

# Client System Impact

## Equity Futures Enhancement

Version: 1.2  
10/12/09

## Equity Futures Enhancements

In the second half of 2009, a number of enhancements were introduced for CME and CBOT Equity futures and future spreads on CME Globex. The messaging and functionality impacts are documented below.

This launch also resulted in reduced message response times. Already among the fastest in the industry, this upgrade reduced response times by 20 - 40% for CBOT Equity futures, and 40-50% for CME Equity futures.

Please note: as a result of the reduced message response times, bandwidth utilization in these futures markets may ultimately increase by as much as 20%.

	<b>New Release Launch</b>	<b>Mock Trading Session</b>	<b>Production Launch</b>
CBOT Equity Futures	Monday, June 29	Saturday, August 22	Sunday, August 30
CME Equity Futures	Monday, August 3	Not Available	Sunday, October 4

### 1.0 Functionality changes

#### 1.1 FIX/FAST Market Data Trade Reporting

With this launch, trades are now reported via FIX/FAST market data at a much more granular level.

Previously, data from a trade event involving multiple orders at the same price were reported mostly in two data blocks. Now, trade events are reported with greater granularity. For a single trade event, a trade data block will be sent for each resting order. This provides customers with better visibility into market activity.

Please note – this does not represent a change to the market activity or trade matching functionality. This behavior is currently in place for the FX futures and all options markets.

#### 1.2 Cancel/Replace Request

Cancel/Replace behavior changed in regards to tag 37-OrderID. As shown below, tag 37-OrderID is not modified for a Cancel/Replace. Previously, this tag was populated with a new value for the Cancel/Replace Confirmation.

**Please note:** for Equity futures, tag 38-OrderQty now must be populated with an order quantity greater than 0 in all Cancel/Replace Request messages, per FIX standards. A Cancel/Replace Request with tag 38=0 will be rejected with the following message in tag 58-Text:

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**Business Reject: Required Field Missing 'Quantity less than 1: '0' tag: 38'**

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### Current Cancel/Replace Behavior

#### → New Order

- Tag 35-MsgType=D
- Tag 11-ClOrdID=300935830118

#### ← Acknowledgement

- Tag 35=8
- Tag 39-OrdStatus=0
- Tag 11=300935830118
- Tag 37-OrderID=20081203000041

#### → Cancel/Replace

- Tag 35=G
- Tag 37=20081203000041
- Tag 11=300935830118

#### ← Cancel/Replace Confirmation

- Tag 35=8
- Tag 39=5
- Tag 37=**20081203000042**
- Tag 11=300935830118

### New Cancel/Replace Behavior

#### → New Order

- Tag 35-MsgType=D
- Tag 11-ClOrdID=300935830118

#### ← Acknowledgement

- Tag 35=8
- Tag 39-OrdStatus=0
- Tag 11=300935830118
- Tag 37-OrderID=504137434

#### → Cancel/Replace

- Tag 35=G
- Tag 37=**504137434**
- Tag 11=300935830118

#### ← Cancel/Replace Confirmation

- Tag 35=8
- Tag 39=5
- Tag 37=**504137434**
- Tag 11=300935830118

### 1.3 In-Flight Fill Mitigation (IFM)

Previously for Equity futures, customer systems could submit a Cancel/Replace Request (tag 35=G) message with the IFM value flagged Y or N. As of this launch, customer systems must ensure a consistent value for tag 9768-OFMOverride. The value set in this tag (Y, N or not included) in the initial Cancel/Replace message for a given order must be the same in all subsequent Cancel/Replace messages within the same order sequence.

## 2.0 Timestamps in CME Globex Messaging

In both iLink and FIX/FAST messaging, UTTimeStamps and UTTimeOnly types may, but do not always, include milliseconds, as defined in the FIX protocol.

FIX Protocol defines **UTTimeStamps** as the time/date combination represented in UTC (Universal Time Coordinated, also known as GMT) in either YYYYMMDD-HH:MM:SS (whole seconds) or YYYYMMDD-HH:MM:SS.sss (milliseconds); and **UTTimeOnly** as the time-only represented in UTC (Universal Time Coordinated, also known as GMT) in either HH:MM:SS (whole seconds) or HH:MM:SS.sss (milliseconds) format.

Equity futures now send milliseconds in iLink timestamps, as options and FX futures do today. FIX/FAST timestamps will always default to “000” milliseconds and should not be relied upon by customers.

All other futures on CME Globex will not send milliseconds in the iLink and FIX/FAST timestamps. Customer applications must be able to support both formats.

## 3.0 FIX tag 38-OrderQty Change for Cancel Confirmation Execution Reports

In iLink Execution Reports for cancel confirmations (tag 35-MessageType=8, tag 39-OrdStatus=4), tag 38-OrderQty now returns the original order quantity for all cancels, including partially filled orders.

Previously, tag 38-OrderQty returned the working order quantity only if the order had been partially filled.

### Previous tag 38-OrderQty Behavior

#### **New Order (tag 35=D)**

```
8=FIX.4.2|9=247|35=D|34=21|49=Y01555N|50=555|52=20090131-
15:03:02.548|56=CME|142=555|43=N|57=G|97=N|1=123456|11=ORD8595413485947|21=1|
38=100|40=2|44=49730|54=1|59=0|60=20090131-
15:03:02.548|77=O|55=ZD|107=ZDZ9|109=230|167=FUT|204=1|9701=123456|9702=1|9717=
65535|10=138|
```

#### **Execution Report, Partial Fill (tag 35=8, tag 39=1)**

```
8=FIX.4.2|9=401|35=8|34=34|369=22|52=20090131-
15:03:08.786|49=CME|50=G|56=Y01555N|57=555|1=123456|6=0|11=ORD8595413485947|14
=20|17=09400120090131090308TN0000003|20=0|31=49730|32=20|37=20090131000005|38
=100|39=1|40=2|41=0|44=49730|48=CME008046336|54=1|55=ZD|59=0|60=20090131-
15:03:08|75=20090131|107=ZDZ9|150=1|151=80|167=FUT|337=TRADE|375=CME000A|432=
20090131|442=1|527=IY011qmae2dr200901310000003|1057=N|9717=65535|10=154|
```

#### **Order Cancel Request (tag 35=F)**

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8=FIX.4.2|9=199|35=F|34=36|49=Y01555N|50=555|52=20090131-  
 15:09:18.470|56=CME|142=555|43=N|57=G|97=N|11=ORD8595413485947|37=20090131000  
 005|41=1234|48=123456|54=1|60=20011017-  
 14:22:00.260|107=ZDZ9|167=FUT|9717=17935|10=005|

### Execution Report, Cancel Confirmation (tag 35=8, tag 39=4)

8=FIX.4.2|9=298|35=8|34=49|369=36|52=20090131-  
 15:09:18.488|49=CME|50=G|56=Y01555N|57=555|1=123456|6=0|11=ORD8595413485947|14  
 =0|17=09700020090131090918|20=0|37=20090131000005|**38=80**|39=4|40=2|41=1234|44=4  
 9730|48=CME008046336|54=1|55=ZD|59=0|60=20090131-  
 15:09:18|107=ZDZ9|150=4|151=0|167=FUT|432=20090131|9717=17935|10=043|

## New tag 38-OrderQty Behavior

### New Order (tag 35=D)

8=FIX.4.2|9=251|35=D|34=348|49=Y01555N|50=555|52=20090131-  
 17:21:11.142|56=CME|142=555|43=N|57=G|97=N|1=123456|11=ORD8595413486039|21=1|  
**38=100**|40=2|44=50|54=1|59=0|60=20090131-17:21:11.142|77=O|55=ZD|107=ZDZ9  
 |109=230|167=FUT|204=1|9701=123456|9702=1|9717=65535|10=065|

### Execution Report, Partial Fill (tag 35=8, tag 39=1)

8=FIX.4.2|9=385|35=8|34=620|369=349|52=20090131-  
 17:21:31.955|49=CME|50=G|56=Y01555N|57=555|1=123456|6=0|11=ORD8595413486039|14  
 =20|17=54233:24TN0000001|20=0|31=50|32=20|37=5485336505|**38=100**|39=1|40=2|41=0|  
 44=50|48=CME003610839|54=1|55=ZD|59=0|60=20090131-  
 17:21:31.911|75=20090131|107=ZDZ9|150=1|151=80|167=FUT|337=TRADE|375=CME000A|4  
 32=20090131|442=1|527=IY011qmae2mu200901311|1057=N|9717=65535|10=167|

### Order Cancel Request (tag 35=F)

8=FIX.4.2|9=202|35=F|34=355|49=Y01555N|50=555|52=20090131-  
 17:24:14.782|56=CME|142=555|43=N|57=G|97=N|11=ORD8595413486039|37=5485336505|  
 41=1234|48=123456|54=1|60=20011017-  
 14:22:00.260|107=ZDZ9|167=FUT|9717=17935|10=172|

### Execution Report, Cancel Confirmation (tag 35=8, tag 39=4)

8=FIX.4.2|9=292|35=8|34=627|369=355|52=20090131-  
 17:24:14.783|49=CME|50=G|56=Y01555N|57=555|1=123456|6=0|11=ORD8595413486039|14  
 =0|17=54233:26|20=0|37=5485336505|**38=100**|39=4|40=2|41=1234|44=50|48=CME0036108  
 39|54=1|55=ZD|59=0|60=20090131-  
 17:24:14.780|107=ZDZ9|150=4|151=0|167=FUT|432=20090131|9717=17935|10=250|

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### 4.0 iLink Messaging Format Changes

#### 4.1 FIX tag 17-ExecID

For all Execution Reports, tag 17-ExecID remains unique per instrument per session. However, the value is no longer fixed length, and may be between 1 and 19 characters long.

The Execution Report Fill (tag 35-MessageType=8, tag 39-OrdStatus=1 or 2) and Trade Cancellation (tag 35=8, tag 39=H) messages still contain a Trade Number (TN) value in tag 17-ExecID.

Please note: Customer systems should only parse or reference the value in this tag following the "TN" in the Fill messages. For example, tag 17=00002220060918140926TN**0000002**.

#### Previous Format Examples: tag 17-ExecID

##### **Buy Side Order (tag 35=D)**

```
8=FIX.4.2|9=215|35=D|34=3988|49=NNM000N|50=XXXX|52=20081203-
21:06:16|56=CME|57=G|142=MySenderLocationID|1=MyAccount|11=ORD1725|21=1|38=1|4
0=2|44=12668|54=1|55=ZD|59=0|60=20081203-
1:06:16|107=ZDZ9|167=FUT|204=1|9702=1|9717=ORD1724|10=053|
```

##### **Order Acknowledgement (tag 35=8)**

```
8=FIX.4.2|9=291|35=8|34=748|369=3988|52=20081203-
21:06:16.386|49=CME|50=G|56=NNM000N|57=XXXX|1=MyAccount|6=0|11=ORD1725|14=0|
17=62400020081203150616|20=0|37=20081203090476|38=1|39=0|40=2|41=0|44=1266848=
CME000175380|54=1|55=ZD|59=0|60=20081203-
21:06:16|107=ZDZ9|150=0|151=1|167=FUT|432=20081203|9717=D1724|10=166|
```

##### **Fill Notice (tag 35=8)**

```
8=FIX.4.2|9=393|35=8|34=749|369=3988|52=20081203-
21:06:16.387|49=CME|50=G|56=NNM000N|57=XXXX|1=MyAccount|6=0|11=ORD1725|14=1|
17=62400120081203150616TN0006053|20=0|31=12668|32=1|37=20081203090476|38=1|39
=2|40=2|41=0|44=12668|48=CME000175380|54=1|55=ZD|59=0|60=20081203-
21:06:16|75=20081203|107=ZDZ9|150=2|151=0|167=FUT|337=TRADE|375=CME000A|432=2
0081203|442=1|527=INNM1o5wi6zb200812030006053|1057=Y|9717=D1724|10=101|
```

#### New Format Examples: tag 17-ExecID

##### **Buy Side Order (tag 35=D)**

```
8=FIX.4.2|9=218|35=D|34=4017|49=NNM000N|50=XXXX|52=20081203-
21:19:05|56=CME|57=G|142=MySenderLocationID|1=MyAccount|11=ORD1739|21=1|38=1|4
0=2|44=36|54=1|55=ZD|59=0|60=20081203-
21:19:05|107=ZDZ8|167=FUT|204=1|9702=1|9717=ORD1738|10=219|
```

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### Order Acknowledgement (tag 35=8)

8=FIX.4.2|9=287|35=8|34=791|369=4017|52=20081203-  
 21:19:05.155|49=CME|50=G|56=NNM000N|57=XXXX|1=MyAccount|6=0|11=ORD1739|14=0|  
**17=52207:2296193**|20=0|37=5253678296|38=1|39=0|40=2|41=0|44=36|48=CME003977162|  
 54=1|55=ZD|59=0|60=20081203-  
 21:19:05.154|107=ZDZ9|150=0|151=1|167=FUT|432=20081203|9717=D1738|10=080|

### Fill Notice (tag 35=8)

8=FIX.4.2|9=380|35=8|34=793|369=4018|52=20081203-  
 21:19:13.913|49=CME|50=G|56=NNM000N|57=XXXX|1=MyAccount|6=0|11=ORD1739|14=1|  
**17=52207:2296195TN0000001**|20=0|31=36|32=1|37=5253678296|38=1|39=2|40=2|41=0|44  
 =36|48=CME003977162|54=1|55=ZD|59=0|60=20081203-  
 21:19:13.845|75=20081203|107=ZDZ9|150=2|151=0|167=FUT|337=TRADE|375=CME000A|43  
 2=20081203|442=1|527=INNM1o5wi704200812031|1057=N|9717=D1738|10=181|

## 4.2 FIX tag 37-OrderID

For all Execution Report (tag 35=8) and Cancel Reject (tag 35=9) messages, this tag remains a unique order identifier assigned by CME Globex per instrument per session. However, the value is no longer fixed length, and may be between 1 and 19 characters long.

### Previous Format Examples: tag 37-OrderID

#### Buy Side Order (tag 35=D)

8=FIX.4.2|9=215|35=D|34=3988|49=NNM000N|50=XXXX|52=20081203-  
 21:06:16|56=CME|57=G|142=MySenderLocationID|1=MyAccount|11=ORD1725|21=1|38=1|4  
 0=2|44=12668|54=1|55=ZD|59=0|60=20081203-  
 1:06:16|107=ZDZ9|167=FUT|204=1|9702=1|9717=ORD1724|10=053|

#### Order Acknowledgement (tag 35=8)

8=FIX.4.2|9=291|35=8|34=748|369=3988|52=20081203-  
 21:06:16.386|49=CME|50=G|56=NNM000N|57=XXXX|1=MyAccount|6=0|11=ORD1725|14=0|  
 17=62400020081203150616|20=0|**37=20081203090476**|38=1|39=0|40=2|41=0|44=1266848=  
 CME000175380|54=1|55=ZD|59=0|60=20081203-  
 21:06:16|107=ZDZ9|150=0|151=1|167=FUT|432=20081203|9717=D1724|10=166|

#### Fill Notice (tag 35=8)

8=FIX.4.2|9=393|35=8|34=749|369=3988|52=20081203-  
 21:06:16.387|49=CME|50=G|56=NNM000N|57=XXXX|1=MyAccount|6=0|11=ORD1725|14=1|  
 17=62400120081203150616TN0006053|20=0|31=12668|32=1|**37=20081203090476**|38=1|39  
 =2|40=2|41=0|44=12668|48=CME000175380|54=1|55=ZD|59=0|60=20081203-



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21:06:16|75=20081203|107=ZDZ9|150=2|151=0|167=FUT|337=TRADE|375=CME000A|432=20081203|442=1|527=INNM1o5wi6zb200812030006053|1057=Y|9717=D1724|10=101|

### New Format Examples: tag 37-OrderID

#### **Buy Side Order (tag 35=D)**

8=FIX.4.2|9=218|35=D|34=4017|49=NNM000N|50=XXXX|52=20081203-21:19:05|56=CME|57=G|142=MySenderLocationID|1=MyAccount|11=ORD1739|21=1|38=1|40=2|44=36|54=1|55=ZD|59=0|60=20081203-21:19:05|107=ZDZ9|167=FUT|204=1|9702=1|9717=ORD1738|10=219|

#### **Order Acknowledgement (tag 35=8)**

8=FIX.4.2|9=287|35=8|34=791|369=4017|52=20081203-21:19:05.155|49=CME|50=G|56=NNM000N|57=XXXX|1=MyAccount|6=0|11=ORD1739|14=0|17=52207:2296193|20=0|**37=5253678296**|38=1|39=0|40=2|41=0|44=36|48=CME003977162|54=1|55=ZD|59=0|60=20081203-21:19:05.154|107=ZDZ9|150=0|151=1|167=FUT|432=20081203|9717=D1738|10=080|

#### **Fill Notice (tag 35=8)**

8=FIX.4.2|9=380|35=8|34=793|369=4018|52=20081203-21:19:13.913|49=CME|50=G|56=NNM000N|57=XXXX|1=MyAccount|6=0|11=ORD1739|14=1|17=52207:2296195TN0000001|20=0|31=36|32=1|**37=5253678296**|38=1|39=2|40=2|41=0|44=36|48=CME003977162|54=1|55=ZD|59=0|60=20081203-21:19:13.845|75=20081203|107=ZDZ9|150=2|151=0|167=FUT|337=TRADE|375=CME000A|432=20081203|442=1|527=INNM1o5wi704200812031|1057=N|9717=D1738|10=181|

### **4.3 FIX tag 9770-EngineQuoteReqID**

In response to a Quote Request (tag 35-R) message, CME Globex sends a Quote Acknowledgement (tag 35-b) message with tag 9770-ExchangeQuoteReqID containing a unique value. This value is variable length and may contain as little as 1 character.

### Previous Format Examples: tag 9770-EngineQuoteReqID

#### **Request for Quote (tag 35=R)**

8=FIX.4.2|9=130|35=R|34=4418|49=NNM000N|50=XXXX|52=20081204-16:42:47.231|56=CME|57=G|142=MySenderLocationID|131=QR1750|146=1|55=ZD|107=ZDZ9|167=FUT|9943=1|10=119|

#### **Quote Acknowledgement (tag 35=b)**

8=FIX.4.2|9=116|35=b|34=1203|369=4418|52=20081204-16:42:47.434|49=CME|50=G|56=NNM000N|131=QR1750|297=0|**9770=CME00017538010424742577**|10=068

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### New Format Examples: tag 9770-EngineQuoteReqID

#### **Request for Quote (tag 35=R)**

8=FIX.4.2|9=136|35=R|34=4423|49=NNM000N|50=XXXX|52=20081204-  
16:45:13.028|56=CME|57=G|142=MySenderLocationID|131=QR1751|146=1|55=ZD|107=ZDZ9  
|167=FUT|9943=1|10=238|

#### **Quote Acknowledgement (tag 35=b)**

8=FIX.4.2|9=118|35=b|34=1208|369=4423|52=20081204-  
16:45:13.134|49=CME|50=G|56=NNM000N|57=XXXX|131=QR1751|297=0|**9770=CME0016252**  
**391**|10=226|