

Metropolitan Stock Exchange of India Ltd.

Equity Spot

FIX Connect Application Programming Interface

Version 11.10
08/03/2022

Revision History

Version No.	Description	Revision Date
11.5	Initial Version Document	26/09/2012
11.5.7	<ol style="list-style-type: none"> Tags 9366 and 9367 have been introduced in <ol style="list-style-type: none"> New Order – Single Order Cancel / Replace Request Order Cancel Request Multi Leg Order Request Conditional Order Cancellation Request Tag 9368 has been introduced in <ol style="list-style-type: none"> New Order – Single Order Cancel / Replace Request Multi Leg Order Request Execution Report Tag 9370 and 9372 have been introduced in Execution Report Following new messages are added <ol style="list-style-type: none"> Index Order Entry Request Index Order Entry Response Description of Tag 393 has been updated in Security Definition Information 	17/12/2012
11.6	<ol style="list-style-type: none"> In Security Definition message new tag 9392 Eligibility Indicator has been added to identify Trade 2 Trade securities. 	15/02/2016
11.7	<ol style="list-style-type: none"> Self-Match Prevention Rules added in Notes for New Order - Single New Tag 9724 for SMPFOrderIdentifier has been introduced in: <ol style="list-style-type: none"> New Order – Single Order Cancel / Replace Request Execution Report Index Order Entry Request Index Order Entry Response Additional value 103 and 104 added in Tag 378 in Execution Report 	24/11/2017
11.8	Rules For Terminal Info have been updated for identification of orders emanating from Colocation	19/03/2018
11.9	<ol style="list-style-type: none"> In Security Definition message new tag has been added to identify T+1/T+2 settlement cycle. 	05/01/2022
11.10	Description of Remarks is changed in Logon Request .	08/03/2022

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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
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	Conditional Order Cancellation Request	Client
U13	Conditional Order Cancellation Response	Gateway
U14	Multi Leg Order Request	Client
f	Security Status	Gateway
U33	Limits Download Request	Client
U34	Limits Download Response	Gateway
U70	Product Profile Mapping Info Request	Client
U71	Product Profile Mapping Info Response	Gateway
U72	Auction Enquiry Info Request	Client
U73	Auction Enquiry Info Response	Gateway
U74	Index Order Entry Request	Client
U75	Index Order Entry 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 behavior 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

Tag	Field Name	Req'd	Data Type	Max Size	Description
					Y = Possible duplicate, N = Original transmission. 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	<p>Contains error code and error description separated with pipe character. For successful authentication error code will be '0' (char) and error description will 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.</p> <p>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</p>
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	
924 9	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 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

Tag	Field Name	Req'd	Data Type	Max Size	Description
					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 behavior 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.

10.2. 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

Tag	Field Name	Req'd	Data Type	Max Size	Description
					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. 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 V = Block Deal W = Auction Buy In P = Pre-Open Order For any other value business rejection message will be sent.
111	Disclosed Quantity	N	Qty		Disclosed quantity should be in Multiple of marketable lots 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 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 2= Buy Back Order
1	Account	N	String	10	This signifies the customer Id in case the order is a customer order or Buy Back 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

Tag	Field Name	Req'd	Data Type	Max Size	Description
					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. Absence of this field is interpreted as DAY. Valid values: 0 = Day 3 = Immediate or Cancel (IOC) 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 3 or 7, then business level rejection would be generated.
432	ExpireDate	N	LocalMktDate		Not Applicable
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. If the value is “~” (tilde) then the request will be treated as Obligation Transfer Request (OTR).
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/ISV Unique No.	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	Not Applicable
9351	SLBMIdentifier	N	Char		Not Applicable
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:

Tag	Field Name	Req'd	Data Type	Max Size	Description
					1 = Passive 2 = Active 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 TimeInForce value must be 7 (EOS).
- Terminal Info/ISV Unique No. 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.

10.2.2. General Rules for Order Entry

- Order Entry is not allowed in the following conditions:
 - 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 \geq 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 \geq zero In case order price is zero, it will be treated as market order.
 - 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 \leq Order Price for Buy Order
 - Trigger Price should be \geq 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.
 - If Tag 204 = 0, Tag 1 = Customer ID and Tag 440 = "~" (tilde) then the order is treated as Obligation Transfer Request (OTR).

10.2.3. Auction Market Rules

- 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 and 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.

10.2.4. 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. 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.

10.2.5. Rules 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

10.2.6. Pre-Open Session Rules

- Pre-Open Orders will be allowed only during Pre-Open session and that to only in those products whose trading is permitted by exchange during Pre-Open session.
- Multi Leg orders are not allowed with Pre-Open Orders. Disclosed Quantity will not be allowed in Pre-Open Orders.
- Order Validity of Pre-Open Orders can be EOS or Day. Pre-Open Orders Price can be Limit or Market.
- For 'Pre Open' Order Type Orders, Order Type modification would not be allowed
- During Pre-Open Order Acceptance session, Pre-Open Order Entry/Order Modification/Order Cancellation would be allowed and based on received Pre-Open Orders Indicative Open Price and Indicative Volume would be broadcasted on every Indicative Time Interval trigger.
- During Pre-Open Betterment session (if defined), only modification of Pre-Open orders for betterment i.e. Increase in Quantity for B/S orders, increase in Price for buy orders, Decrease in Price for Sell orders and LIMIT orders modification to MARKET Orders would be allowed.
- After Pre-Open session Market end, Pre-Open Orders will get matched with Pre-Open Orders and Open Price would be broadcasted. Unmatched 'Day' Limit Pre-Open Orders will get carried forwarded to Normal session at Limit price and Market Pre-Open Orders at Pre-Open Price and both will be eligible for matching with counter side Regular Lot Orders.

10.2.7. Special Pre-Open Session Rules

- Special Pre-Open Orders will be allowed only during Special Pre-Open session and that to only in those products who's trading is permitted by exchange during Special Pre-Open session.
- Products participating in Special Pre-Open session would be mapped to a profile time table. Download for Product – Profile Mapping would be provided on request.
- The order type for special pre-open orders would also be "Pre-Open". The orders for Special Pre-Open would be identified with the help of the product participating in Special Pre-Open and Order Type as "Pre-Open".
- Multi Leg orders are not allowed with Special Pre-Open Orders. Disclosed Quantity will not be allowed in Special Pre-Open Orders.
- Order Validity of Special Pre-Open Orders can be EOS or Day. Special Pre-Open Orders Price can be Limit or Market.
- Order Type modification would not be allowed for Special Pre-Open Orders.
- During Special Pre-Open Order Acceptance session, Special Pre-Open Order Entry / Order Modification / Order Cancellation would be allowed.
- During Special Pre-Open Betterment session (if defined), only modification of orders for betterment i.e. increase in quantity for buy and sell orders, increase in price for buy orders, decrease in price for sell orders and LIMIT orders modification to MARKET Orders would be allowed.
- After Special Pre-Open session Market end, orders will get matched.
- Special Pre-Open sessions unmatched 'Day' Limit Special Pre-Open Orders will get carried forwarded to Normal session at Limit price and Market Pre-Open Orders at Special Pre-Open Price and both will be eligible for matching with counter side Regular Lot Orders.

- DPR of normal session, for the products participating in Special Pre-Open session, would be computed on the derived Open Price.

10.2.8. Market Price Protection Rules

- Market Price Protection (%) must be ≥ 0.00 and $\leq 99.99\%$
- 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 % \leq 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

10.2.9. 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 yymmddNNnnnnnnnn; 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.

10.2.10. 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.

10.3. 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

Tag	Field Name	Req'd	Data Type	Max Size	Description
					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 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
					<p>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.</p> <p>If value is other than 1 or 2, then business level rejection would be generated.</p>
	Standard Trailer	Y			

10.3.1. Notes

- For OrderType = W TimeInForce value must be 7 (EOS).

10.3.2. 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.
- 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
 - Text
- If the New Order - Single message contains a value in Tag 440 and subsequent Cancel/Replace requests do not contain values in Tag 440, then the Cancel/Replace Request will be rejected.

10.4. 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
	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

Tag	Field Name	Req'd	Data Type	Max Size	Description
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			

10.5. 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. 58 = "ValueEnteredInRequest" + "!" +

Tag	Field Name	Req'd	Data Type	Max Size	Description
					"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			

10.6. Multi Leg Order Request

With Multi Leg Order facility user can place orders for up to three different products simultaneously. 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		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 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/ISV Unique No.	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

Tag	Field Name	Req'd	Data Type	Max Size	Description
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			

10.6.1. 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 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 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'.

10.7. 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

Tag	Field Name	Req'd	Data Type	Max Size	Description
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	<p>In case of normal execution report 58 = "ValueEnteredInRequest"</p> <p>Note: If "ValueEnteredInRequest" is empty then 58 = 0.</p> <p>In case of Rejection related execution report 58 = "ValueEnteredInRequest" + " " + "Error Message"</p> <p>Note : if "ValueEnteredInRequest" is empty then 58 = 0 Error message</p>
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

Tag	Field Name	Req'd	Data Type	Max Size	Description
					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) 1 st bit – 2 ⁰ – Fill Original 2) 2 nd bit – 2 ¹ – Fill Modified 3) 3 rd bit – 2 ² – Fill Accepted 4) 4 th bit – 2 ³ – Fill Rejected 5) 5 th bit – 2 ⁴ – Fill Resubmitted 6) 7 th 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 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). Valid Values: 1 - Single Security (default if not specified) 2 - Individual leg of a multi-leg security

Tag	Field Name	Req'd	Data Type	Max Size	Description
					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. For Obligation Transfer Request (OTR) the value will be "~" (tilde).
336	TradingSessionID	N	String	2	Will not be present in case of Multi Leg order and Multi Leg trade (fill) related transactions. Applicable only in case of valid orders.
9227	Terminal Info/ISV Unique No.	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 Message.
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
9351	SLBMIdentifier	N	Char		Refer to the tag definition as in New Order - Single Message
9368	MktProtectionPercentage	Y	Int		Market Protection percentage assigned by the exchange. Refer Market Protection Rules .
9370	IndexReferenceNumber	N	String	15	Applicable only in case of Index Order. Exchange generated reference no. for Index Order requests.
9372	IndexSecurityID	N	String	12	Applicable only in case of Index Order. Refer to the tag definition as in Index Order Entry Request Message
9724	SMPFOrderIdentifier	N	Char		Refer to the tag definition as in New Order - Single Message .
	Standard Trailer	Y			

10.7.1. 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 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 (including Pre-Open/Special Pre-Open) 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.

10.8. 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 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.

Tag	Field Name	Req'd	Data Type	Max Size	Description
					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			

10.9. 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

Tag	Field Name	Req'd	Data Type	Max Size	Description
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	IDSSource	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			

10.10. 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	IDSSource	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 AUC for Auction, UL for Underlying. SPT for Spot

Tag	Field Name	Req'd	Data Type	Max Size	Description
					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		Not Applicable
205	Maturity Day	N	Day-of-month		Not Applicable
202	Strike Price	N	Price		Not Applicable
201	PutOrCall	N	Int		Not Applicable
206	OptAttribute	N	Char		Not Applicable
	Standard Trailer	Y			

10.11. 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: SPT for Spot 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		Refer to the tag definition in the Security Definition Request message
205	Maturity Day	N	Day of Month		Refer to the tag definition in the Security Definition Request message
201	PutOrCall	N	Int		Refer to the tag definition in the Security Definition Request message
206	OptAttribute	N	Char		Refer to the tag definition in the Security Definition Request message
202	StrikePrice	N	Price		Refer to the tag definition in the Security Definition Request message
107	SecurityDesc	N	String	25	Free flow text description of the security.

Tag	Field Name	Req'd	Data Type	Max Size	Description
58	Text	N	String	160	Other descriptions about the product like Corporate Action information
9201	LotSize	N	Int		Required to derive trade value.
9202	Trading Unit	N	String	5	Not Applicable
9246	Trading Unit Factor	N	Float		Not Applicable
9247	Delivery Unit	N	String	5	Not Applicable
9248	Delivery Unit Factor	N	Float		Not Applicable
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	Trading Currency of the Product
120	SettlCurrency	N	String	3	Not Applicable
9265	Product Month	N	String	7	Not Applicable
9267	Pre-Open	N	Int		0 = Pre-Open Not Allowed for the security. 1 = Pre-Open Allowed for the security.
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		Not Applicable
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	Y	Char		1 – Trade Value should be computed as existing (Calculate according to Method 1).
9353	IRFConfigFactor	N	Float		Not Applicable
9354	FaceValue	N	Int		Face Value of the product
9392	Eligibility Indicator	N	Int		Eligibility Values: 0 - Others 1 – Trade 2 Trade
146	NoRelatedSym	N	Int		NoRelatedSym = 0
→311	UnderlyingSymbol	N	String	12	The Symbol must be specified as the first field in 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	UnderlyingMaturityMonth Year	N	Month-Year		Not Applicable
→314	UnderlyingMaturityDay	N	Day of Month		Not Applicable
→315	UnderlyingPutOrCall	N	Int		Not Applicable

Tag	Field Name	Req'd	Data Type	Max Size	Description
→317	UnderlyingOptAttributes	N	Char		Not Applicable
→316	UnderlyingStrikePrice	N	Price		Not Applicable
→307	UnderlyingSecDesc	N	String	25	Security description of the underlying.
→9266	UnderlyingProductMonth	N	String	7	Not Applicable
63	Settlement Cycle Indicator	N	Int		Settlement cycle is of T+1 day or T+2 day 2 – Settlement on T+1 day 3 – Settlement on T+2 day
	Standard Trailer	Y			

10.11.1. Notes

Method 1 -

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

For example, if ACC is to be traded in lots of 30 shares 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: Shares

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

10.12. 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	IDSSource	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			

10.13. 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			

10.14. 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		Not Applicable
9285	Daily Futures Sell Limit	N	Float		Not Applicable
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		Not Applicable
9289	Daily Option Sell Limit	N	Float		Not Applicable
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	Last Modify Date	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			

10.15. 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			

10.16. 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			

10.17. 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

Tag	Field Name	Req'd	Data Type	Max Size	Description
198	SecondaryOrderId	Y	String	15	Refer to the tag definition in the Execution Report Message This field refers to the TradeNumber.
9264	Split Number	Y	Int		Should always be '0'.
22	IDSSource	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			

10.18. 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	IDSSource	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			

10.19. 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	IDSSource	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			

10.20. 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			

10.21. 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.
→902 3	ParticipantId	Y	String	15	The ID of the institution registered with the exchange.
→902 4	ParticipantName	N	String	40	The name of the institution registered with the exchange.
→902 5	ParticipantStatus	Y	Char		Valid values: A=Active D= Inactive
→902 6	LastModifyDate	N	UTC Timestamp		Last update time of the information about this participant.
	Standard Trailer	Y			

10.22. 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			

10.23. 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)

Tag	Field Name	Req'd	Data Type	Max Size	Description
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 4 = Pre-Open 5 = Pre-Close
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).
9216	Special Session Status	Y	Int		Status of Special Session -1 – Not Defined 5 – Close 6 – Open
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 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 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.

Tag	Field Name	Req'd	Data Type	Max Size	Description
9222	Auction Sell Out Session ID	Y	String	2	Not Applicable
9223	Auction Trading Buy In Session ID	Y	String	2	Not Applicable
9224	Auction Trading Sell Out Session ID	Y	String	2	Not Applicable
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		Not Applicable
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	Conditionally required in case when this message is generated to indicate the Profile Name of the Special Pre-Open session for which the trading Status is changed.
9346	Special Pre-Open Session Id	N	Int		Conditionally required in case when this message is generated to indicate the Session Id of the Special Pre-Open session for which the trading Status is changed.
9347	Special Pre-Open Trading Status	N	Int		Conditionally required in case when this message is generated to indicate the changed Trading Status of the Special Pre-Open session. 0 – Start of Special Pre-Open Session. 1 – Start of Price/Quantity Betterment for Special Pre-Open Session. 2 – End of Price/Quantity Betterment for Special Pre-Open Session. 3 – End of Matching for Special Pre-Open Session. 4 – End of Buffer Time for Special Pre-Open Session.
	Standard Trailer	Y			

10.24. Conditional Order Cancellation Request

This message is sent by the client application to the gateway to effect conditional 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	COC Unique Id	Y	String	15	Unique identifier for the COC Request.
9215	Order Validity	Y	Int		The field will be bit wise field for multiple selection intention. Description of Order Validity and corresponding significant bit:

Tag	Field Name	Req'd	Data Type	Max Size	Description
					1) 1 st bit – 2 ⁰ – All order validity and order types. 2) 4 th bit – 2 ³ – Day 3) 5 th bit – 2 ⁴ – SL 4) 6 th bit – 2 ⁵ – RL 5) 7 th bit – 2 ⁶ – EOS 6) 8 th bit – 2 ⁷ – BD (Block Deal) 7) 10 th bit – 2 ⁹ – Pre Open
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) 1 st bit – 2 ⁰ – All 2) 2 nd bit – 2 ¹ – SPT 3) 6 th 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, 2= Buy Back Order 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
9366	StrategyId	N	Int		Refer Algorithm Trading Identifier Rules

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

10.25. Conditional Order Cancellation Response

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

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U13
9212	COC Unique Id	Y	String	15	Unique identifier received in COC Request.
9215	Order Validity	Y	Int		Refer to the tag definition as in Conditional Order Cancellation Request Message
9232	Security Type	Y	Int		Refer to the tag definition as in Conditional 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 Conditional Order Cancellation Request Message
37	Order Id	N	String	15	Refer to the tag definition as in Conditional Order Cancellation Request Message
204	CustomerOrFirm	N	Int		Refer to the tag definition as in Conditional Order Cancellation Request Message
1	Account	N	String	10	Refer to the tag definition as in Conditional Order Cancellation Request Message
440	Clearing Account	N	String	12	Refer to the tag definition as in Conditional Order Cancellation Request Message
54	Side	N	Char		Refer to the tag definition as in Conditional Order Cancellation Request Message
309	UnderlyingSecurityId	N	String	12	Refer to the tag definition as in Conditional Order Cancellation Request Message
48	SecurityID	N	String	12	Refer to the tag definition as in Conditional Order Cancellation Request Message
58	Text	N	String	160	Refer to the tag definition as in Conditional 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			

10.26. Product Profile Mapping Info Request

Product Profile Mapping Info request message is used to fetch the Token and Profile mapping for the Special Pre-Open Session.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U70

9348	Product Profile Mapping Info Request Id	Y	String	15	Must be unique identifier.
	Standard Trailer	Y			

10.27. Product Profile Mapping Info Response

Product Profile Mapping Info message is the response to Product Profile Mapping Info request.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U71
9348	Product Profile Mapping Info Request Id	Y	String	15	Same as in Product Profile Mapping Info Request.
9236	No Of Records	Y	Int		Total number of records.
→48	SecurityID	Y	String	12	Security Id for which Special Pre-Open is available
→9345	Special Pre-Open Profile Name	Y	String	10	Name of the Special Pre-Open Profile
	Standard Trailer	Y			

10.28. Auction Enquiry Info Request

Auction Enquiry Info request message.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U72
9355	Auction Enquiry Info Request Id	Y	String	15	Must be unique identifier.
	Standard Trailer	Y			

10.29. Auction Enquiry Info Response

Auction Enquiry Info response message is the response to Auction Enquiry Info request.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U73
9355	Auction Enquiry Info Request Id	Y	String	15	Same as in Auction Enquiry Info Request.
9356	Auction Enquiry Status	Y	Int		Identifies status of Auction Enquiry Info. Valid values: 0 – Successfully processed 1 – Rejected
58	Text	N	String	160	Valid only when value in Tag 9356 = 1
9236	No Of Records	Y	Int		Total number of records.
→48	SecurityID	Y	String	12	Security ID for which Auction is available
→38	Order Quantity	Y	Qty		Quantity to be auctioned
→14	CumQty	Y	Qty		Total executed quantity for a chain of orders.
→336	TradingSessionID	Y	String	2	Identifier for Trading Session.
→44	Price	Y	Price		Trade Price of Security
→9357	Auction Enquiry Trading Status	Y	Int		Status of the Auction Trading Session 0 = Not Initiated 1 = Open 2 = Closed
	Standard Trailer	Y			

10.30. Index Order Entry Request

This message is sent by the client application to the gateway to submit Index Order request. If the Index Order Entry request is successful, at least one order is placed in each contract in the Index. 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			MsgType = U74
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.
9372	IndexSecurityID	Y	String	12	Security ID of the Index provided by the exchange
54	Side	Y	Char		Indicates whether the intention of the order is to buy or sell. Valid values: 1 = Buy 2 = Sell If the value is negative or contains any alphabet or special character, then session level rejection will be sent 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 For any other value business rejection message will be sent.
9369	IndexOrderValue	Y	Price		Specifies the value of the index order. If value is negative or contains alphabet or special characters, then session level rejection would be generated.
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
59	TimeInForce	N	Char		Specifies how long the order remains in effect. Absence of this field is interpreted as DAY. Valid values: 0 = Day 3 = Immediate or Cancel (IOC) 7 = End of Session (EOS) (Additional value other than FIX supported) If value is negative or alphabetic, then session level rejection will be sent to the client followed by disconnection. If value is other than 0 or 3 or 7, then business level rejection would be generated.
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. If the value is "~" (tilde) then the request will be treated as Obligation Transfer Request (OTR).
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 9999999999999999 Presence of non- numeric character will cause session level rejection.
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 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			

10.31. Index Order Entry Response

This message is sent by the gateway to the client application in response to the Index Order request.

Tag	Field Name	Req'd	Data Type	Max Size	Description
	Standard Header	Y			MsgType = U75
11	Client Order Id	Y	String	15	Refer to the tag definition as in Index Order Entry Request Message
48	SecurityID	Y	String	12	Refer to the tag definition as in Index Order Entry Request Message
54	Side	Y	Char		Refer to the tag definition as in Index Order Entry Request Message
40	OrderType	Y	Char		Refer to the tag definition as in Index Order Entry Request Message
9369	IndexOrderValue	Y	Price		Refer to the tag definition as in Index Order Entry Request Message
60	TransactTime	N	UTC Timestamp		Timestamp for the particular transaction as generated by the exchange.
204	CustomerOrFirm	Y	Int		Refer to the tag definition as in Index Order Entry Request Message
1	Account	N	String	10	Refer to the tag definition as in Index Order Entry Request Message

59	TimelnForce	N	Char		Refer to the tag definition as in Index Order Entry Request Message
58	Text	N	String	25	Refer to the tag definition as in Index Order Entry Request Message
440	Clearing Account	N	String	12	Refer to the tag definition as in Index Order Entry Request Message
76	Exec Dealer(Broker Id)	N	String	5	Refer to the tag definition as in Index Order Entry Request Message
9227	Terminal Info	N	String	15	Refer to the tag definition as in Index Order Entry Request Message
9368	MktProtectionPercentage	Y	Int		Market Protection percentage assigned by the exchange. Refer Market Price Protection Rules
9370	IndexReferenceNumber	N	String	15	Exchange generated reference no. for Index Order requests.
9724	SMPFOrderIdentifier	Y	Char		Refer to the tag definition as in Index Order Entry Request
	Standard Trailer	Y			

10.32. Annexure 1

10.32.1. 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.

10.32.2. 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.

10.32.3. 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.

10.32.3.1.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.

10.32.3.2.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].

10.32.4. 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**]

10.32.5. 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. Parameter 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 instance
        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 CTriplesDESImplementation
{
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
    CTriplesDESImplementation(String^ pcEncryptionKey,
                              String^ pcIV)
    {
        SetEncryptionKey(pcEncryptionKey);
        SetIV(pcIV);
    }

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

        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  
}  
};
```