

CME Globex[®] Platform

Mass Quote Governor

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1. Introduction

Mass Quote Governor limits the rate at which firms can submit mass quotes. Excessive mass quotes impact CME Group trading engines and result in excessive amounts of market data, which impacts the customer. Mass Quote Governor eases the bandwidth and processing constraints on CME Group and firms receiving market data. This allows CME Group to provide a more stable and reliable market. In conjunction with Mass Quote Governor, CME Group continues to upgrade iLink and MDP infrastructure.

1.1 Overview

Mass Quote Governor measures the number of quotes per second (QPS) for each Market Maker mass quote enabled iLink session. The QPS is measured during a CME Group defined time interval. If a firm exceeds their allotted QPS as measured over the defined time interval, subsequent mass quote messages are rejected during the next time interval. When the Mass Quote Governor is triggered, mass quote Cancel by Instrument, by Group, and Cancel All is not subjected to Mass Quote Governor functionality and is not rejected.

Though Mass Quote Governor has the capability of measuring mass quote messages per second, this document discusses examples of mass quote, quote entries per second.

1.2 Functionality

For every mass quote received, CME Group calculates the time difference between the current message (Tx) and the first message received at the start of the time interval (T0) and verifies whether the difference is greater than or equal to three seconds. If the time difference is less than three seconds, there is no action taken and CME Group continues to accept quotes. If the time difference is greater than three seconds, CME Group counts the number of messages received from T0 to Tx and averages that over the time interval.

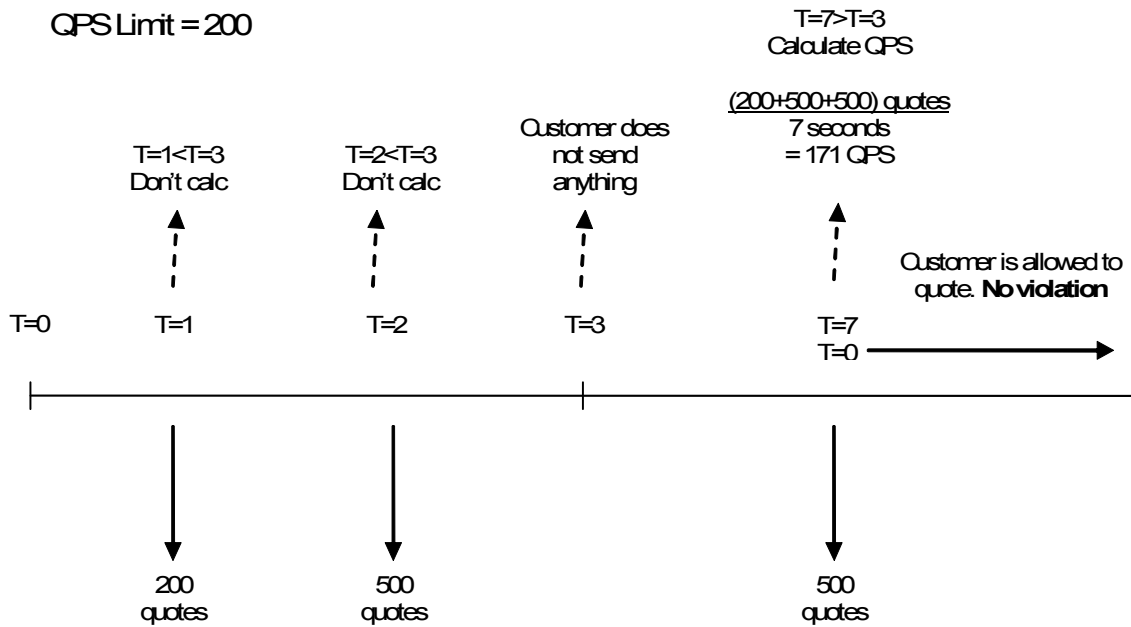
If the average QPS calculated exceeds the allowed QPS, the triggering quote and all quotes are rejected for at least the next three seconds. If the average QPS calculated does not exceed the allowed QPS, customers are allowed to continue quoting and the process continues. A three second interval is used as a minimum interval because Mass Quote Governor is an **event-driven** application. At the end of three seconds there is no way for CME Group to know that the time interval has ceased and it should lift the reject restriction. Instead, it waits for a message to arrive, at which point it performs the calculation mentioned above.

CME Group first checks for the greater than or equal to three second time interval. If the criteria is met, an average QPS calculation is performed and the quote message is sent through only if the QPS level is below the set threshold. If a customer continues to exceed the threshold level, even during the reject period, quotes are rejected again for at least the next three seconds. The timer is reset as T0 every time a message received is beyond the three second interval verification period.

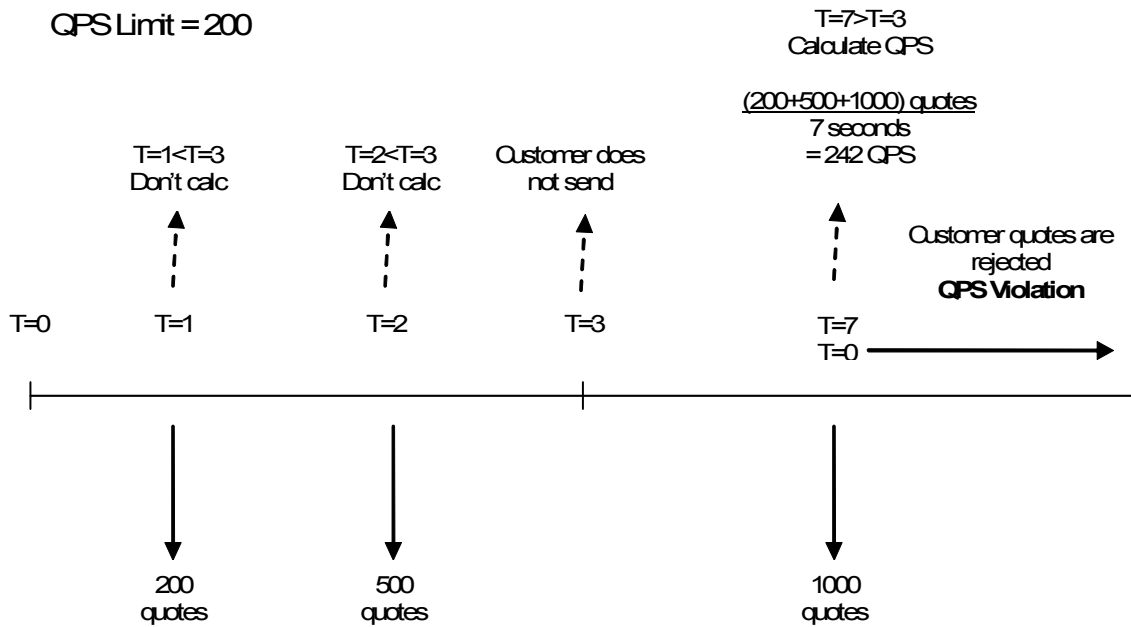
The following are examples based on the minimum three second lockout.

Note: The examples in this document show the logic used to calculate inbound mass quote message rates. There is also functionality to govern inbound flow at a quote level, and the same logic is used to calculate inbound quote entry rates. Customers can receive rejects on mass quote messages due to either of the two violations (whichever occurs first). The reject code and text describes the reason.

1.2.1 Example 1: No Lockout, 200QPS



1.2.2 Example 2: Lockout, 200QPS



During the minimum three second lockout:

- Quote messages will receive a session level reject
- CME Group will accept customer cancels
- CME Group will continue to count the quotes received in this period
- At T=3 or after (based on when the next message is received), CME Group will calculate the quotes received so far and their average, and check them against the allowable QPS limit. If the customer is within the limit, the reject restriction is lifted and they are allowed to quote. If the customer is outside the QPS limit, quotes are rejected for another three second minimum.

The following is an example of a session level reject error message when Mass Quote Governor is triggered.

```
iLink Quote Governor initiated Reject due to exceeding [Mass Quote Message]
limit. Current QPS:x
```

The error message specifies whether the quote was rejected due to the number of mass quote messages or the number of mass quote, quote entries.

Note: The number of mass quote messages is counted first. Thus, if the threshold for the number of mass quote messages is exceeded, the message is rejected, regardless if the threshold for the number of quotes sent has also been exceeded or not.

Table1. 1. Session Level Reject Message

Tag	Field Name	Req'd	Comments
	<MessageHeader>	Y	<u>MsgType</u> <35> = 3
45	<u>RefSeqNum</u>	Y	<u>MsgSeqNum</u> <34> of rejected message
371	<u>RefTagID</u>	N	<u>QuoteID</u> <117> of the FIX message being rejected
372	<u>RefMsgType</u>	N	The <u>MsgType</u> <35> of the FIX message being rejected
373	<u>SessionRejectReason</u>	N	Code to identify reason for a session-level <u>Reject</u> <3> message. Possible values can be 70 for mass quote message violations and 71 for mass quote, quote entry violations.
58	<u>Text</u>	N	Where possible, message to explain reason for rejection
	<Message Trailer>	Y	

2. Exceptions and Other Information

Firms should keep the following in mind when developing to accommodate the Mass Quote Governor:

- While setting the quantities to zero in a quote entry will delete the quote entry, the Mass Quote Governor will reject the mass quote. This is because CME Group recognizes that as an actual quote, thus it is subjected to the Mass Quote Governor. As a result, firms should use one of the three mass quote cancel messages to cancel quotes.
- By default, CME Group measures quotes as a bid/ask pair = 1 quote. If a customer quotes only one side, it will still be counted as one quote.
- CME Group will set the measurement threshold and the QPS limit per session. This will be communicated to firms prior to the roll-out of the functionality.

Revision History

Initial Release	Version	Last Update	Author	Description
4/25/08	1.0	N/A	LM	Initial Release