

OneChicago ✕

1.0

Delta1 FIX44 API Guide to Messages and Content

Read-only Audit Session

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Portions of this document have been taken from the Fix 4.4 Specification, which is property of FIX Protocol Ltd. (<http://www.fixtradingcommunity.org>).

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Preface P.1 Usage and Conventions

- All references to “the exchange” in this document indicate OneChicago, LLC.
- The ^ is used to represent the FIX field separator.

`[48=1237^200=200010^207]`

- FIX Tags are referenced by name followed by the tag number in parentheses.

`[OrdType (40)
OrderQty (38)]`

Preface P.2 Exchange Rules

- Fields not specified in this document are ignored by the exchange’s FIX service. Such unsupported fields are not carried through the system.
- The exchange will ignore any message rejects sent by a connected session.
- The exchange reserves the right to terminate any session that rejects exchange messages.
- The exchange will terminate any session where messaging is deemed inappropriate and detrimental to the marketplace.

Preface P.3 Future Enhancements

The exchange reserves the right to make period system modifications that may result in changes to this guide. Such changes will be conveyed by way of a Software Change Notice and sent by email to all subscribers.

1.0 Introduction

This document serves to provide guidance for developing an application to the Delta1 FIX44 API for the purposes of audit. The intended use of the **Read-only Audit Session** is to leverage the trading group functionality of Delta1 to provide copies of all outgoing messages for affirmative acknowledgements.

1.1 Who should use the Read-only Audit Session?

This configuration is intended to be deployed for FIX API sessions seeking to receive a real-time audit trail in FIX format. The exchange also offers a near real-time SFTP CSV audit trail service for Delta1 Trading Front-end logins. Please note, the SFTP CSV audit trail is not available for FIX44 API sessions.

1.2 Trading Groups Explained

A trading group is a logical association that provides shared access to a central order book. This is achieved through application level rules within the FIX Gateway and the dissemination of event driven/unsolicited *Execution Report*, *Trade Capture Report*, and *Trade Capture Report Ack* messages to all sessions in the same group. Sessions may also send an *Order Mass Status Request* to obtain a working copy of the order book. The *SenderSubID (50)* FIX tag is provided on each message to indicate the session that originated the order or trade record.

Basic Principles:

- A session can only be a member of a single trading group.
- The trading group association is assigned at the exchange level, as such no run-time designation from the client application is required.
- Sessions in a trading group must be assigned the same *TargetCompID* when connecting to the exchange FIX Gateway (XOCHT_####).

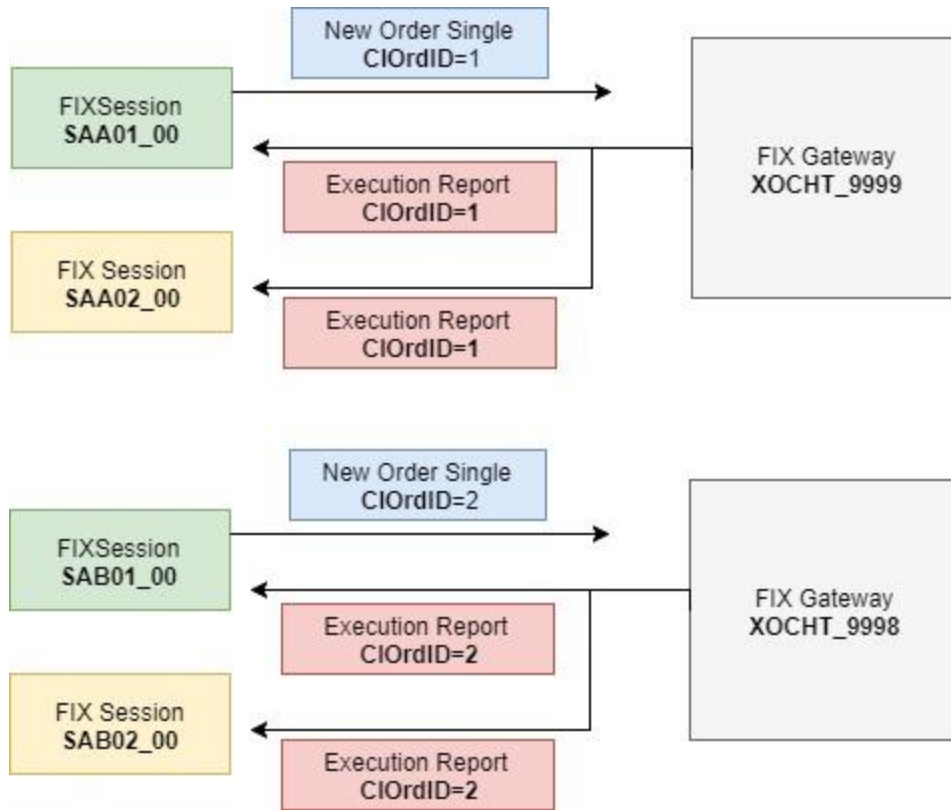
1.3 Role of the Read-only Audit Session

Sessions in a trading group support a configuration option that designates the session as **Read-only Audit**. Simply put, the FIX Gateway employs a blacklist policy to all standard messages supported by the Delta1 FIX44 API and employs a whitelist policy for the specific FIX message types.

1.4 Sample Configuration

Sample Trading designs and deploys a trading application. The application requires that two FIX Sessions target the exchange and the message flow is separated according to the Sample Trading's business logic while allocating each session a throughput of 500 msg/sec per *TargetCompID*. Sample trading requires a real-time FIX format audit trail for each session.

- 2 FIX Gateways: **XOCHT_9999, XOCHT_9998**
- 2 trading groups: **SAA, SAB**
- 2 order entry sessions are assigned: **SAA01_00, SAB01_00**
- 2 read-only audit sessions are assigned: **SAA02_00, SAB02_00**



In the above example, SAA01_00 and SAA02_00 are assigned to the trading group “SAA.” As such, both sessions receive an *Execution Report* when SAA01_00 enters a *New Order Single (CIOrdID=1)*.

SAB01_00 and SAB02_00 are assigned to the trading group “SAB”. Similarly, both sessions receive an *Execution Report* when SAB01_00 enters a *New Order Single (CIOrdID=2)*.

The logins highlighted in green, can act on any message (*Execution Report, Trade Capture Report, Trade Capture Report Ack*) as the originating party.

However the logins highlighted in yellow, while configured as a read-only session can only receive these messages.

Any attempts by SAA02_00 or SAB02_00 to *Cancel/Replace* a working order, *Accept/Decline/Cancel* a trade invitation, submit a *Trade Capture Report* or enter a *New Order Single* will result in an application level reject at the FIX Gateway.

2.0 Messages

This guide is to be supplemented by the [Delta1 FIX44 API Guide to Messages and Content – Technical Specifications](#). This section provides for supported messages and sample messages received by a read-only session.

2.1 Supported Messages

Only valid or accepted messages will be sent to the read-only session. Application level or business level rejects are only delivered to the originating FIX session.

Additional points regarding messaging:

- FIX messages are only sent to read-only sessions while the session is connected.
- Read-only sessions cannot request sequence reset gap fill for sessions other than its own.
- All unsolicited messages sent to a read-only session from the Fix Gateway include *SenderSubID (50)* which provides the originating session's *SenderCompID*.

The following messages may be **sent by** a read-only session to the FIX Gateway:

- Heartbeat
- Logon
- Logout
- Security List
- Order Mass Status Request

The following messages may be **sent by** the FIX Gateway to a read-only session:

- Security List
- New Order Single
- Execution Report
- Trade Capture Report
- Trade Capture Report Ack

2.2 Rules of Engagement

Read-only sessions should never attempt to *Cancel/Replace* a working order, *Accept/Decline/Cancel* a trade invitation, submit a *Trade Capture Report* or enter a *New Order Single*. Attempts will be acknowledged with the appropriate reject message type in conjunction with *OrdRejReason(103) = 80*.

2.3 Sample Messages

The below message samples pertain to the following sample configurations:

- FIX API order entry session: **XYA01T_02**
- FIX API read-only session: **XYA02_00**
- Both sessions are assigned to trading group **XYA**
- **Affiliate** is defined as the FIX API order entry session **XYA01T_02**

2.3.1 New Order Single

```
8=FIX.4.4^9=372^35=8^34=36^49=XOCHT_0020^50=XYA01T_02^52=20160324-
12:45:17.939^56=XYA02_00^6=0^11=14588235166470000005^14=0^17=14588232
5100000002^22=8^37=1200207520000000044^38=100^39=0^40=2^44=1.2345^4
8=11936121160318160415^54=1^59=0^60=20160324-
12:45:17^77=C^150=0^151=100^453=3^448=100^447=D^452=1^448=XYZ^447=
D^452=12^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^30013=15
3.8167^10=072
```

2.3.2 Order Cancel Replace

8=FIX.4.4^9=396^35=8^34=37^49=XOCHT_0020^50=XYA01T_02^52=20160324-12:45:46.795^56=XYA02_00^6=0^11=14588235451310000006^14=0^17=145882325100000003^22=8^37=1200207520000000044^38=150^39=5^40=2^41=14588235166470000005^44=1.2345^48=11936121160318160415^54=1^59=0^60=20160324-12:45:46^77=C^150=5^151=150^453=3^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^30013=153.8167^10=003

2.3.3 Order Partially Filled

8=FIX.4.4^9=435^35=8^34=38^49=XOCHT_0020^50=XYA01T_02^52=20160324-12:46:14.698^56=XYA02_00^6=1.2345^11=14588235451310000006^14=60^17=145882325100000000422=8^31=1.234532=60^37=1200207520000000044^38=150^39=1^40=2^41=14588235166470000005^44=1.2345^48=11936121160318160415^54=1^59=0^60=20160324-12:46:14^77=C^150=F^151=90^198=3001814000001^453=3^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^30013=153.8167^10=070

2.3.4 Order Cancel

8=FIX.4.4^9=400^35=8^34=40^49=XOCHT_0020^50=XYA01T_02^52=20160324-12:46:32.819^56=XYA02_00^6=1.2345^11=14588235928110000011^14=60^17=145882325100000000622=8^37=1200207520000000044^38=150^39=4^40=2^41=14588235451310000006^44=1.2345^48=11936121160318160415^54=1^59=0^60=20160324-12:46:32^77=C^150=4^151=0^453=3^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^30013=153.8167^10=172

2.3.5 Order Fully Filled

8=FIX.4.4^9=382^35=8^34=43^49=XOCHT_0020^50=XYA01T_02^52=20160324-12:47:08.196^56=XYA02_00^6=10^11=14588236229840000018^14=10^17=1458823251000000009^22=831=10^32=10^37=1200207520000000049^38=10^39=2^40=2^44=10^48=11936111160415000000^54=159=0^60=20160324-12:47:08^77=C^150=F^151=0^198=3002814000001^453=3^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^10=249

2.3.6 Trade Capture Report Ack – Initiator New (Sent by Affiliate)

8=FIX.4.4^9=353^35=AR^34=47^49=XOCHT_0020^50=XYA01T_02^52=20160324-
12:50:24.334^56=XYA02_00^22=8^31=100^32=12^48=11936112160415000000^60=20160324-
12:50:24^487=0^552=1^54=2^453=4^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=WWC01T_02^447=D^452=56^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^77=C^571=14588238040390000019^573=1^856=0^939=0^1003=3101814000001^1123=3^10=121

2.3.7 Trade Capture Report – Accepted (Sent by Counter-party)

8=FIX.4.4^9=392^35=AE^34=50^49=XOCHT_0020^50=XYA01T_02^52=20160324-
12:51:43.474^56=XYA02_00^22=8^31=100^32=12^48=11936112160415000000^55=IBO1C^60=20160324-
12:51:43^75=20160324^325=Y^487=2^552=1^54=2^453=4^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=WWC01T_02^447=D^452=56^448=sample^447=D^452=24^802=15^23=1^803=26^582=4^77=C^571=3101814000004^572=14588238842760000023^573=0^856=0^1003=3101814000003^1123=0^10=042

2.3.8 Trade Capture Report – Declined (Sent by Counter-party)

8=FIX.4.4^9=392^35=AE^34=51^49=XOCHT_0020^50=XYA01T_02^52=20160324-
12:51:58.238^56=XYA02_00^22=8^31=100^32=12^48=11936112160415000000^55=IBO1C^60=20160324-
12:51:5^875=20160324^325=Y^487=2^552=1^54=1^453=4^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=WWC01T_02^447=D^452=56^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^77=C^571=3101814000005^572=14588238725200000021^573=1^856=3^1003=3101814000002^1123=3^10=046

2.3.9 Trade Capture Report Ack – Canceled (Sent by Affiliate)

8=FIX.4.4^9=371^35=AR^34=52^49=XOCHT_0020^50=XYA01T_02^52=20160324-
12:52:12.592^56=XYA02_00^22=8^31=100^32=12^48=11936112160415000000^60=20160324-
12:52:12^487=5^552=1^54=2^453=4^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=WWC01T_02^447=D^452=56^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^77=C^571=1458823932653^572=14588238040390000019^573=1^856=6^939=0^1003=310181400000^1123=3^10=011

2.3.10 Trade Capture Report - Invitation New (Sent by Counter-party)

8=FIX.4.4^9=314^35=AE^34=53^49=XOCHT_0020^50=XYA01T_02^52=20160324-
12:53:07.565^56=XYA02_00^22=8^31=100^32=21^48=11936112160318000000^55=IBO1C^60=20160324-
12:53:07^75=20160324^325=Y^487=0^552=1^54=2^453=3^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=WWC01T_02^447=D^452=56^571=3101814000007^573=1^856=11^1003=3101814000007^1123=3^10=114

2.3.11 Trade Capture Report Ack – Accepted (Sent by Affiliate)

8=FIX.4.4^9=364^35=AR^34=56^49=XOCHT_0020^50=XYA01T_02^52=20160324-
12:53:49.980^56=XYA02_00^22=8^31=100^32=21^48=11936112160318000000^60=20160324-
12:53:49^487=2^552=1^54=2^453=4^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=WWC01T_02^447=D^452=56^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^77=C^571=1458824030044^572=3101814000007^573=1^856=2^939=0^1003=3101814000007^1123=3^10=161

2.3.12 Trade Capture Report – Trade Confirmation

8=FIX.4.4^9=385^35=AE^34=57^49=XOCHT_0020^50=XYA01T_02^52=20160324-
12:53:49.981^56=XYA02_00^22=8^31=100^32=21^48=11936112160318000000^55=IBO1C^60=20160324-
12:53:49^75=20160324^325=Y^487=2^552=1^54=2^453=4^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=WWC01T_02^447=D^452=56^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^77=C^571=3101814000010^572=1458824030044^573=0^856=0^1003=3101814000007^1123=0^10=221

2.3.13 Trade Capture Report Ack – Declined (Sent by Affiliate)

8=FIX.4.4^9=363^35=AR^34=58^49=XOCHT_0020^50=XYA01T_02^52=20160324-
12:54:16.501^56=XYA02_00^22=8^31=10^32=12^48=11936112160318000000^60=20160324-
12:54:16^487=2^552=1^54=1^453=4^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=WWC01T_02^447=D^452=56^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^77=C^571=1458824056567^572=3101814000008^573=1^856=3^939=0^1003=3101814000008^1123=3^10=113

2.3.14 Trade Capture Report– Canceled (Sent by Counter-party)

8=FIX.4.4^9=330^35=AE^34=59^49=XOCHT_0020^50=XYA01T_02^52=20160324-
12:54:26.411^56=XYA02_00^22=8^31=12^32=10^48=11936112160318000000^55=IBO1C^60=20160324-
12:54:26^75=20160324^325=Y^487=5^552=1^54=2^453=3^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=WWC01T_02^447=D^452=56^571=3101814000012^572=3101814000009^573=1^856=6^1003=3101814000009^1123=3^10=126

2.3.15 Execution Report – As a Result of an OMS (Working Orders)

8=FIX.4.4^9=90^35=AF^34=4^49=XYA02_00^52=20160324-
14:04:06.770^56=XOCHT_0020^584=1458828246770862^585=12^10=088

8=FIX.4.4^9=402^35=8^34=38^49=XOCHT_0020^50=XYA01T_02^52=20160324-
14:04:06.772^56=XYA02_00^6=0^11=14588267883640000062^14=0^17=1458823251000000012^22=8^37=12002075200000000072^38=1440^39=0^40=2^44=0^48=11936121160318160415^54=1^59=0^60=20160324-
13:39:49^77=C^150=I^151=1440^453=3^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^584=1458828246770862^911=3^912=N^30013=153.8167^10=063

8=FIX.4.4^9=383^35=8^34=39^49=XOCHT_0020^50=XYA01T_02^52=20160324-
14:04:06.772^56=XYA02_00^6=0^11=14588267768400000057^14=0^17=1458823251000000011^22=8^37=12002075200000000071^38=10^39=0^40=2^44=1^48=1193611160617000000^54=2^59=0^60=20160324-
13:39:37^77=C^150=I^151=10^453=3^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^584=1458828246770862^911=3^912=N^10=147

8=FIX.4.4^9=384^35=8^34=40^49=XOCHT_0020^50=XYA01T_02^52=20160324-
14:04:06.772^56=XYA02_00^6=0^11=14588267709740000054^14=0^17=1458823251000000010^22=8^37=12002075200000000070^38=23^39=0^40=2^44=13^48=1193611160415000000^54=2^59=0^60=20160324-
13:39:31^77=C^150=I^151=23^453=3^448=100^447=D^452=1^448=XYZ^447=D^452=12^448=sample^447=D^452=24^802=1^523=1^803=26^582=4^584=1458828246770862^911=3^912=Y^10=197

2.3.16 Execution Report – As a Result of an OMS (Filled Orders)

8=FIX.4.4^9=90^35=AF^34=3^49=XYA02_00^52=20160324-
14:04:06.770^56=XOCHT_0020^584=1458828246770605^585=11^10=081

8=FIX.4.4^9=415^35=8^34=34^49=XOCHT_0020^50=XYA01T_02^52=201603
24-
14:04:06.771^56=XYA02_00^6=10^11=14588236229840000018^14=10^17=14588
23251000000009^22=8^31=10^32=10^37=1200207520000000049^38=10^39=2^
40=2^44=10^48=11936111160415000000^54=1^59=0^60=20160324-
12:47:08^77=C^150=I^151=0^198=3002814000001^453=3^448=100^447=D^452
=1^448=XYZ^447=D^452=12^448=sample^447=D^452=24^802=1^523=1^803
=26^582=4^584=1458828246770605^911=4^912=N^10=078

8=FIX.4.4^9=415^35=8^34=35^49=XOCHT_0020^50=XYA01T_02^52=201603
24-
14:04:06.771^56=XYA02_00^6=10^11=14588236147560000014^14=10^17=14588
23251000000008^22=8^31=10^32=10^37=1200207520000000048^38=10^39=2^
40=2^44=10^48=11936111160415000000^54=2^59=0^60=20160324-
12:47:08^77=C^150=I^151=0^198=3002814000001^453=3^448=100^447=D^452
=1^448=XYZ^447=D^452=12^448=sample^447=D^452=24^802=1^523=1^803
=26^582=4^584=1458828246770605^911=4^912=N^10=072

8=FIX.4.4^9=442^35=8^34=36^49=XOCHT_0020^50=XYA01T_02^52=201603
24-
14:04:06.771^56=XYA02_00^6=1.2345^11=14588235729590000010^14=60^17=1
458823251000000005^22=8^31=1.2345^32=60^37=1200207520000000046^38=6
0^39=2^40=2^44=1.2345^48=11936121160318160415^54=2^59=0^60=20160324
-
12:46:14^77=C^150=I^151=0^198=3001814000001^453=3^448=100^447=D^452
=1^448=XYZ^447=D^452=12^448=sample^447=D^452=24^802=1^523=1^803
=26^582=4^584=1458828246770605^911=4^912=N^30013=153.8167^10=156

8=FIX.4.4^9=468^35=8^34=37^49=XOCHT_0020^50=XYA01T_02^52=201603
24-
14:04:06.771^56=XYA02_00^6=1.2345^11=14588235451310000006^14=60^17=1
458823251000000004^22=8^31=1.2345^32=60^37=1200207520000000044^38=1
50^39=1^40=2^41=14588235166470000005^44=1.2345^48=119361211603181604
15^54=1^59=0^60=20160324-
12:46:14^77=C^150=I^151=90^198=3001814000001^453=3^448=100^447=D^45
2=1^448=XYZ^447=D^452=12^448=sample^447=D^452=24^802=1^523=1^80
3=26^582=4^584=1458828246770605^911=4^912=Y^30013=153.8167^10=171