CrossFinder Direct
FIX Specification Document

Introduction

Objective and Scope

The purpose of this document is to describe the FIX messages supported only for the Credit Suisse's CrossFinder Direct access. The document is specific to the trading of US Equities. All counterparties will need to certify their trading system with Credit Suisse in the UAT environment before being called production ready. It assumes prior knowledge and understanding of FIX Protocol specification that can be referenced at www.fixprotocol.org/specifications.

Credit Suisse FIX Connectivity Contact

Credit Suisse FIX Hotline: (212) 538-3491

Credit Suisse FIX team e-mail: fix.us@credit-suisse.com

Network Connectivity Overview

Credit Suisse is connected to all major network providers. Please call the Credit Suisse FIX Hotline to discuss your specific network requirements.

FIX Session Overview

LLDMA flow in only supported over FIX protocol 4.2. Following FIX messages are supported for incoming and outgoing flow.

Logon

The logon (MsgType A) is the first message sent by the Counterparty after the TCP connection is established.

Sequence Numbers

Sequence numbers, both inbound and outbound, will be reset to 1 every day 6:00 PM US EST. In case, you need a different recycle times for your FIX connection, please contact the Credit Suisse FIX connectivity team. A resend request should be sent by the counterparty in case a gap in sequence numbers is seen after any disconnect caused due to any reason including any network outage. Similarly Credit Suisse will issue a Resend Request to the Counterparty for messages that are missed. HeartbeatInterval must be specified by the Counterparty in the logon message. This value will be returned in the logon reply message. We recommend using 60 to 120 seconds as the HeartbeatInterval.

Resend Request and Sequence Reset

The counterparty should be able to process a Resend Request and Sequence Reset message as per standard FIX 4.2 protocol. In case of logout (intentional or unintentional) or disconnects due to any reason, all pending orders with Credit Suisse's Crossfinder will be cancelled. Once the session reconnects, the counterparty will receive the outs on those orders.

Heartbeat

A Heartbeat message should be sent if the agreed upon HeartbeatInterval has elapsed since the last message was sent.

Test Request

The HearbeatInterval that is specified in the Logon message will be used to make sure that your connection is alive and functioning. If inactivity is detected for a period longer than the HearbeatInterval + 1 second, CrossFinder will send a Test Request to determine if you are still active. If after another HearbeatInterval, there is still no activity, CrossFinder will send another test request. If there is still no activity after this additional HearbeatInterval, CrossFinder will immediately send a logout message and the connection will be closed. It is expected that similar logic will be used on your side in order to detect host activity.

Reject

Session level rejects are used to indicate violations of the session protocol, or missing fields.

Logout

A Logout message should be sent by the counterparty by 4:15 PM US EST to close the FIX session. Please contact the Credit Suisse FIX connectivity team in case you need a different recycle time.

Standard Message Header

TAG	Field Name	Comments
8	BeginString	FIX 4.2 – Must be first field in message.
9	BodyLength	Length of message following BodyLength field up to and including the delimiter.
35	MsgType	Third field in message.
49	SenderCompID	Will be assigned by Credit Suisse.
50	SenderSubID	Sub ID of the counterparty – optional – and decided during discussions.
56	TargetCompID	Will be assigned by Credit Suisse.
34	MsgSeqNum	Sequential sequence number for session.
43	PossDupFlag	Indicates a message resent from the admin level (has a duplicate sequence number). Default is "N". Used during outages or disconnects.
52	SendingTime	GMT date-time that message was sent.
122	OrigSendingTime	For messages with PossDupFlag="Y", indicates time that message was first sent.
115	OnBehalfOfCompID	Optional.
116	OnBehalfOfSubID	Optional.

Standard Message Trailer

TAG	Field Name	Comments
10	CheckSum	Modulo 256 checksum of all characters in message up to and including the delimiter preceding the CheckSum field.

New Order – Single

Following are the FIX fields that are supported for the new orders being sent to Credit Suisse.

TAG	Field Name	Comments
35	StandardMessageHeader	MsgType="D"
1	Account (optional)	Reflected back on execution reports associated with this order.
11	ClOrdId	Unique ID for the day. Should be 68 characters or less. Duplicate CliOrdIs's will be rejected.
18	ExecInst****	Execution instructions. The only acceptable value is 'f' signifying ISO order from Broker Dealers.
60	TransactTime	Time the order was initiated by the counterparty.
55	Symbol	Symbol (upper case).
65	SymbolSfx	
54	Side	Buy = "1" Sell = "2" Sell Short = "5"
38	OrderQty	Number of shares for this order.
210	MaxShow (optional)	Portion of OrderQty to display. The balance is reserve.
40	OrdType	Market = "1" Limit = "2"
44	Price	Limit Price for the Limit orders.
110	MinQty (optional)	Minimum order quantity.
47	Rule80A (optional)	Valid values as per the FIX protocol.
59	TimeInForce	"0" = DAY (expires at end of day) – Mandatory. "3" = IOC (portion not filled immediately is cancelled).
100	ExchDest (optional)	"CROS" = Credit Suisse Crossfinder
57	PriceImprovement (optional)**	"AGGRESSIVE" = 100% Price improvement (Default). Order will peg to aggressive side of the NBBO spread. "NEUTRAL" = Mid point or better. Order will peg to midpoint of the NBBO spread. "PASSIVE" = No Price Improvement. Order will peg to passive side of the NBBO spread.
9130	AbsolutePriceImprovement (optional)**	Absolute price improvement, in 0.1 penny increments. Default infinity (example 0.001).
9131	RelativePriceImprovement (optional)**	Relative price improvement in percentage and 10% increments (example 10 for 10%). Default 100%.
9136	PriceImprovementAdjustment (optional)***	Limit price adjustment in dollars.
9132	RoundLotExecutionFlag (optional)	Default 'N' i.e., false. "Y" = true "N" = false If this field is empty, then preconfigured value for the session is used. If a pre-configured value does not exist; default value of false is used.

** Note:
1. If either tag 9130 or tag 9131 is present, price improvement from tag 57 is ignored. In this case price improvement is minimum of AbsoultePriceImprovement (9130) and RelativePriceImprovement (9125). If all three tags (57, 9130, and 9131) are missing, default values for tag 9130 and 9131 are used in determining price improvement.
2. Tag 9130 can have a negative value. In this case the order can match only with ISO order. Note that if tag 9130 has negative value, tag 9131 must be empty; otherwise the order will be rejected.

*** Note:Tag 9136 is used to adjust limit price on new order. It may have up to 4 significant digits after the period and is treated as follows:
1. For bids (buy orders) this value is subtracted from the limit price when CrossFinder is calculating dynamic limit price.
2. For offers (sell orders) this value is added to the limit price when CrossFinder is calculating dynamic limit price.
3. For market orders this value is ignored.
4. The semantics of all other custom tags does not change and they can be combined with 9136.
   Examples:
   If NBBO is 100.01 - 100.02, bid LMT: 100.02, 9136 = 0.0090. The adjusted limit price is 100.02 - 0.0090 = 100.011
   If NBBO is 100.34 - 100.36, offer LMT: 100.35, 9136 = 0.0050. The adjusted limit is 100.35 + 0.0050 = 100.355

**** Note: ISO orders must not specify any price improvement tags (9130,9131,9136) otherwise it will be rejected. Only IOC orders can be designated as ISO.

Order Cancel Request

TAG	Field Name	Comments
35	StandardMessageHeader	MsgType="F"
11	ClOrdId	Day-unique ID chosen by the counterparty. 68 characters or less.
41	OrigClOrdID	ClOrdID of the order to cancel.
37	OrderId (optional)	OrderID supplied by Credit Suisse on the order acknowledgement.
60	TransactTime	Time cancel initiated/released.
55	Symbol	Symbol (upper case). Must match original order.
65	SymbolSfx	Must match original order if used.
54	Side	Buy = "1" Sell = "2" Sell Short = "5"

Cancel Reject

A Cancel Reject should not be used as an indication that the original order has been cancelled.

TAG	Field Name	Comments
35	MsgType	MsgType="9"
11	ClOrdID	ClOrdID from the Cancel.
41	OrigClOrdID	ClOrdID of the order that failed to be cancelled.
37	OrderId	Same value as tag 11 on Rejects.
39	OrdStatus	OrdStatus of order that failed to be cancelled.
102	CxlRejReason	All valid fix values plus "4" = Order Already Cancelled or Rejected or Filled "99" = Other
434	CxlRejectResponseTo	"1" = Order Cancel Request.
58	Text	Free form text message.

Execution Report

TAG	Field Name	Comments
35	StandardMessageHeader	MsgType="8"
52	SendingTime	GMT date-time that message was sent.
20	ExecTransType	"0" = New "1" = Cancel "2" = Correct "3" = Status
17	ExecID	Day-unique ID of execution.
19	ExecRefID	Only present when ExecTransType = Cancel (1) or Correct (2).
11	ClOrdID	ClOrdID of the order being accepted, executed or rejected, or ClOrdID of the cancel.
41	OrigClOrdID	ClOrdID of the order being cancelled.
37	OrderId	OrderId (supplied by Credit Suisse).
39	OrdStatus	State of order. "0" = New "1" = Partially Filled "2" = Filled "4" = Cancelled "5" = Replaced "8" = Rejected

103	OrdRejReason	Only when ExecType is Rejected (8). All valid Fix values and "92" = SecurityShortSellNotAllowed, Credit Suisse does not currently accept short sell orders in this security "99" = Other
1	Account	Value echoed back from order.
55	Symbol	Value echoed back from order.
65	SymbolSfx	Value echoed back from order.
54	Side	Value echoed back from order.
38	OrderQty	Value echoed back from order.
44	Price	Value echoed back from order.
59	TimeInForce	Value echoed back from order.
30	LastMkt	Market of execution for last fill. "X" = CrossFinder
32	LastShares	Quantity of shares traded on this message.
31	LastPx	Price on this message for only this number of shares.
14	CumQty	Cumulative quantity of shares executed for this order.
6	AvgPx	Average price of executions for this order weighted by trade size. Zero if CumQty is zero.
60	TransactTime	GMT date-time that transaction occured.
58	Text	If present, indicates reason for reject or cancel.
150	ExecType	"1" = Partial Fill "0" = New "2" = Fill "4" = Cancelled "8" = Rejected
151	LeavesQty	Quantity of shares open for the order.
132	BidPx (optional)**	For fills only. Bid at the time of execution.
133	OfferPx (optional)**	For fills only. Offer at the time of execution.
9200	LiquidityIndicator **	For fills only "A" = Add "R" = Remove "I" = ContraSelf "Z" = ContraRetail

** Note: Special fields BidPx, OfferPx, and LiquidityIndicator can be sent to pre-configured external client.

Business Reject

All application level messages that fulfill session level rules but violate business logic (e.g., invalid order type or invalid order quantity) will be rejected by sending ExecutionReport (MsgType = 8) with appropriate values for OrdStatus and ExecType.

Order Cancel/Replace Request

Credit Suisse does not support Order Cancel Replace Request for the CrossFinder Direct FIX platform.

Pending Cancel/Pending Replace

Credit Suisse does not send Pending Cancel or Pending Replace messages for the CrossFinder Direct FIX platform.

Symbology

CrossFinder will follow NYSE symbology for handling suffixes. Clients should specify suffixes in Suffix (tag 65) as per table below:

Type	Suffix (tag 65)	Examples
Series (or Class) A-T & V-Z	<v>	ZZZ/A
Series (or Class) A-T & V-Z When Issued	<v>WI	ZZZ/AWI
Preferred	PR	ZZZ/PR
Preferred Series A-T & V-Z	PR<v>	ZZZ/PRA
Preferred Series A-T & V-Z Called	PR<v>CL	ZZZ/PRACL
Preferred Series A-T & V-Z When Issued	PR<v>WI	ZZZ/PRAWI
Preferred When Issued	PRWI	ZZZ/PRWI
Preferred Called	PRCL	ZZZ/PRCL
Rights	RT	ZZZ/RT
Units (a combination of securities composed of two or more of warrants, common stocks, preferred stocks and/or bonds)	U	ZZZ/U
When Distributed	WD	ZZZ/WD
When Issued	WI	ZZZ/WI
Warrants	WS	ZZZ/WS
Warrants Series A-T & V-Z	WS<v>	ZZZ/WSA
Warrants When Issued	WSWI	ZZZ/WSWI

Note: <v> represents a character.

Appendix A: CrossFinder Price Improvement Instructions

Price improvement instructions are used to peg an order to NBBO. CrossFinder calculates (what it calls) a dynamic limit price based on order limit price (if any), price improvement instructions, and current market conditions. Relative price improvement is used to improve best bid (offer) by percentage of spread, while absolute price improvement is the actual amount (in cents) best bid (offer) is improved by. Please note, that both parameters are optional: relative price improvement is defaulted to 100%, absolute one is defaulted to infinity, so that if both are absent, the order behaves exactly like standard limit (market) order. It is also important to note both price improvements constitute a restriction on the dynamic limit price, so if both are present they are used with "and" condition: e.g., "improve by 40% of the spread but no more than 2 cents."

Important Note:

1. Regardless of price improvement instructions CrossFinder does not execute outside of NBBO(dynamic limit price is adjusted accordingly).

2. Regardless of price improvement instructions limit price is always honored by CrossFinder (dynamic limit price is adjusted accordingly).

3. Dynamic price is recalculated on every tick.

4. If neither price improvement instructions are specified, dynamic limit price is equal to limit price or market price.

Examples:

Bid: $99.50 Offer: $99.54
Order: Bid Limit $99.53, relative price improvement is 50%, no absolute price improvement.
Dynamic limit price is $99.52

Bid: $99.50 Offer: $99.54
Order: Bid Limit $99.53, relative price improvement is 50%, absolute price improvement is $0.01.
Dynamic limit price is $99.51

Bid: $99.50 Offer: $99.54
Order: Bid Limit $99.53, no relative price improvement, absolute price improvement is $0.01.
Dynamic limit price is $99.51

Bid: $99.50 Offer: $99.54
Order: Bid Limit $99.53, no relative price improvement, absolute price improvement is $0.05.
Dynamic limit price is $99.53

Bid: $99.50 Offer: $99.54
Order: Bid Limit $99.53, no relative price improvement, no absolute price improvement.
Dynamic limit price is $99.53

Bid: $99.50 Offer: $99.54
Order: Market, relative price improvement 80%, absolute price improvement is $0.05.
Dynamic limit price is $99.532

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