MDP 3.0 - Conflation Processing

This section outlines functionality for the CME MDP Conflated UDP and CME MDP Conflated TCP market data groups. Conflated market data combines multiple updates within an interval to a single event. The interval is reset once MDP messages are published. The conflation interval is a configurable value set at the market segment level (tag 1300-MarketSegmentID in the Security Definition tag 35-MsgType=d). Messages that are not conflated will be sent real-time and will flush any queued conflated messages. The following table outlines which messages are subject to market data conflation:

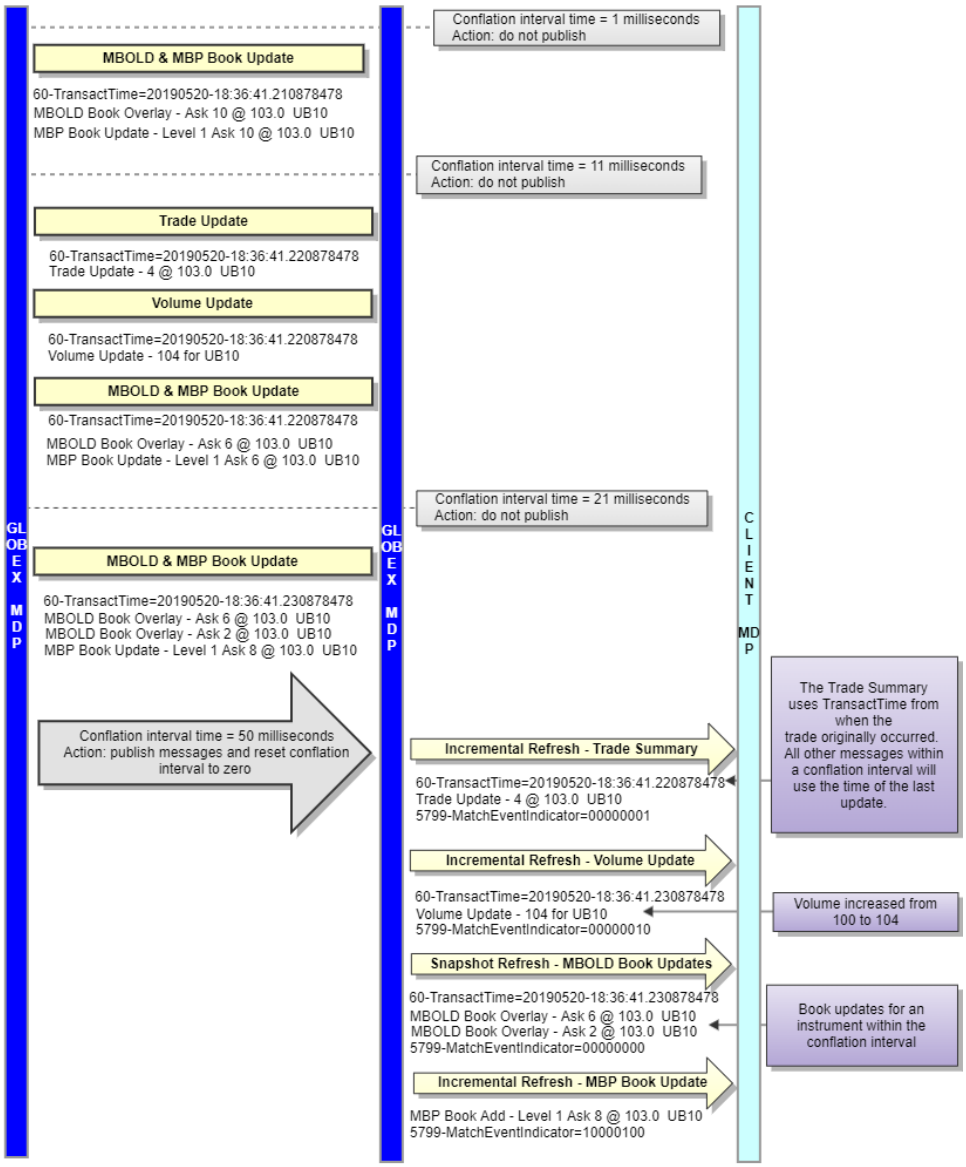
Message	Conflated
Trade Summary	Yes
Electronic Volume	Yes
Market by price book updates (MBP)	Yes
Market By Order Limited Depth (MBOLD)	Yes
Implied Book	Yes
Session Stats	Yes
Security Definitions	No
Security Status	No
Limits and Banding	No
Channel Reset	No
Collateral	No

Conflated market data processing will follow standard CME Globex event ordering. The trade summary will use the real-time tag 60-TransactTime; all other conflated messages will use the last event tag 60-TransactTime. Non-conflated messages will use a real-time tag 60-TransactTime. Order entry on CME Globex is not subject to conflation.

Unless otherwise noted, the following examples assume an empty book and the conflation interval is set to 50 milliseconds. Additionally, for the examples below, message performance is for illustrative purposes only. Actual production message performance on CME Globex will differ.

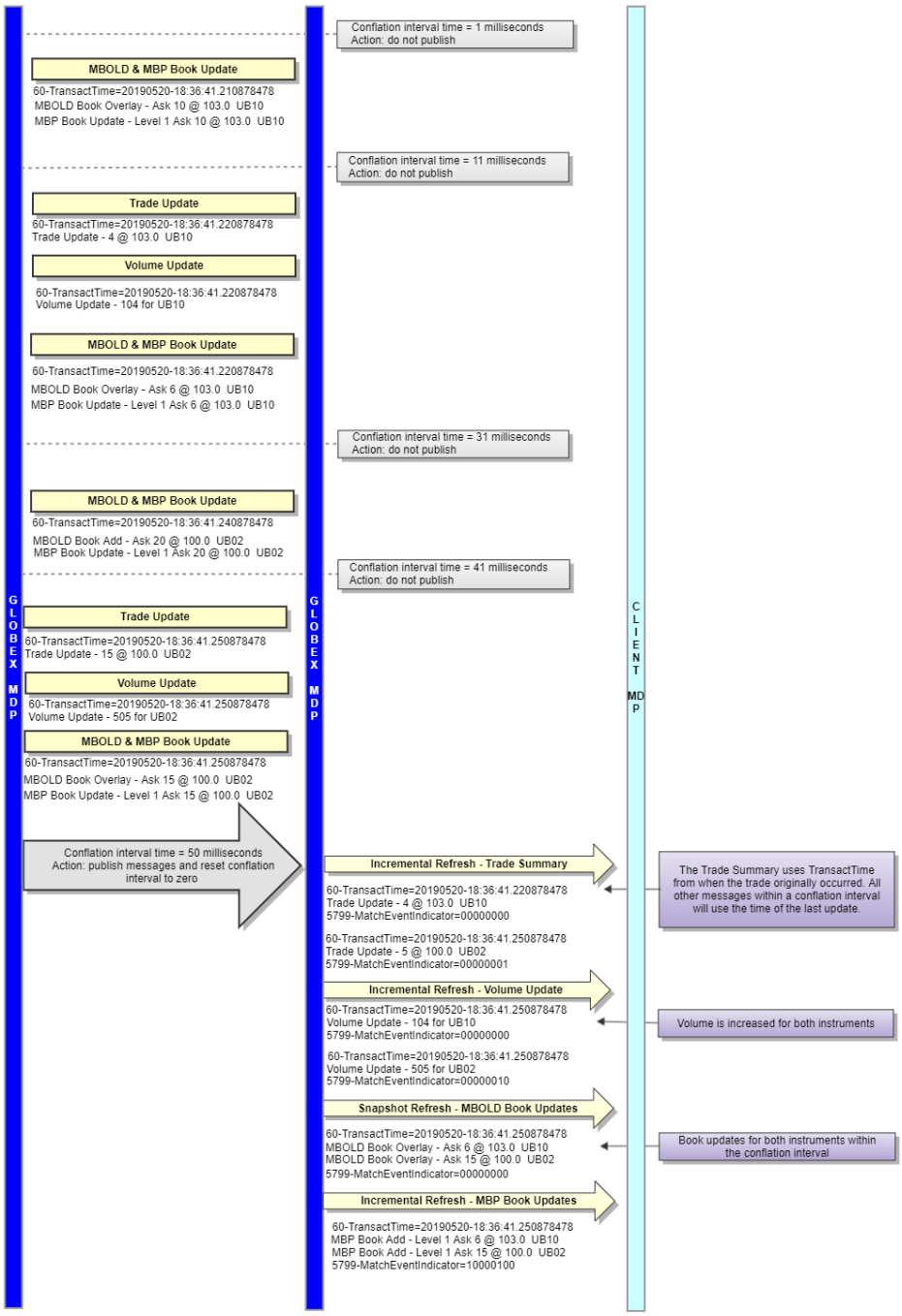
Example 1 - Multiple Updates for Single Instrument

The following example illustrates conflation for a single instrument with multiple updates.



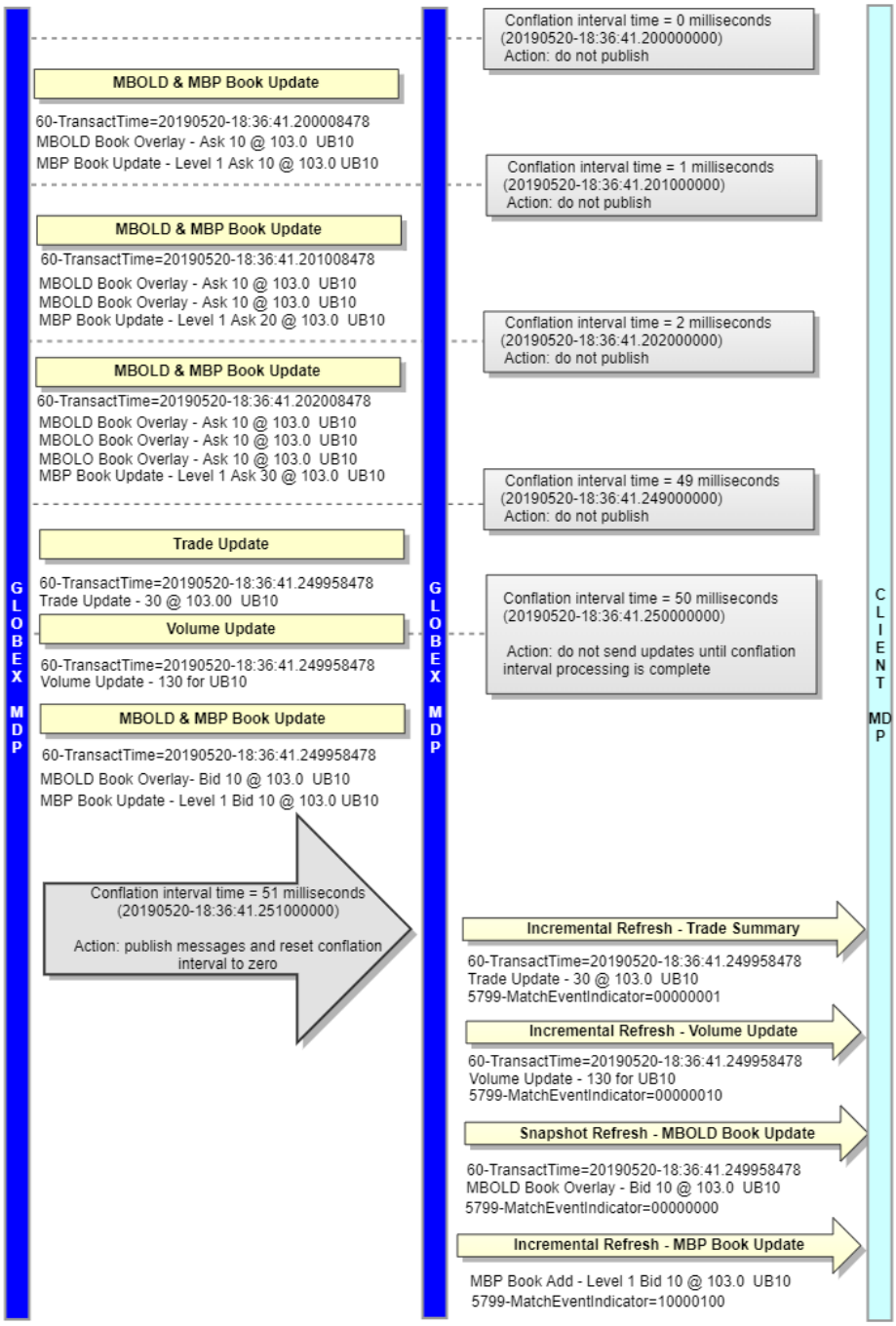
Example 2 - Multiple Updates for Multiple Instruments

The following example illustrates conflation with multiple updates and multiple instruments.



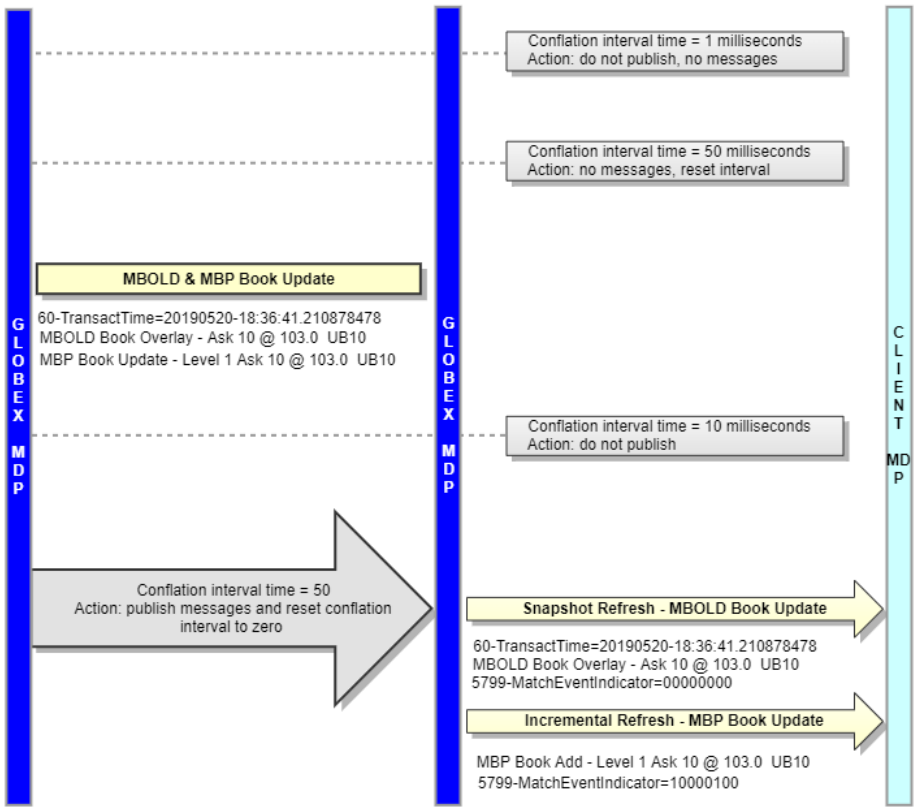
Example 3 - Event Exceeds Conflation Interval

In this example, a market data event exceeds the 50 millisecond conflation interval. When the conflation interval is exceeded due to additional processing, MDP 3.0 waits until the event is complete before publishing messages.



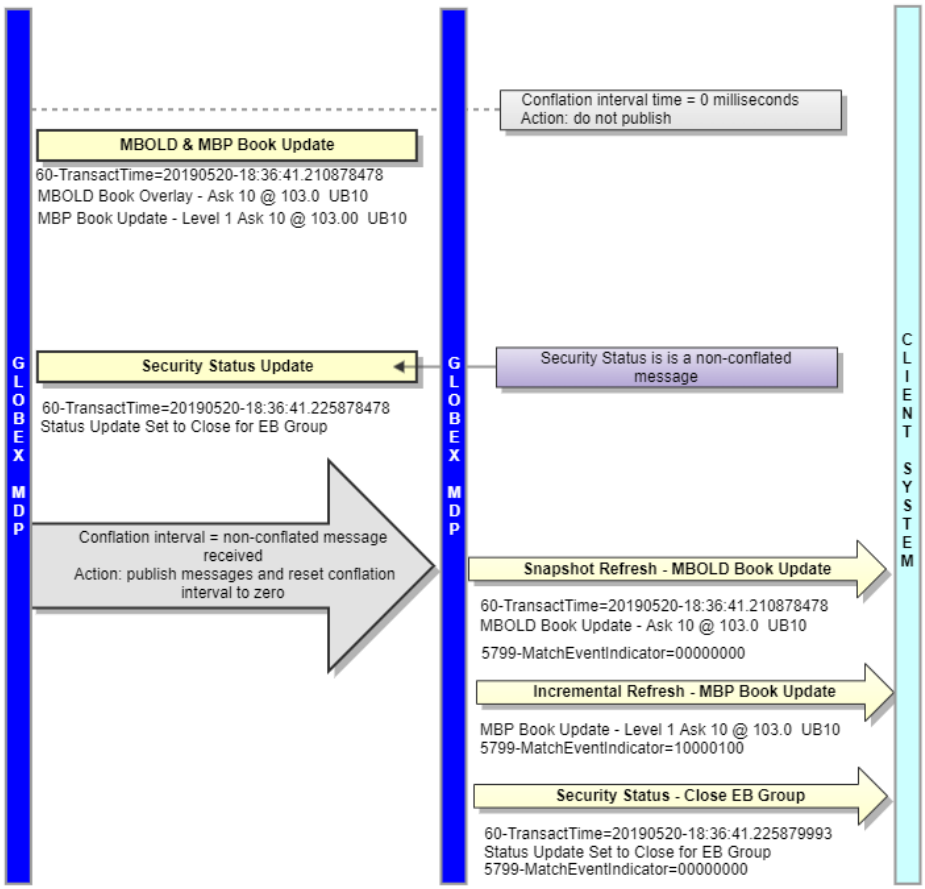
Example 4 - No Messages within Configured Interval

In this example, there is no activity within the 50 millisecond interval. Therefore, MDP 3.0 resets the conflation interval to 50 and waits to publish the next market event.



Example 5 - Non-Conflated Message Flush

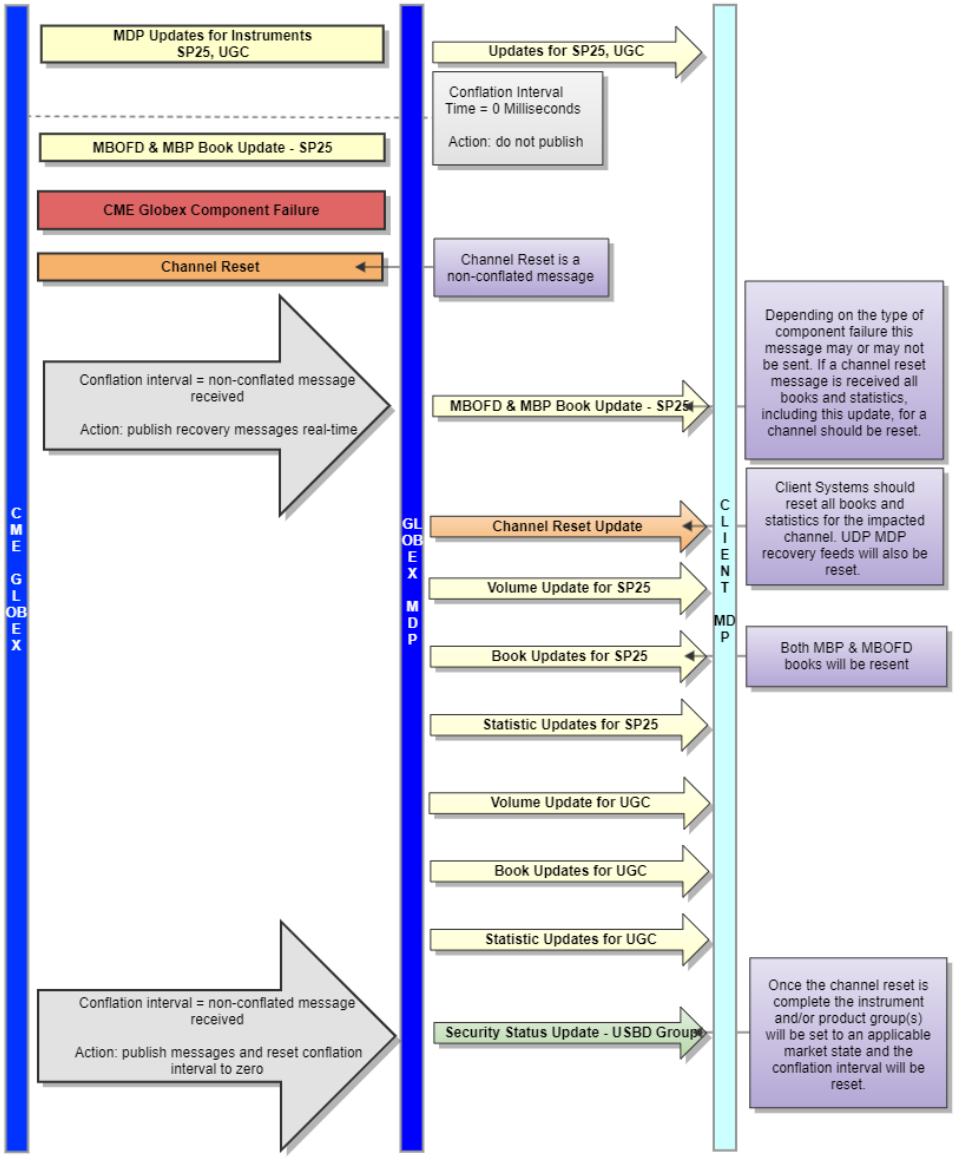
In this example, a non-conflated message is triggered, which causes the conflated data to be sent earlier.



Example 6 - Market Data Channel Reset with Conflation

Conflated market data feeds support Market Data Channel Reset (tag 269-MDEntryType=J). Market Data Channel Reset provides a process for synchronizing order books and trade session statistics in the unlikely event of a CME Group component failure. In this scenario, order books on the channel may be corrupted. During a conflation channel reset, Market by Order Limited Depth (MBOLD) along with Market by Price (MBP) messages will be sent down the incremental feed real-time. More information regarding channel reset can be found here.

The following diagram shows an example of a Market Data Channel Reset and Recovery for a channel with 2 instruments.


CME GLOBEX
GLOBEX MDP
CLIENT MDP
MDP Updates for Instruments SP25, UGC
MBOFD & MBP Book Update - SP25
CME Globex Component Failure
Channel Reset
Conflation interval = non-conflated message received
Action: publish recovery messages real-time
Conflation interval = non-conflated message received
Action: publish messages and reset conflation interval to zero
Updates for SP25, UGC
Conflation Interval Time = 0 Milliseconds
Action: do not publish
Channel Reset is a non-conflated message
MBOFD & MBP Book Update - SP25
Channel Reset Update
Volume Update for SP25
Book Updates for SP25
Statistic Updates for SP25
Volume Update for UGC
Book Updates for UGC
Statistic Updates for UGC
Security Status Update - USBD Group
Depending on the type of component failure this message may or may not be sent. If a channel reset message is received all books and statistics, including this update, for a channel should be reset.
Client Systems should reset all books and statistics for the impacted channel. UDP MDP recovery feeds will also be reset.
Both MBP & MBOFD books will be resent
Once the channel reset is complete the instrument and/or product group(s) will be set to an applicable market state and the conflation interval will be reset.