

PFD FIX gateway requires to setup 2 sessions. One is used for market data updates and second for trading activity. FIX gateway is based on QuickFIX/J FIX engine
www.quickfixj.org

CHANGES:

17 Nov 2016: added support for IOC Limit order

5 Dec 2016: added support for market depth in a quote session

Common settings:

Heart Beat interval: 30 seconds.

FIX version 4.2

Messages have standard header and trailer as described www.fixtradingcommunity.org

This document describes PFD's specific messages and requirements.

Administrative message.

Logon (35=A).

Tag	Required	
553	Y	Login name provided by PFD
554	Y	Password provided by PFD
141	C	Default is 141=N

For market data update session reset sequence flag is obligated to be set to «Y» i.e. 141=Y. Market data session logon request with no tag 141 or 141=N will be rejected. For trading session client side is able to reset at any time.

Application messages.

MarketDataRequest (35=V)

Tag	Required	
262	Y	Request ID. Any valid string.
263	Y	Request type. Valid values are 0,1,2
264	N	Market depth. Value ignored if AggregatedBook is not set.
266	N	AggregatedBook. Valid values are "Y" and "N"
146	Y	Number of symbols in request.
55, repeated	Y	Symbol. Format CCY1/CCY2 for forex and symbol name for CFD/Futures CFD symbols

System does not keep subscription list across sessions. After logout, interrupted connection client should subscribe again.

Request ID (tag 262) is any valid string. If request has one or more invalid symbols, client will receive MarketDataRequestReject message for each invalid symbol; all valid symbols processed normally. MarketDataRequestReject message has same Request ID as MarketDataRequest message. This is not obligated to keep request id unique.

Request type 0: Snapshot. Response with current price for all valid symbols in request.
 Request type 1: Snapshot+Updates. System responds with current prices and add symbols to subscription list. Client can subscribe as much symbols as required. If one or more symbols already in subscription list this is ignored and process normally others.
 Request type 2: Disable previous request Snapshot+Updates. Remove one or more symbols for subscription list. If one or more symbol (s) is not in subscription list, or symbol is not valid, this is ignored and process normally the others.

Customers who interested to see market depth should set tag 266 to values Y or N.

- If value not set, PFD will submit best bid/offer with no MDEntrySize
- If value set to “Y”, PFD will summarize same price entries liquidity available to single entry.
- If value set to “N”, PFD will not aggregate liquidity

MarketDataRequestReject (35=Y)

Tag	Required	
262	Y	Client’s supplied ID required in MarketDataRequest message
281	Y	Reject reason
58	Y	Reject reason text description

Possible values for Reject Reason (tag 281):

- 5: Unsupported market depth
- 0: Unknown symbol
- 4: Unsupported request type

MarketDataSnapshotFullRefresh (35=W)

Tag	Required	
55	Y	Symbol
268	Y	Number of groups. Below fields are group fields.

Tag	Required	
290	Y	Entry position number
269	Y	Entry type. Valid values are 0 (Bid), 1 (Offer)
270	Y	Entry price. If Quote condition is other than «A» it may be possible value contains zero value or stale/invalid price.
271	C	Entry size. Liquidity available at this price. If quote condition "A" possible value "0" means liquidity available but size is unspecified.
276	Y	Quote condition. Valid values are A: Open/Active, B: Closed/Inactive

If message contains no bid or no offer group, or any other groups, this means no price is available at this time.

NewOrderSingle (35=D)

Tag	Required	
1	Y	Trading account provided by PFD
11	Y	Client order id. Any valid string. Value should be unique across session.
55	Y	Symbol
38	Y	Order Quantity. See description below.
54	Y	Order side. Valid values are only 1: Buy, 2: Sell
40	Y	Order type. Supported values are 1: Market 2: Limit
59	C	Time In Force. Required for limit order type. Supported values: 3: IOC (Immediate or cancel)
44	C	Price. Required for limit order type. Order will be executed by this price or better or canceled.
21	Y	should be 1
60	Y	UTC timestamp of order at the client's side.

Order Quantity is:

FX: amount in contract currency. I.e. 100 000 for EUR/USD standard lot size 100 000 EUR

Spot metals: number of contract commodity. I.e. 100 for XAU 100oz

Indices: number of index points. I.e 1 for US500 for 1 index point

CFD/Futures: number of contract commodity. I.e. 100 for CLxx 100 barrels

Each symbol has own restriction of minimal, step and maximum size of order quantity. For example GCxx for now allowed whole contract trading activity only, so valid Order Quantity is 100, 200,300 etc, values like 110 will be rejected. For exchange linked symbols please see exchange description, for this example

http://www.cmegroup.com/trading/metals/precious/gold_contract_specifications.html

Once system receives NewOrderSingle initial check is performed. If message has some required tags unfilled or tags has incorrect values BusinessMessageReject (35=j) is sent to client side, in all other cases client will receive ExecutionReport messages (35=8)

ExecutionReport (35=8)

Tag	Required	
37	Y	Order ID or «N/A»
17	Y	Execution ID or «N/A»
20	Y	Exec Trans Type
150	Y	Exec Type
39	Y	Order Status
55	Y	Symbol. Field has same value as in client's order
54	Y	Side. Field has same value as in client's order
151	Y	Amount to be filled.
14	Y	Amount filled so far.
32	Y	Last fill amount if applicable.
31	Y	Last fill price if applicable.
6	Y	Average fill price if applicable.
44	Y	Price. Fill price if applicable.
38	Y	Order quantity. Field has same value as in client's order.
58	N	Text. Additional description if applicable.

Tag	Required	
11	Y	Client Order id. Field has same value as in client's order.

System always coping tags 54,55,11,38 from initial order.

Client can expect few scenarios:

1. If something is wrong, but message is correct from the FIX point of view, for example, invalid symbol, unsupported order type or so.

FIX engine will answer with

37= «N/A», 17= «N/A», 20=0, 150=8, 39=0, 58= error description text

2. If initial check is passed, but something going wrong while order execution, for example this symbol market is closed, or order quantity does not meet required conditions, liquidity provider reject, not enough funds:

Receive acknowledgment messages:

37= string value, 17= string value, 20=0, 150=0, 39=0

Receive reject message

37= «N/A», 17= «N/A», 20=0, 150=8, 39=0, 58= error description text

3. All good.

Receive acknowledgment messages:

37= string value, 17= string value, 20=0, 150=0, 39=0

Receive execution confirmation:

37= string value, 17= string value, 20=3, 150=2, 39=2

4. Partially filled IOC Limit order:

Receive acknowledgment messages:

37= string value, 17= string value, 20=0, 150=0, 39=0

Receive execution confirmation:

37= string value, 17= string value, 20=3, 150=2, 39=1, 32=<filled quantity>,

151=<leaves quantity >, 44=<fill price>

Canceled rest of order

37= string value, 17= string value, 20=3, 150=8, 39=4, 151=<leaves quantity, 58=text