



# **FIX RoE**

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**CFH FIX API V. 2.5**

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## **CFH FIX API V2.5**

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# 1 Change log

Version	User	Details	Date
2.3	EKO	Added sections 2.3, 3.2.2, 3.2.4, 3.2.5, 3.2.6 Updated section 3.2.7	2012-12-05
2.4	EKO	Added contingent orders section 4.2.16, 4.2.17 & 4.2.18 Added RequestForPositions section 3.4.5, 4.2.17, 4.2.18 & 4.2.19 Added OrderStatusRequest 4.2.14	2012-12-31
2.5	EKO	Added SettlDate to Quote and MarketData messages.	2012-12-09
2.5.1	EKO	Added AccountInfoRequest and AccountInfo messages.	2013-03-18
2.5.2	EKO	Updated the AccountInfo message (AAB)	2013-06-17
2.5.3	EKO	Updated Description of HeartBeat message	2013-11-12
2.5.4	EKO	Added description to ExecutionReport about new possible PartyRole = 33	2014-08-05
2.5.5	EKO	Added description of constraints on content of PartyId in NewOrderSingle	2014-10-31



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# 2 INTRODUCTION

This document presents an overview of CFH Clearing FIX implementation for spot FX trading, as well as a detailed view of the message formats that will enable our counterparties to migrate their current connections to FIX protocol, and enable on-boarding of new counterparties as well, with minimal development, testing and maintenance requirements. This specification is written to meet FIX 4.4 standards.

# 3 MARKET AND CONNECTIVITY OVERVIEW

CFH Clearing FIX technology provides access to the spot Forex liquidity and facilitates trading in a large number of minor and major currency pairs. This chapter will describe the fundamentals of FIX connectivity to the environment, supported products and the basic flows.

## 3.1 Supported Products

Currently, CFH Clearing FIX infrastructure provides multi – tiered executable streaming prices (ESPs) for spot FX transactions, with each tier representing a range of tradable amounts. These streams are provided to market participants upon connect. They are continuous, without a predetermined lifespan and are updated in real time, in response to market conditions and changes. They are immediately available to be traded upon, provided that they do not violate or exceed certain predefined restrictions such as credit limits.

## 3.2 Connectivity Model

CFH Clearing FIX environment is available for FIX connectivity continuously, from Sunday 17:30 UTC through Friday 22:15 UTC.

Availability of streaming tradable prices are however subject to market conditions, and will be available in a short er period, typically from start of day Monday in Sydney (07:00 local time), to end of day Friday in New York (17:00 local time). FIX connectivity to CFH Clearing will be via the public internet.

Connectivity to CFH Clearing FIX infrastructure will support 2 sessions, one for Price and another for Order/Trade related messages, including actual outbound ESPs, “New Order” messages (which are requests to trade on the ESPs), and outbound Execution Reports (confirmations).

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The table below defines which messages are communicated over which FIX session.

Message	Type of CFH Clearing FIX Session
Heartbeat	Price, Trade
Logon	Price, Trade
Logout	Price, Trade
Resend Request	Price, Trade
Test Request	Price, Trade
Business Message Reject	Price, Trade
QuoteRequest	Price
Quote	Price
MarketDataSnapshotFullRefresh	Price
MarketDataRequest	Price
MarketDataIncrementalRefresh	Price
NewOrderSingle	Trade
ExecutionReport	Trade
OrderStatusRequest	Trade
OrderMassStatusRequest	Trade
RequestForPosition	Trade
RequestForPositionAck	Trade
PositionReport	Trade
AccountInfoRequest	Trade
AccountInfo	Trade

### 3.2.1 Sequence Number Reset

Sequence numbers for the order / trade session will be reset at the weekly session break. Sequence numbers for the price session will be reset on every disconnect (as well as during the weekend break).

### 3.3 Price message types

CFH Clearing supports two types of pricing that clients can choose from, either Quotes or MarketData. MarketData messages is the most efficient and recommended by CFH, but clients can choose what suits their needs best. If Quotes is selected the client will have to choose if MarketDepth is desired, as this is setup by CFH and can't be changed by a QuoteRequest. The client also decides if subscriptions should be required, for systems that always need prices for all instruments a setup without subscriptions can be made.

Using MarketData the client can set the number of bands desired in the MarketDataRequest, and also it's possible to select if incremental updates should be used.

No matter the type of messages used the prices updates that CFH provides is aggregated at price, so there will never exist to bands in the same book with the same price.

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### 3.4 Messages and Message Flows

The CFH Clearing FIX specification is built on the messages briefly described in the table below. Please see Chapter 3 of this document for a detailed explanation of their format and usage. Please note that this is the minimum set of messages required to support the necessary work flows and is subject to change over time as both business needs and the FIX standard evolve.

#### 3.4.1 Principal Pricing flow using Quotes

Message Name	Direction		Description
	→ (To CFH Clearing)	← (From CFH Clearing)	
QuoteRequest (5002=0)	→		Client request to receive Quotes
QuoteRequestReject		←	If the QuoteRequest can't be supported
Quote		←	Streaming quotes to client
QuoteRequest (5002=1)	→		Client request to stop Quotes

#### 3.4.2 Principal pricing flows using MarketData Full refresh

Message Name	Direction		Description
	→ (To CFH Clearing)	← (From CFH Clearing)	
MarketDataRequest (263=1, 265=0)	→		Client request to receive MarketData updates
MarketDataRequestReject		←	If the MarketDataRequest can't be supported
MarketDataSnapshotFullRefresh		←	Streaming MarketData to client
MarketDataRequest (263=2)	→		Client request to stop MarketData updates.

#### 3.4.3 Principal pricing flows using MarketData incremental refresh

Message Name	Direction		Description
	→ (To CFH Clearing)	← (From CFH Clearing)	
MarketDataRequest (263=1, 265=1)	→		Client request to receive MarketData updates
MarketDataRequestReject		←	If the MarketDataRequest can't be supported
MarketDataSnapshotFullRefresh		←	Full book sent to client
MarketDataIncrementalRefresh		←	Streaming MarketData to client
MarketDataRequest (263=2)	→		Client request to stop MarketData updates.

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**3.4.4 Principal trading flow**

Message Name	Direction	Description
	→ (To CFH Clearing) ← (From CFH Clearing) ↔ (To/From CFH Clearing)	
NewOrderSingle	→	Client request to trade
OrderCancelRequest	→	Client request to cancel order
OrderCancelReplaceRequest	→	Client request to modify pending order
ExecutionReport (Reject)	←	Order Rejected
ExecutionReport (Fill)	←	Order Confirmed

**3.4.5 Principal position request flow**

Message Name	Direction	Description
	→ (To CFH Clearing) ← (From CFH Clearing) ↔ (To/From CFH Clearing)	
RequestForPositions	→	Client request to get open positions.
RequestForPositionAck	←	RequestForPosition acknowledgement
PositionReport	←	PositionReports is sent to client



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### 3.4.6 Principal account info request flow

Message Name	Direction	Description
	→ (To CFH Clearing) ← (From CFH Clearing) ↔ (To/From CFH Clearing)	
AccountInfoRequest	→	Client request to get available account info.
AccountInfo	←	A single AccountInfo message is sent to client if the requester is authorized for the account.
BusinessMessageReject	←	A message is sent to client if the requester is not authorized for the account.

### 3.4.7 System and Admin Messages

Message Name	Direction	Description
	→ (To CFH Clearing) ← (From CFH Clearing) ↔ (To/From CFH Clearing)	
Heartbeat	↔	Standard FIX message used to validate a connection.
Logon	↔	Message sent by counterparty to establish connectivity to our FIX engine. CFH Clearing acknowledges a successful Logon with a corresponding Logon
Logout	→	Signals the normal termination of a FIX session.
Resend Request	↔	A request to resend a message (or messages), typically when a gap is detected in the sequence numbering.
Test Request	↔	Used to verify connectivity and synchronize sequence numbers.
Business Message Reject	←	Indicates that we cannot respond to an inbound application level message as expected by the counterparty.

## 3.5 System Flows

The CFH Clearing FIX infrastructure will support the following fundamental flows:

1. Logon
2. Logout
3. Price request
4. SequenceNumber (MsgSeqNum) Reset
5. TestResend
6. NewOrdersSingle
7. OrderCancelRequest
8. OrderCancelReplaceRequest

These flows are described in the following sections.

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### 3.5.1 Logon

This is simply a straightforward logon request to CFH Clearing FIX from a Market Participant. Once logon is complete, price and trade flows can proceed for the lifecycle of the session. After a successful logon, if a client sends a FIX message to CFH Clearing FIX with a different SenderCompID in the header (see section 3.1) than that which was contained in the Logon message, CFH Clearing will terminate the session.

### 3.5.2 Logout

A session logout occurs in response to a Market Participant sending a Logout message to CFH Clearing.

## 4 FIX MESSAGE FORMATS

The CFH Clearing FIX implementation consists of two categories of messages; System messages, which, facilitate administrative messaging between FIX engines and are typically found in nearly all FIX implementations, and Application Messages, which are those that facilitate business specific transactions.

This chapter will define and provide examples of these FIX messages.

*A note on time and date representation:* The messages below use both the UTC Timestamp and LocalMktDate data types defined in the FIX standard. UTC Timestamp is formatted as YYYYMMDD-HH:MM:SS.sss (milliseconds). Note that colons, dash, and period, as indicated, are required characters.

LocalMktDate is the date expressed in “YYYYMMDD” format.

### 4.1 System Messages

FIX System Messages facilitate essential functions such as enabling two parties to log on and off from each other, and maintain communications throughout the session.

#### 4.1.1 Header and Trailer

Every FIX message is required to have both a header and a trailer. They provide essential information about the accompanying message. The header defines:

- The message type,
- Its origin and destination,
- Its length and its sequence number.

The header is defined as follows:

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**Table 3.1: Header Format**

(Note: The Header is required on *all* messages, both inbound and outbound)

Tag	Name	Data Type	Required	Comments	Example
8	BeginString	String	Y	This field identifies the beginning of new message and the protocol version. It is always the first field in the message, and must always be unencrypted.	FIX.4.4
9	BodyLength	Length	Y	Length of the message, in bytes, up to the CheckSum field. It is always the second field in the message, and must always be unencrypted.	556
35	MsgType	String	Y	This field defines the message type, and must always be the third field in the message, and always unencrypted.	NewOrderSingle <D>
34	MsgSeqNum	SeqNum	Y	Integer message sequence number	8
49	SenderCompID	String	Y	Identifies firm sending the message.	Fund8
56	TargetCompID	String	Y	Identifies firm receiving the message	FIX-Test
52	SendingTime	UTCTimestamp	Y	Time of message transmission (always expressed in UTC (Universal Time Coordinated, also known as "GMT"))	20060829-12:26:18.961

**Table 3.2: Trailer Format**

Note: The Trailer consists of only one field, CheckSum, and it is required on *all* messages, both inbound and outbound.

Tag	Name	Data Type	Required	Comments	Example
10	Checksum	String	Y	Three byte, simple checksum. This is always the last field in the message. Serves, with the trailing <SOH>, as the end-of-message delimiter. This field is always unencrypted	111

### 4.1.2 Heartbeat

The Heartbeat monitors the status of the communication link and identifies when the last of a string of messages was not received. CFH will send out a heartbeat after the number of seconds specified in tag 108 of the LogOn message if no other message has been sent in that period.

Tag	Name	Data Type	Required	Comments	Example
<i>Header</i>			Y	MsgType = 0	
112	TestReqID	String	<i>See Comments</i>	Identifier included in Test Request message to be returned in resulting Heartbeat. This field is only required if the heartbeat is in response to a Test Request message.	1296XXT
<i>Trailer</i>					

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### 4.1.3 Logon

This Logon is an inbound message sent by counterparty to establish connectivity to our FIX engine. Once received, the FIX engine will authenticate the party logging in. If the logon is accepted the CFH FIX engine will respond with a logon message without username and password.

If more than 6 consecutive logon attempts are made with wrong password, the session's will be locked out, and further logon attempts will be rejected.

Tag	Name	Data Type	Required	Comments	Example
<i>Header</i>		Y		MsgType = A	
98	EncryptMethod	Int	Y	Method of encryption. Always 0.	0
108	HeartBtInt	Int	Y	Heartbeat interval (seconds).	30
553	Username	String	Y	User Id.	T34517
554	Password	String	Y	Password.	Ayq7y8W
141	ResetSeqNumFlag	Boolean	N	Indicates both sides of a FIX sessions should reset sequence numbers.	Y
<i>Trailer</i>		Y			

### 4.1.4 Logout

The Logout message that signals the normal termination of a session.

Tag	Name	Data Type	Required	Comments	Example
<i>Header</i>		Y		MsgType = 5	
58	Text	String	N	Free format text string	
<i>Trailer</i>		Y			

### 4.1.5 Resend Request

The Resend Request message is used to request resending a message (or messages), typically when a gap is detected in the sequence numbering.

Tag	Name	Data Type	Required	Comments	Example
<i>Header</i>		Y		MsgType = 2	
7	BeginSeqNo	SeqNum	Y	Message sequence number of first message in range to be resent	8
16	EndSeqNo	SeqNum	Y	Message sequence number of last message in range to be resent. If the request is for a single message, then BeginSeqNo = EndSeqNo. If the request is for all messages subsequent to a particular message, then EndSeqNo = "0".	14
<i>Trailer</i>		Y			

### 4.1.6 Sequence Reset Request

The Sequence Reset Request is used in response to Resend Request to reset the incoming sequence number on the opposing side FIX engine.

Tag	Name	Data Type	Required	Comments	Example
<i>Header</i>		Y		MsgType = 4	
123	GapFillFlag	Boolean	N	Indicates that the sequence Reset message is replacing administrative or application message which will not be resent.	Y

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36	NewSeqNo	SeqNum	Y	New sequence number	401
Trailer			Y		

### 4.1.7 Test Request

The Test Request message is used to verify connectivity and synchronize sequence numbers. A test request should be responded to with a heartbeat from the recipient.

Tag	Name	Data Type	Required	Comments	Example
Header			Y	MsgType = 1	
112	TestReqID	String	Y	Identifier included in Test Request to be returned in resulting HeartBeat	233
Trailer			Y		

### 4.1.8 Reject Message

The Reject Message is issued when a message is received that cannot be properly processed due to session-level rule violation.

Tag	Name	Data Type	Required	Comments	Example
Header			Y	MsgType = 3	
45	RefSeqNum	SeqNum	Y	MsgSeqNum of rejected message.	221
371	RefTagID	Int	N	The tag number of the FIX field being referenced.	123
372	RefMsgType	String	N	The MsgType of the FIX message being referenced.	4
373	SessionRejectReason	Int	N	Code to identify reason for a session-level Reject message.	1
				0 = InvalidTagNumber	
				1 = RequiredTagMissing	
				2 = TagNotDefinedForThisMessage	
				3 = UndefinedTag	
				4 = TagSpecifiedWithoutValue	
				5 = ValueIsIncorrectOutOfRangeForThisTag	
				6 = IncorrectDataFormatForValue	
				9 = CompIDProblem	
				10 = SendingTimeAccuracyProblem	
				11 = InvalidMsgType	
13 = TagAppearsMoreThanOnce					
14 = TagSpecifiedOutOfRequiredOrder					
17 = NonDataValueIncludesFieldDelimiterSOHCharacter					
99 = Other					
58	Text	String	N		
Trailer			Y		

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### 4.2 Application Messages

FIX Application messages facilitate financial/business specific transactions. These include quotes – price updates, new order messages (intent to trade on a price), confirmation and rejection messages, order modifications and cancellations which are detailed in the sections below.

NOTE:

1. The Symbol field (55) must always follow market convention (e.g. EURUSD cannot be expressed as USDEUR), in order to remain consistent with the format of exchange rates.
2. The Currency field (15) must always be the dealt currency (the currency that is being bought or sold, the amount of which is indicated in the OrderQty field (38)) in the trade related messages (New Order Single and Execution Report, OrderCancelRequest and OrderCancelReplaceRequest). In trade related messages, the value of the OrderQty field must always be the amount of the chosen dealt currency. This is demonstrated in the examples below.
3. The Side field (54) must indicate whether the client is buying or selling the dealt Currency (15).
4. The assignment of a side to the dealt currency, or the assignment of base or term currency as the dealt currency may vary per transaction (or per individual trade), but once these parameters are initially defined in a New Order Single, they must be used consistently in all subsequent messages between CFH Clearing and the client pertaining to that particular trade request.
5. CFH Clearing will create Execution Reports that reflect trade details from a Client's point of view.
6. The following is an example of valid orders against a USDJPY quote of 117.55/58 (note that these represent a subset of fields from the New Order Single messages).

**Example 1:**

Symbol (55) = USDJPY

Currency (15) = USD

OrderQty (38) = 4300000

Side (54) = 2 (Sell)

Price (44) = 117.55

#### 4.2.1 Business Reject message (From CFH Clearing)

Business Reject messages are sent from CFH Clearing to a counterparty indicating that CFH Clearing cannot respond to an inbound application level message as expected by the counterparty, due to some condition or value in that message that prevents our systems from generating the normal, expected response.

Tag	Name	Data Type	Required	Comments	Example
Header		Y		MsgType = j	
45	RefSeqNum	SeqNum	Y	Reference message sequence number	113
372	RefMsgType	String	Y	The MsgType of the FIX message referenced in this one.	Quote <S>
379	BusinessRejectRefID	String	N	The value of the business-level "ID" field on the message being referenced.	
380	BusinessRejectReason	Int	Y	Code that identifies reason for the Business Message Reject message. Values:	4
				0 - Other	
				1 - Unknown ID	
				2 - Unknown Security	
				3 - Unsupported Message Type	

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				4 - Application not available	
				5 - Conditionally Required Field Missing	
				6 - Not authorized	
				7 - DeliverTo firm not available at this time	
58	Text	String	Y	Free format text string	
Trailer					Y

### 4.2.2 QuoteRequest (To CFH Clearing)

If clients gateway is setup for "Quotes with subscriptions" the client will have to send a QuoteRequest for each instrument desired. A single QuoteRequest can include several instruments using the repeating group NoRelatedSym although it's recommended to only include a single instrument.

Tag	Fieldname	Data Type	Required	Comments	Example
Header			Y	MsgType = R	
131	QuoteReqID	String	Y	Unique id of the request specified by client	xyz654
5002	QuoteRequestAction	int	Y	0= SUBSCRIBE 1= UNSUBSCRIBE	0
→ 146	NoReleatedSym	Int	Y		1
55	Symbol	String	Y	Currency pair (CCY1CCY2)	EURUSD
Trailer					Y

### 4.2.3 QuoteRequestReject (From CFH Clearing)

If a QuoteRequest received from client can't be supported either because of error in the request or if the instrument is not available for the client account, then CFH Clearing will send a QuoteRequestReject. The reject is for all instruments included in the original QuoteRequest if more than one specified.

Tag	Fieldname	Data Type	Required	Comments	Example
Header			Y	MsgType = AG	
131	QuoteReqID	String	Y	Unique id of the request specified by client	xyz654
658	QuoteRejectReason	int	Y	1=UNKNOWN SYMBOL 2=NOTAUTHTOREQQUOTE	1
→ 146	NoReleatedSym	Int	Y		1
55	Symbol	String	Y	Currency pair (CCY1CCY2)	EURUSD
Trailer					Y

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### 4.2.4 Quote (From CFH Clearing)

A Quote is an outbound message from CFH Clearing. CFH Clearing will be streaming quotes to the client for the symbols that client has sent QuoteRequests for or all available instruments depending on the pricing mode.

MarketData is preferred to Quotes as the MarketData message provides better bandwidth utilization. If Quotes is still selected by client, the price book will be restricted to top of book data only.

In either case, quotes should be treated as follows on the client side:

- Quotes marked as tradable (537 = 1) on a **new** QuoteID should be added to the price book maintained by the client side. When adding the quote, the client side must insert the new quote ordered by the price (ordering is only required if market depth is enabled).
- Quotes marked as tradable (537 = 1) on an **existing** QuoteID must update the price book maintained by the client side for that QuoteID. When updating the quote, the client side may have to reorder the price book based on prices (re-ordering is only required if market depth is enabled).
- Quotes marked as indicative (537 = 0) indicates a cancel of a previous quote, and the entry in the client side price book for that QuoteID must be removed.

When the client logs on to the price session the server side will immediately send quote messages with all currently available prices, if not configured for Quotes with subscriptions.

Please note that CFH Clearing is streaming a tradable price book, showing at what prices CFH Clearing is willing to buy / sell. What is streamed is **not** an order book, and you will e.g. not be able to see you own orders in the quote stream.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>		Y		MsgType = S	
117	QuoteID	String	Y	CFH Clearing identifier for this quote; will be used for all updates and/or for the cancellation	xyz654
537	QuoteType	int	Y	0 = Indicative, means a cancellation, also amount field will be set to 0. 1 = Tradable	1
55	Symbol	String	Y	Currency pair (CCY1CCY2)	EURUSD
54	Side	Char	Y	Side of quote. 1 = Buy, 2 = Sell.	1
132	BidPx	Price	N	Bid Price	1.1017
133	OfferPx	Price	N	Offer Price	1.1021
134	BidSize	Qty	N	Quantity available on the sell side – set to 0 when QuoteType is indicative	30000000
135	OfferSize	Qty	N	Quantity available on the buy side – set to 0 when QuoteType is indicative	30000000
64	SettlDate	LocalMktDate	Y	Value date of the instrument	20130110
<i>Trailer</i>			Y		



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### 4.2.5 MarketDataRequest (To CFH Clearing)

If client gateway is setup for "MarketData" the client will have to send a MarketDataRequest for each instrument desired.

If the subscription is for incremental updates, the first update sent to client will be a MarketDataFullRefresh ('W') message with the full book for the instrument, all subsequent MarketDataIncrementalRefresh ('X') will be updates to that book.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>			Y	MsgType = V	
262	MDReqId	String	Y	Unique id of the request specified by client	xyz654
263	SubscriptionRequestType	Char	Y	Only SNAPSHOT_PLUS_UPDATES ('1') and DISABLE_PREVIOUS_SNAPSHOT_PLUS_UPDATE_REQUEST ('2') supported.	'1'
264	MarketDepth	Int	C	Number of bands to receive (0 = Max, 1=TopOfBook, 2=2 bands, 3= 3 bands and so on) (Required if 263=1)	0
265	MDUpdateType	Int	C	Update type: (Required if 263=1) 0 = Full, 1 = Incremental.	1
→ 267	NoMDEntryTypes	Int	C	Number of elements in group both Bid and Offer should be requested. Required if 263=1	2
269	MDEntryType	Char	Y	0=Bid 1=Offer	0
→ 146	NoReleatedSym	Int	C	(Required if 263=1)	1
55	Symbol	String	Y	Currency pair (CCY1CCY2)	EURUSD
<i>Trailer</i>				Y	

### 4.2.6 MarketDataRequestReject (From CFH Clearing)

If a MarketDataRequest received from client can't be supported either because of error in the request or if the instrument is not available for the client account, then CFH Clearing will send a MarketDataRequestReject. The reject is for all instruments included in the original MarketDataRequest if more than one specified.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>			Y	MsgType = Y	
262	MDReqID	String	Y	Unique id of the request specified by client	xyz654
281	MDRejectReason	Char	Y	0=UNKNOWN_SYMBOL	0
				1=DUPLICATE_MDREQID	
				4=UNSUPPORTED_SUBSCRIPTIONREQUESTTYPE	
58	Text	String	Y	Extra explanation of reject	""
<i>Trailer</i>				Y	

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### 4.2.7 MarketDataSnapshotFullRefresh (From CFH Clearing)

A MarketDataSnapshotFullRefresh contains the entire order book for a single instrument, with all available bands. Whenever a MarketDataSnapshotFullRefresh is received any previous prices should be removed from client's book.

Tag	FieldName	Data Type	Required	Comments	Example
<i>Header</i>			Y	MsgType = W	
262	MDReqId	String	Y	Unique id of the request specified by client	xyz654
55	Symbol	String	Y	Currency pair (CCY1CCY2)	EURUSD
→ 268	NoMDEntries	Int	Y	Number of entries in the repeating group.	6
269	MDEntryType	Int	Y	0 = Bid, 1 = Offer	1
270	MDEntryPx	Price	Y	Price of the entry	1.123456
271	MDEntrySize	Qty	Y	Quantity available at the price	500000
290	MDEntryPosNo	Int	Y	Position of the entry in book (1 = first band)	1
64	SettlDate	LocalMktDate	N	Value date of the instrument (Always present in first entry)	20130110
278	MDEntryId	String	Y	Unique Market Data Entry identifier. Is unique across all books for the duration of the session or login.	'39/1-105099'
<i>Trailer</i>				Y	

### 4.2.8 MarketDataIncrementalRefresh (From CFH Clearing)

A MarketDataIncrementalRefresh only contains the changed price bands of a book since the last full or incremental market data refresh received from CFH. Each message will only contain data for a single instrument.

Tag	FieldName	Data Type	Required	Comments	Example
<i>Header</i>			Y	MsgType=X	
262	MDReqId	String	Y	Unique id of the request specified by client	xyz654
→ 268	NoMDEntries	Int	Y	Number of entries in the repeating group.	6
279	MDUpdateAction	Int	Y	0 = New (At the end, just add the entry to the end of the book. In existing book, push down existing entries and place this new entry at level)	1
				1 = Change (Simply change the entry at the specified level)	
				2 = Delete (Delete the entry at this level, copy entries above 1 level down)	
269	MDEntryType	Char	Y	Bid = 0	'1'
				Offer = 1	
278	MDEntryID	String	Y	Unique Market Data Entry identifier. Is unique across all books for the duration of the session or login.	'39/1-105099'
270	MDEntryPx	Price	Y	Price of the entry	1.123456
271	MDEntrySize	Qty	Y	Quantity available at the price	500000
290	MDEntryPosNo	Int	Y	Position of the entry in book (1 = first band)	1
64	SettlDate	LocalMktDate	N	Value date of the instrument (Always present in first entry)	20130110
55	Symbol	String	Y	Currency pair (CCY1CCY2)	'EURUSD'
<i>Trailer</i>				Y	

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### 4.2.9 NewOrderSingle (From Client)

A NewOrderSingle is an order message from the Client, containing information about a Market participant order.

Tag	Fieldname	Data Type	Required	Comments	Example
Header			Y	MsgType = D	
11	ClOrdID	String	Y	Unique client id used to reference order ( <b>NOTE: This field must always be unique, per individual order. A value used in this field must not be re-used on future business days. The length must not exceed 50 characters, and not include any of: [<code>&lt;&gt;\'"%;()&amp;]</code> </b> )	ORD123-20060826-15:31:22.385
21	HandInst	Char	N	Optional when order type set to Stop or StopLimit, F – first touch, T – Trade through. Defaults to 'T'.	F
55	Symbol	String	Y	Symbol being traded	EURUSD
54	Side	Char	Y	1 = Buy, 2 = Sell	1
60	TransactTime	UTCTimestamp	Y	Time this order request was initiated/released by the trader, trading system, or intermediary.	20060826-15:31:22.385
38	OrderQty	Qty	Y	Order quantity must be a whole amount, fractions are not allowed.	9000000.00
40	OrdType	Char	Y	1 – market, 2 – limit, 3 – stop, 4 – StopLimit	3
44	Price	Price	C	Price for the order being submitted. Required for OrdType=2	1.1021
99	StopPx	Price	C	Stop price for stop orders. Required for OrdType=3 and OrdType=4	1.1234
15	Currency	Currency	N	Dealt currency	EUR
59	TimeInForce	Char	N	0 – Day, 1 – GoodTillCancel, 3 – Immediate or Cancel, valid only for Market and Limit orders, will enable partial fills and cancel the rest, 4 – FillorKill, valid only for Market and Limit orders, will give complete fill or a rejection. 6 – GoodTillDate. Default to Day (0)	1
432	ExpireDate	LocalMktDate	C	The date where the order will expire. (Required if tag 59=6)	20130601
1	Account	String	N	An internal CFH account id, identifying what account to trade on. Should in most cases not be used.	ACC123
➔ 453	NoPartyIDs	Int	Y	The repeating group is used to set a client Id of the order originator. CFH only expects value to always be 1.	1
448	PartyId	String	Y	Unique id of order originator. Note <b>the length must not exceed 100 characters, and not include any of: [<code>&lt;&gt;\'"%;()&amp;]</code> </b>	"Trader1"
447	PartyIdSource	Char	Y	Only 'D' = Proprietary allowed.	'D'
452	PartyRole	Int	Y	Only 3 = ClientID allowed	3
77	PositionEffect	Char	N	Specifies if the requested order will open or close a position. 'O'=Open 'C'=Close	'O'
5001	MarkUp	Price	N	A mark-up to be added to the execution price. Should in most cases not be used. Only allowed for TimeInForceLoC and FoK	0.00005
5003	Track	Int	N	Can be used by client to specify a track to trade on. If -1 is specified the next available track will be used. Default track is 1 if tag is not present. All tracks have to be >= 1	1
Trailer			Y		

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### 4.2.10 ExecutionReport (From CFH Clearing)

The ExecutionReport message is sent by CFH Clearing in response to a New Order Single message. The message details the transactions and statuses accordingly, depending on the type of incoming message and how it is handled within the CFH Clearing environment. ExecutionReport's will also be sent if a trade is executed on an account used on the FIX gateway. So trades done using another platform or FIX gateway, will also be published, to identify these the NoParties repeating group can be used.

Tag	Fieldname	Data Type	Required	Comments	Example
Header			Y	MsgType = 8	
37	OrderID	String	Y	Unique CFH Clearing id used to reference order, if the order was accepted.	10084775
11	ClOrdID	String	N	Client id received in the order request from the user. If the trade is an result of a margin call this field will contain: "marginActionsExecutor"	ORD123-20060826-15:31:22.385
41	OrigClOrdID	String	N	Client id received in the previous order request from the user.	ORD123-20060826-15:30:22.381
66	ListID	String	N	Required for executions against orders part of a List	'LIST123'
17	ExecID	String	Y	Unique identifier of execution.	
150	ExecType	char	Y	Describes execution event:	0
				0 = New	
				4 = Cancelled	
				5 = Replaced	
				6 = Pending Cancel	
				8 = Rejected	
				A = Pending New	
				I = Order status	
				E = Pending Replace	
F = Trade					
39	OrdStatus	char	Y	Current status of order chain:	0
				0 = New	
				1 = Partially Filled	
				2 = Filled	
				4 = Cancelled	
				6 = Pending Cancel	
				8 = Rejected	
				A = Pending New	
E = Pending Replace					
584	MassStatusReqId	String	C	The id specified by client in the OrderMassStatusRequest. (Required if repport is response to OrderMassStatusRequest)	'ABC123'
911	TotNumReports	Int	C	Total number of execution reports that will be sent for the OrderMassStatusRequest. (Required if repport is response to OrderMassStatusRequest)	5
912	LastRptRequested	Bool	C	True if this is the last ExecutionReport from the OrderMassStatusRequest. (Required if repport is response to OrderMassStatusRequest)	TRUE
1	Account	String	N	Internal CFH account id.	
55	Symbol	String	Y	Currency pair (CCY1CCY2)	USDJPY

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54	Side	char	Y	Buy/Sell Indicator. CFH will populate this field with the same value that is provided in the NewOrderSingle message	1
38	OrderQty	Qty	N	Amount requested expressed in Currency	9000000
40	OrdType	Char	N	1 – Market, 2 – Limit, 3 - Stop	1
44	Price	Price	N	Requested price if any; this field is not included when no price was sent in the original trade request	1.2343
64	SettlDate	LocalMktDate	C	Value date of the trade. (Required if ExecType=F)	20130110
99	StopPx	Price	N	Requested stop price if any; this field is not included when no stop price was sent in the original trade request	1.2343
59	TimeInForce	Char	N	0 – Day, 1 – GoodTillCancel, 3 – Immediate or Cancel, 4 – FillorKill, 6-GoodTillDate	0
15	Currency	Currency	N	Dealt currency	EUR
432	ExpireDate	LocalMktDate	C	The date where the order will expire. (Required if tag 59=6)	20130601
32	LastQty	Qty	N	Amount executed in this fill	9000000
31	LastPx	Price	N	Price of current fill	1.2343
151	LeavesQty	Qty	Y	Amount open for further execution.	Equal to (OrderQty – CumQty)
14	CumQty	Qty	Y	Amount filled so far from the original order	9000000
6	AvgPx	Price	Y	Average price over all of the fills for the current order	1.2343
12	Commission	Amount	N	Present if ExecType=F and a commission has been applied.	0.5
13	CommType	Char	N	Present if ExecType=F and a commission has been applied. Always = 3	3
479	CommCurrency	Currency	N	Present if ExecType=F and a commission has been applied.	EUR
21	HandlInst	Char	C	Used when order type set to Stop, F – first touch, T – Trade through	T
103	OrdRejReason	int	N	Reject reason code	3
→ 453	NoPartyIDs	Int	Y	The repeating group is used to set a client Id of the order originator. CFH only expects a single entry.	2
448	PartyId	String	Y	Id of order originator	“Trader1”
447	PartyIdSource	Char	Y	Only ‘D’ = Proprietary allowed.	‘D’
452	PartyRole	Int	Y	Only 3 = ClientID allowed	3
448	PartyId	String	N	“Alternative source”	
447	PartyIdSource	Char	N	Only ‘D’ = Proprietary allowed.	‘D’
452	PartyId	int	N	33 = INTERESTEDPARTY	33
58	Text	String	N	Free format text string	
5001	Markup	Price	N	A mark-up that was added to the execution price before the trade registration.	0.00005
5003	Track	Int	N	Track number specified by client when the order was placed.	1
Trailer			Y		

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### 4.2.11 OrderCancelRequest (From Client)

This OrderCancelRequest message is sent by a Market participant (Client) to cancel a pending order in the CFH Clearing system.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>		Y		MsgType = F	
41	OrigClOrdID	String	C	Unique client id used to reference the previous accepted order submitted. Required if tag 37 is not present.	ORD123-20060826-15:31:22.385
37	OrderID	String	C	Unique order id specified by CFH. Required if tag 41 is not present.	'40659941'
11	ClOrdID	String	Y	Unique client id	ORD123-20060826-15:51:34.123
55	Symbol	String	Y	Currency pair (CCY1CCY2)	USDJPY
54	Side	Char	Y	Buy/Sell Indicator. The side of the order to cancel.	1
38	OrderQty	Qty	Y	Amount expressed in Currency; the full remaining quantity for the order will be cancelled	9000000
60	TransactTime	UTCTimestamp	Y	UTC timestamp of order cancel request	20060826-15:31:25.585
<i>Trailer</i>		Y			

### 4.2.12 OrderCancelReplaceRequest (From Client)

The OrderCancelReplaceRequest message is sent by a Market participant (Client) to modify a pending order in the CFH Clearing system.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>		Y		MsgType = G	
41	OrigClOrdID	String	C	Unique client id used to reference the previous accepted order submitted. Required if tag 37 is not present.	ORD123-20060826-15:31:22.385
37	OrderID	String	C	Unique order id specified by CFH. Required if tag 41 is not present.	'40659941'
11	ClOrdID	String	Y	Unique client id	ORD123-20060826-15:49:34.557
55	Symbol	String	Y	Currency pair (CCY1CCY2)	USDJPY
54	Side	char	Y	Buy/Sell Indicator. The side of the order to replace.	1
38	OrderQty	Qty	Y	Total Original quantity for the order, including all of the quantity already executed prior to this message received by system	9000000
40	OrdType	Char	Y	1 – market, 2 – limit, 3 – stop, 4- StopLimit. Order type can't be changed, but is only used for validation.	1
44	Price	Price	C	Limit price. (Required if OrdType=2)	1.2343
99	StopPx	Price	C	Stop price (Required if OrdType=3 or OrdType=4)	1.2343
59	TimeInForce	Char	N	0 – Day, 1 – GoodTillCancel, 3 – Immediate or Cancel, 4 – FillorKill, 6 – GoodTillDate	0
432	ExpireDate	LocalMktDate	C	The date where the order will expire. (Required if tag 59=6)	20130601
60	TransactTime	UTCTimestamp	N	UTC timestamp of order change request	20060826-15:31:25.585
<i>Trailer</i>		Y			

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### 4.2.13 OrderCancelReject (From CFH Clearing)

The OrderCancelReject message is issued by CFH Clearing, upon the receipt of a OrderCancelRequest or a OrderCancelReplaceRequest from Client that cannot be honored.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>		Y		MsgType = 9	
37	OrderID	String	Y	Unique CFH Clearing id used to reference order, if the order was accepted. If CxlRejReason="Unknown order" the value is "NONE"	10084775
11	ClOrdID	String	Y	Unique client id	ORD123-20060826-15:31:22.385
41	OrigClOrdID	String	Y	ClOrdID which could not be canceled/replaced.	ORD123-20060826-15:31:22.385
39	OrdStatus	Char	Y	OrdStatus value after this cancel reject is applied. 1 = Partially Filled 2 = Filled 4 = Cancelled 6 = Pending Cancel 8 = Rejected E = Pending Replace	1
60	TransactTime	UTCTimestamp	N	Time this OrderCancelReject was initiated/released by the trader, trading system, or intermediary	20060826-15:31:25.585
434	CxlRejResponseTo	Char	Y	Identifies the type of request that a Cancel Reject is in response to. 1 = OrdCxlReq 2 = OrdCxlRepRequest	1
102	CxlRejReason	Int	N	Code to identify reason for cancel rejection. 0 = TooLate 1 = Unknown 2 = BrokerOpt 3 = AlreadyPendingCxl 4 = UnableToProcess 5 = OrigOrdModTimeMismatch 6 = DupClOrdID 99 = Other	0
58	Text	String	N	Free format text string	
<i>Trailer</i>			Y		

### 4.2.14 OrderStatusRequest (From Client)

This OrderStatusRequest message is sent by a Market participant (Client) to request the status of a n order placed by the client in the CFH Clearing system.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>		Y		MsgType = H	
37	OrderID	String	C	Unique ID of the order as assigned by CFH. (Required if ClOrdId is not specified)	102234
11	ClOrdId	String	C	Unique ID of the order as assigned by the client. (Required if OrderId is not specified)	ORD123-20060826-15:49:34.557
<i>Trailer</i>			Y		

### 4.2.15 OrderMassStatusRequest (From Client)

This OrderMassStatusRequest message is sent by a Market participant (Client) to request all open orders placed by the client in the CFH Clearing system.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>		Y		MsgType = AF	
584	MassStatusReqId	String	Y	Unique ID of mass status request as assigned by the client	'ABC123'
585	MassStatusReqType	Int	Y	Specifies the scope of the mass status request 7=StatusForAllOrders 8=StatusForOrdersForPartyId	7
→ 453	NoPartyIds	String	C	Repeating group below should contain unique combinations of PartyID, PartyIDSource, and PartyRole. Only one entry allowed. (Required if MassStatusReqType=8)	1
448	PartyId	String	C	AccountId of the account to get open orders for.	6754
447	PartyIDSource	Char	C	Only PROPRIETARY_CUSTOM_CODE ('D')	'D'
452	PartyRole	Int	C	Only CustomerAccount (24) allowed.	24
<i>Trailer</i>				Y	

### 4.2.16 RequestForPositions (From Client)

Can be used by the client to request open net or track positions for an account.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>		Y		MsgType = AN	
710	PosReqId	String	Y	Unique ID of the position request	'REQ123'
724	PosReqType	Int	Y	0=Positions	0
→ 453	NoPartyIds	Int	Y	Always 0	0
1	Account	String	Y	The account to request positions for	'1712'
581	AccountType	Int	Y	1=CarriedCustomerSide	1
55	Symbol	String	C	If specified only position for this symbol is requested. Required if 5003 is set to other than -1.	'EURUSD'
715	ClearingBusinessDate	LocalMktDate	Y	Set as Transactime	20060826-15:31:22
60	TransactTime	UTCTimestamp	Y	Time of request	20060826-15:31:22
5003	Track	Int	N	If not present this is a Net position request. If -1 is set then all open track positions is returned.	1
<i>Trailer</i>				Y	



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### 4.2.17 RequestForPositionsAck (From CFH Clearing)

The RequestForPositionsAck is sent by CFH Clearing when a RequestForPositions has been successful received and processed.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>			Y	MsgType = AO	
721	PosMaintRptID	String	Y	Unique ID of the position request ack	'ACK123'
710	PosReqId	String	N	Id of the position request	'REQ123'
727	TotalNumPosReports	Int	N	Present if 728=0, contains the number of PositionReports that will be sent	5
728	PosReqResult	Int	Y	0=ValidRequest 1=InvalidRequest 2=NoPositionsFoundThatMatchCriteria	0
729	PosReqStatus	Int	Y	0 = Completed 2 = Rejected	0
1	Account	String	Y	The account to request positions for	'1712'
581	AccountType	Int	Y	1=CarriedCustomerSide	1
55	Symbol	String	N	Present if specified in the request	'EURUSD'
58	Text	String	N	Can contain details of the request status	"
<i>Trailer</i>			Y		

### 4.2.18 PositionReport (From CFH Clearing)

CFH Clearing will send a PositionReport for each open position that matches the criteria's in a RequestForPositions.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>			Y	MsgType = AP	
721	PosMaintRptID	String	Y	Unique ID of the position request ack	'ACK123'
710	PosReqId	String	N	Id of the position request	'REQ123'
728	PosReqResult	Int	Y	0=ValidRequest 1=InvalidRequest 2=NoPositionsFoundThatMatchCriteria	0
715	ClearingBusinessDate	LocalMktDate	Y	Time of the position.	20060826-15:31:22
1	Account	String	Y	The account to request positions for	'1712'
581	AccountType	Int	Y	1=CarriedCustomerSide	1
55	Symbol	String	Y	The instrument with the position	'EURUSD'
231	ContractMultiplier	Int	Y	Specifies the ratio or multiplyfactor to convert from "nominal" units	1
730	SettlPrice	Price	Y	The average price of the position	1,30000
731	SettlPriceType	Int	Y	Always 1=Final	1
734	PriorSetlPrice	Price	Y	Same as SettlPrice	1,30000
→ 702	NoPositions	Int	Y	Always 1	1
704	LongPos	Qty	N	Present if it is a long position	100000
705	ShortPos	Qty	N	Present if it is a short position	100000
5003	Track	Int	N	Present if it is a track position	1
<i>Trailer</i>			Y		

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### 4.2.19 AccountInfoRequest (From Client)

An AccountInfoRequest message is a custom FIX message introduced to allow clients to retrieve account information using FIX protocol.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>			Y	MsgType = AAA	
1	Account	String	Y	The account id that the request is for.	'1961'
<i>Trailer</i>				Y	

### 4.2.1 AccountInfo (From CFH)

An AccountInfoRequest message is a custom FIX message introduced to allow clients to retrieve account information using FIX protocol.

Tag	Fieldname	Data Type	Required	Comments	Example
<i>Header</i>			Y	MsgType = AAB	
1	Account	String	Y	The account id that the request is for.	'1961'
15	Currency	String	Y	The account currency code	'EUR'
898	MarginRatio	Percentage	Y	The margin requirement ratio (MarginRequirement / Equity).	50.00
5020	Balance	Float	Y	The account balance	50000.00
5021	AvailableForMarginTrading	Float	Y	The amount available for further margin based trading. (In account currency)	100000.00
5022	CreditLimit	Float	N	The credit limit for account	100000.00
5023	SecurityDeposit	Float	Y	The amount deposited to account	50000.00
5024	ClosedPL	Float	Y	Open P/L across all products (in account / client currency)	2014.50
5025	OpenPL	Float	Y	Closed P/L across all products (in account / client currency)	128.35
5026	MarginRequirement	Float	Y	The margin requirement calculated across all margin products.	0
5027	NetOpenPosition	Float	Y	The net open position / exposure across all products	0
5028	CreditLimitNOP	Float	N	The net open position for products traded on credit limit terms	0
<i>Trailer</i>				Y	