



CME Futures Functionality

Version: 1.1

Release: March 22, 2007

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1. Spread Functionality

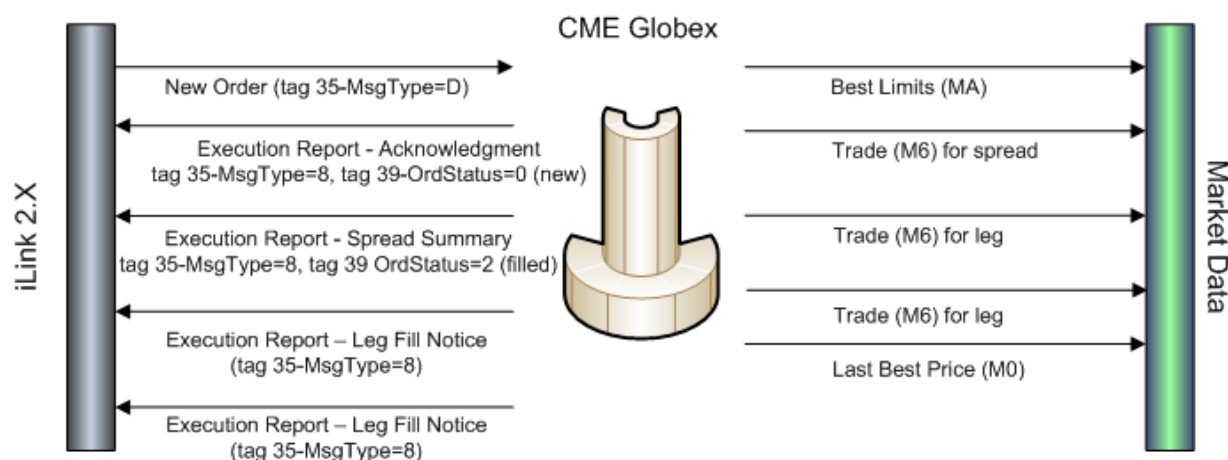
An outright futures instrument is a standardized electronically traded contract entailing the purchase or sale of a financial instrument or physical commodity for future delivery on a regulated futures exchange.

A futures spread instrument denotes the simultaneous purchase and sale of the same outright futures contract but for different contract months (i.e., buying a September CME S&P 500® futures contract and selling a December CME S&P 500 futures contract). This section describes functionality specific to CME futures contract trading on the CME Globex platform.

1.1 CME Futures Spreads

An Execution Report – Fill Notice (tag 35-MsgType=8) message is sent for each leg composing the spread instrument, in addition to the Execution Report – Fill Notice sent for the spread itself, upon spread trade execution. The CME Globex platform also sends a market data Trade (M6) message for the spread and for each leg of the spread.

The following diagram provides an example of the CME iLink 2.X and market data messages the CME Globex platform sends for a two-legged spread trade.



CME Globex Futures Spread Execution

1.1.1 Exceptions on Calendar Futures Spreads

1.1.1.1 CME FX Calendar Futures Spreads

CME Globex supports the 'FX' futures spread type to differentiate CME FX Calendar spreads from all other spreads types (SP) traded on the CME Globex platform. This value is transmitted in position 727-728 Strategy Type of the Instrument Creation (MO) message.

The FX spread listing convention for identifying side and contract differs from calendar spreads on other futures traded on the CME Globex platform, as shown in the following example:

Table 1.1. CME FX Spread vs. Standard Calendar Spread

Order	Action
Buy CME FX spread 6EU7-6EM7.	Buy back month (6EU7) / sell front month (6EM7)
Buy standard calendar spread.	Buy front month (M7) / sell back month (U7).

Due to tick differences between the spread and the underlying markets, FX Leg prices from Spread trades may be allowed at non-standard tick increments.

Table 1.2. Example of Non-Standard Tick Increment for a CME FX Spread

Instrument	Settlement Price	Last	Leg Prices from Spread
6AZ6-6AH7		13.5	---
6AZ7		7506	7503.5
6AH7	6AH7 7490	7493	7490*

*Nonstandard tick increment

1.1.1.2 CME Equity Calendar Futures Spread Execution

CME Globex broadcasts the Instrument Creation (MO) message for CME Equity future spreads with a value of '2' (i.e., non-implied instrument with leg messages) in position 777, Implied Spread Indicator. This value indicates that an Execution Report – Fill Notice (tag 35-MsgType=8) message is sent for each leg composing the spread instrument, in addition to the Execution Report – Fill Notice sent for the spread instrument itself, upon spread trade execution.

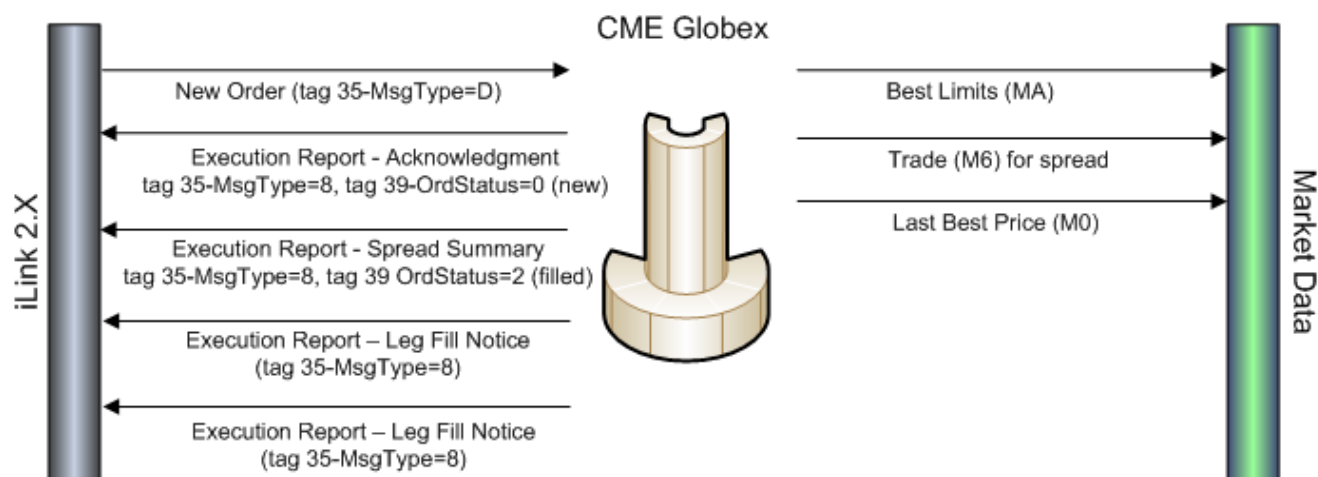
To accommodate different minimum ticks for CME Equity future spread contracts and the composite legs, the Execution Report – Fill Notice message for the CME Equity spread instrument supports a .05 tick and the Execution Report – Fill Notice message for each composite leg supports a .25 tick. The CME Globex platform broadcasts a market data Trade (M6) message for the spread only; no M6 is disseminated for the composite legs.

Table 1.3. Example of Non-Standard Tick Increment for a CME Globex Equity Spread

Instrument	Settlement Price	Last	Leg Prices from Spread
ESM7-ESU7		12.05	---
ESM7	SPM7 1246.00	1237.25	1246.00
ESU7		1245.00	1258.05*

*Nonstandard tick increment

The following diagram provides an example of the CME iLink 2.X and market data messages sent by the CME Globex platform for a two-legged CME Equity spread trade.



CME Globex Equity Futures Spread Execution

CME Equity Calendar Futures Spread Type

The CME Globex platform supports the 'EQ' futures spread type to differentiate CME EQ Calendar spreads from all other spreads types (SP) traded on the CME Globex platform. This value is transmitted in position 727-728 Strategy Type of the Instrument Creation (MO) message. The EQ spread listing convention for identifying side and contract differs from calendar spreads on other futures traded on the CME Globex platform, as shown in the following example:

Table 1.4. CME Equity Calendar Futures Spread Type

Order	Action
Buy CME Equity spread ESM7-ESU7	Buy back month (ESU7) / sell front month (ESM7)
Buy standard calendar spread.	Buy front month (M7) / sell back month (U7).

1.1.2 Effects of Implied Spreading on Order Execution

CME Globex broadcasts the Instrument Creation (MO) message for all futures spreads in position 777, Implied Spread Indicator with a value of '1' for implied or '2' for non-implied instrument with leg messages.

An implied spread order is an order created from individual outright orders available in the market. CME Globex performs Implied spreading to create synthetic spread orders in spread contracts and work synthetic orders in the individual leg markets at the same time.

Customers need to be aware of the following effects of Implied Spreading. When a spread is filled, multiple Execution Report messages are returned to the client for each fill:

- One Execution Report is sent for the spread with CME Default Account as the counterparty.
- One Execution Report is sent for each counterpart of the leg.

All execution notices for calendar spreads acting as butterfly spread legs display a Counterparty ID of the CME Default Account and the tag "Spread" so that front-end applications can process these messages correctly.

Table 1.5. Example A: Incoming Butterfly Trades against Implied IN Butterfly Created from Three Outright Legs

Execution Report Messages Received for Fill Matching an Implied Spread					
Description	Tag 107-Security-Desc	Tag 31-LastPx	Tag 32-Last-Shares	Tag 54-Side	Tag 37-OrderID
Summary Execution Report message for the spread.	GE:BF [U7-Z7-H8]	9	10	2	20061025000001
Description	Tag 107-Security-Desc	Tag 31-LastPx	Tag 32-Last-Shares	Tag 54-Side	Tag 37-OrderID
Execution Report message for the first leg.	GEU7	9810	10	2	20061025000001
Execution Report message for the second leg.	GEZ7	9805	20	1	20061025000001
Execution Report message for the third leg.	GEH8	9809	10	2	20061025000001

Table 1.6. Example B: Incoming Butterfly Trades against Implied IN Butterfly Created from Two Calendar Spreads

Execution Report Messages Received for Fill Matching an Implied Spread					
Description	Tag 107-Security-Desc	Tag 31-LastPx	Tag 32-Last-Shares	Tag 54-Side	Tag 37-OrderID
Summary Execution Report message for the spread.	GE:BF U7-Z7-H8]	3	10	1	20061025000001
Execution Report message for the first calendar spread.	GEU7-GEZ7	5	10	1	20061025000001
Execution Report message for the second calendar spread.	GEZ7-GEH8	2	10	2	20061025000001

Table 1.6. Example B: Incoming Butterfly Trades against Implied IN Butterfly Created from Two Calendar Spreads

Execution Report Messages Received for Fill Matching an Implied Spread					
Description	Tag 107-Security-Desc	Tag 31-LastPx	Tag 32-Last-Shares	Tag 54-Side	Tag 37-OrderID
Execution Report message for the first leg of the first calendar spread.	GEU7	9	10	1	20061025000001
Execution Report message for the second leg of the first calendar spread.	GEZ7	4	10	2	20061025000001
Execution Report message for the first leg of the second calendar spread.	GEZ7	4	10	2	20061025000001
Execution Report message for the second leg of the second calendar spread.	GEH8	2	10	1	20061025000001

The processing of stop-limit orders is slightly different for Implied-enabled instruments. After a stop-limit order is triggered, it is treated as a newly arriving limit order. It can be executed at all price levels better than or between the trigger and the limit prices. This behavior differs from the processing of non-implied instruments, which are executed only at price levels between the trigger and the limit prices.

Fields contained in the table below are important in matching the leg Execution Report messages to their summary Execution Report message: (e.g. SecurityDesc, LastPx, Side, ContraTrader, ContraBroker, and OrderID.)

Table 1.7. Differences in Leg and Summary Execution Report

Differences in Leg and Summary Execution Report				
Tag	Tag Name	Description	Included in Summary	Included in Leg
1	Account	Refer to iLink 2.X Message Specifications	X	
6	AvgPx	“ “	X	
11	ClOrdID	“ “	X	X
14	CumQty	“ “	X	

Table 1.7. Differences in Leg and Summary Execution Report

Differences in Leg and Summary Execution Report				
Tag	Tag Name	Description	Included in Summary	Included in Leg
17	ExecID	The value of this field in the leg execution reports differs from the value in the summary execution report.	X	X
20	ExecTransType	“ “	X	
55	Symbol	Contains the product group of the individual leg.	X	X
31	LastPx	Contains the fill price of the individual leg or spread.	X	X
32	LastShares	Quantity of contract units bought/sold on this fill.	X	X
37	OrderID	This field can be used to match the leg execution reports with the summary report.	X	X
38	OrderQty	“ “	X	
39	OrdStatus	“ “	X	
40	OrdType	“ “	X	
41	OrigClOrdID	“ “	X	
44	Price	“ “	X	
48	SecurityID	Contains the instrument identification (ISIN code) of the individual leg.	X	X
54	Side	This field contains the side of the individual leg.	X	X
59	TimInForce	“ “	X	
60	TransactTime	“ “	X	
75	TradeDate	“ “	X	
99	StopPx	“ “	X	

Table 1.7. Differences in Leg and Summary Execution Report

Differences in Leg and Summary Execution Report				
Tag	Tag Name	Description	Included in Summary	Included in Leg
107	SecurityDesc	This field contains the human readable instrument name of the individual leg.	X	X
150	ExecType	“ “	X	
151	LeavesQty	“ “	X	
167	SecurityType	“ “	X	X
337	ContraTrader		X	X
375	ContraBroker		X	X
432	ExpireDate	“ “	X	
9717	CorrelationCltOrdID	“ “	X	X

1.1.3 Implied Packs for CME Eurodollar Futures

CME Globex Implied Pack Trading provides customers trading CME Eurodollar futures greater market liquidity and improved prices. Implied trading allows Market Makers to generate liquidity in the underlying contracts with relatively low-risk spread contracts.

Implied trading will only apply to outright Packs and Pack spreads. The implied trading functionality will be consistent with existing rules and procedures from previous CME Globex releases.

- Instruments will consist of all front-month Packs for the first five years.
- Instruments will roll over the weekend prior to expiration of the front quarterly.
- Instruments will consist of the White, Red, Green, Blue, and Gold Packs for the lead quarter and all possible spreads.

1.1.3.1 Implied Pack Spreads

Implied spread functionality will imply the front month to front month Pack Calendar spreads through the Purple listings only (see table below). Packs, like CME Eurodollar futures, are designated by a color code that corresponds to their position on the yield curve. CME Eurodollar futures Packs available for implied trading are color-coded as follows:

Table 1.8. Color Code for CME Eurodollar Futures Packs available for Implied Trading

Color Code	Quarterly
White	1-4 (i.e. Z7 H8 M8 U8)
Red	5-8
Green	9-12

Table 1.8. Color Code for CME Eurodollar Futures Packs available for Implied Trading

Color Code	Quarterly
Blue	13-16
Gold	17-20
Purple	21-24

Note: On the Saturday prior to expiration, the expiring front month Pack is no longer implied, but outright Packs can be traded.

1.1.3.2 Implied Calendar Packs

This example uses Z5 as the first quarterly month.

Table 1.9. Implied Calendar Packs

White – Red Z5-Z6	Red – Green Z6-Z7	Green – Blue Z7-Z8	Blue – Gold Z8-Z9	Gold – Purple Z9-Z0
White – Green Z5-Z7	Red – Blue Z6-Z8	Gold – Green Z7-Z9	Blue – Purple Z8-Z0	
White – Blue Z5-Z8	Red – Gold Z6-Z9	Green – Purple Z7-Z0		
White – Gold Z5-Z9	Red – Purple Z6-Z0			
White – Purple Z5-Z0			Total: 15 Calendar Spreads	

Example

Implied Pack spreads generated from outright Pack orders:

- Buy 1 M05 White Pack: +1
- Sell 1 M06 Red Pack: +3.0
- Creates 1 implied bid White/Red Pack spread: - 2.0

1.1.3.3 Implied Outright Packs

Consistent with current implied functionality on the GE futures contracts, a combination of an outright Pack and a Pack spread will generate implied outright Pack orders.

Example: The following example creates an implied order in the Red Pack.

- Buy 1 M05 White Pack: +2.0
- Sell 1 M05 White/Red Pack Spread: +1.0

- Creates an implied 1 lot bid in the M06 Red Pack: + 1.0

Example: The following example creates an implied order in the White Pack.

- Sell 1 M06 Red Pack: + 2.0
- Sell 1 M05 White/Red Pack Spread: -1.0
- Creates an implied 1 lot offer in the M05 White Pack: + 1.0

1.1.3.4 Second Generation Implied Orders

With this release, orders created from a combination of at least one implied order and one outright order are generated (but not displayed) on the CME Globex platform.

Example: The following example creates an implied order in Red/Green spread.

First Generation:

- Buy 1 M05 White Pack: +3.0
- Sell 1 M05 White/Red Pack Spread: +1.0
- Creates an implied 1 lot bid in the M06 Red Pack: +2.0

Second Generation

- Sell 1 M05 Green Pack: +2.0
- Creates an implied 1 lot bid Red/Green spread: 0

Revision History

Initial Release	Version	Last Update	Author	Description
1/19/07	1.0	N/A	LM	Initial Release
1/19/07	1.1	3/22/07	LM	Corrected inaccurate cross-references and links.

NOTE: The cover page was updated to reflect CME Group branding. No technical changes were made.