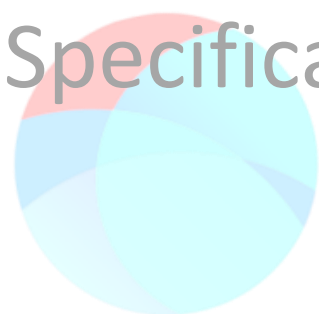




Centroid  
S O L U T I O N S

# Centroid FIX 4.4 Trading API Specification v0.16.8



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## Messages

As defined in the FIX protocol, the Centroid FIX server is using two different data levels: Session and Application. The Session level handles the delivery of data and the Application level defines the business-related data content. The following session and application messages are supported by the Centroid FIX Engine:

### ❖ **Standard messages**

1. Standard header
2. Standard trailer

### ❖ **Session messages**

1. Heartbeat (Client Centroid)
2. Test Request (Client Centroid)
3. Logon (Client Centroid)
4. Logout (Client Centroid)
5. Resend Request (Client Centroid)
6. Reject (Client Centroid)
7. Business Reject (Client Centroid)
8. Sequence Reset (Client Centroid)

### ❖ **Application messages**

#### ➤ **Market Data Session**

1. Market Data Request (Client)
2. Market Data Request Reject (Centroid)
3. Market Data Snapshot Full Refresh (Centroid)

#### ➤ **Trading Session**

4. New Order Single (Client)
5. Order Cancel Request (Client)
6. Order Cancel Replace Request (Client)
7. Order Cancel Reject (Centroid)
8. Order Status Request (Client)
9. Execution Report (Client)

### ❖ **Important notes**

- All time formats in the system are UTC.
- Session timings are to be communicated with the Broker.
- IP address white-listing might be required to obtain the connection.
- Timestamp precision is 3 or more (microseconds or milliseconds).



- Trading session is not to reset sequence number on logon.
- Market data session is to reset sequence number on logon.

Date	Version	Change
25-08-2020	v0.16.5	Validation on ClOrdID tag11 added in NewOrderSingle message (D)
25-08-2020	v0.16.5	NoMDEntry tag267 added to MarketDataRequest message (V) as required
25-08-2020	v0.16.5	MDEntryType tag269 added to MarketDataRequest message (V) as required
23-05-2022	v0.16.6	Added trades allocation tags 78, 79, 80, and 661 in new order with example
14-10-2022	v0.16.7	OrigClOrdID tag 41 is now available in the FIX Execution report when requesting Limit Order Cancel/Replace
24-01-2023	v0.16.8	Added Order Cancel Replace Request Details/ Enabled GTC Limit & Stop

## Standard Messages

### ❖ Standard Header

A standard set of fields to form the header of the FIX message.

Tag	Field name	Required	Description
8	BeginString	Y	Identifies beginning of new message and protocol version (always first field in message)
9	BodyLength	Y	Message length (in bytes) forward to the CheckSum field (always second field in message)
35	MsgType	Y	Defines message type (always 3rd tag in message)
49	SenderCompID	Y	Assigned value used to identify the client sending messages (will be provided by Centroid)
56	TargetCompID	Y	Assigned value used to identify receiving party (will be provided by Centroid)
34	MsgSeqNum	Y	Integer message sequence number
50	SenderSubID	N	Optional. Assigned value used to identify specific message originator (desk   trader   etc.) (will be provided by Centroid if necessary)
52	SendingTime	Y	Message transmission time in UTC/GMT

### ❖ Standard Trailer

A standard set of fields to form the trailer of the FIX message.

Tag	Field name	Required	Description
10	Checksum	Y	Three digit character representing the checksum value of the message

## Session Messages (Admin Messages)

### ❖ Heartbeat (MsgType=0)

To be sent/received on a predefined interval basis as mentioned in the Logon message (A). Otherwise, 30 seconds be default.

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=0
112	TestReqID	N	Required when the heartbeat is the result of a Test Request message
	Standard Trailer	Y	

### ❖ Test Request (MsgType=1)

For the purpose of testing the connectivity and responsiveness of the other party.

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=1
112	TestReqID	Y	A unique identifier for this test message
	Standard Trailer	Y	

### ❖ Logon (MsgType=A)

Handshake logon initiated by the client and confirmed by Centroid.

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=A
98	EncryptMethod	Y	Use of Encryption set to 0
108	HeartBtInt	Y	Heart beat interval in seconds
141	ResetSeqNumFlag	N	Indicates both sides of a FIX session should reset sequence numbers
553	Username	Y	Username
554	Password	Y	Password
	Standard Trailer	Y	

### ❖ Logout (MsgType=5)

Handshake logout initiated by the Centroid/Client and confirmed by the other party.

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=5

58	Text	N	Reason for logout
	Standard Trailer	Y	

#### ❖ Resend Request (MsgType=2)

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=2
7	BeginSeqNo	Y	
16	EndSeqNo	Y	
	Standard Trailer	Y	

#### ❖ Reject (MsgType=3)

Session Level reject message.

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=3
45	RefSeqNum	Y	MsgSeqNum of rejected message
371	RefTagID	N	The tag number of the FIX field being referenced
372	RefMsgType	N	The MsgType of the FIX message being referenced
373	SessionRejectReason	N	Code to identify reason for a session-level
	Standard Trailer	Y	

#### ❖ Business Reject (MsgType=j)

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=j
45	RefSeqNum	N	MsgSeqNum (34) of rejected message.
371	RefTagID	Y	The tag number of the FIX field being referenced.
372	RefMsgType	Y	Message Type being referenced.
380	BusinessRejectReason	Y	Code to identify reason for a Business Message Reject (j) message.
58	Text	Y	Where possible, message to explain reason for rejection.
	Standard Trailer	Y	

### ❖ Sequence Reset (MsgType=4)

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=4
123	GapFillFlag	N	Gap fill flag to determine the need to fill the gap of sequence or no.
36	NewSeqNo	Y	The new sequence number requested
	Standard Trailer	Y	

## Market Data Session Messages

### ❖ Market Data Request (MsgType=V)

Sent by the client to subscribe to a stream of market data pricing. This is to be sent a message per symbol.

Tag	Field name	Required	Description
	Standard header	Y	MsgType=V
262	MDReqID	Y	Unique request id.
263	SubscriptionRequestType	Y	[1 = Snapshot plus updates (subscribe)] [2 = Disable previous snapshot plus update request (unsubscribe)]
264	MarketDepth	N**	Specifies the number of layers requested [Should be > 0].
753 3	StreamReference	N	Specifies the stream. Only needed if a client is configured for more than one streams.
267	NoMDEntryTypes	Y	required but not functional currently
269	MDEntryType	Y	[0: Bid] [1: Ask] required but not functional currently
146	NoRelatedSym	Y	Always set to 1
55	Symbol	Y	Name of the symbol
	Standard Trailer	Y	

### ❖ Market Data Request Reject (MsgType=Y)

A reject response to an invalid market data request (V)

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=Y
262	MDReqID	Y	ID of the market data request
58	Text	N	Reason for market data request being rejected
	Standard Trailer	Y	

## ❖ Market Data Snapshot Full Refresh (MsgType=W)

Symbol-wise, a full refresh of the full depth of the book is to be sent by Centroid aggregator in real-time manner as a response to the subscription request.

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=W
<b>262</b>	MDReqID	Y	Refers to the MDReqID of the request
<b>55</b>	Symbol	Y	Symbol to trade on
<b>268</b>	NoMDEntries	Y	Number of entries following
<b>269</b>	MDEntryType	Y	[0: Bid] [1: Ask]
<b>270</b>	MDEntryPx	N	Price of the Market Data Entry.
<b>271</b>	MDEntrySize	N	Quantity or volume represented by the Market Data Entry.
<b>273</b>	MDEntryTime	N	Market Data Entry Time
	Standard Trailer	Y	

## Trading Session Messages

## ❖ New Order Single (MsgType=D)

Sent by the client to request for a trade.

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=D
<b>11</b>	ClOrdID	Y	Must be unique identifier sent by the client. Used for response. Allowed characters <b>A-Z, a-z, . - _</b>
<b>1</b>	Account	Y	Account name as provided by Centroid
<b>55</b>	Symbol	Y	Symbol to trade on
<b>54</b>	Side	Y	Side of order: [1 = Buy] [2 = Sell]
<b>38</b>	OrderQty	Y	Order Quantity
<b>40</b>	OrdType	Y	Type of order: [1 = Market] [2=Limit] [3=Stop]
<b>59</b>	TimeInForce	Y	GTC, IOC, FOK (Time in force execution may vary depending on the execution settings on the broker's interface)
<b>44</b>	Price	C	Required when OrdType"40" =2 (Limit). Otherwise, ignored.

<b>60</b>	TransactTime	Y	Timestamp of order request
<b>78</b>	NoAllocs	N	number of allocation accounts if using trades allocation
<b>→ 79</b>	AllocAccount	C	TEM to allocate trade under – mandatory if using tag 78
<b>→ 80</b>	AllocQty	C	quantity to be allocated – mandatory if using tag 78
<b>→ 661</b>	AllocAcctIDSource	C	Allocation: [0=A Alloc] [1=B Alloc] (Default is 0) - Optional
<b>90000</b>	TTL	N	Time to live (milliseconds)
<b>90001</b>	Login	N	External trader's login can be passed here
<b>90002</b>	Group	N	External trader's Group
<b>90003</b>	Ticket	N	External Order Ticket number
<b>90008</b>	Deviation	N	Should be decimal number (currently disabled)
<b>90009</b>	Contract Size	N	External Contract size for instrument. e.g for EURUSD 100000
<b>132</b>	Bid	N	External trader's Bid Price
<b>133</b>	Ask	N	External trader's Ask Price
	Standard Trailer	Y	

#### ❖ Order Cancel Request (MsgType=F)

Available if (MsgType=D, Tag"40"=2, Tag"59"=1"GTC") is available.

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=F
<b>11</b>	ClOrdID	Y	Must be unique identifier sent by the client. Used for response
<b>1</b>	Account	Y	Account name as provided by Centroid
<b>41</b>	OrigClOrdID	Y	The ClOrdID of the order to be cancelled
<b>54</b>	Side	Y	Side of order:[1 = Buy] [2 = Sell]
<b>60</b>	TransactTime	Y	Timestamp of the cancel request
	Standard Trailer	Y	

#### ❖ Order Cancel Replace Request (MsgType=G)

Available if (MsgType=D, Tag"40"=2, Tag"59"=1"GTC") is available.

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=G
<b>11</b>	ClOrdID	Y	Must be unique identifier sent by the client. Used for response
<b>1</b>	Account	Y	Account name as provided by Centroid
<b>41</b>	OrigClOrdID	Y	The ClOrdID of the order to be replaced



54	Side	N	Side of order:[1 = Buy] [2 = Sell]
38	OrderQty	N	Order Quantity
40	OrdType	N	Type of order: [1 = Market] [2=Limit] [3=Stop]
59	TimeInForce	N	GTC, IOC, FOK
44	Price	N	Required when OrdType"40" =2 (Limit). Otherwise, ignored.
60	TransactTime	Y	Timestamp of the cancel request
	Standard Trailer	Y	

#### ❖ Order Cancel Reject (MsgType=9)

Available if (MsgType=F) is available.

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=9
37	OrderID	Y	Centroid Order ID. Can be N/A or NONE indicating no order found.
11	ClOrdID	Y	Order Cancel Request (F) ClOrdID.
39	OrdStatus	Y	The Order Status of the order being cancelled.
41	OrigClOrdID	Y	The ClOrdID of the order to be cancelled.
102	CxlRejReason	Y	Reason of rejecting the Order Cancel Request.
434	CxlRejResponseTo	Y	Order Cancel Request (F) message.
60	TransactTime	Y	Timestamp of reject response.
	Standard Trailer	Y	

#### ❖ Order Status Request (MsgType=H)

To be sent by the client to request for the status of a trade

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=H
37	OrderID	C	Centroid Order ID.
11	ClOrdID	Y	The ClOrdID of the order to be requested.
1	Account	Y	The account initiated the requested order.
	Standard Trailer	Y	

#### ❖ Execution Report (MsgType=8)

A response to New Order Single Message (D).

Tag	Field name	Required	Description
	Standard Header	Y	MsgType=8

11	ClOrdID	Y	Must be unique identifier sent by the client. Used for response
17	ExecID	Y	Unique identifier of execution message assigned by Centroid Gateway
150	ExecType	Y	The execution report type. [0 = New] [1 = Partially Filled] [2 = Filled] [4 = Canceled] [8 = Rejected]
55	Symbol	Y	Symbol name
54	Side	Y	Side of order [1= Buy] [2= Sell]
38	OrderQty	Y	Order Quantity
40	OrdType	Y	[1= Market], [2= Limit], [3= Stop]
32	LastQty	C	Fill Quantity
59	TimeInForce	Y	TimeInForce
37	OrderID	Y	Centroid Gateway order ID
39	OrdStatus	Y	Current order state. [0 = New] [1 = Partially filled] [2 = Filled] [4 = Canceled] [8 = Rejected]
41	OrigClOrdID	C	The ClOrdID of the order to be cancelled.
31	LastPx	C	Price of this fill.
151	LeavesQty	C	Remaining quantity open for execution
14	CumQty	C	Cumulative quantity executed
6	AvgPx	C	Average price of executed quantity
44	Price	N	Price of the Limit order
58	Text	Y	Free format text string
60	TransactTime	Y	Time of the transaction
	Standard Trailer	Y	

C: Conditionally required

Y: Required

N: Not required

## Examples

- Market Data Request (V)**

20170321-11:51:32.201632000 : 8=FIX.4.4|9=151|35=V|34=8|49=TraderSender|52=20170321-11:51:32.201|56=CENTROID\_SOL|146=1|55=EURUSD|262=US1pip\_feed||EURUSD|263=2|264=0|267=2|269=0|269=1|10=210|

- Market Data Request Reject (Y)**

20170321-11:51:24.201729000 : 8=FIX.4.4|9=134|35=Y|34=5|49=CENTROID\_SOL|52=20170321-11:51:24.201850|56=TraderSender|58=Failed to Unsubscribe Symbol: EURUSD|262=USplain\_feed2||EURUSD|10=037|

- **Market Data Snapshot Full Refresh (W)**

20170321-11:51:33.083494000 : 8=FIX.4.4|9=183|35=W|34=6|49=CENTROID\_SOL|52=20170321-11:51:33.083245|56=TraderSender|55=EURUSD\_1|262=1|268=2|269=0|270=1.13882|271=1000000|273=11:51:33|269=1|270=1.13904|271=4000000|90007=1pip\_feed|10=082|

20170321-11:55:43.514924000 : 8=FIX.4.4|9=182|35=W|34=16|49=CENTROID\_SOL|52=20170321-11:55:43.514831|56=TraderSender|55=EURUSD\_1|262=1|268=2|269=0|270=1.13908|271=986000|273=11:55:43|269=1|270=1.1393|271=2502000|10=069|

- **New Order Single (D)**

20170321-11:51:40.225951000 : 8=FIX.4.4|9=186|35=D|34=10|49=TraderSender|52=20170321-11:51:40.225|56=CENTROID\_SOL|1=MT5\_Plain|11=BI9NLJ5674FDPRD79NGG|38=1000|40=1|54=1|55=EURUSD\_1|59=3|60=20170321-11:51:40.222|132=1.13882|133=1.13904|10=108|

- **New Order Single (D) with Trades Allocation**

20220320-14:31:41.33651000 : 8=FIX.4.4|9=186|35=D|34=10|49=TraderSender|52=20220320-14:31:41.336|56=CENTROID\_SOL|1=tem\_plain|11=DO9NLJ5674ASGJHASFHF|38=1000|40=1|54=1|55=EURUSD\_1|59=3|60=20220320-14:31:41.330|78=1|79=tem\_alloc\_1|80=1000|10=108|

- **Execution Report (8)**

20170321-11:51:40.228926000 : 8=FIX.4.4|9=277|35=8|34=8|49=CENTROID\_SOL|52=20170321-11:51:40.228846|56=TraderSender|1=MT5\_Plain|6=0|11=BI9NLJ5674FDPRD79NGG|14=0|17=00012017032100000000000000|31=0|32=0|37=00012017032100000000000000|38=1000|39=0|40=1|54=1|55=EURUSD\_1|58=N/A|59=3|60=20170321-11:51:40|150=0|151=1000|9999=CenSystem|10=213|

- **Logon (A)**

20170321-11:54:01.992036000 : 8=FIX.4.4|9=117|35=A|34=1|49=TraderSender|52=20170321-11:54:01.991|56=CENTROID\_SOL|98=0|108=30|141=Y|553=Username|554=Password|10=063|

20170321-11:54:01.992804000 : 8=FIX.4.4|9=86|35=A|34=1|49=CENTROID\_SOL|52=20170321-11:54:01.992734|56=TraderSender|98=0|108=30|141=Y|10=076|

- **Heartbeat (0)**

20170321-11:55:47.725747000 : 8=FIX.4.4|9=65|35=0|34=4|49=TraderSender|52=20170321-11:55:47.725|56=CENTROID\_SOL|10=092|