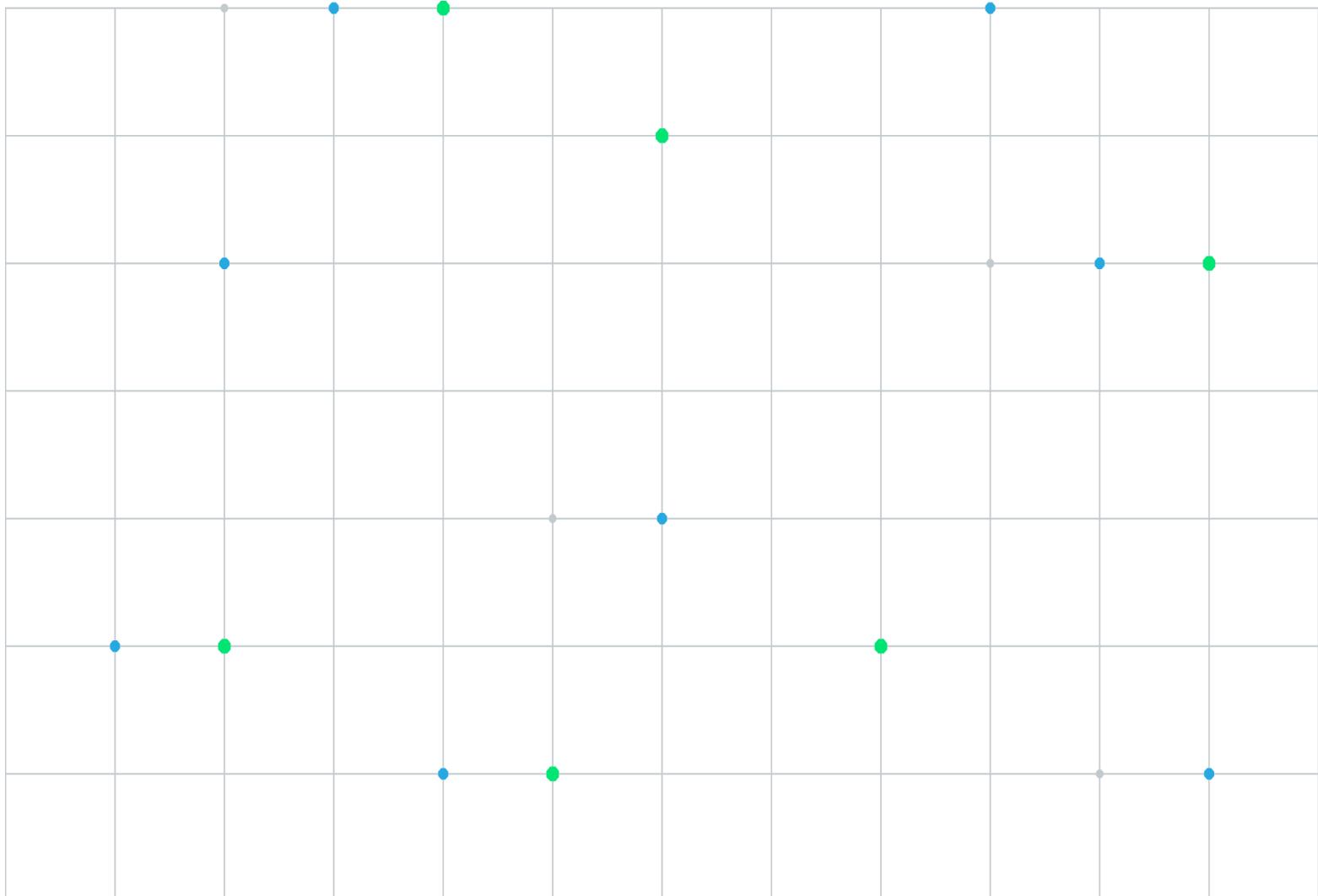


AutoCert+ Drop Copy 4.0 for BrokerTec User Manual

October 7, 2022



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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 to CME Globex, CME Group provides a dedicated certification environment to allow customers to test their systems before they complete certification.

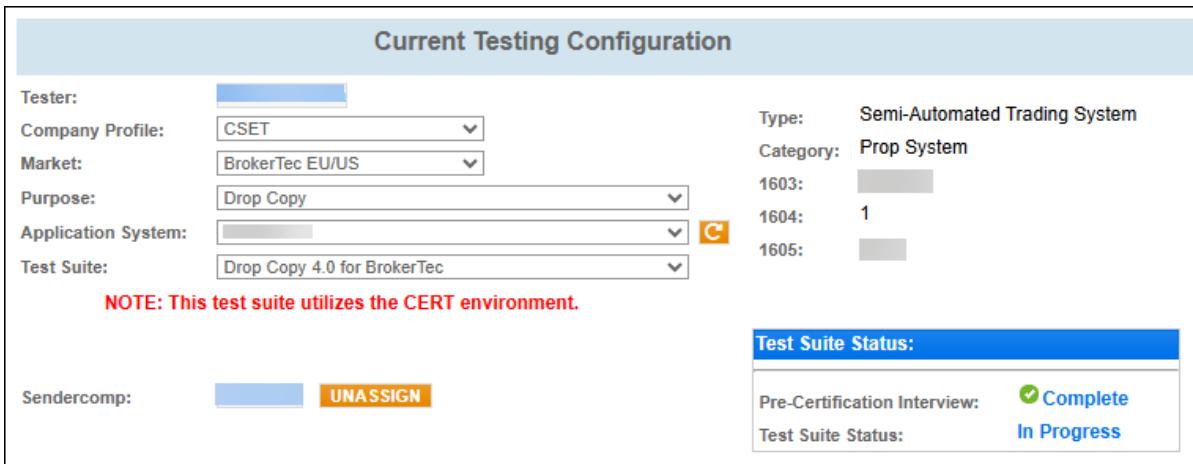
The Drop Copy 4.0 service allows customers to receive real-time copies of CME Globex Execution Report and Acknowledgment messages as they are sent over iLink order entry system sessions. Drop Copy aggregates iLink messages, enabling customers to aggregate positions and monitor orders for sessions guaranteed by one or more clearing firms upon approval of the clearing firms.

Customers must manage sequence streams from Market Segment Gateway (MSGW) iLink source sessions per unique market segment; with the possibility of having the same sequence numbers from multiple market segments.

 **Note:** This test suite uses "Dummy Contracts" or "Certification Dedicated Instruments" during the certification process.

To run and navigate AutoCert+:

1. Complete the steps detailed in the "[Process Summary: BrokerTec New Release Testing Setup](#)" topic.
2. [Log into](#) the automated certification tool.
3. Navigate to the AutoCert+ Drop Copy 4.0 for BrokerTec test suite.



Current Testing Configuration

Tester:

Company Profile: CSET

Market: BrokerTec EU/US

Purpose: Drop Copy

Application System: 

Test Suite: Drop Copy 4.0 for BrokerTec

NOTE: This test suite utilizes the CERT environment.

Sendercomp: UNASSIGN

Type: Semi-Automated Trading System

Category: Prop System

1603:

1604: 1

1605:

Test Suite Status:

Pre-Certification Interview:  Complete

Test Suite Status: In Progress

- Select a **Company Name**.
- For **Market**, select BrokerTec EU/US.
- For **Purpose**, select *Drop Copy*.
- Select an **Application System**.

To update Application Systems to include recent additions, use the refresh () button.

- For **Test Suite**, select *Drop Copy 4.0 for BrokerTec*.
- Review general AutoCert+ test suite [navigation](#) and [general interview](#) information.
- Complete the [Interview](#) for this test suite.
- Complete applicable test cases.
- Complete the certification process from the [Post Certification](#) tab.

Additional Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)

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:

1. Select a **SenderComp** from the drop-down and select **ASSIGN**.

SenderComp: **ASSIGN**

2. Answer each question and select "**Complete**" when finished.

Note: The number of market segments and the instruments listed on each market segment is subject to change.

Note: Each Drop Copy MSGW session has a unique IP address for each of the primary and backup MSGWs.

Interview **Test Suite** **Test Case** **Post Certification** **Help**

Which markets does your system support?

US Treasuries
 US Repo
 EU Bonds
 EU Repo

Secure key pairs can expire mid-week. It is important to maintain sequence numbers when rotating keys during mid-week. Will your application support a mid-week key rotation?

Yes
 No (If No, ensure a proper process is in place to rotate keys ahead of expiration times that land mid-week)

Complete

What's New

The list below illustrates the updates made to the AutoCert+ Drop Copy 4.0 for BrokerTec Help system.

Date	Topic	Description
7 Oct 2022	Format	Website and PDF format changes only.
11 Mar 2022	Logon Process with Failover	Updated screenshot and description.
11 Oct 2021	All	Updated message specification links.
29 Jun 2020	Receive Message Stream (No Resend)	Added tag names to procedure.
15 Jun 2020		Initial release

Session Management Tests

This section contains information about the Session Management tests.

Logon Message

This test verifies that your system can appropriately handle timely connection at [logon](#), implement a valid logon [heartbeat](#) interval and then handle point of origin values on any Logon and ensuing acknowledgment message.

Additional Drop Copy Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)

Steps of the test: Drop Copy Session Management Tests - Logon Message

This test could take up to several minutes. Please do not close the window during the test. Closing window/stopping test requires to rerun the test from step 1.

Purpose

The purpose of this test is to verify that client system can appropriately handle timely connection at Logon, implement valid logon heartbeat interval and enter handle point of origin values on any logon and ensuing acknowledgement message.

Note: Press the Start Test button to start or restart a Test. Please do not press the Start Test button again if you are currently running this test.

Description	Flag	Status
1 Over the Drop Copy client application, submit a Logon message for Market Segment [1].	<input type="radio"/>	Not Tested
2 Receive and process a Logon Confirmation message for market segment [1].	<input type="radio"/>	Not Tested
3 Receive and process a Test Request message for market segment [1].	<input type="radio"/>	Not Tested
4 Submit a Heartbeat message for market segment [1].	<input type="radio"/>	Not Tested
5 Submit a Logout message for market segment [1].	<input type="radio"/>	Not Tested
6 Receive and process a Logout Confirmation message for market segment [1].	<input type="radio"/>	Not Tested

Key: not tested ● complete ● pending ● failed

REFRESH

► To run a Logon Message test:

1. Select a **SenderComp** from the drop-down and select **ASSIGN** if a SenderComp is not already assigned.
2. Select the **START TEST** button.



Note: DO NOT select the **START TEST** button once the test is in progress.

3. Over a Drop Copy connection, submit a [Logon \(35=A\)](#) message for market segment (1).
4. Receive and process a [Logon \(35=A\)](#) confirmation message for market segment (1).
5. Receive and process a [Test Request \(35=1\)](#) message for market segment (1).
6. Submit a [Heartbeat \(35=0\)](#) message for market segment (1).
7. Submit a [Logout \(35=5\)](#) message for market segment (1).
8. Receive and process a Logout (35=5) message for market segment (1).

Beginning of Week Logon

The Beginning of Week Logon test verifies that the client system can log on to the CME Group system at the beginning of the week and maintain the correct inbound and outbound sequence numbers (tag 34-MsgSeqNum).

Additional Drop Copy Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)

The screenshot shows the 'Test Case' tab selected in the navigation bar. The main content area is titled 'Steps of the test: Drop Copy Session Management Test - Beginning of Week Logon'. It includes a note about the test taking several minutes and not closing the window. The 'Purpose' section states: 'The Beginning of Week Logon test verifies that client system can logon to the CME Group system at the beginning of the week and maintain the correct inbound and outbound sequence numbers.' A note at the bottom of the table says: 'Note: Press the Start Test button to start or restart a Test. Please do not press the Start Test button again if you are currently running this test.' The 'START TEST' button is orange. Below the table is a legend: 'Key: ⓘ not tested ● complete ○ pending ✘ failed'. A 'REFRESH' button is at the bottom left.

Description	Flag	Status
1 Over the Drop Copy connection, submit a Logon message.	<input type="radio"/>	Not Tested
2 Receive and process a Logout message including tag 789-NextMsgSeqNum.	<input type="radio"/>	Not Tested
3 Submit a Logon (35=A) message using the proper sequence number (tag 34-MsgSeqNum)	<input type="radio"/>	Not Tested
4 Receive and process a Logon Confirmation message	<input type="radio"/>	Not Tested
5 Receive and process a Test Request message.	<input type="radio"/>	Not Tested
6 Submit a Heartbeat message.	<input type="radio"/>	Not Tested

► To run the Beginning of Week Logon test:

1. Select a **SenderComp** from the drop-down and select **ASSIGN** if a SenderComp is not already assigned.
2. Select the **START TEST** button.



Note: DO NOT select the **START TEST** button once the test is in progress.

3. Over a Drop Copy connection, submit a [Logon \(35=A\)](#) message.
4. Receive and process a [Logout \(35=5\)](#) message, including tag 789-NextMsgSeqNum.
5. Submit a Logon (35=A) message, including the correct sequence number (tag 34-MsgSeqNum).
6. Receive and process a [Logon \(35=A\)](#) confirmation message.
7. Receive and process a [Test Request \(35=1\)](#) message.
8. Submit a [Heartbeat \(35=0\)](#) message.

Mid Week Logon

This test verifies that the client system can [logon](#) to the CME Group system during the week and maintain the correct inbound and outbound sequence numbers (tag 34-MsgSeqNum).

Additional Drop Copy Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)

Steps of the test: Drop Copy Session Management Test - Mid Week Logon Process

This test could take up to several minutes. Please do not close the window during the test. Closing window/stopping test requires to rerun the test from step1.

Purpose
The Logon Process Mid Week test verifies that client system can connect to the CME Group system during the week and maintain the correct inbound and outbound sequence numbers.

Note: Press the Start Test button to start or restart a Test. Please do not press the Start Test button again if you are currently running this test.

START TEST

Description	Flag	Status
1 Over a Drop Copy connection, submit a Logon message.	<input type="radio"/>	Not Tested
2 Receive and process a Logout message including tag 789-NextMsgSeqNum.	<input type="radio"/>	Not Tested
3 Submit a Logon (35=A) message using the proper sequence number (tag 34-MsgSeqNum)	<input type="radio"/>	Not Tested
4 Receive and process a Logon Confirmation message	<input type="radio"/>	Not Tested
5 Receive and process a Test Request message	<input type="radio"/>	Not Tested
6 Submit a Heartbeat message.	<input type="radio"/>	Not Tested

Key: not tested complete pending failed

REFRESH

► To run the Mid Week Logon test:

1. Select a **SenderComp** from the drop-down and select **ASSIGN** if a SenderComp is not already assigned.
2. Select the **START TEST** button.



Note: DO NOT select the **START TEST** button once the test is in progress.

3. Over a Drop Copy connection, submit a [Logon \(35=A\)](#) message.
4. Receive and process a [Logout \(35=5\)](#) message, including tag 789-NextMsgSeqNum.
5. Submit a Logon (35=A) message using the correct sequence number (tag 34-MsgSeqNum).
6. Receive and process a [Logon \(35=A\)](#) confirmation message.
7. Receive and process a [Test Request \(35=1\)](#) message.
8. Submit a [Heartbeat \(35=0\)](#) message.

Logon Process with Failover

The purpose of this test is to verify that client system can support primary gateway enforcement.

In the event of a Drop Copy 4.0 failover, upon logon to the new primary connection, client systems will experience a significant increase (currently set to 4000) in sequence numbers (tag 34-MsgSeqNum) sent from CME Globex to the client system. CME Group recommends that client systems request all missing messages.

For all [Resend Requests](#), the client system can request no more than the maximum limit of 2500 messages. To recover any missed in-flight messages beyond the 2500 message range, the client system must submit multiple Resend Request (tag 35-
MsgType=2) messages.

In response to the Resend Request from the client system, Drop Copy 4.0 will respond with a [Gap Fill](#) for all [Administrative](#) messages and send tag 35-
MsgType35=n with tag 43-PossDupFlag=Y for business messages.

Additional Drop Copy Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)

Interview Test Suite **Test Case** Post Certification Help

Steps of the test: Drop Copy Session Management Test - Logon Process with Failover

This test could take up to several minutes. Please do not close the window during the test. Closing window/stopping test requires to rerun the test from step1.

Purpose

The purpose of this test is to verify that client system can support primary gateway enforcement. In the event of a Drop Copy 4.0 failover, upon logon to the new primary connection, client systems will experience a significant increase (currently set to 4000) in sequence numbers (tag 34-MsgSeqNum) sent from CME Globex to the Client System. CME Group recommends that client systems request all missing messages. For all [Resend Requests](#), the client system can request no more than the maximum limit of 2500 messages. To recover any missed in-flight messages beyond the 2500 message range, the client system must submit multiple Resend Request (tag 35-
MsgType=2) messages. In response to the Resend Request from the client system, Drop Copy 4.0 will respond with a [Gap Fill](#) for all [Administrative](#) messages and send tag 35-
MsgType35=n with tag 43-PossDupFlag=Y for business messages.

Note: Press the Start Test button to start or restart a Test. Please do not press the Start Test button again if you are currently running this test.

START TEST

Test Not Running

Description	Flag	Status
1 Over the Drop Copy connection, submit a Logon message		Not Tested
2 Over the Drop Copy client application, submit a Logon message on the backup gateway		Not Tested
3 Receive and process a Logon Confirmation message		Not Tested
4 Submit a Resend Request message(s)		Not Tested
5 Receive a Gap Fill message(s)		Not Tested
6 Submit a Heartbeat message		Not Tested
7 Receive and process a Heartbeat message		Not Tested
8 Submit a Heartbeat message		Not Tested
9 Submit a Logout message		Not Tested
10 Receive and process a Logout Confirmation message		Not Tested

Key:

REFRESH

To run a Logon Process with Failover test:

1. Select a **SenderComp** from the drop-down and select **ASSIGN** if a SenderComp is not already assigned.
2. Select the **START TEST** button.



Note: DO NOT select the **START TEST** button once the test is in progress.

3. Over the Drop Copy connection, submit a [Logon \(35=A\)](#) message.
4. Over the Drop Copy client application, submit a Logon (35=A) message on the backup gateway.
5. Receive and process a [Logon \(35=A\)](#) confirmation message.
6. Submit a [Resend Request \(35=2\)](#) message(s).
7. Receive a [Gap Fill \(35=4,123-GapFillFlag=Y\)](#) message(s).
8. Submit a [Heartbeat \(35=0\)](#) message.
9. Receive and process a Heartbeat message.
10. Submit a Heartbeat message.
11. Submit a [Logout \(35=5\)](#) message.
12. Receive and process a [Logout \(35=5\)](#) confirmation message.

Sequencing Tests

This section contains information about the Sequencing tests.

Receive Encapsulated Message from Simulated Order Mass Action Messages

This test verifies the client system can successfully receive an Order Mass Action Report [35=BZ (Accepted)] message.

Additional Drop Copy Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)

► To run a Receive Encapsulated Message from Simulated Order Mass Action Messages test:

1. From the **Contract** drop-down, select the desired contract if the contract is not already locked.
2. Click the **START TEST** button.



Note: DO NOT select the **START TEST** button once the test process is in progress.

3. Enter the following tag values to confirm that your system received and processed a simulated [Order Mass Action Report Accepted](#)
 - tag 1300-MarketSegmentID
 - tag 1374-MassActionScope
 - tag 1375-MassActionResponse
 - tag 533-TotalAffectedOrders

- tag 534-NoAffectedOrders
- tag 41-OrigClOrdID
- tag 84-CxlQty
- tag 535-AffectedOrderID
- tag 893-LastFragment

4. Enter the following tag values to confirm that your system received and processed a simulated Order Mass Action Report Accepted (no orders cancelled)

- tag 1300-MarketSegmentID
- tag 1374-MassActionScope
- tag 1375-MassActionResponse
- tag 533-TotalAffectedOrders
- tag 893-LastFragment

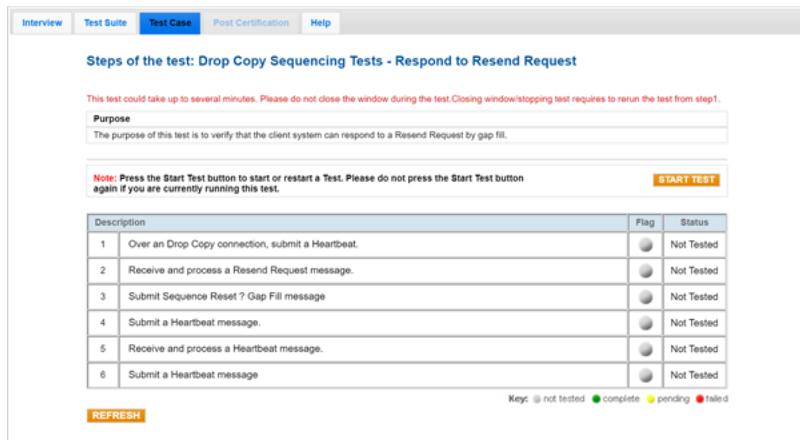
Respond to Resend Request

This test verifies that your system can respond to a [Resend Request](#) by gap fill.

Additional Drop Copy Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)



The screenshot shows the 'Test Case' tab selected in the top navigation bar. The main content area is titled 'Steps of the test: Drop Copy Sequencing Tests - Respond to Resend Request'. It includes a note: 'This test could take up to several minutes. Please do not close the window during the test. Closing window/stopping test requires to rerun the test from step1.' Below this is a 'Purpose' field containing the text: 'The purpose of this test is to verify that the client system can respond to a Resend Request by gap fill.' A note at the bottom left of the table area states: 'Note: Press the Start Test button to start or restart a Test. Please do not press the Start Test button again if you are currently running this test.' To the right of this note is a 'START TEST' button. The main area is a table with columns 'Description', 'Flag', and 'Status'. The steps are:

Description	Flag	Status
1 Over an Drop Copy connection, submit a Heartbeat.	<input type="radio"/>	Not Tested
2 Receive and process a Resend Request message.	<input type="radio"/>	Not Tested
3 Submit Sequence Reset ? Gap Fill message	<input type="radio"/>	Not Tested
4 Submit a Heartbeat message.	<input type="radio"/>	Not Tested
5 Receive and process a Heartbeat message.	<input type="radio"/>	Not Tested
6 Submit a Heartbeat message	<input type="radio"/>	Not Tested

Below the table is a 'Key' legend: '● not tested' (grey), '● complete' (green), '● pending' (yellow), and '● failed' (red). At the bottom left is a 'REFRESH' button.

To run the Respond to Resend Request test:

1. Select a **SenderComp** from the drop-down and select **ASSIGN** if a SenderComp is not already assigned.
2. Select the **START TEST** button.



Note: DO NOT select the **START TEST** button once the test is in progress.

3. Over a Drop Copy connection, submit a [Heartbeat \(35=0\)](#) message.
4. Receive and process a [Resend Request \(35=2\)](#) message.
5. Submit a [Sequence Reset - Gap Fill \(35=2, 123-GapFillFlag=Y\)](#) message.
6. Submit a Heartbeat (35=0) message.
7. Receive and process a Heartbeat (35=0) message.
8. Submit a Heartbeat (35=0) message.

Bi-Directional Resend Request Scenario

This test verifies that your system can receive out-of-sequence messages across multiple session connections during a Resend Response without triggering another [Resend Request](#).

Additional Drop Copy Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)

The test could take up to several minutes. Please do not close the window during the test. Closing window/stopping test requires to rerun the test from step 1.

Purpose
The purpose of this test is to verify that the client system can receive out-of-sequence messages across multiple session connections during a Resend Response without triggering another Resend Request.

Selected Contract: UB10t_50_05/30 -700 **Unlock**

Category	IP	Port
Incremental Premium Feed A	233.143.214.5	15700
Incremental Premium Feed B	233.143.214.132	16700
Incremental Confated Feed A	233.143.214.19	15701
Incremental Confated Feed B	233.143.214.147	16701
Premium Snapshot MBP	233.143.214.6	22700
Premium Snapshot MBO	233.143.214.6	20700
Confated Snapshot MBP & MBOLD	233.143.214.20	22701
Instrument Replay Premium	233.143.214.7	
Instrument Replay Confated	233.143.214.21	14701
TCP Confated Feed		
Category	Link	
Template File:	templates_FxBinary.xml	
Premium Configuration File:	config.xml	
Confated Configuration File:	config.xml	
TCPS Session Management SBE Schema:	templates_MdoSessionMgmt.xml	

Note: Press the Start Test button to start or restart a Test. Please do not press the Start Test button again if you are currently running this test.

START TEST

Description	Flag	Status
1 Over an Drop Copy connection, submit a Heartbeat.	<input type="radio"/>	Not Tested
2 Receive and process a Heartbeat message.	<input type="radio"/>	Not Tested
3 Over an iLink connection, submit a Heartbeat.	<input type="radio"/>	Not Tested
4 Receive and process an Execution Report - Confirmation/Acknowledgement messages and detect sequence gap.	<input type="radio"/>	Not Tested
5 Submit a Resend Request message.	<input type="radio"/>	Not Tested
6 Receive and process an Execution Report - Confirmation/Acknowledgement messages.	<input type="radio"/>	Not Tested
7 Receive and process a Resend Request message.	<input type="radio"/>	Not Tested
8 Submit a Sequence Reset - Gap fill message.	<input type="radio"/>	Not Tested
9 Submit a Heartbeat message.	<input type="radio"/>	Not Tested
10 Receive and process a Heartbeat message.	<input type="radio"/>	Not Tested
11 Submit a Heartbeat message	<input type="radio"/>	Not Tested

Key: not tested complete pending failed

REFRESH

To run the Bi-Directional Resend Request Scenario test:

1. Select a **SenderComp** from the drop-down and select **ASSIGN** if a SenderComp is not already assigned.
2. From the **Contracts** drop-down, select the desired contract if the contract is not already locked.
3. Select the **START TEST** button.



Note: DO NOT select the **START TEST** button once the test is in progress.

4. Over a Drop Copy connection, submit a [Heartbeat \(35=0\)](#) message.
5. Receive and process a Heartbeat (35=0) message.

6. Over an iLink connection, submit a Heartbeat (35=0) message.
7. Receive and process an [Execution Report - Order Creation \[35=8, 39-OrdStatus=0 \(New Order Ack\)\]](#) message and detect a sequence gap.
8. Submit a [Resend Request \(35=2\)](#) message.
9. Receive and process an Execution Report - Order Creation [35=8, 39-OrdStatus=0 (New Order Ack)] message.
10. Receive and process a Resend Request (35=2) message.
11. Submit a [Sequence Reset - Gap Fill \(35=4, 123-GapFillFlag=Y\)](#) message.
12. Submit a Heartbeat (35=0) message.
13. Receive and process a Heartbeat (35=0) message.
14. Submit a Heartbeat (35=0) message.

Process Real-Time Messages During a Resend Response

This test verifies that your system can receive out-of-sequence messages during a [Resend Response](#) without triggering another Resend Request.

Additional Drop Copy Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)

Steps of the test: Drop Copy Sequencing Tests - Process Real-Time Messages During a Resend Response from CME Globex

This test could take up to several minutes. Please do not close the window during the test. Closing window/stopping test requires to rerun the test from step 1.

Purpose: The purpose of this test is to verify that the client system can receive out-of-sequence messages during a Resend Response without triggering another Resend Request.

Selected Contract : UB10M_5B_05/30-700 **Unlock**

Category	IP	Port
Incremental Premium Feed A	233.143.214.5	15700
Incremental Premium Feed B	233.143.214.132	16700
Incremental Conflicted Feed A	233.143.214.19	15701
Incremental Conflicted Feed B	233.143.214.147	16701
Premium Snapshot MBP	233.143.214.6	22700
Premium Snapshot MBO	233.143.214.6	20700
Conflicted Snapshot MBP & MBOLD	233.143.214.20	22701
Instrument Replay Premium	233.143.214.7	
Instrument Replay Conflicted	233.143.214.21	14701
TCP Conflicted Feed		
Category	Link	
Templates File:	templates_FixBinary.xml	
Premium Configuration File:	config.xml	
Conflicted Configuration File:	config.xml	
TCP Session Management SBE Schema:	templates_MdpSessionMgmt.xml	

Note: Press the Start Test button to start or restart a Test. Please do not press the Start Test button again if you are currently running this test.

START TEST

Description	Flag	Status
1 Submit a Heartbeat message		Not Tested
2 Receive and process an heartbeat message and detect sequence gap.		Not Tested
3 Submit a Resend Request message.		Not Tested
4 Receive real-time interleaved messages with resend responses and process an Execution Report - Confirmation/Acknowledgement.		Not Tested
5 Submit a Heartbeat message.		Not Tested
6 Receive and process a Heartbeat message		Not Tested
7 Submit a Heartbeat message		Not Tested

Keys: not tested complete pending failed

REFRESH

To run the Process Real-Time Messages During a Resend Response test:

1. Select a **SenderComp** from the drop-down and select **ASSIGN** if a SenderComp is not already assigned.
2. From the **Contracts** drop-down, select the desired contract if the contract is not already locked.
3. Select the **START TEST** button.



Note: DO NOT select the **START TEST** button once the test is in progress.

4. Submit a [Heartbeat \(35=0\)](#) message.
5. Receive and process a Heartbeat (35=0) message and detect a sequence gap.
6. Submit a [Resend Request \(35=2\)](#) message.
7. Receive real-time interleaved messages with resend responses and process an [Execution Report - Order Creation \[35=8, 39-OrdStatus=0 \(New Order Ack\)\]](#) message.

8. Submit a Heartbeat (35=0) message.
9. Receive and process a Heartbeat (35=0) message.
10. Submit a Heartbeat (35=0) message.

Receive Message Stream (No Resend)

The purpose of this test is to verify that your system can receive and process Execution Reports with a non-unique SessionID and similar message sequence numbers (i.e., same SessionID and MsgSeqNum for 2 different market segments).

Note: For this test, the source session sequence numbers will be reset to 1. Systems are expected to be logged in to both market segments concurrently to gather Execution Reports.

Additional Drop Copy Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)

Steps of the test: Drop Copy Sequencing Test - Receive Message Stream (No Resend)

This test could take up to several minutes. Please do not close the window during the test. Closing window/stopping test requires to rerun the test from step 1.

Purpose

The purpose of this test is to verify that the client system can receive and process execution reports with non-unique SessionID and similar message sequence numbers (i.e. same SessionID and MsgSeqNum for 2 different market segments). Please note for this test the source session sequence numbers will be reset to one. Systems are expected to be logged in to both Market Segments concurrently to gather execution reports.

Selected Contract: UB104_58_0530.UTGCI#SFLEPXTTQ18F-700 **Unlock**

Category	IP	Port
Incremental Premium Feed A	233.143.214.5	15700
Incremental Premium Feed B	233.143.214.52	16700
Incremental Confirmed Feed A	233.143.214.19	15701
Incremental Confirmed Feed B	233.143.214.17	16701
Premium Snapshot MBP	233.143.214.6	22700
Premium Snapshot MB0	233.143.214.6	20700
Confirmed Snapshot MBP & MB0LD	233.143.214.20	22701
Instrument Replay: Premium	233.143.214.7	
Instrument Replay: Confirmed	233.143.214.21	14701

Category	Link
Templates File:	templates_FixBinary.xml
Premium Configuration File:	config.xml
Confirmed Configuration File:	config.xml
TCP Session Management SBE Schema:	templates_IMoSessionMgmt.xml

Note: Press the Start Test button to start or restart a Test. Please do not press the Start Test button again if you are currently running this test. **START TEST**

Description	Flag	Status
1 When testing with BrokerTec EU Drop Copy session, please login to segment 95 and 96. When testing with BrokerTec US Drop Copy session, please login to segment 97 and 98. Receive encapsulated message for market segment [1]	<input type="radio"/>	Not Tested
2 Receive encapsulated message for market segment [2]	<input type="radio"/>	Not Tested
3 Receive encapsulated execution report for market segment [1]	<input type="radio"/>	Not Tested
4 Receive encapsulated execution report for market segment [2]	<input type="radio"/>	Not Tested
5 Confirm your system successfully processed all segment messages with concurrent connections	<input type="radio"/>	Not Tested

Keys: ● not tested ● complete ● pending ● failed

REFRESH

To run the Receive Message Stream (No Resend) test:

- Select a **SenderComp** from the drop-down and select **ASSIGN** if a SenderComp is not already assigned.
- From the **Contracts** drop-down, select the desired contract if the contract is not already locked.
- Select the **START TEST** button.

Note: DO NOT select the **START TEST** button once the test is in progress.

- When testing with BrokerTec EU Drop Copy session, please login to segment 95 and 96. When testing with BrokerTec US Drop Copy session, please login to segment 97 and 98. Receive encapsulated message for market segment [1].

- tag 44-Price
- tag 33-OrderQty

5. Receive an encapsulated message for market segment [2].

- tag 44-Price
- tag 33-OrderQty

6. Receive an encapsulated Execution Report for market segment [1].

- tag 44-Price
- tag 151-LeavesQty
- tag 33-OrderQty

7. Receive an encapsulated Execution Report for market segment [2].

- tag 44-Price
- tag 151-LeavesQty
- tag 33-OrderQty

8. Select "**Yes**" or "**No**" to indicate whether or not your system successfully processed all segment messages with concurrent connections.

Example of Encapsulated Message: (Multiple Messages)

The FIX payload is shown in **bold** below.

```
[8=FIX.4.2|9=509|35=n|34=185|369=57|52=20200610-
05:47:01.098|49=CME|50=98|56=717NEXN|57=CSET|143=SG|212=413|213=<RTRF>
8=FIX.4.2|9=377|35=8|34=208|369=106|52=20200610-
05:47:01.096|49=CME|50=98|56=EVACPUSP|57=GUSUS|143=US,IL|1=ACP_
ORDER|6=0|11=ACP1591768021071|14=0|17=9848:28271|20=0
37=982167244|38=67|39=0|40=2|41=0|44=130|48=3273848|54=2|55=#USBD|59=0|60=20200610-
05:47:01.071|107=UB07#_1/2_
05/27|150=0|151=67|167=TNODE|432=20200610|819=0|1028=Y|1031=H|1598=1|5149=Memo
ACPOS|5906=A|5979=1591768021071320596|10=249|</RTRF>|10=027|]
```

Receive and Process Encapsulated Message

This test verifies that the client system can receive and process encapsulated XML non-FIX (35=n) messages with new BrokerTec tags provided in the Drop Copy payload.

Additional Drop Copy Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)

Steps of the test: Receive and Process Encapsulated Message

This test could take up to several minutes. Please do not close the window during the test. Closing window/stopping test requires to rerun the test from step1.

Purpose

The purpose of the test is to verify your system can receive and process encapsulated messages.

Selected Contract : UB07a_1/2_05/27-700 **Unlock**

Category	IP	Port
Incremental Feed A	233.143.214.5	15700
Incremental Premium Feed B	233.143.214.132	16700
Incremental Confilated Feed A	233.143.214.19	15701
Incremental Confilated Feed B	233.143.214.147	15701
Premium Snapshot MBP	233.143.214.6	22700
Premium Snapshot MBO	233.143.214.6	20700
Confilated Snapshot MBP & MBO	233.143.214.20	22701
Instrument Replay Premium	233.143.214.7	
Instrument Replay Confilated	233.143.214.21	14701
TCP Confilated Feed		
Category	Link	
Templates File:	templates_FixBinary.xml	
Premium Configuration File:	config.xml	
Confilated Configuration File:	config.xml	
TCP Session Management SBE Schema:	templates_MdpSessionMgmt.xml	

Note: Press the Start Test button to start or restart a Test. Please do not press the Start Test button again if you are currently running this test.

START TEST

Description	Flag	Status
1 Receive and process an encapsulated execution report for a New Order	●	Complete
2 Receive and process an encapsulated execution report for a Fill. Verify the second fill event in the repeating group	○	Not Tested

Key: ○ not tested ● complete ■ pending ■ failed

REFRESH

To run the Receive and Process Encapsulated Message test:

1. Select a **SenderComp** from the drop-down and select **ASSIGN** if a SenderComp is not already assigned.
2. From the **Contracts** drop-down, select the desired contract if the contract is not already locked.
3. Select the **START TEST** button.
4. Enter the following tag values to confirm that your system received and processed an *encapsulated Execution Report* for a New Order
 - tag 57-TargetSubID
 - tag 34-MsgSeqNum
 - tag 37-OrderID
 - tag 1-Account



Note: DO NOT select the **START TEST** button once the test is in progress.

Description		Flag	Status
1	<p>Establish a Drop Copy connection prior to hitting Start Test. After starting the test, receive and process an encapsulated execution report for a New Order</p> <p>Instrument: UB34C#_5/8_03/99 SecurityID: <input type="text"/></p> <p>TargetSubID in the encapsulated message : <input type="text"/></p> <p>MsgSeqNum in the encapsulated message : <input type="text"/></p> <p>OrderID : <input type="text"/></p> <p>Account : <input type="text"/></p> <p>Submit</p>		Pending
2	<p>Receive and process an encapsulated execution report for a Fill. Verify the second fill event in the repeating group</p>		Pending

Key: not tested complete pending failed

5. Enter the following tag values to confirm that your system received and processed an *encapsulated message for a Fill*.

- tag 48-SecurityID: Provided in the test case
- tag 1795-NoOrderEvents

First Order

- →1797-OrderEventExecID
- →1799-OrderEventPx
- →1800-OrderEventQTY

Second Order

- →1797-OrderEventExecID
- →1799-OrderEventPx
- →1800-OrderEventQTY

Description		Flag	Status
1	<p>Establish a Drop Copy connection prior to hitting Start Test. After starting the test, receive and process an encapsulated execution report for a New Order</p>		Complete
2	<p>Receive and process an encapsulated execution report for a Fill. Verify the second fill event in the repeating group</p> <p>Instrument: UB34C#_5/8_03/99 SecurityID: <input type="text"/></p> <p>NoOrderEvents : <input type="text"/></p> <p>First OrderEventExecID : <input type="text"/></p> <p>First OrderEventPx : <input type="text"/></p> <p>First OrderEventQty : <input type="text"/></p> <p>Second OrderEventExecID : <input type="text"/></p> <p>Second OrderEventPx : <input type="text"/></p> <p>Second OrderEventQty : <input type="text"/></p> <p>Submit</p>		Pending

Key: not tested complete pending failed

Example of Encapsulated Message: (Multiple Messages)

The FIX payload is shown in **bold** below.

```
[8=FIX.4.2|9=509|35=n|34=185|369=57|52=20200610-
05:47:01.098|49=CME|50=98|56=717NEXN|57=CSET|143=SG|212=413|213=<RTRF>
8=FIX.4.2|9=377|35=8|34=208|369=106|52=20200610-
05:47:01.096|49=CME|50=98|56=EIVACPUSP|57=GUSUS|143=US,IL|1=ACP_
ORDER|6=0|11=ACP1591768021071|14=0|17=9848:28271|20=0
37=982167244|38=67|39=0|40=2|41=0|44=130|48=3273848|54=2|55=#USBD|59=0|60=20200610-
```

05:47:01.071|107=UB07#_1/2_
05/27|150=0|151=67|167=TNOTE|432=20200610|819=0|1028=Y|1031=H|1598=1|5149=Memo
ACPOS|5906=A|5979=1591768021071320596|10=249|</RTRF>|10=027|]

Mid-Week Key Rotation

This test verifies that the client system can properly logon to the CME system using the security enhancement functionality with key rotation. You will need two valid keys to complete this test.

Additional Drop Copy Information

See the following documentation for more information on Drop Copy functionality:

- [iLink Binary Order Entry](#)
- [Drop Copy Service for iLink - BrokerTec Markets](#)
- [iLink Binary Order Entry - BrokerTec Markets](#)
- [iLink FIX Tag Library](#)

Interview Test Suite **Test Case** Post Certification Help

Steps of the test: Drop Copy - Mid-Week Key Rotation

This test could take up to several minutes. Please do not close the window during the test. Closing window/stopping test requires to rerun the test from step1.

Purpose	
The purpose of this test is to verify that the client system can properly logon to the CME system using the security enhancement functionality with key rotation. You will need two valid keys to complete this test.	

Note: Press the Start Test button to start or restart a Test. Please do not press the Start Test button again if you are currently running this test. **START TEST**

Description		Flag	Status
1	Over the Drop Copy connection, logon using the first secure key pair.	<input type="radio"/>	Not Tested
2	Receive and process a Logon Confirmation message	<input type="radio"/>	Not Tested
3	Receive and process a Test Request message	<input type="radio"/>	Not Tested
4	Submit a Heartbeat message.	<input type="radio"/>	Not Tested
5	Submit a Logout and process a Logout Confirmation	<input type="radio"/>	Not Tested
6	Over the MSGW connection again, logon using a different set of secure key pairs other than the ones used in step 1.	<input type="radio"/>	Not Tested
7	Receive and process a Logon Confirmation message	<input type="radio"/>	Not Tested
8	Receive and process a Test Request message	<input type="radio"/>	Not Tested

Key: not tested complete pending failed

REFRESH

► To complete the Mid-Week Key Rotation test:

1. Select a **SenderComp** from the drop-down and select **ASSIGN** if a SenderComp is not already assigned.
2. Select the **START TEST** button.

Note: DO NOT select the **START TEST** button once the test is in progress.

3. Over the Drop Copy connection, submit a [Logon \(35=A\)](#) message using the first secure key pair.

4. Receive and process a [Logon \(35=A\)](#) confirmation message.
5. Receive and process a [Test Request \(35=1\)](#) message.
6. Submit a [Heartbeat \(35=0\)](#) message.
7. Submit a [Logout \(35=5\)](#) and process the Logout (35=5) confirmation.
8. Over the MSGW connection again, submit a Logon (35=A) message using a different set of secure key pairs other than the ones used in step 3.
9. Receive and process a Logon Confirmation (35=A) message.

 **Note:** Client systems with Cancel on Disconnect (COD) or Mass Quote functionality enabled may send 1 [Resend Request \(35=2\)](#) message to have any missed messages resent.

10. Receive and process a Test Request (35=1) message.