CME Group

AutoCert+ Market Data GCP Web-socket
User Manual

March 18, 2024

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Disclaimer

Getting Started

The AutoCert+ tool is an automated testing tool for validating application functionality. It provides an easy-to-use web interface for walking through CME Group certification scenarios.

To facilitate the process of connecting a customer application, CME Group provides a dedicated certification environment to allow customers to test their systems before they complete certification.
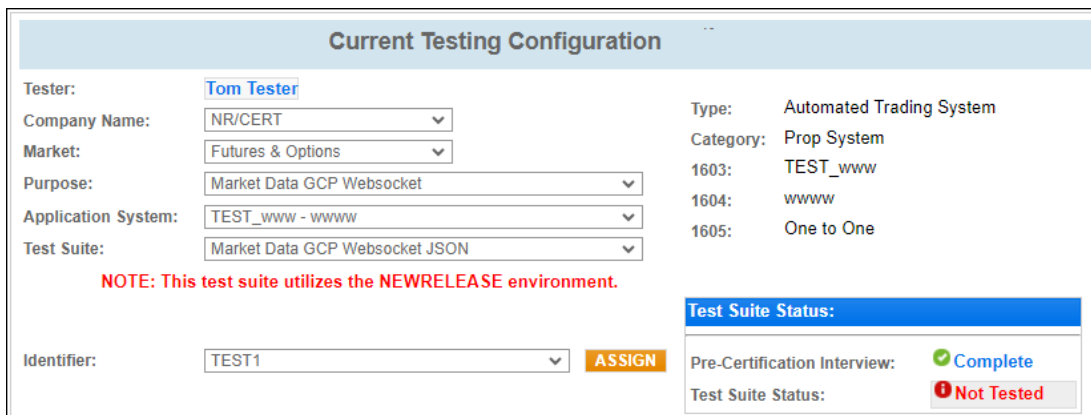
Certification session details will be assigned and forwarded to the customer, including certification target locations and firm / user Identifiers.

This Help system accompanies the AutoCert+ Market Data GCP Websocket test suite.

Certification is required for customers that will use the Market Data GCP Websocket functionality.

▷ **To run and navigate AutoCert+:**

1. Log into the automated certification tool.

2. Review general AutoCert+ test suite navigation and general interview information.

3. Navigate to the AutoCert+ Market Data GCP Websocket test suite.

a. Select a **Company Name**.

b. For **Market**, select *Futures & Options*.

c. For **Purpose**, select *Market Data GCP Websocket*.

d. Select an **Application System**.

e. For **Test Suite**, select *Market Data GCP Websocket JSON*.

4. Select an **Identifier**, select **ASSIGN**, then enter the associated **API ID.**

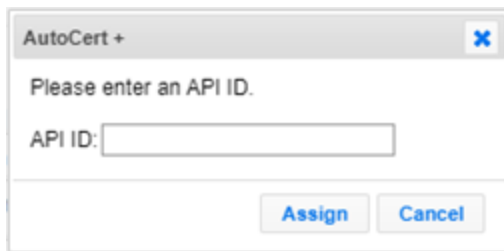API IDs are used to authenticate system-to-system communication with CME Group applications, via API interface.

To look up or manage API IDs, refer to the CME Group Login User Help.

5. Complete the Interview for this test suite.

6. Complete applicable **test cases**.

7. Complete the certification process from the Post Certification tab.

What's New

The list below illustrates the updates made to the AutoCert+ Market Data GCP Websocket Help system.

Date	Topic	Description
March 18, 2024	All	New tests
		• Subscription for a Futures Instrument Test
		• Subscription for an Options Instrument Test
		• Subscription for Statistics Test
		Update existing test
		• *Book Message Top of Book* updated to *Subscription for Top of Book Test*
		• *Trade Message Test* updated to *Subscription for Trade Information Test*
		Updated existing test with websocket validation
		• Settlement Statistic Message Test
		• Open Interest Statistic Message Test
		• Cleared Volume Statistic Message Test
October 4, 2023	All	Initial release

Interview

The interview consists of a series of questions about your trading application. Based on your responses, certain tests are required and others are optional. You must complete the pre-certification interview before running the test cases.

▷ **To complete the interview:**

Answer each question, then select **Complete** when finished.

Subscription for a Futures Instrument Test

The purpose of this test is to verify the client system can properly subscribe to a futures instrument.

For more information on the WebSocket API connection and subscription process, see CME Market Data Over WebSocket API .

▷ **To run the Futures Instrument subscription test:**

1. Prior to selecting the test, assign an *Identifier* , and assign the *API ID*

; a unique identifier to connect, send and receive data (e.g. subscription messages, responses).

> **Note**: To look up or manage API IDs, refer to the CME Group Login User Help.

2. From the **Instrument** drop-down, select the *instrument*, then **Select**.

3. Select **START TEST**, then confirm the selection.

4. Over an existing Websocket connection, send a Subscription Message (→ messageType=SUBSCRIBE) for the selected Futures *Instrument* (→ → productCode); step 1, above.

5. Receive and Process Subscription Status Message.

6. Send an Unsubscribe Message (→ messageType=UNSUBSCRIBE) to the Subscription for the selected Futures Instrument in step 1 of the test.

7. Receive and Process Subscription Status Message.

Subscription for a Options Instrument Test

The purpose of this test is to verify the client system can properly subscribe to an options instrument.

For more information on the WebSocket API connection and subscription process, see CME Market Data Over WebSocket API .

▷ **To run the Options Instrument subscription test:**
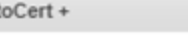

1. Prior to selecting the test, assign an *Identifier*   , and assign the *API ID*

; a unique identifier to connect, send and receive data (e.g. subscription messages, responses).

> ℹ **Note**: To look up or manage API IDs, refer to the CME Group Login User Help.

2. From the **Instrument** drop-down, select the *instrument*, then **Select**.

3. Select **START TEST**, then confirm the selection.

4. Over an existing Websocket connection, send a Subscription Message (→ messageType=SUBSCRIBE) for the selected Options *Instrument* (→ → productCode); above.

5. Receive and Process Subscription Status Message.

6. Send an Unsubscribe Message (→ messageType=UNSUBSCRIBE) to the Subscription for the selected Options Instrument in step 1 of the test.

7. Receive and Process Subscription Status Message.
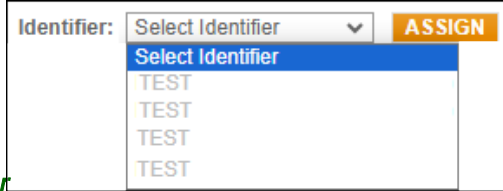
Subscription for a Top of Book Test

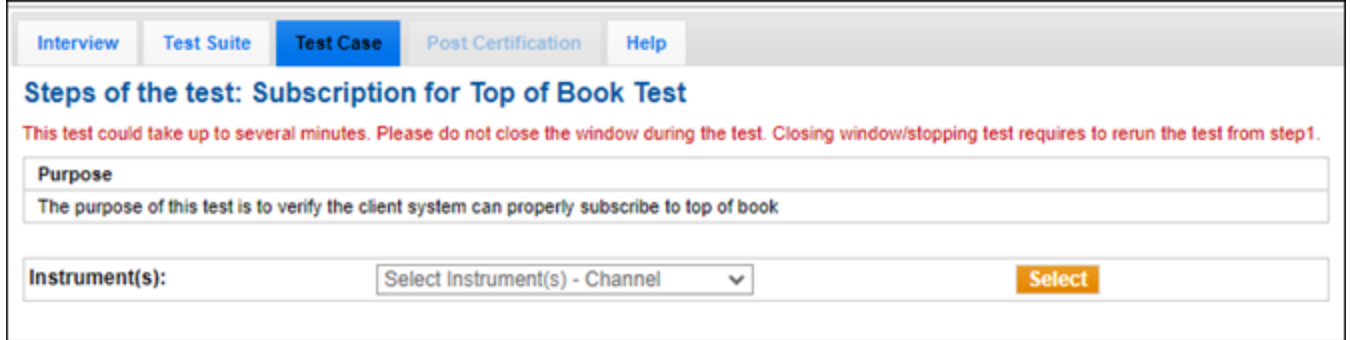The purpose of this test is to verify the client system can properly subscribe to top of book.

For more information on the WebSocket API connection and subscription process, see CME Market Data Over WebSocket API .

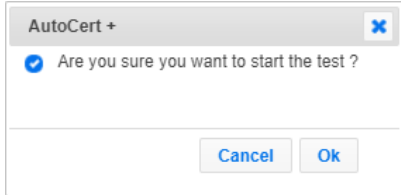▷ **To run the Options Instrument subscription test:**

1. Prior to selecting the test, assign an *Identifier* _____, and assign the *API ID* _____; a unique identifier to connect, send and receive data (e.g. subscription messages, responses).

   > **Note**: To look up or manage API IDs, refer to the CME Group Login User Help.

2. From the **Instrument** drop-down, select the *instrument*, then **Select**.

3. Select **START TEST**, then confirm _____ the selection.

4. Do not subscribe to the Websocket. After clicking *START TEST*, confirm you are ready to proceed with the test by selecting **YES**.

5. After Step 1 turns green, over the Websocket connection, send a Subscription Message for *Top of Book* [TOB (→ subscriptionMessageTypes=TOB)] for the selected *Instrument* (→ → productCode).

6. Receive and Process Subscription Status Message.

7. Confirm quantities and prices on the top of book, by entering the quantity (→ → qty) and prices (→ → price) from the top of the book.

8. Receive another set of top of book messages for selected instrument.

9. Confirm quantities and prices on the top of book.

Subscription for Trade Information Test

The purpose of this test is to verify the client system can properly subscribe to trade information.

For more information on the WebSocket API connection and subscription process, see CME Market Data Over WebSocket API .

▷   **To run the Futures Instrument subscription test:**

1. Prior to selecting the test, assign an *Identifier* , and assign the *API ID*

; a unique identifier to connect, send and receive data (e.g. subscription messages, responses).

> **Note**: To look up or manage API IDs, refer to the CME Group Login User Help.

2. From the **Instrument** drop-down, select the *instrument*, then **Select**.

3. Select **START TEST**, then confirm the selection.

4. Over an existing Websocket connection, send a Subscription Message for *Trade Information* (→ sub-scriptionMessageTypes=TRD) on the selected *Instrument* (→ → productCode).

5. Receive and Process Subscription Status Message.

6. A *trade* was sent. Validate the following values (from the Trade Summary):

   - → → tradePrice
   - → → tradeQty

7. A *trade modification* is sent. Validate the following values:

   - → → tradePrice
   - → → tradeQty

8. A *trade cancellation* is sent. Validate the following values:

   - → → tradePrice
   - → → tradeQty

Settlement Statistic Message Test

The purpose of this test is to verify the client system can receive and process statistics messages.

▷ **To run the settlement statistic message test:**

1. Prior to selecting the test, assign an *Identifier*_____, and assign the *API ID*

   ; a unique identifier to connect, send and receive data (e.g. subscription messages, responses).

   > ⓘ **Note**: To look up or manage API IDs, refer to the CME Group Login User Help.

2. From the **Instrument** drop-down, select the *instrument*, then **Select**.

3. Select **START TEST**, then confirm the selection.

4. Over an existing Websocket connection, send a Subscription Message for *Statistics* (→ sub-scriptionMessageTypes=STAT) on the selected *instrument* (→ → productCode).

5. Receive and Process Subscription Status Message.

6. A statistic message containing settlement price was sent. Validate the following value:

   • settlement Price

Open Interest Statistic Message Test

The purpose of this test is to verify the client system can receive and process statistics messages.

▷ **To run the open interest statistic message test:**

1. Prior to selecting the test, assign an *Identifier* , and assign the *API ID* ; a unique identifier to connect, send and receive data (e.g. subscription messages, responses).

   > **Note**: To look up or manage API IDs, refer to the CME Group Login User Help.

2. From the **Instrument** drop-down, select the *instrument*, then **Select**.

3. Select **START TEST**, then confirm the selection.

4. Over an existing Websocket connection, send a Subscription Message for *Statistics* (→ subscriptionMessageTypes=STAT) on the selected instrument (→ → productCode).

5. Receive and Process Subscription Status Message.

6. A statistic message containing open interest was sent. Validate the following value:

   - → → openInterest
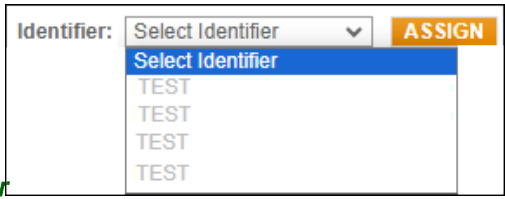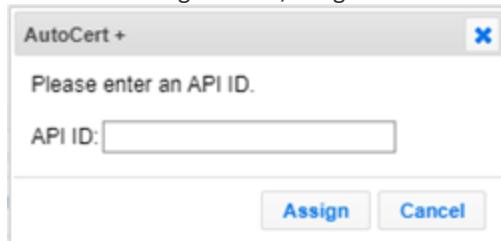
Cleared Volume Statistic Message Test

The purpose of this test is to verify the client system can receive and process statistics messages.

▷ **To run the cleared volume statistic message test:**

1. Prior to selecting the test, assign an *Identifier* _____, and assign the *API ID*

; a unique identifier to connect, send and receive data (e.g. subscription messages, responses).

> ℹ️ **Note**: To look up or manage API IDs, refer to the CME Group Login User Help.

2. From the **Instrument** drop-down, select the *instrument*, then **Select**.

3. Select **START TEST**, then confirm [image] the selection.

4. Over an existing Websocket connection, send a Subscription Message for *Statistics* (→ sub-scriptionMessageTypes=STAT) on the selected instrument (→ → productCode).

5. Receive and Process Subscription Status Message.

6. A statistic message containing cleared volume was sent. Validate the following value:

    • → → clearedVolume