
					0 = Customer, 1= Firm are the only valid values.
1	Account	N	String	10	Refer to the tag definition as in New Order - Single
440	Clearing Account	N	String	12	Refer to the tag definition as in New Order - Single
76	Exec Dealer(Broker Id)	N	String	5	The Trading Member ID of the user who has (or on whose behalf), the order is entered.
9227	Terminal Info	N	String	15	Refer to the tag definition as in New Order - Single
58	Text	N	String	25	Refer to the tag definition as in New Order - Single
9366	StrategyId	N	Int		Refer Algorithm Trading Identifier Rules
9367	StrategyTriggerSeqNumber	N	String	17	Refer Algorithm Trading Identifier Rules
9368	MktProtectionPercentage	N	Int		Market Protection percentage for the request. Refer Market Price Protection Rules
	Standard Trailer	Y			

10.5.1. General Rules:

- Client Order Id(Tag 11) field will be in consonance with the same field in New Order – Single. e.g. New Order – Single was placed with Client Order Id "1" and subsequently if Multi Leg Order is placed with the same value Client Order Id "1" then Multi Leg Order will be rejected citing the reason as Duplicate Client Order Id.
- Rules for Spread IOC:
  Spread IOC Order should be with different Buy Product and Sell Product. The Buy Product and Sell Product should
  - *Belong to the same Product underlying*
  - *Not be a Spread product*
  - *Not be an Auction Product*
  - *Have the same Market Lot / quotation units*
  - *Have same decimal locator*
  - *Price (Tag 44) in repeating group represents the spread price. It could be negative, zero or positive. Spread price (Tag 44) should be same in repeating group (both legs of Spread IOC order)*
  - *Order Quantity (Tag 38) in repeating group represents common Quantity for both the products. Order Quantity (Tag 38) should be same in repeating group (both legs of Spread IOC order)*
  - *Order Type (Tag 40) value should always be 2 – Limit order*

- Rules for Two Leg / Three Leg:
  - *Each product is independent of one another*
  - *Each leg's Side is independent of one another i.e. all leg can be Buy or all leg can be Sell or in any combination*
  - *Each product may belong to different Product underlying*
  - *Any of the product cannot be a Spread product*
  - *Any of the product cannot be an Auction Product*
  - *Each product may have the different Market Lot / quotation units*
  - *Each product may have different decimal locator*

- *Price (Tag 44) in repeating group represents an individual price for a corresponding leg*
- *Order Quantity (Tag 38) in repeating group represents an individual quantity for a corresponding leg*
- *Order Type (Tag 40) can be either of Market and Limit type*
- *MktProtectionPercentage (Tag 9368) shall apply to the respective leg in which the price is quoted as 'Market'.*

10.6. Execution Report

The execution report message is used to:

- Confirm the receipt of an order
- Confirm changes to an existing order (i.e. accept cancel and replace requests)
- Relay fill information on working orders
- Report error in placing new order.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = 8
11	Client Order Id	Y	String	15	Refer to the tag definition as in New Order - Single Message
41	Original Client Order Id	N	String	15	Refer to the tag definition as in New Order - Single Message
22	IDSource	N	String	1	Refer to the tag definition as in New Order - Single Message
48	SecurityID	Y	String	12	Refer to the tag definition as in New Order - Single Message
54	Side	Y	Char		Refer to the tag definition as in New Order - Single Message
40	OrderType	N	Char		Refer to the tag definition as in New Order - Single Message
111	Disclosed Quantity	N	Qty		Refer to the tag definition as in New Order - Single Message
38	Order Quantity	N	Qty		Refer to the tag definition as in New Order - Single Message
44	Price	N	Price		Refer to the tag definition as in New Order - Single Message
109	ClientId(Logon Id)	N	String	5	The user ID (or on whose behalf) who has entered the order.
204	CustomerOrFirm	N	Int		Refer to the tag definition as in New Order - Single Message
1	Account	N	String	10	Refer to the tag definition as in New Order - Single Message
99	TriggerPrice	N	Price		Refer to the tag definition as in New Order - Single Message
60	TransactTime	N	UTC Timestamp		Timestamp for the particular transaction as generated by the exchange.
59	TimeInForce	N	Char		Refer to the tag definition as in New Order - Single Message
9214	OrderLUT	N	UTC Timestamp		Conditionally required in case of Fill. The field indicates Last Updated Time of order.
432	ExpireDate	N	LocalMktDate		Refer to the tag definition as in New Order - Single Message
58	Text	N	String	160	In case of normal execution report 58 = "ValueEnteredInRequest" Note: If "ValueEnteredInRequest" is empty then 58 = 0.

Tag	Field Name	Req'd	Data Type	Max Size	Description
					In case of Rejection related execution report 58 = "ValueEnteredInRequest" + "|" + "Error Message" Note : if "ValueEnteredInRequest" is empty then 58 = 0|Error message
37	Order Id	Y	String	15	Exchange order number generated by the exchange - for each New Order – Single Request.
198	Secondary Order Id	N	String	15	Trade No generated by the exchange.
9264	Split Number	N	Int		Should always be '0'.
17	ExecId	Y	String	32	Execution report id
19	ExecRefId	N	String	32	Required for Cancel ExecTransType messages.
20	ExecTransType	Y	Char		0 – New 1 – Cancel 2 – Correct (Not in use) 3 - Status
150	ExecType	Y	Char		Valid Values used are: 0 – New 1 – Partially Filled 2 – Filled 4 – Cancelled 5 – Replaced 6 – Pending Cancel 7 – Stopped (for orders frozen at the exchange) 8 – Rejected A – Pending New D – Restated E – Pending Replace S – Sync (Not FIX Specific). Please refer to the notes.
39	OrdStatus	Y	Char		Valid Values used are: 0 – New 1 – Partially Filled 2 – Filled 4 – Cancelled 5 – Replaced 6 – Pending Cancel 7 – Stopped (for orders frozen at the exchange) 8 – Rejected A – Pending New E – Pending Replace
9228	Fill Status	N	Int		Conditionally sent in case of Fill. Bitwise value: 1) 1st bit – 2^0 – Fill Original 2) 2nd bit – 2^1 – Fill Modified 3) 3rd bit – 2^2 – Fill Accepted 4) 4th bit – 2^3 – Fill Rejected 5) 5th bit – 2^4 – Fill Resubmitted 6) 7th bit – 2^6 – Cancelled Fill.
103	OrdRejReason	N	Int		Exchange generated Reason Code. Valid in case where ExecType value is 8.
378	ExecRestatementReason	N	Int		Code to identify reason for an ExecutionRpt message sent with ExecType=Restated or used when communicating an unsolicited cancel. Valid values: 0 = GT Corporate action 1 = GT renewal / restatement (no corporate

Tag	Field Name	Req'd	Data Type	Max Size	Description
					action) 2 = Verbal change 3 = Repricing of order 4 = Broker option 5 = Partial decline of OrderQty (e.g. exchange-initiated partial cancel) 103 = Active Self Match Prevention Identifier (Not FIX Specific) (Refer Self-Match Prevention Rules) 104 = Passive Self Match Prevention Identifier (Not FIX Specific) (Refer Self-Match Prevention Rules)
151	LeavesQty	Y	Qty		Quantity open for further execution.
14	CumQty	Y	Qty		Currently executed quantity for a chain of orders.
6	Avg. Price	Y	Price		This will be filled as 0. Application does not compute the average price
377	SolicitedFlag	N	Boolean		Indicates the order is Solicited or not, default value Y – Was solicited N – Was not solicited
76	Exec Dealer(Broker Id)	N	String	5	The Trading member ID of the user who has (or on whose behalf), the order is entered.
439	ClearingFirm	N	String	12	The clearing member ID of the user who has (or on whose behalf), the order is entered.
442	MultiLegReportingType	N	Char		Used to indicate what an Execution Report represents (e.g. used with multi-leg securities, such as option strategies, spreads, etc.). Valid Values: 1 - Single Security (default if not specified) 2 - Individual leg of a multi-leg security 3 - Multi-leg security
31	LastPx	N	Price		Represents the last price of a security either on a consolidated or individual participant basis.
32	LastShares	N	Qty		Quantity bought / sold on this fill.
440	Clearing Account	N	String	12	The clearing Account information as entered for institutional order. For non-institutional trade, will have same value as in Tag 439.
336	TradingSessionID	N	String	2	Will not be present in case of MultiLeg order and MultiLeg trade (fill) related transactions. Applicable only in case of valid orders.
9227	Terminal Info	N	String	15	Refer to the tag definition as in New Order - Single Message Will be present when Execution Report is a part of Order Response.
9233	MLOrderAttributes	N	Int		Refer to Multi Leg Order Request .
9229	Reference Number	N	String	15	Applicable only in case of Multi Leg Order. Exchange generated reference no. for Multi Leg requests.
9230	Leg Indicator	N	Int		Applicable only in case of Multi Leg Order. The field mentions the leg number for which the current Execution Report is generated.
9231	Counter Party Broker ID	N	String	5	Refer to the tag definition as in New Order – Single Message.

Tag	Field Name	Req'd	Data Type	Max Size	Description
9351	SLBMIdentifier	N	Char		Refer to the tag definition as in New Order – Single Message.
9368	MktProtectionPercentage	N	Int		Market Protection percentage assigned by the exchange. Refer Market Price Protection Rules
9370	IndexReferenceNumber	N	String	15	Not Applicable
9372	IndexSecurityID	N	String	12	Not Applicable
9724	SMPFOrderIdentifier	N	Char		Refer to the tag definition as in New Order – Single Message.
	Standard Trailer	Y			

10.6.1. Notes

- ExecType (150) type value 'S' indicates synchronous status. Usually execution report with this value is sent to the client after successful login (as a part of order downloads). With ExecType value is 'S', value of OrdStatus (Tag 39) indicates final state of an order in the Exchange system.

- In case of spread order's trade response, end client will receive two execution reports, one for the near expiry instrument and another for the far expiry instrument that belongs to the spread (InstrumentId). No execution report will be sent for the spread instrument itself.

- In case of unsolicited order responses (for instance orders entered by Member Administrator), execution report will have ClientOrderId (Tag 11) same as OrderID (Tag 37) i.e. Tag 11 = Tag 37, along with SolicitedFlag (Tag 377) = "N"

- The Order Time [TransactTime (TagNo=60)] should also be updated on every trade confirmation [ExecType (Tag 150) values 1 – Partially Filled / 2 – Filled]

- Tag 31 and Tag 32 will exist in all execution reports with value 0 except for partial/full trade related execution reports. In partial/full trade related execution reports, Tag 31 and Tag 32 will have actual Last Price as well as Last Quantity respectively.

- User-Remarks entered in Member-Admin, will be sent to the FIX client (maximum of 25 chars), using execution report's Tag 58.

- For any Market Order Price Confirmation report, ExecType (Tag 150) will have value 'D' (Restated) and ExecRestatementReason (Tag 378) will have value 4.

- **Transaction Retransmission:-**
  - In Exchange disaster recovery scenario, all the transactions belonging to the firm will be retransmitted. In case of Order Book retransmission, Execution Reports with ExecTransType (Tag 20) with value 3, ExecType (Tag 150) with value 'S' will be communicated to the client.

10.7. Trade Modify Instruction Request

The Trade Modify Instruction Request message provides the ability to request the change in Account information for an already executed trade.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U3
9010	TrdModReqID	Y	String	15	Unique identifier for this modification instruction

Tag	Field Name	Req'd	Data Type	Max Size	Description
					message.
37	OrderID	Y	String	15	Refer to the tag definition as in Order Cancel/Replace Request Message. If value is negative or alphabetic, then business level rejection would be generated.
198	SecondaryOrderId	Y	String	15	TradeNumber If value is negative or alphabetic, then business level rejection would be generated.
9264	Split Number	Y	Int		Should always be '0'.
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in New Order - Single Message
9011	Old CustomerOrFirm	Y	Int		Refer to the definition of Tag 204 in the New Order - Single Message This is applicable to the previous CustomerOrFirm information for the trade.
9012	Old Account	N	String	10	Refer to the definition of Tag 1 in the New Order - Single Message This is applicable to the previous Account information for the trade. Required if Tag 9011 = 0.
9017	Old Clearing Account	N	String	12	Refer to the definition of Tag 440 in the New Order - Single Message This is applicable to the previous Clearing Account information for the trade.
9013	New CustomerOrFirm	Y	Int		Refer to the definition of Tag 204 in the New Order - Single Message This is applicable to the updated CustomerOrFirm information for the trade.
9014	New Account	N	String	10	Refer to the definition of Tag 1 in the New Order - Single Message This is applicable to the updated Account information for the trade. Required if Tag 9013 = 0.
9018	New Clearing Account	N	String	12	Refer to the definition of Tag 440 in the New Order - Single Message This is applicable to the updated Clearing Account information for the trade.
22	IDSource	N	String	1	Refer to the tag definition as in New Order - Single Message
48	SecurityId	Y	String	12	Refer to the tag definition as in New Order - Single Message
58	Text	N	String	25	Refer to the tag definition as in New Order - Single Message
	Standard Trailer	Y			

10.8. Trade Modify Instruction Report

The Trade Modify Instruction Report message provides the response of Trade Modify Instruction Request.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U4
9010	TrdModReqID	Y	String	15	Unique identifier for this modification instruction message. If TrdModReqID (Tag 9010) = OrderID (Tag 37), then consider it as an unsolicited Trade Modify Response.
37	OrderID	Y	String	15	Refer to the tag definition in the Trade Modify Instruction Request message
198	SecondaryOrderId	Y	String	15	Refer to the tag definition in the Trade Modify Instruction Request message
9264	Split Number	Y	Int		Should always be '0'.
9011	Old CustomerOrFirm	Y	Int		Refer to the tag definition in the Trade Modify Instruction Request message
9012	Old Account	N	String	10	Refer to the tag definition in the Trade Modify Instruction Request message
9017	Old Clearing Account	N	String	12	Refer to the tag definition in the Trade Modify Instruction Request message
9013	New CustomerOrFirm	Y	Int		Refer to the tag definition in the Trade Modify Instruction Request message
9014	New Account	N	String	10	Refer to the tag definition in the Trade Modify Instruction Request message
9018	New Clearing Account	N	String	12	Refer to the tag definition in the Trade Modify Instruction Request message
9019	Accept/Rejection Time	N	UTC Timestamp		Time at which trade modification is accepted / rejected by the exchange.
22	IDSource	N	String	1	Refer to the tag definition as in New Order - Single Message
48	SecurityId	Y	String	12	Refer to the tag definition as in New Order - Single Message
9015	TrdModStatus	N	String	2	0 – Accepted but trade details are not updated 1 – Accepted -1 – Rejected
103	OrdRejReason	N	Int		Exchange generated rejection code.
58	Text	N	String	160	In case of normal report 58 = "ValueEnteredInRequest" Note : if ValueEnteredInRequest is empty then 58 = 0 In case of Rejection related report i.e. TrdModStatus(#9015) = -1 58 = "ValueEnteredInRequest" + "|" + "Error Message" Note : if ValueEnteredInRequest is empty then 58 = 0|Error message
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in New Order - Single Message
	Standard Trailer	Y			

10.9. Security Definition Request

The Security Definition Request message is sent by the client to request a list of tradable securities.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = c (Lower case)
320	SecurityReqID	Y	String	15	Unique ID of a Security Definition Request.
22	IDSource	N	String	1	Refer to the tag definition as in New Order - Single Message
321	SecurityRequestType	Y	Int		Type of Security Definition Request. Valid value : 3 = Request List Securities If value other than 3 is provided, then session level rejection will be generated.
167	Security Type	Y	String	3	Valid values are FUT for Futures, OPT for Options, AUC for Auction, UL for Underlying. For value other than the mentioned, business rejection will be sent.
48	Security Id	N	String	12	If present, the value will be considered for exact filtering.
55	Security Symbol	N	String	12	If present, the value will be considered for initial character match filtering.
65	SymbolSfx	N	String	2	If present, the value will be considered for initial character match filtering.
200	MaturityMonthYear	N	Month-Year		If present, the value will be considered for exact filtering.
205	Maturity Day	N	Day-of-month		If present, the value will be considered for exact filtering.
202	Strike Price	N	Price		If present, the value will be considered for exact filtering.
201	PutOrCall	N	Int		If present, the value will be considered for exact filtering. Applicable only in case of Options: Valid values 0 – Put 1 - Call For value other than the mentioned, business rejection will be sent.
206	OptAttribute	N	Char		If present, the value will be considered for exact filtering. Applicable only in case of Options: Valid values are: A – "American" E – "European" For value other than the mentioned, business rejection will be sent.
	Standard Trailer	Y			

10.10. Security Definition

The Security Definition message provides the list of traded securities. Multiple security definition information messages will be sent, each having the details about listed and traded products.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = d (Lower case)
320	SecurityReqID	Y	String	15	Refer to the tag definition in the Security Definition Request message
322	Security Response ID	Y	String	15	Unique ID of a Security Definition message.
323	Security Response Type	N	Int		Type of security definition response message. Will always be 4 – List of Securities.
22	IDSource	N	String	1	Refer to the tag definition in the Security Definition Request message
393	Total No. of Sec	Y	Int		Remaining Number Of securities to be sent including the current one. (Value 1 will indicate the last security record.)
167	Security Type	N	String	3	Possible values are: FUT for Futures, OPT for Options, AUC for Auction, UL for Underlying
55	Symbol	N	String	12	Security Symbol Provided by the Exchange.
65	SymbolSfx	N	String	2	Symbol Series Provided by the Exchange. Conditionally required in case of Spot and Auction instruments.
48	Security Id	N	String	12	Security Id provided by the exchange.
200	MaturityMonthYear	N	Month-Year		Month and Year of the Maturity for the instrument. Format : YYYYMM Not required in case of Spot or Auction or Underlying Instrument.
205	Maturity Day	N	Day of Month		Day of Month used in conjunction with MaturityMonthYear to Specify the Maturity Date Valid values are 1 – 31. Not required in case of Spot or Auction or Underlying Instrument.
201	PutOrCall	N	Int		Applicable only for options and indicates whether the instrument is a call or a put option. Valid values are: 0 = Put 1 = Call
206	OptAttribute	N	Char		Applicable only for options and indicates whether the exercise attribute is American or European. Valid values are: A = "American" E = "European"
202	StrikePrice	N	Price		Strike price of the instrument – applicable only for options.
107	SecurityDesc	N	String	25	Free flow text description of the security.
58	Text	N	String	160	Contains the Tender Period Start and End Date. The Data format is : Tender Period Start Date : YYYYMMDD | Tender

Tag	Field Name	Req'd	Data Type	Max Size	Description
					Period End Date : YYYYMMDD | Delivery Start Date : YYYYMMDD | Delivery End Date : YYYYMMDD. Absence of any of the date in the system will omit the presence of that date. e.g. if Delivery Start Date & Delivery End Date is absent in the system, then Text field will only contain Tender Period Start Date and Tender Period End Date.
9201	LotSize	N	Int		Required to derive trade value.
9202	Trading Unit	N	String	5	Trading Unit e.g for Gold TOZ
9246	Trading Unit Factor	N	Float		
9247	Delivery Unit	N	String	5	Delivery Unit e.g for Gold TOZ
9248	Delivery Unit Factor	N	Float		
9203	Price Numerator	N	Float		Required to derive trade value.
9204	Price Denominator	N	Float		Required to derive trade value.
9205	Gen Numerator	N	Float		Required to derive trade value.
9206	Gen Denominator	N	Float		Required to derive trade value.
9210	Price Tick	N	Int		Tick size of quote / order price
9211	Decimal Locator	N	Float		Number of decimal places required in Price fields. Also required to derive trade value.
15	Trading Currency	N	String	3	
120	SettlCurrency	N	String	3	
9265	Product Month	N	String	7	Displays the Product Month. Product Month can be same or different from Product's Expiry Date Month
9267	Pre-Open	N	Int		0 = Pre-Open Not Allowed for the security. 1 = Pre-Open Allowed for the security. Note: This functionality is not applicable to currency exchange, thus for all products this tag will contain 0.
9268	Group Id	N	Int		Indicates the Group to which the security belongs to. Important in case of Group level halt. Default value is 0.
9269	Matching Type	N	Int		0 = Normal (Price Time Priority)
9270	Spread Type	N	Int		Please refer to the description Rules for Spread Type Combination.
9273	Underlying Security ID	N	String		Underlying Security Id of a Product.
332	HighPx	N	Price		Please refer to the tag definition in Security Status
333	LowPx	N	Price		Please refer to the tag definition in Security Status
9350	SLBMEligibility	N	Int		Not Applicable. Value will be "0"
9352	ValueMethod	N	Char		1 – Trade Value should be computed as existing (Calculate according to **Method 1**). 2–Trade Value should be computed by considering the logic for IRF products value computation (Calculate according to **Method 2**).
9353	IRFConfigFactor	N	Float		Applicable for IRF Products for use in Method 2 of Value Computation
9354	Face Value	N	Int		Applicable for IRF Products for use in Method 2 of Value Computation
9392	Eligibility Indicator	N	Int		Not Applicable. Value will be "0"
63	SettlmntTyp	N	Char		Not Applicable
146	NoRelatedSym	N	Int		Number of legs that make up the Security. If Security Type = FUT then NoRelatedSym = 2 If Security Type = OPT then NoRelatedSym = 1 Else NoRelatedSym = 0
→311	UnderlyingSymbol	N	String	12	The Symbol must be specified as the first field in

Tag	Field Name	Req'd	Data Type	Max Size	Description
					the repeating group. Conditionally required if tag 146 is greater than zero.
→312	UnderlyingSeriesSfx	N	String	2	Refer to the tag definition of Symbol in Security Definition Information.
→309	UnderlyingSecurityId	N	String	12	Refer to the tag definition of Security Id in Security Definition Information.
→305	UnderlyingIDSource	N	String	1	Refer to the definition of Tag 22 in the message New Order – Single.
→310	UnderlyingSecurityType	N	String	3	Refer to the tag definition of Security Type in Security Definition Information.
→313	UnderlyingMaturityMonthYear	N	Month-Year		Refer to tag definition of MaturityMonthYear in Security Definition Information.
→314	UnderlyingMaturityDay	N	Day of Month		Refer to tag definition of MaturityDay in Security Definition Information.
→315	UnderlyingPutOrCall	N	Int		Refer to tag definition of PutOrCall in Security Definition Information.
→317	UnderlyingOptAttributes	N	Char		Refer to tag definition of OptAttribute in Security Definition Information.
→316	UnderlyingStrikePrice	N	Price		Refer to tag definition of Strike Price in Security Definition Information.
→307	UnderlyingSecDesc	N	String	25	Security description of the underlying.
→9266	UnderlyingProductMonth	N	String	7	In case of spread and option instruments, Underlying Product Month displays the respective Leg's Product Month
	Standard Trailer	Y			

10.10.1. Notes

- Trade Value Computation:
  - **Method 1:** Trade Value = Qty * (Price / Decimal Locator) * LotSize * (Gen Numerator/Gen Denominator) * (Price Numerator/Price Denominator)

    For example, if USDINR is to be traded in lots of 30 units and the Price is in Paise then Trade Value is derived with following data:
    Rate = 705.85 paise (i.e. Rs. 7.0585)
    Trading Unit: Units
    Lot Size = 30
    Price Numerator = 1 (multiplier to convert value from paise to Rupees)
    Price Denominator = 100
    General Numerator = 3215075 (alternatively can be 32.15075)
    General Denominator = 100000 (alternatively can be 1 based on numerator)
    Trade Value = ROUND (705.85 * (1 / 100) * 1 * 30 * (3215075 / 100000),2) = 6808.08

  - **Method 2:** Trade Value = Qty * (IRF Multiplier/Decimal Locator) * Lot Size * (Gen Numerator/Gen Denominator) * (Price Numerator/Price Denominator)

    where IRF Multiplier = Face Value – IRF Config Factor * (Face Value - Trade Price)

For example, if IRF 91 Days T- Bills has Face Value = 100, IRF Config Factor = 0.25, Lot Size = 2000, Price Numerator = 1, Price Denominator = 1, General Numerator = 1, General Denominator = 1, Decimal Locator = 100
For Qty of 10 at a price of 92
IRF Multiplier = 100 – 0.25*(100-92) = 98
Trade Value = 10 * (9800/100) * 2000 * (1/1) * (1/1) = 19,60,000

- Rules for Spread Type Combination:
  - First and second bit will determine the Spread product B/S Anchor Leg.
    - 1st bit - 2^0 - Near month means
      - Buy would Buy Near month and Sell Far month
      - Sell would Buy Far month and Sell Near month
    - 2nd bit - 2^1 - Far month means
      - Buy would Buy Far month and Sell Near month
      - Sell would Buy Near month and Sell Far month
  - Third and forth bit will determine whether the price calculation will be based on LTP or Closing Price.
    - 3rd bit – 2^2 - Last Traded Price
    - 4th bit – 2^3 - Closing Price
  - Fifth and sixth bit will determine whether the calculation will be based on L1 or L2.
    - 5th bit – 2^4 - Near Month would refer Near Month's LTP/Closing Price based on defined 3rd/4th bit
    - 6th bit – 2^5 - Far Month would refer Far Month's LTP/Closing Price based on defined 3rd/4th bit

10.11. Security Status

The Security Status message provides for the ability to report changes in status to a security. This response will provide the Daily Price Range information related to a security.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = f
48	SecurityID	Y	String	12	
22	IDSource	N	String	1	Valid value 8 = Exchange Provided. If value is other than '8' then Business Message Reject would be generated.
332	HighPx	N	Price		Represents the high end of the price range.
333	LowPx	N	Price		Represents the low end of the price range.
	Standard Trailer	Y			

10.12. Limit Download Request

Download request for Limits for the entity and all entities mapped to the requesting entity.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U33
9281	Limits Download Request Id	Y	String	15	Must be unique identifier.
	Standard Trailer	Y			

10.13. Limit Download Response

Download response for Limits for the entity and all entities mapped to the requesting entity.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U34
9281	Limits Download Request Id	Y	String	15	Must be unique identifier.
9282	Entity Id	Y	String	12	Entity Id for which the message is sent/received.
9284	Daily Futures Buy Limit	N	Float		Applicable for User entity.
9285	Daily Futures Sell Limit	N	Float		Applicable for User entity.
9286	Daily Spot Buy Limit	N	Float		Applicable for User entity.
9287	Daily Spot Sell Limit	N	Float		Applicable for User entity.
9288	Daily Option Buy Limit	N	Float		Applicable for User entity.
9289	Daily Option Sell Limit	N	Float		Applicable for User entity.
9290	Daily Auction Buy Limit	N	Float		Applicable for User entity.
9291	Daily Auction Sell Limit	N	Float		Applicable for User entity.
58	Text	N	String	160	
9026	LastModifyDate	N	UTC Timestamp		Last update time of the information.
9305	Last Updated By Entity Id	Y	String	12	Last updated by Entity Id.
	Standard Trailer	Y			

10.14. Institution Trade Acceptance Report

The Institutional Trade Acceptance Report message provides the Acceptance response of an Institutional Trade. This message is unsolicited and only applicable to Institutional Trades.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U5
37	OrderID	Y	String	15	Refer to the tag definition in the Execution Report Message
198	SecondaryOrderId	Y	String	15	Refer to the tag definition in the Execution Report Message. This is the trade number.
9264	Split Number	Y	Int		Should always be '0'.
60	TransactTime	Y	UTC Timestamp		Refer to the tag definition in the Execution Report Message This is the traded time.
204	CustomerOrFirm	Y	Int		Refer to the tag definition as in New Order - Single Message
1	Account	N	String	10	Refer to the tag definition as in New Order - Single Message. This corresponds to the latest Account information for the institutional trade.
440	ClearingAccount	N	String	12	This is the clearing Account information of the settling hierarchy. Relevant only in case of institutional trade.
439	ClearingFirm	N	String	12	Refer to the tag definition as in New Order - Single Message.

Tag	Field Name	Req'd	Data Type	Max Size	Description
					This is the clearing Account information of trading hierarchy.
22	IDSource	N	String	1	Refer to the tag definition as in New Order - Single Message
9019	ConfirmationTime	N	UTC Timestamp		Time at which institutional trade is accepted by exchange.
32	LastShares	N	Qty		Traded Quantity
58	Text	N	String	25	Institutional Remarks
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in New Order - Single Message
	Standard Trailer	Y			

10.15. Institution Trade Rejection Report

The Institutional Trade Rejection Report message provides the Rejection response of an Institutional Trade. This message is unsolicited and only applicable to Institutional Trades.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U6
37	OrderID	Y	String	15	Refer to the tag definition in the Institution Trade Acceptance Report Message
198	SecondaryOrderId	Y	String	15	Refer to the tag definition in the Institution Trade Acceptance Report Message
9264	Split Number	Y	Int		Should always be '0'.
204	CustomerOrFirm	Y	Int		Refer to the tag definition in the Institution Trade Acceptance Report Message
1	Account	N	String	10	Refer to the tag definition in the Institution Trade Acceptance Report Message
440	ClearingAccount	N	String	12	Refer to the tag definition in the Institution Trade Acceptance Report Message
439	ClearingFirm	N	String	12	Refer to the tag definition in the Institution Trade Acceptance Report Message
22	IDSource	N	String	1	Refer to the tag definition in the Institution Trade Acceptance Report Message
9019	ConfirmationTime	N	UTC Timestamp		Refer to the tag definition in the Institution Trade Acceptance Report Message
32	LastShares	N	Qty		Refer to the tag definition in the Institution Trade Acceptance Report Message
58	Text	N	String	25	Refer to the tag definition in the Institution Trade Acceptance Report Message
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in New Order - Single Message
	Standard Trailer	Y			

10.16. Resubmit Institution Trade for Approval Request

This message is sent to resubmit the institutional trade for approval message. The message can be sent only if the status of the institution trade is rejected (by the clearing member). The message is only applicable to rejected institutional trades.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U7
9010	ResubmitReqID	Y	String	15	Unique identifier for this instruction message
37	OrderID	Y	String	15	Refer to the tag definition in the Execution Report Message
198	SecondaryOrderId	Y	String	15	Refer to the tag definition in the Execution

Tag	Field Name	Req'd	Data Type	Max Size	Description
					Report Message This field refers to the TradeNumber.
9264	Split Number	Y	Int		Should always be '0'.
22	IDSource	N	String	1	Refer to the tag definition as in New Order - Single Message
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in New Order - Single Message
	Standard Trailer	Y			

10.17. Resubmit Institution Trade Confirmation

This message is sent in response to a successful resubmit request.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U8
9010	ResubmitReqID	Y	String	15	If response is solicited then ResubmitReqID of that request else exchange order number.
37	OrderID	Y	String	15	Refer to the tag definition as in Resubmit Institution Trade for Approval Request Message
198	SecondaryOrderId	Y	String	15	Refer to the tag definition as in Resubmit Institution Trade for Approval Request Message
9264	Split Number	Y	Int		Should always be '0'.
22	IDSource	N	String	1	Refer to the tag definition as in Resubmit Institution Trade for Approval Request Message
9019	ConfirmationTime	N	UTC Timestamp		Time at which institutional trade is confirmed by exchange.
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in New Order - Single Message
	Standard Trailer	Y			

10.18. Resubmit Institution Trade Rejection

This message is sent in response to a rejected resubmit request.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U9
9010	ResubmitReqID	Y	String	15	If response is solicited then ResubmitReqID of that request else exchange order number.
37	OrderID	Y	String	15	Refer to the tag definition as in Resubmit Institution Trade for Approval Request Message
198	SecondaryOrderId	Y	String	15	Refer to the tag definition as in Resubmit Institution Trade for Approval Request Message
9264	Split Number	Y	Int		Should always be '0'.
22	IDSource	N	String	1	Refer to the tag definition as in Resubmit Institution Trade for Approval Request Message
9019	RejectionTime	N	UTC Timestamp		Time at which institutional trade is rejected by exchange.
58	RejectionReason	N	String	128	The reason why the resubmit request was rejected.
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in New Order - Single Message
	Standard Trailer	Y			

10.19. Participant Master Request

This message is sent to get the list of participants (institutions) registered at the exchange.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U10
9010	ParticipantReqID	Y	String	15	Unique identifier for this instruction message
9021	ParticipantRequestType	Y	Int		3 = Request Entire List If value is negative or non-numeric or other than 3 then, then session level rejection will be send to the client followed by disconnection.
	Standard Trailer	Y			

10.20. Participant Master Response

This message is to provide the list of participants (institutions) registered with the exchange. Multiple such messages will be sent wherein each message will contain details about the multiple participants.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U11
9010	ParticipantReqID	Y	String	15	Same as in participant master request.
9021	ParticipantRequestType	Y	Int		3 = Request Entire List
9022	NoOfRecords	Y	Int		Total number of records.
→9023	ParticipantId	Y	String	15	The ID of the institution registered with the exchange.
→9024	ParticipantName	N	String	40	The name of the institution registered with the exchange.
→9025	ParticipantStatus	Y	Char		Valid values: A=Active D= Inactive
→9026	LastModifyDate	N	UTC Timestamp		Last update time of the information about this participant.
	Standard Trailer	Y			

10.21. Position Maintenance Request

This message is sent to indicate an intention to exercise or do not exercise positions in options instruments and give delivery intentions in futures instruments.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U1
9710	PosReqID	Y	String	15	Unique identifier for the position maintenance request as assigned by the submitter.
9709	PosTransType	Y	Int		Identifies the type of position transaction Valid values: 1 = Exercise 2 = Do Not Exercise 3 = Position Adjustment 4 = Position Change Submission/Margin Disposition 5 = Pledge 6 = Delivery 3/4/5 currently not supported
9712	PosMaintAction	Y	Int		Maintenance Action to be performed. Valid values: 1 = New

Tag	Field Name	Req'd	Data Type	Max Size	Description
					2 = Replace 3 = Cancel If value other than 1 or 2 or 3, then business level rejection would be generated.
9714	PosOrderId	Y	String	15	PosOrderId received in previous confirmation response. For New request it will be 0. If value is negative or alphabetic, then business level rejection would be generated.
54	Side	N	Char		Indicates whether the intention of the order is to buy or sell. Valid values: 1 = Buy 2 = Sell Mandatory values For OPT=BUY (1) Field is optional. Above values are default values. If value is other than 1 or 2, then business level rejection would be generated.
204	CustomerOrFirm	Y	Int		Refer to the tag definition as in New Order - Single Message
1	Account	N	String	10	Refer to the tag definition as in New Order - Single Message
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in New Order - Single Message
22	IDSource	N	String	1	Refer to the tag definition as in New Order - Single Message
48	SecurityID	Y	String	12	Refer to the tag definition as in New Order - Single Message
60	TransactTime	Y	UTC Timestamp		This is the time this order request was initiated / released by the trader, trading system, or intermediary.
38	Order Quantity	Y	Qty		Refer to the tag definition as in New Order - Single Message
58	Text	N	String	25	Refer to the tag definition as in New Order - Single Message
	Standard Trailer	Y			

10.22. Position Maintenance Report

This message will provide response (successful or rejection) for position maintenance request.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = U2
9710	PosReqID	N	String	15	Unique identifier for the position maintenance request associated with this report PosReqID = PosOrderId (tag 9714) should consider as unsolicited entry response
9709	PosTransType	Y	Int		Refer to the tag definition as in Position Maintenance Request Message
9712	PosMaintAction	Y	Int		Refer to the tag definition as in Position Maintenance Request Message
9714	PosOrderId	Y	String	15	Refer to the tag definition as in Position Maintenance Request Message

Tag	Field Name	Req'd	Data Type	Max Size	Description
9722	PosMaintStatus	Y	Int		Status of Position Maintenance Request Valid values: -1 = Entry Rejection 0 = Pending or Accepted 1 = Cancelled
9723	PosMaintResult	N	Int		Status of position Maintenance Request. Valid values: 0 = Successful completion - no warnings or errors 1 = Rejected 2 = for Unsolicited Successful Completion - No warnings or errors 99 = Other
103	OrdRejReason	N	Int		Exchange generated reason code.
54	Side	N	Char		Refer to the tag definition as in Position Maintenance Request Message
22	IDSource	N	String	1	Refer to the tag definition as in Position Maintenance Request Message
204	CustomerOrFirm	Y	Int		Refer to the tag definition as in Position Maintenance Request Message
109	ClientId(LogonId)	N	String	5	Refer to the tag definition as in Execution Report Message
1	Account	N	String	10	Refer to the tag definition as in Position Maintenance Request Message
60	TransactTime	Y	UTC Timestamp		Time this order request was initiated/released by the trader, trading system, or intermediary.
9019	ConfirmationTime	N	UTC Time		Time at which request is confirmed or rejected at Exchange.
38	OrderQuantity	Y	Qty		Refer to the tag definition as in Position Maintenance Request Message
58	Text	N	String	160	In case of normal report 58 = "ValueEnteredInRequest" Note : if ValueEnteredInRequest is empty then 58 = 0 In case of Rejection related report 58 = "ValueEnteredInRequest" + "|" + "Error Message" Note : if ValueEnteredInRequest is empty then 58 = 0|Error message
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in New Order - Single Message
	Standard Trailer	Y			

10.22.1. Notes

- PosMaintAction (Tag 9712) with value 4 indicates Sync status. This value indicates the final state of a position maintenance request in the exchange system. The report with this value is generally a part of download after successful login.

10.23. Trading Session Status Request

This message is used to request information and subscribe for change notification of information relating to trading status.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = g (lowercase)

335	TradSesReqID	Y	String	15	Must be unique identifier.
338	TradSesMethod	N	Int		Method of Trading 1= Electronic If value is other than 1 is provided then Session Level Rejection will be generated.
263	SubscriptionRequestType	Y	Char		Subscription Request Type 0 = Snapshot 1 = Snapshot + Update (Subscribe) 2 = Unsubscribe If value is other than these is provided then Session Level Rejection is generated.
	Standard Trailer	Y			

10.24. Trading Session Status

This message is sent to provide information about the trading status at the exchange.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			Message Type = h (lowercase)
335	TradSesReqID	N	String	15	Provided for a response to a specific Trading Session Status Request message (snapshot).
336	TradingSessionID	Y	String	2	Identifier for Trading Session.
338	TradSesMethod	N	Int		Method of Trading 1 = Electronic
339	TradSesMode	N	Int		Trading Session Mode 1 = Testing 2 = Simulated 3 = Production
325	UnsolicitedIndicator	N	Boolean		'Y' if message is sent unsolicited as a result of a previous subscription request.
340	TradSesStatus	Y	Int		State of the Trading Session 1 = Halted 2 = Open 3 = Closed
9216	Special Session Status	Y	Int		Status of Special Session -1 – Not Defined 5 – Close 6 – Open
9271	Pre-Open Session Indicator	N	Int		Conditionally required in case of when TradSesStatus (Tag 340) is having the value 4 or 5. Possible values: 0 – Default (when Pre-Open session is started (Tag 340 will have the value 4) and Pre-Open session is closed (Tag 340 will have the value 5)). 1 – Price/Quantity Betterment Interval (in this case Tag 340 will have the value 4). 2 – Pre-Open End (in this case Tag 340 will have the value 5). Note: Not applicable for exchange
9217	Special Session ID	Y	String	2	Identifier for Special Session 0 in case Special Session is Not Defined.
9218	Post Close Session Status	Y	Int		Status of Post Close Session -1 – Not Defined 7 – Open

Tag	Field Name	Req'd	Data Type	Max Size	Description
					8 – Close
9219	Post Close Session ID	Y	String	2	Identifier for Post Close Session 0 in case Post Close Session is Not Defined.
9220	Auction Session Status	Y	Int		Bit wise representation of Auction Market Status 1st bit – 2^0 – Auction Buy In 2nd bit – 2^1 – Auction Sell Out 3rd bit – 2^2 – Auction Trading Buy In 4th bit – 2^3 – Auction Trading Sell Out The bit will be set to 1 in case the corresponding auction market is open. -1 if none of the Auction Market is defined
9221	Auction Buy In Session ID	Y	String	2	Identifier for Auction Buy In Session 0 in case Auction Buy In Session is Not Defined.
9222	Auction Sell Out Session ID	Y	String	2	Identifier for Auction Sell Out Session 0 in case Auction Sell Out Session is Not Defined.
9223	Auction Trading Buy In Session ID	Y	String	2	Identifier for Auction Trading Buy In Session 0 in case Auction Trading Buy In Session is Not Defined.
9224	Auction Trading Sell Out Session ID	Y	String	2	Identifier for Auction Trading Sell Out Session 0 in case Auction Trading Sell Out Session is Not Defined.
9225	Trade Modification Time Window after all Trading Sessions	Y	Int		-1 – Trade Modification Time Window has not elapsed 1 – Trade Modification Time Window has elapsed
9226	Position Maintenance Request Time Window after all Trading Sessions	Y	Int		-1 – Position Maintenance Request Time Window has not elapsed 1 – Position Maintenance Request Time Window has elapsed
9268	Group Id	N	Int		Conditionally required in case when this message is generated to indicate Group Id of securities for which the trading is started or closed.
9272	Group Id Trading Status	N	Int		Conditionally required in case when this message is generated to indicate Group Id of securities for which the trading is started or closed. 1 – Start of trading for Group Id. 2 – End of trading for Group Id.
9345	Special Pre-Open Profile Name	N	String	10	Not Applicable
9346	Special Pre-Open Session Id	N	Int		Not Applicable
9347	Special Pre-Open Trading Status	N	Int		Not Applicable
	Standard Trailer	Y			

10.25. Mass Order Cancellation Request

This message is sent by the client application to the gateway to effect mass order cancellation based on conditions specified by the application.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U12
9212	MOC Unique Id	Y	String	15	Unique identifier for the MOC Request.
9215	Order Validity	Y	Int		The field will be bit wise field for multiple selection intention.

Tag	Field Name	Req'd	Data Type	Max Size	Description
					Description of Order Validity and corresponding significant bit: 1) 1st bit – 2^0 – All order validity and order types. 2) 2nd bit – 2^1 – GTD 3) 3rd bit – 2^2 – GTC 4) 4th bit – 2^3 – Day 5) 5th bit – 2^4 – SL 6) 6th bit – 2^5 – RL 7) 7th bit – 2^6 – EOS
9232	Security Type	Y	Int		The field will be bit wise field for multiple selection intention. Description of Security Type and corresponding significant bit: 1) 1st bit – 2^0 – All 2) 3rd bit – 2^2 – FUT 3) 4th bit – 2^3 – OPT 4) 5th bit – 2^4 – SPREAD 5) 6th bit – 2^5 – AUC
76	Exec Dealer(Broker Id)	Y	String	5	The Trading member ID of the user who has (or on whose behalf), the order is entered.
109	ClientId(Logon Id)	Y	String	5	The user ID (or on whose behalf) who has entered the order.
37	Order Id	N	String	15	Exchange order number. In case this field is not present, specific order number filter will not be affected.
204	CustomerOrFirm	N	Int		0=Customer, 1= Firm In case this field is not present, specific CustomerOrFirm attribute will not be used for filtering.
1	Account	N	String	10	Refer to the tag definition as in New Order - Single Message Required if filtering is for non Firm Accounts.
440	Clearing Account	N	String	12	Participant Code as provided by the exchange. Valid when CustomerOrFirm has value 0 and Account has valid Client Id value.
54	Side	N	Char		Refer to the tag definition as in New Order - Single Message In case this field is not present, specific Side attribute will not be used for filtering.
309	UnderlyingSecurityId	N	String	12	Refer to the definition of Tag 48 in the New Order - Single Message. In case this field is not present, specific underlying security will not be used for filtering.
48	SecurityID	N	String	12	Refer to the definition of Tag 48 in the New Order - Single Message In case this field is not present, specific security will not be used for filtering.
58	Text	N	String	25	Refer to the tag definition as in New Order - Single Message

Tag	Field Name	Req'd	Data Type	Max Size	Description
9366	StrategyId	N	Int		Refer Algorithm Trading Identifier Rules
9367	StrategyTriggerSeqNumber	N	String	17	Refer Algorithm Trading Identifier Rules
	Standard Trailer	Y			

10.26. Mass Order Cancellation Response

This message is sent by the gateway to the client application to confirm the number of orders cancelled by the mass order cancellation request.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U13
9212	MOC Unique Id	Y	String	15	Unique identifier received in MOC Request.
9215	Order Validity	Y	Int		Refer to the tag definition as in Mass Order Cancellation Request Message
9232	Security Type	Y	Int		Refer to the tag definition as in Mass Order Cancellation Request Message
76	Exec Dealer(Broker Id)	Y	String	5	The Trading member ID of the user who has (or on whose behalf), the order is entered.
109	ClientId(Logon Id)	Y	String	5	Refer to the tag definition as in Mass Order Cancellation Request Message
37	Order Id	N	String	15	Refer to the tag definition as in Mass Order Cancellation Request Message
204	CustomerOrFirm	N	Int		Refer to the tag definition as in Mass Order Cancellation Request Message
1	Account	N	String	10	Refer to the tag definition as in Mass Order Cancellation Request Message
440	Clearing Account	N	String	12	Refer to the tag definition as in Mass Order Cancellation Request Message
54	Side	N	Char		Refer to the tag definition as in Mass Order Cancellation Request Message
309	UnderlyingSecurityId	N	String	12	Refer to the tag definition as in Mass Order Cancellation Request Message
48	SecurityID	N	String	12	Refer to the tag definition as in Mass Order Cancellation Request Message
58	Text	N	String	160	Refer to the tag definition as in Mass Order Cancellation Request Message This field will contain the Text field as in the request. Optionally it will be followed with – "| <Error Message>" in case the request is rejected. In case the Text field is not present in the request which is rejected , this field will contain 0 followed by "| <Error Message>"
102	RejectReason	N	Int		Exchange generated Reason Code
	Standard Trailer	Y			

10.27. Currency Info Request

This message is sent by the client application to the gateway to request for download of currency information.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U15
9234	Currency Download Request Id	Y	String	15	Must be unique identifier.
9235	Currency Download Request Type	Y	Int		Used to represent the download type. Valid values 1 = Currency Master Download 2 = Currency Pair Details Download 3 = Currency Pair Conversion Rate Download For a non-numeric or negative value, session level rejection will be sent followed by the disconnection. For positive value other than the above specified, business level rejection will be sent.
	Standard Trailer	Y			

10.28. Currency Information

This message is sent by the gateway to the client application as response of currency info request for request type =1.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U16
9234	Currency Download Request Id	Y	String	15	Same as in Currency Info Download Request.
9236	No Of Records	Y	Int		Total number of records.
→9237	Currency Id	Y	Int		Unique Currency Id
→9238	Currency Code	Y	String	3	Unique Currency Code e.g. INR, USD etc.
→9239	Currency Desc	N	String	20	
→58	Text	N	String	25	
→9026	LastModifyDate	N	UTC Timestamp		Last update time of the information about this currency
	Standard Trailer	Y			

10.29. Currency Pair Information

This message is sent by the gateway to the client application as response of currency info request for request type =2.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U17
9234	Currency Download Request Id	Y	String	15	Same as in Currency Info Download Request.
9236	No Of Records	Y	Int		Total number of records.
→9240	Currency Pair Id	Y	Int		Unique Currency Pair Id
→9241	Currency Pair Code	Y	String	6	Unique Currency Pair Combination Code.
→9242	From Currency Id	Y	Int		
→9243	To Currency Id	Y	Int		

Tag	Field Name	Req'd	Data Type	Max Size	Description
→9239	Currency Pair Desc	N	String	20	
→9244	From Currency Unit	N	Float		
→9211	Currency Pair Decimal Locator	N	Float		
→58	Text	N	String	25	
→9026	LastModifyDate	N	UTC Timestamp		Last update time of the information about this currency
	Standard Trailer	Y			

10.30. Currency Conversion Rates Information

This message is sent by the gateway to the client application as response of currency info request for request type =3.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U18
9234	Currency Download Request Id	Y	String	15	Same as in Currency Info Download Request.
9236	No Of Records	Y	Int		Total number of records.
→9240	Currency Pair Id	Y	Int		Unique Currency Pair Id
→9245	Currency Conversion Rate	Y	Float		
→58	Text	N	String	25	
→9026	LastModifyDate	N	UTC Timestamp		Last update time of the information about this currency
	Standard Trailer	Y			

10.31. Asset Master Download Request

This message is sent by the client application to the gateway to request for download of Asset information.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U20
9250	Asset Master Download Request Id	Y	String	15	Must be unique identifier.
	Standard Trailer	Y			

10.32. Asset Master Download Response

This message is sent by the gateway to the client application for various assets related information downloads which are available in the system.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U21
9250	Asset Master Download Request Id	Y	String	15	Unique identifier sent in the request.
9236	No Of Records	Y	Int		Total number of records.
→48	Asset Security Id	Y	String	12	
→9251	Asset Name	Y	String	50	

Tag	Field Name	Req'd	Data Type	Max Size	Description
→9026	LastModifyDate	Y	UTC Timestamp		Last update time of the information about this asset.
	Standard Trailer	Y			

10.33. Asset Underlying Mapping Download Request

This message is sent by the client application to the gateway to request for download of Asset Underlying Mapping information.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U22
9252	Asset Underlying Mapping Download Request Id	Y	String	15	Must be unique identifier.
	Standard Trailer	Y			

10.34. Asset Underlying Mapping Download Response

This message is sent by the gateway to the client application for various assets-Underlying Mapping related information downloads which are available in the system.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U23
9252	Asset Underlying Mapping Download Request Id	Y	String	15	Unique identifier sent in the request.
9236	No Of Records	Y	Int		Total number of records.
→48	Asset Security Id	Y	String	12	
→309	Underlying Security Id	Y	String	12	
→9203	Price Numerator	Y	Float		
→9204	Price Denominator	Y	Float		
→9026	LastModifyDate	Y	UTC Timestamp		Last update time of the information about this asset.
	Standard Trailer	Y			

10.35. Open Interest Violations Download Request

This message is sent by the client application to the gateway to request for download of Open Interest Violation information.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U24
9253	Open Interest Violation Download Request Id	Y	String	15	Must be unique identifier.
	Standard Trailer	Y			

10.36. Open Interest Violations Download Response

This message is sent by the gateway to the client application for Open Interest Violation downloads which are available in the system.

Tag	Field Name	Req'd	Data Type	Max Size	Description

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U25
9253	Open Interest Violation Download Request Id	Y	String	15	Unique identifier sent in the request.
9236	No Of Records	Y	Int		Total number of records.
→9254	Asset Type	Y	Int		0 – Asset Class 1 – Asset 2 – Underlying 3 – product
→48	Security Id	Y	String	12	
→9255	Violation Status	Y	Int		0 – Active – This means received message is for change of status from violated status to active. 1 – Inactive – This means received message is for change of status from active status to violated.
→9256	OI Quantity Limit	Y	Float		This defines fixed Quantity limit for particular Asset Type and Instrument Identifier.
→9257	OI Percentage Limit	Y	Float		This defines OI % Limit in terms of % of Market wide open interest for particular Asset Type and Instrument Identifier.
→9258	Effective OI Limit	Y	Float		This defines Effective OI Limit for particular Asset Type and Instrument Identifier. This will be Maximum of OI Quantity Limit and OI Percentage Limit.
→9259	Actual OI Quantity	Y	Float		This defines Actual OI Quantity of particular Asset Type and Instrument Identifier for which violation has been generated.
→9026	LastModifyDate	Y	UTC Timestamp		Last update time of the information about this asset.
→58	Text	Y	String	256	
→167	Security Type	N	String	3	Possible values are: FUT for Futures, OPT for Options, UL for Underlying
	Standard Trailer	Y			

10.37. Open Interest Violations UMS Response

This message is sent by the gateway to the client application as real-time Open Interest Violation Message.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U26
9254	Asset Type	Y	Int		0 – Asset Class 1 – Asset 2 – Underlying 3 – product
48	Security Id	Y	String	12	
9255	Violation Status	Y	Int		0 – Active – This means received message is for change of status from violated status to active. 1 – Inactive – This means received message is for change of status from active status to violated.
9256	OI Quantity Limit	Y	Float		This defines fixed Quantity limit for particular Asset Type and Instrument Identifier.
9257	OI Percentage Limit	Y	Float		This defines OI % Limit in terms of % of Market wide open interest for particular Asset Type and Instrument Identifier.
9258	Effective OI Limit	Y	Float		This defines Effective OI Limit for particular Asset Type and Instrument Identifier.

Tag	Field Name	Req'd	Data Type	Max Size	Description
					This will be Maximum of OI Quantity Limit and OI Percentage Limit.
9259	Actual OI Quantity	Y	Float		This defines Actual OI Quantity of particular Asset Type and Instrument Identifier for which violation has been generated.
9026	LastModifyDate	Y	UTC Timestamp		Last update time of the information about this asset.
58	Text	Y	String	256	
167	Security Type	N	String	3	Possible values are: FUT for Futures, OPT for Options, UL for Underlying
	Standard Trailer	Y			

10.38. Open Interest Alerts Download Request

This message is sent by the client application to the gateway to request for download of Open Interest Alert information.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U27
9263	Open Interest Alerts Download Request Id	Y	String	15	Must be unique identifier.
	Standard Trailer	Y			

10.39. Open Interest Alerts Download Response

This message is sent by the gateway to the client application for Open Interest Alerts downloads which are available in the system.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U28
9263	Open Interest Alert Download Request Id	Y	String	15	Unique identifier sent in the request.
9236	No Of Records	Y	Int		Total number of records.
→9254	Asset Type	Y	Int		0 – Asset Class 1 – Asset 2 – Underlying 3 – Product
→48	Security Id	Y	String	12	
→9260	Alert Level	Y	Int		This value defines level of alert 1 – 1st (Lowest) of 3 Alerts set for OI 2 – 2nd of 3 Alerts set for OI 3 – 3rd (Highest and last) of 3 Alerts set for OI 4 – Alert for 100% breach of OI
→9261	Alert Percentage	Y	Int		This defines the % set for each alert level defined.
→9262	Utilized Alert Percentage	Y	Float		This contains currently utilized alert % for particular Asset Type and Instrument identifier.
→9026	LastModifyDate	Y	UTC Timestamp		Last update time of the information about this asset.
→58	Text	Y	String	256	
→167	Security Type	N	String	3	Possible values are: FUT for Futures, OPT for Options,

Tag	Field Name	Req'd	Data Type	Max Size	Description
					UL for Underlying
	Standard Trailer	Y			

10.40. Open Interest Alerts UMS Response

This message is sent by the gateway to the client application as real-time Open Interest Alert Message.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U29
9254	Asset Type	Y	Int		0 – Asset Class 1 – Asset 2 – Underlying 3 – Product
48	Security Id	Y	String	12	
9260	Alert Level	Y	Int		This value defines level of alert 1 – 1st (Lowest) of 3 Alerts set for OI 2 – 2nd of 3 Alerts set for OI 3 – 3rd (Highest and last) of 3 Alerts set for OI 4 – Alert for 100% breach of OI
9261	Alert Percentage	Y	Int		This defines the % set for each alert level defined.
9262	Utilized Alert Percentage	Y	Float		This contains currently utilized alert % for particular Asset Type and Instrument identifier.
9026	LastModifyDate	Y	UTC Timestamp		Last update time of the information about this asset.
58	Text	Y	String	256	
167	Security Type	N	String	3	Possible values are: FUT for Futures, OPT for Options, UL for Underlying
	Standard Trailer	Y			

10.41. Annexure 1

10.41.1. Introduction:

TripleDES is a standard encryption algorithm used to encrypt the sensitive information during the data transmission across the network. In FIX Gateway, TripleDES (CBC Mode with PKCS 5 Padding) is implemented to encrypt connecting entity's password and new password information during the logon request processing.

10.41.2. Target audience and purpose of the document:

This document serves as a handy guide to interact with FIX gateway specifically involving message that uses encryption.The code snippet included in this document is just for reference and the hosting exchange is not liable for accuracy of the same. It is recommended that this document should be read in conformation with the Open Interface Document.

ISVs are expected to verify their application in test environment before implementing encryption in production environment.

10.41.3. Significance of Tag 90 And Tag 91:

The values in tag 90 and tag 91 (both tags are the part of standard message header) are used to communicate the password information in an encrypted form during the logon processing on the FIX gateway.

10.41.3.1. Tag 90:

The value of Tag 90 signifies the length of ensuing encrypted information in Tag The value of Tag 90 will always be unencrypted. It demarcates the boundary of encrypted password information.

10.41.3.2. Tag 91:

The value of Tag 91 is an actual encrypted password/new password information. This information is to be encrypted using TripleDES algorithm. Delving further in the content of value of Tag 91, it is to be noted that after encrypting the required information, ASCII value of each character of encrypted information is to be represented in its hexadecimal form with the fix length of 2 with leading zero.

Example:

For an encrypted information [a x ½ P z W ¿], its representation will be [61 78 AB 50 7A 57 A8].

10.41.4. TripleDES Implementation:

To encrypt any information in TripleDES, it requires having one Key and the other IV factor. For simplicity, we can refer to Key as Key1 and IV factor as Key2. The length of Key (Key1) should be 24 (fixed) and the length of IV factor (Key2) should be 8 (fixed). Please note that both the keys are case sensitive.

The format for the Key (Key1) will be as follows:
[<IV Factor (Key2)><Next 16 characters as published by the Exchange>]

IV Factor (Key2) will be the current password. In case when password length is less than 8 characters then the required no of '|' will be appended to make it of length 8.

Example:
If the current password is [***abc.123***] then the IV Factor (Key2) value will be [***abc.123|***].
If the current password is [***abc.1234***] then expected IV factor is [***abc.1234***].

The encryption key (Key1) and IV factor (Key2) as described above should be used to encrypt the password/new password information.

Example:
Case 1: Login with an existing password

16 characters published by exchange is [***~!@#$%^&*={};<>?***]
Current Password is [***abc.123***]

Key1 will be [***abc.123|~!@#$%^&*={};<>?***]
Key2 will be [***abc.123|***]
Information to be encrypted will be actual password i.e. [***abc.123***]

(Here, actual password [*abc.123*] is considered not the [*abc.123*|])

Case 2: New password to be set

16 characters published by exchange is [***~!@#$%^&*={};<>?***]
Current Password is [***abc.1234***]
New password is [***xyz.6757***]

Key1 will be [***abc.1234~!@#$%^&*={};<>?***]
Key2 will be [***abc.1234***]
Information to be encrypted will be the actual password i.e. [***abc.1234,xyz.6757***]

10.41.5. Recommendation:

It is recommended that the 16 characters as published by the Exchange should be saved in the UI such that the user will have to type it only once during the first logon. Rest of the time it will be read directly from the saved location. It is also recommended that the 16 characters as published by the Exchange should not be masked viz. with no asterisk or any other representation.

Code Snippet For Reference

Following are the code snippets of TripleDES implementation in different languages:

Java Implementation:

```
import javax.crypto.Cipher;
import javax.crypto.spec.IvParameterSpec;
import javax.crypto.spec.SecretKeySpec;

public class CTripleDESImplementation
{
   private String key;     //Key
   private String initializationVector;      //IV Factor

   //Constructor
   public CTripleDESImplementation(String key, String
                                   initializationVector)
   {
      this.key = key;
      this.initializationVector = initializationVector;
   }

   //Encryption method. Paramter being the string to be
   //encrypted.
   public byte[] encrypt(String plainText) throws Exception
   {
      byte[] plaintext = plainText.getBytes();

      byte[] tdesKeyData = key.getBytes();
      byte[] myIV = initializationVector.getBytes();

      //Instantiating Cipher class instace
      Cipher c3des =
                 Cipher.getInstance("DESede/CBC/PKCS5Padding");
```

```
         SecretKeySpec myKey = new SecretKeySpec(tdesKeyData,
                                                 "DESede");
         IvParameterSpec ivspec = new IvParameterSpec(myIV);

         //ENCRYPT_MODE
         c3des.init(Cipher.ENCRYPT_MODE, myKey, ivspec);
         byte[] cipherText = c3des.doFinal(plaintext);

        //Convert the received byte array in hexadecimal
        //representation. Character range will be from 0 to 255.

        return cipherText; // return hexadecimal representation of
                           //ciphertext.
      }
   }
```

C# Implementation:

```
using System;
using System.Diagnostics;
using System.Security.Cryptography;
using System.Text;

public class CTripleDESImplementation
{
   private byte[] EncryptionKey;    //Key
   public byte[] EncryptionKeyStr
   {
      get { return EncryptionKey; }
      set { EncryptionKey = value; }
   }

   private byte[] IV;   //IV Factor
   public byte[] IVStr
   {
      get { return IV; }
      set { IV = value; }
   }

   //Encryption method. Parameter being string to be encrypted,
   public byte[] Encrypt(byte[] textToEncrypt)
   {
     TripleDESCryptoServiceProvider tdes = new
                              TripleDESCryptoServiceProvider();

     tdes.Key = EncryptionKey;
     tdes.IV = IV;

     byte[] encryptedBuffer =
     tdes.CreateEncryptor().TransformFinalBlock(textToEncrypt, 0,
                                             textToEncrypt.Length);

   //Convert the received byte array in hexadecimal representation
   //Character range should be 0 to 255.

   return encryptedBuffer;// return  hexadecimal representation of
                          //encryptedBuffer.
   }
}
```

Managed C++ Implementation:

```
#pragma once
using namespace System;
using namespace System::Security::Cryptography;
using namespace System::Text;
using namespace System::Globalization;
using namespace System::Diagnostics;
using namespace System::Runtime::InteropServices;

public ref class CTripleDESImplementation
{
   private:
      array<Byte>^ m_cEncryptionKey;      //Key
      array<Byte>^ m_cIV;                 //IV Factor

    public:
      array<Byte>^ GetEncryptionKey()
      {
         return m_cEncryptionKey;
      }

      void SetEncryptionKey(String^ pcEncryptionKey)
      {
         m_cEncryptionKey
         = Encoding::ASCII->GetBytes(pcEncryptionKey);
      }

      array<Byte>^ GetIV()
      {
         return m_cIV;
      }

      void SetIV(String^ pcIV)
      {
         m_cIV = Encoding::ASCII->GetBytes(pcIV);

      }

      //Constructor
      CTripleDESImplementation(String^ pcEncryptionKey,
                               String^ pcIV)
      {
        SetEncryptionKey(pcEncryptionKey);
        SetIV(pcIV);
      }

      //Encrypt method. Parameter being the string to be encrypted.
      array<Byte>^ Encrypt(array<Byte>^ cPlainText)
      {
         TripleDESCryptoServiceProvider^ tdes = gcnew
                              TripleDESCryptoServiceProvider();

         tdes->Key      = m_cEncryptionKey;
         tdes->IV       = m_cIV;
      array<Byte>^ CipherText =
      tdes->CreateEncryptor()->TransformFinalBlock
            (cPlainText, 0, cPlainText->Length);
```

```
      //Convert the received byte array in hexadecimal
      //representation
      //Character range should be 0 to 255.

      return CipherText; //return hexadecimal representation of
                         //CipherText
     }
};
```