ASX Signal B

Application Conformance Process

Version 1.2 | September 2022

INFORMATION CLASSIFICATION - CONFIDENTIAL

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1. Introduction

The ASX application conformance test process is designed to help protect participants from any erroneous application behaviour that may be disruptive due to non-conformance.

The following conformance test process applies to any application that connects to the Signal B FIX service.

All customer applications must pass the ASX conformance process prior to accessing the Signal B FIX production environment.

1.1 Purpose

The purpose of this document is to provide an overview of the ASX Signal B conformance test and set expectations regarding conduct and expected results.

1.2 Readership

This document outlines the test phases customers need to pass to certify their Signal B FIX software applications.

Technical staff and other participants that connect directly to the Signal B FIX service are expected to read this document and understand the requirements of this process.

1.3 Enquiries

Please contact CTS@asx.com.au or your Technical Account Manager if you have any questions relating to this document.

2. ASX Conformance Process

The ASX conformance process provides procedures that customers can use to ensure that their application software conforms to ASX operating rules and technical specifications.

ASX expects customers to become conversant with the ASX development platform and develop their applications to a state of readiness for conformance testing. At this point they can contact ASX to schedule a date and time to undertake the conformance test. ASX requires customers to have finalised their software, meaning that said software is in a "production ready" state, before booking the test.

Customers must submit an application conformance checklist and indicate within, the test scenarios their application will not complete when arranging with CTS to undertake the conformance test.

Customers perform the majority of the conformance test unassisted and complete the process by advising CTS about start and end time of the self test. CTS will then check the available logs to verify the result and produce a pass or fail report.

Once a pass is verified by CTS, customers can go on to complete the second phase of the self test.

2.1 When to Repeat Conformance Testing?

While customers are encouraged to perform regular conformance testing, they must repeat conformance testing of their software in these circumstances:

- When their software is modified in any way that may affect or directly impact connectivity to ASX.
- When ASX upgrades or changes its production environment and deems the change mandatory.
- During extended periods of absence when the software is not connected to ASX.
- Upon specific request from the ASX.

2.2 Non-Compliant software

Warning:

ASX reserves the right to block access to the production system by non-compliant software. ASX will require successful completion of a conformance test prior to re-connection.

2.3 Application Conformance Testing

To successfully complete application conformance testing the customer's software application needs to have established a connection to the Signal B FIX ITE environment. This platform simulates the ASX production environment and is designed to give a "production-like" platform to develop and test against.

2.4 Prior to Conformance

Prior to conformance, customers are requested to:

- Read and understand the Signal B FIX specification documents
- Discuss the intended functionality of their applications with their Technical Account Manager to ensure all steps were followed and the process is fully understood.
- Submit the application conformance checklist with all functions not supported by the software clearly marked.
- Send the application conformance checklist to CTS@asx.com.au prior to self testing

The CTS team will be available to assist customers in completing their tests, if required.

2.5 Expectations during Conformance

Customers are expected to:

- Maintain a stable connection and FIX session throughout documented sequence of tests.
- Perform all tests in the documented sequence.
- Perform only the documented tests using the FIX session specified.
- Refrain from introducing any additional tests during the conformance test phase.

3. Self Testing

The customer is responsible for completing this section of the conformance test without the direct supervision of ASX. All activities performed during this segment of the conformance test are logged. On completion of this segment of the conformance test, ASX will review logs to ensure that applicable test scenarios were successfully completed by the customer application(s).

3.1 Connection

The following set of test scenarios define how applications must connect and disconnect from the environment to meet ASX conformance requirements.

3.1.1 Log on

Category	Mandatory
Description	• The application must perform two instances of a Logon<A> – the first logon for the business day and the second logon (which will need to be performed after a logout) • The application must receive a successful connection acknowledgement and sustain connectivity. • The application must pass this test to progress to the next phase of functionality testing.
Notes	• It is recommended the application should wait for at least two heartbeats after the first test scenario, logoff, then log back on for the second test scenario
Requirements	• It is expected that the tester will have confirmed network connectivity to the test environment prior to commencement of conformance • The correct heartbeat interval (30 seconds) must be set as part of the Logon<A> message

#	Test Scenarios	Expected Results
1.	Establish a connection and send first Logon<A> for the business day where ResetSeqNumFlag<141> must be set to 'Y'	The application receives an 'ack' confirming a successful logon, where SessionStatus<1409>=0 (Session Active). The application will then need to maintain a heartbeat.
2.	Establish a connection and send a Logon<A> where ResetSeqNumFlag<141> must be set to 'N'	The application receives an 'ack' confirming a successful logon, where SessionStatus<1409>=0 (Session Active). The application will then need to maintain a heartbeat.

3.1.2 Logout

Category	Mandatory
Description	The purpose of this test is to ensure that applications log out gracefully.
Notes	
Requirements	

#	Test Scenarios	Expected Results
1.	Log out gracefully and disconnect from the current session by sending a Logout<5> message.	The application receives a Logout<5> message confirming a graceful log off.

3.1.3 Password Change

Category	Mandatory
Description	The purpose of this test is to ensure that the application can perform a password change as part of a logon to the environment to demonstrate to ASX that the application can manage its own password in day to day operations.
Notes	Signal B passwords expire every 90 days, and must be changed by the application prior to this or it will not be able to logon.
Requirements	Applications must adhere to the ASX password policy, outlined in Logon<A>, NewPassword<925>.

#	Test Scenarios	Expected Results
1.	The application will need to initiate a Logout<5> if a FIX session is currently active and then send a Logon<A> message, which includes a NewPassword<925> value that matches the ASX password policy.	Logon<A> message will be returned with SessionStatus<1409>=1 and Text<58>=”Password Changed”

3.2 Downloads

3.2.1 Trade Capture Report Request

Category	Mandatory
Description	The purpose of this test is to ensure that Signal B FIX applications can send through a request to receive all trade information for the current trading day.
Notes	A TradeCaptureReportRequestAck<AQ> message will be returned to acknowledge a successful request.
Requirements	

#	Test Scenarios	Expected Results
1.	The application sends a TradeCaptureReportRequest<AD> message for the current trading day requesting all trades; TradeRequestType<569>=0 (All Trades).	TradeCaptureReportRequestAck<AQ> message will be returned, providing acknowledgement of the request.

3.2.2 Trade Capture Report

Category	Mandatory
Description	The purpose of this test is to ensure that Signal B FIX applications can receive both one-sided and two-sided TradeCaptureReport<AE> messages.
Notes	Trades will need to be executed within ASX Trade CDE+ in order for TradeCaptureReport<AE> messages to be received. Two-sided TradeCaptureReport<AE> messages can be generated via crossing trades.
Requirements	

#	Test Scenarios	Expected Results
1.	The application receives one-sided TradeCaptureReport<AE> messages.	The application is able to receive one-sided TradeCaptureReport<AE> messages.
2.	The application receives two-sided TradeCaptureReport<AE> messages.	The application is able to receive two-sided TradeCaptureReport<AE> messages.

3.2.3 Retransmission Request

Category	Mandatory
Description	The purpose of this test is to ensure that the application can successfully request a retransmission of TradeCaptureReport<AE> messages.
Notes	
Requirements	The application will need to ensure that at least one order was executed in the specified trading day being used for this test. ASX will accept a minimum of 1 out of the 2 scenarios below.

#	Test Scenarios	Expected Results
1.	The application performs a retransmission by sending a ResendRequest<2> message specifying a non-zero tag 7 (BeginSeqNo) and non-zero tag 16 (EndSeqNo). These sequence numbers identify the gap for which a retransmission is being requested.	TradeCaptureReport<AE> messages within the specified sequence number range will be returned.
2.	The application performs a full retransmission by sending a ResendRequest<2> message specifying a value of 1 for BeginSeqNo and 0 for EndSeqNo. This triggers a full retransmission.	All TradeCaptureReport<AE> messages for the current business day will be returned.

3.3 Error Handling

3.3.1 Message Reject Handling

Category	Mandatory
Description	Applications should be able to handle receipt of reject messages.
Notes	The information below only provides one possible example for each test scenario. However any combination of values can be used to generate the rejection messages.
Requirements	The application will need to generate an example of a general message rejection and a rejection to a TradeCaptureReportRequest<AD>.

#	Test Scenarios	Expected Results
1.	**Invalid Message Type** The application triggers a BusinessMessageReject<j>, e.g. by sending an unsupported value for MsgType<35>	A BusinessMessageReject<j> will be received with BusinessRejectReason<380>=3 (Unsupported Message Type).
2.	**Invalid Date** The application triggers a rejection in response to a TradeCaptureReportRequest<AD>, e.g. by sending an invalid date in the TradeCaptureReportRequest<AD> that is not the current business date.	A TradeCaptureReportRequestAck<AQ> will be received where Text<58>=”TradeDate not as expected”.

4. Scheduled Testing

Subsequent to the completion of self testing, the following cases are booked with CTS in advance, who will provide the timeslots for when each test needs to be completed.

4.1 Account Disable

Category	Mandatory
Description	The purpose of this test is to ensure that the application attempts to login no more than three times after the account has been locked.
Notes	CTS will specify a date on which the account lock will be initiated. Once the account lock has occurred, CTS will then contact the customer who will then need to perform the test scenarios. The FIX session does not need to be established prior to this test. Remaining logged on whilst the account lock is initiated will not affect the results of the testing.
Requirements	

#	Test Scenarios	Expected Results
1.	CTS schedules the account lock to occur on specified date.	
2.	If the FIX session is active at the time of the account lock, CTS will ask the customer to initiate a FIX session Logout<5>. The application will then need to initiate a Logon<A>.	The application is observed to make no more than three login attempts after their user has been locked. The interval between logon attempts is greater than 30 seconds.

4.2 Impending Password Expiry

Category	Mandatory
Description	The purpose of this test is ensure an application can correctly manage an account that is nearing its password expiry date.
Notes	CTS will specify a date on which the impending password expiry will be initiated. Once the impending password expiry has been configured, it will take effect overnight. CTS will then contact the participant who will then need to perform the test scenarios on the following business date. Once the password has expired, the application will not be able to change the password and CTS will need to be contacted.
Requirements	The application is required to be able to read the SessionStatus<1409> and Text<58> values that are provided in the acknowledgement. The application should be able to provide a new logon password thereafter.

#	Test Scenarios	Expected Results
1.	CTS will schedule the impending password expiry and will inform the participant of the date it will take effect.	
2.	On the specified date, the application initiates a Logon<A> for the first time after system startup.	The application receives a Logon<A> message, where SessionStatus<1409>=2 (session password due to expire) and Text<58>=”Password due to expire on DD/MM/YYYY”.
3.	The application will need to initiate a Logout<5> and then send a Logon<A> message, which includes a NewPassword<925> value that matches the ASX password policy.	The application establishes a valid FIX session.

4.3 Trade Cancellation

Category	Mandatory
Description	The purpose of this test is to ensure that Signal B FIX applications can receive both one-sided and two-sided TradeCaptureReport<AE> messages for trade cancellations.
Notes	Trades will need to be executed within ASX Trade CDE+ in order for TradeCaptureReport<AE> messages to be received. Two-sided TradeCaptureReport<AE> messages can be generated via crossing trades. Please contact CTS and provide the trade slip number to request trade cancellations.
Requirements	

#	Test Scenarios	Expected Results
1.	The application receives one-sided TradeCaptureReport<AE> messages for a trade cancellation.	The application is able to receive one sided TradeCaptureReport<AE> messages.
2.	The application receives two-sided TradeCaptureReport<AE> messages for a trade cancellation.	The application is able to receive two sided TradeCaptureReport<AE> messages.

4.4 Failover

Category	Mandatory
Description	The purpose of this section is to test application recovery when ASX initiates a FIX gateway failover. When reconnecting, the application should maintain sequence numbers. FIX gateway failover is simulated in ITE at 15:00 AEDT/AEST every Tuesday and Thursday afternoon. The downtime is 15 minutes.
Notes	If sequence numbers are unrecoverable following a disconnection, please refer to "Sequence Number Gap Management" of the Signal B FIX Specification Manual for information on sequence number recovery.
Requirements	The application must make use of NextExpectedMsgSeqNum<789>.

#	Test Scenarios	Expected Results
1.	The test environment will be brought down for 15 minutes.	
2.	The application will need to send a Logon<A> message with the correct NextExpectedMsgSeqNum<789> once the FIX gateway is brought back up.	ASX will respond with a Logon<A> message populating NextExpectedMsgSeqNum<789> with the next expected sequence number to be sent by the application. The FIX gateway and client application will automatically send missed messages before sending any other messages. On Logon<A>, if NextExpectedMsgSeqNum<789>=1, ASX will view this as a failure. The application must logon with the correct NextExpectedMsgSeqNum<789> to be received from the exchange.

5. Version History

This document has been revised according to the table below:

Version	Date	Comment
1.0	March 2022	Initial version
1.1	May 2022	Added cases and corrected retransmission case
1.2	September 2022	Amendments made to conformance cases 3.1.3 and 3.3.1

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