



TMX AUSTRALIA EXCHANGE

CXA Binary Order Entry Version 3 Specification

Version 1.0.17

3 August 2026





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Introduction

Overview

This document describes Binary Order Entry, version 3 (BOEv3), the CXA proprietary order entry protocol used by a participant to send orders to CXA.

Where applicable, the terminology (e.g., time in force) used in this document is similar to that used by the FIX protocol to allow those familiar with FIX to more easily understand BOEv3. This document assumes the reader has basic knowledge of the FIX protocol.

BOEv3 fulfills the following requirements:

- *CPU and memory efficiency.* Message encoding, decoding, and parsing are simpler to code and can be optimised to use less CPU and memory at runtime.
- *Application level simplicity.* State transitions are simple and unambiguous. They are easy to apply to a participant's representation of an order.
- *Session level simplicity.* The session level protocol (login, sequencing, replay of missed messages, logout) is simple to understand.

While CXA has striven to preserve feature parity between FIX and BOEv3 where possible, some features may only be available in one protocol or the other.

Note that while FIX is an ASCII based protocol, BOE is binary based, providing for efficiencies that can allow for reduced latency.

All binary values are in **little-endian** (as used by Intel x86 processors), and not network byte order.

Each message is identified by a unique message type. A listing of the supported message types is provided in Table 1 - Session Message Types and Table 2 - Application Message Types.

All communication is via standard TCP/IP.

BOEv3 Message Format Versioning and Nomenclature

Since BOEv3 uses a more rigidly structured message format than prior versions of BOE, message types may be introduced when new fields cannot be accommodated by utilising reserve bytes in the existing message specification. In such cases, when a new message type is introduced, it will be documented as a distinct message type in this document. Application layer message types are named using the following pattern:

Application Layer Message Type	General Type	Market	Version
NewOrderAUEquitiesV1	New Order	AU Equities	V1

This allows for ease of distinction between similar message types between markets (for example, AU Equities compared to US Futures), and the handling of new versions of the message (V1, V2, *et cetera*).



When application layer message types are discussed in this document, they are being referred to using their general type name unless their specific version is relevant to the documentation.

During any time when multiple versions of messages from CXA to Participant are supported concurrently, the configuration of the port determines which message version may be sent by CXA.

Introduction of New Fields in Existing BOEv3 Messages

Existing message fields will not change in length. Fields currently identified as "Reserved" may be redefined, in part or in whole, as new specified fields. New fields may be introduced at the end of any message that does not have a repeating group of fields; consequently, Clients must check the length of messages received from CXA and treat any additional bytes present as undefined values.

Hours of Operation

Refer to the website for the [CXA Regular Trading Hours](#) and [CXA Holiday Schedule](#).

Data Types

The following data types are used by BOEv3. The size of some data types varies by message. All data types have default values of binary zero, in both Participant to CXA and CXA to Participant contexts.

- **Binary:** Little Endian byte order, unsigned binary value. The number of bytes used depends on the context.
 - One byte: FE = 254
 - Four bytes: 64 00 00 00 = 100
- **Binary Price:** Little Endian byte order value, signed two's complement, eight bytes in size, with four implied decimal places. So, if the value is 123,400, the actual value considering implied decimal places is 12.34.
 - 08 E2 01 00 00 00 00 00 = 123,400/10,000 = 12.34
 - F8 1D FE FF FF FF FF FF = -123,400/10,000 = -12.34
- **Alpha:** ASCII uppercase letters (A-Z) and lowercase letters (a-z) only. ASCII NUL (0x00) filled on the right, if necessary. The number of bytes used depends on the context.
- **Alphanumeric:** ASCII uppercase letters (A-Z), lowercase letters (a-z) and numbers (0-9) only. ASCII NUL (0x00) filled on the right, if necessary.
- **Text:** Printable ASCII characters only (binary values in the inclusive range 0x20 through 0x7E). ASCII NUL (0x00) filled on the right, if necessary. The number of bytes used depends on the context.
- **DateTime:** Little Endian byte order, unsigned binary value, 8 bytes in size. The date and time, in UTC, represented as nanoseconds past the UNIX epoch (00:00:00 UTC on 1 January 1970). The nanoseconds portion is set to 0 by the exchange (the actual precision will be in microseconds).
 - E0 FE 20 F7 36 71 F8 11F = 1,294,909,373,757,324,000 = 2011-01-13 09:02:53.757324 UTC
- **Date:** Little Endian byte order, unsigned binary value, 4 bytes in size. The YYYYMMDD expressed as an integer.
 - A7 3C 34 01 = 20200615 = "June 15, 2020"



- *Reserved:* sequence of ASCII NUL (0x00) values when sent by the participant. May contain any values when sent by the exchange and should be ignored by the participant.

Protocol Features

The exchange does not guarantee messages sent by Members to the exchange, including through protocols such as TCP. Members are responsible to monitor the status of the messages they send to the exchange.

Architecture

Each BOE order handler process will allow a single TCP connection from a participant. Connection attempts from unknown source IP ranges will be blocked to prevent unauthorised access to BOE ports. Contact the CXA APAC [Network Operations Centre](#) to connect from a new source IP range.

Each BOE order handler will connect, using a proprietary UDP protocol, to all matching units. Connections from order handlers to matching engines are latency equalised. The connections between order handlers and matching units are governed by an internal flow control mechanism to control burst rates.

Maximum Open Order Limits

The exchange limits the maximum number of open orders allowed on a BOE port to 300,000 per port. New orders will be rejected once this limit is breached until the number of open orders drops back below the limit.

Stale NBBO

A stale ASX BBO will occur when the CXA trading system determines that one or more market data channels are impaired or down completely. If the trading system detects that an ASX BBO is stale, trading will continue using the CXA BBO quote for all pricing.

Port Types

All BOE port types may be ordered through the Customer Web Portal using the [Logical Port Request form](#) tool. Changes to port attributes may be requested through the same tool by submitting a 'Modify' request for one or more existing BOE ports.

BOE Order Ports

BOE Order Ports support order entry, modification, and cancellation. Order Ports purposefully do not support the usage of the Purge Orders message type. The attempted usage of this message type on a standard BOE order port will result in a rejection of the disallowed message type.

BOE Order Ports are limited to 4,000 inbound messages per second. Once the inbound limit is reached new orders are rejected, modifies are handled as cancels, and cancels are processed normally. BOE Order Ports are limited to 10 inbound messages per second on CXA Test Products (including ZZA).

BOE Matching Units and Sequence Numbers

BOE Order Ports are not specific to a particular matching unit. Note however that message sequence numbers from CXA are issued per matching unit. Sequence numbers will be monotonically incremental values per MatchingUnit. Currently, CXA has 2 matching units.



BOE Purge Ports

BOE Purge Ports support only one message type from participants: Purge Orders. Participants may use this port type to request a cancellation of groups of orders, including orders across multiple BOE/FIX Order Ports.



Session

Message Headers

Each message has a twelve-byte header. The two initial *StartOfMessage* bytes are present to aid in message reassembly for network capture purposes. The *MatchingUnit* field is only populated on sequenced, non-session level messages sent from CXA to the Participant. Messages from Participant to CXA and all session level messages must always set this value to 0.

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes of the <i>StartOfMessage</i> field.
MessageType	4	2	Binary	Message type
MatchingUnit	6	1	Binary	Matching unit which created this message. Matching units in BOE correspond to matching units on Multicast PITCH. For session level traffic the unit is set to 0. For messages from Participant to CXA, the unit must be 0.
Reserved	7	1	Binary	Must be zero from participant. Value unspecified from CXA.
SequenceNumber	8	4	Binary	The sequence number for this message. Messages from CXA to Participant are sequenced distinctly per matching unit. Zero for session level traffic.

Handling of Invalid Message Headers

If an invalid message header is encountered, the exchange will disconnect the port. A message header is considered invalid if any of the following is encountered:

- *StartOfMessage* is not B0E3.
- *MessageLength* is not appropriate for the given message type.
- *MessageType* is not a documented message type for CXA. Note that the types of application messages accepted will vary between CXA and other BOEv3 exchanges.

Login, Replay, and Sequencing

Session level messages, both inbound (Participant to CXA) and outbound (CXA to Participant) are unsequenced.

Inbound (participant to CXA) application messages are sequenced. Upon reconnection, CXA informs the participant of the last processed sequence number; the participant may choose to resend any messages with sequence numbers greater than this value. A gap forward in the participant's incoming sequence number is permitted at any time and is ignored by CXA. Gaps backward in sequence number (including the same sequence number used twice) are never



permitted and will always result in a Logout Response message being sent and the connection being dropped.

Most (but not all) outbound (CXA to participant) application messages are monotonically sequenced per matching unit. Each message's documentation will indicate whether it is sequenced or unsequenced. While matching units on BOE correspond directly to matching units on Multicast PITCH, sequence numbers do not.

Upon reconnection, a participant sends the last received sequence number per matching unit in a Login Request message. CXA will then respond with any missed messages.

The *ReplayUnspecifiedUnit* value can be used to control the replay behaviour for unknown units. If the flag is set to F (Fail), CXA will send a Login Response and close the connection if the login request does not list all CXA matching units. If the flag is set to S (Skip), CXA will exclude messages from unspecified matching units during replay. If the flag is set to R (Replay), CXA will send messages from unspecified units during replay (starting with sequence 1 per unspecified unit). CXA will send a Replay Complete message when replay is finished. If there are no messages to replay, a Replay Complete message will be sent immediately after a Login Response message. CXA will reject all orders during replay.

If a participant has requested replay messages using a properly formatted Login Request after a disconnect, any unacknowledged orders remaining with the participant after the Replay Complete message is received should be assumed to be unknown to CXA.

Unsequenced messages will not be included during replay.

A session is identified by the *SessionId* and *SessionSubId* (both supplied by CXA).

If a login is rejected an appropriate Login Response message will be sent and the connection will be terminated.

See 'Appendix A – Login Strategies' for recommended login messaging.

Sequence Reset

A reset sequence operation is not available for Binary Order Entry. However, a participant can send a Login Request message with *ReplayUnspecifiedUnit* field set to S (Skip), and *NumberOfUnits* field set to zero. Then, upon receiving a Login Response message from CXA, the participant can use the *ClientSequence* value in that message as the sequence starting point for sending future messages.



Heartbeats

Client Heartbeat messages are sent from participant to CXA, and Server Heartbeat messages are sent from CXA to Participant if no other data has been sent in that direction for one second. Similar to other session level messages, heartbeats from CXA to the participant do not increment the sequence number. If CXA receives no inbound data or heartbeats for five seconds, a Logout Response message will be sent, and the connection will be terminated.

Clients are encouraged to have a one second heartbeat interval and to perform similar connection staleness logic.

Logging Out

To gracefully log out of a session, a Logout Request message should be sent by the participant. CXA will finish sending any queued data for that port, respond with a Logout Response message, and close the connection. After receipt of a Logout Request message, CXA will ignore all other inbound (Participant to CXA) messages except for Client Heartbeat.

Session Messages

Table 1 - Session Message Types

Direction	Message Name	Type	Sequenced
Participant to CXA	Login Request	01 00 (1)	No
Participant to CXA	Logout Request	02 00 (2)	No
Participant to CXA	Client Heartbeat	03 00 (3)	No
CXA to Participant	Login Response	F5 01 (501)	No
CXA to Participant	Replay Complete	F6 01 (502)	No
CXA to Participant	Logout Response	F7 01 (503)	No
CXA to Participant	Server Heartbeat	F8 01 (504)	No

Participant to CXA

Login Request

A Login Request message must be sent as the first message upon connection.

This message includes a repeating group starting with field *UnitNumber* which repeats *NumberOfUnits* times. *NumberOfUnits* can be used to specify the last consumed sequence numbers per matching unit received by the participant. CXA uses these sequence numbers to determine what outbound (CXA to participant) traffic, if any, was missed by the participant. If *NumberOfUnits* is 0, it is assumed the participant has not received any messages (e.g., start of day).

The participant does not need to include a sequence number for a unit if they never received messages from it. If the participant wishes to send a value for the unit anyway, 0 is the only allowed value.

Field Name	Offset	Length	Data Type	Description
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StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	(30 + 5*NumberOfUnits)
MessageType	4	2	Binary	01 00 (1)
MatchingUnit	6	1	Binary	Must be zero
Reserved	7	1	Binary	Must be zero
SequenceNumber	8	4	Binary	Must be zero
SessionId	12	4	AlphaNumeric	Session Id as supplied by CXA
SessionSubId	16	4	AlphaNumeric	Session Sub Id as supplied by CXA (ex. "0001")
Password	20	10	AlphaNumeric	The password associated with the <i>SessionId</i> and <i>SessionSubId</i> .
ReplayUnspecifiedUnit	30	1	Text	Controls replay behavior for unknown units. Must be one of: F = fail if any unit is not specified R = replay any unspecified unit from one S = skip replay of unspecified units
NumberOfUnits	31	1	Binary	The number (possibly 0) of unit/sequence pairs to follow, one per unit from which the participant has received messages over this port. This value must be 0, 1, or 2 since CXA has 2 matching units.
UnitNumber	32	1	Binary	A unit number (1 or 2, since CXA has 2 matching units)
UnitSequence	33	4	Binary	Last received sequence number for the unit (Zero if nothing has been received).

Example Login Request Message

StartOfMessage	B0 E3	
MessageLength	1E 00	30
MessageType	01 00	1 (login request)
MatchingUnit	00	
Reserved	00	
SequenceNumber	00	(unsequenced)
SessionId	41 42 43 44	(ex. "ABCD") - Session Id as supplied by CXA
SessionSubId	30 30 30 31	(ex. "0001") Session Sub Id as supplied by CXA
Password	61 62 63 64 65 66 67 68 69 6A	(ex. "abcdefghij") Password



ReplayUnspecifiedUnit 52

"R" - Replay unknown units.

Logout Request

To end the session, the participant should send a Logout Request message. CXA will finish sending any queued data, respond with a Logout Response message, and close the connection.

A participant may simply close the connection without logging out however, queued messages may be lost when closing the connection without logging out.

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	0A 00 (10)
MessageType	4	2	Binary	02 00 (2)
MatchingUnit	6	1	Binary	Must be zero
Reserved	7	1	Binary	Must be zero
SequenceNumber	8	4	Binary	Must be zero

Example Logout Request Message

StartOfMessage	B0 E3	Start of message bytes
MessageLength	0A 00	10 bytes
MessageType	02 00	Logout Request
MatchingUnit	00	Must be zero
Reserved	00	Must be zero
SequenceNumber	00 00 00 00	Must be zero

Client Heartbeat

See 'Section 0 - Heartbeats' for more information about heartbeats and the session level protocol.

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	0A 00 (10)
MessageType	4	2	Binary	03 00 (3)
MatchingUnit	6	1	Binary	Must be zero
Reserved	7	1	Binary	Must be zero
SequenceNumber	8	4	Binary	Must be zero



Example Client Heartbeat Message

StartOfMessage	B0 E3	Start of message bytes
MessageLength	0A 00	10 bytes
MessageType	03 00	Client Heartbeat
MatchingUnit	00	Must be zero
Reserved	00	Must be zero
SequenceNumber	00 00 00 00	Must be zero

CXA to Participant

Login Response

A Login Response message is sent in response to a Login Request message. On a successful login, the *LoginResponseStatus* will be set to 'A'. On a failed login, *LoginResponseStatus* will be set to a value other than 'A', and *LoginResponseText* will be set to an appropriate failure description.

Note that the repeating group starting with field *UnitNumber* provides the highest available CXA to participant sequence number for the unit. All units will be included in a successful Login Response, regardless of whether all units were listed in the Login Request message.

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	(76 + NumberOfUnits*5)
MessageType	4	2	Binary	F5 01 (501)
MatchingUnit	6	1	Binary	Will be zero
Reserved	7	1	Binary	Unspecified
SequenceNumber	8	4	Binary	Will be zero
LoginResponseStatus	12	1	Text	Accepted, or the reason for the rejection. A = Accepted B = Session in Use D = Disabled I = Invalid Unit M = Invalid Message (first message was not Login Request) N = Not Authorised Q = Sequence Ahead S = Invalid Session
LoginResponseText	13	60	Text	Human-readable text with additional information about the reason for rejection. ASCII NUL (0x00) filled on the right, if necessary.



ClientSequence	73	4	Binary	Last inbound (participant to CXA) message sequence number processed by CXA on this port.
NumberOfUnits	77	1	Binary	A number, n, of unit/sequence pairs to follow, one per unit. A pair for every unit will be sent, even if no messages have been sent to this port today. For unsuccessful logins, this will be 0.
UnitNumber	78	1	Binary	A unit number
UnitSequence	79	4	Binary	Highest available CXA to participant sequence number for the unit.

Example Login Response Message

StartOfMessage	B0 E3	Start of message bytes
MessageLength	51 00	81 bytes
MessageType	F5 01	Login Response
MatchingUnit	00	Always zero
Reserved	00	
SequenceNumber	00 00 00 00	Always zero
LoginResponseStatus	41	"A" (Accepted)
LoginResponseText	54 45 53 54 49 4E 47 00	"TESTING"
ClientSequence	01 00 00 00	1
NumberOfUnits	01	1 unit
UnitNumber	01	Unit 1
UnitSequence	06 41 27 00	160,790
UnitNumber	02	Unit 2
UnitSequence	3F 15 00 00	5,439

Replay Complete

See 'Section 0 - Login, Replay, and Sequencing' for more information about replay and the session level protocol.

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)



MessageLength	2	2	Binary	0A (10)
MessageType	4	2	Binary	F6 01 (502)
MatchingUnit	6	1	Binary	Will be zero
Reserved	7	1	Binary	Unspecified
SequenceNumber	8	4	Binary	Will be zero

Example Replay Complete Message

StartOfMessage	B0 E3	Start of message bytes
MessageLength	0A 00	10 bytes
MessageType	F6 01	Replay Complete
MatchingUnit	00	Always zero
Reserved	00	
SequenceNumber	00 00 00 00	Always zero

Logout Response

A Logout Response is usually sent in response to a Logout Request. Any queued data is transmitted, a Logout Response is sent, and CXA will close the connection. However, a Logout Response may also be sent if the participant violates the protocol specification (e.g., by moving backwards in sequence number).

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	47 00 (71)
MessageType	4	2	Binary	F7 01 (503)
MatchingUnit	6	1	Binary	Will be zero
Reserved	7	1	Binary	Unspecified
SequenceNumber	8	4	Binary	Will be zero
LogoutReason	12	1	Text	Reason for the logout. U = User Requested A = Administrative ! = Protocol Violation (ex. timeout due to inactivity)
LogoutReasonText	13	60	Text	Human-readable text with additional information about the reason for logout.

Example Logout Response Message

StartOfMessage	B0 E3	Start of message bytes
MessageLength	47 00	71 bytes
MessageType	F7 01	Logout Response



MatchingUnit	00	Always zero
Reserved	00	
SequenceNumber	00 00 00 00	Always zero
LogoutReason	55	"U" (User Requested)
LogoutReasonText	54 45 53 54 49 4E 47 00	"TESTING"

Server Heartbeat

See 'Section 0 - Heartbeats' for more information about heartbeats and the session level protocol.

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	0A (10)
MessageType	4	2	Binary	F8 01 (504)
MatchingUnit	6	1	Binary	Will be zero
Reserved	7	1	Binary	Unspecified
SequenceNumber	8	4	Binary	Will be zero

Example Server Heartbeat Message

StartOfMessage	B0 E3	Start of message bytes
MessageLength	0A 00	10 bytes
MessageType	F8 01	Server Heartbeat
MatchingUnit	00	Always zero
Reserved	00	
SequenceNumber	00 00 00 00	Always zero

Application Messages

Note that if CXA receives a message type not listed in this specification, the connection will be closed. See section "0 - Handling of Invalid Message Headers" for details.

Table 2 - Application Message Types

Direction	Message Name	Version	Type	Seq.
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to CXA	NewOrderAUEquitiesV1	V1	3001	Y
to CXA	ModifyOrderAUEquitiesV1	V1	3002	Y
to CXA	CancelOrderAUEquitiesV1	V1	3003	Y
to CXA	PurgeOrdersAUEquitiesV1	V1	3004	Y
to CXA	NewOrderAUEquitiesV1	V2	3005	Y
to CXA	ModifyOrderAUEquitiesV2	V2	3006	Y
from CXA	OrderAcknowledgementAUEquitiesV1	V1	3501	Y
from CXA	OrderRejectedAUEquitiesV1	V1	3502	N
from CXA	OrderModifiedAUEquitiesV1	V1	3503	Y
from CXA	ModifyRejectedAUEquitiesV1	V1	3504	N
from CXA	OrderRestatedAUEquitiesV1	V1	3505	Y
from CXA	OrderExecutionAUEquitiesV1	V1	3506	Y
from CXA	OrderCancelledAUEquitiesV1	V1	3507	Y
from CXA	CancelRejectedAUEquitiesV1	V1	3508	N
from CXA	ExecutionRestatementAUEquitiesV1	V1	3509	Y
from CXA	PurgeAcknowledgementAUEquitiesV1	V1	3510	N
from CXA	PurgeRejectedAUEquitiesV1	V1	3511	N
from CXA	TradeCancelCorrectAUEquitiesV1	V1	3512	Y
from CXA	OrderModifiedAUEquitiesV2	V2	3513	Y
from CXA	CarriedRestatementAUEquitiesV1	V1	3514	Y
from CXA	DoneForDayAUEquitiesV1	V1	3515	Y

Participant to CXA

New Order

The Trading Participant Identifier for the order will be assigned via the port configuration.

NewOrderAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	170
MessageType	42	2	Binary	B9 0B (3001)
MatchingUnit	62	1	Binary	Zero - from participant message
Reserved	7	1	Binary	MUST be zero from participant
SequenceNumber	8	4	Binary	(Sequenced by Participant)
Account	12	10	Text	Used by a trading participant to provide a broker cross reference. Valid characters are ASCII 32-126.



				Reflected back on messages associated with this order.
TradingParticipantID	22	2	Binary	The (4 digit) trading participant identifier. A zero value will be populated with the port default (see Port Attributes section)
CLOrdID	24	20	Text	Unique Id chosen by the participant. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon, pipe, 'at' (@), and double quotes ("). If the CLOrdID matches a live order, the order will be rejected as duplicate. A leading tilde (~) cannot be sent on any CLOrdID and will result in a reject. These are reserved for internal use by CXA and could be received because of a CXA-generated CLOrdID. Note: Although CXA only enforces uniqueness of CLOrdID values among currently live orders, using unique CLOrdID values is strongly recommended.
ExecInst	44	1	Text	All values not defined below are rejected. Ignored if blank (0x00). P = Market Peg (peg Buy [Sell] to NBBO Offer [Bid], one tick within NBBO) R = Primary Peg (peg Buy [Sell] to NBBO Bid [Offer], one tick within NBBO) M = Midpoint (peg to NBBO Midpoint) j = BestX Order (insert the limit order at the best visible price on same side). Not applicable to IOC or FOK. k = MarketX Order (insert the limit order against the best visible price on opposite side).
OrderQty	45	4	Binary	Order quantity. System limit is 999,999,999.
OrdType	49	1	Text	2 = Limit 5 = Market on Close (MOC) P = Pegged MOC requires <i>MaxFloor</i> to be 0 if <i>TimeInForce</i> is 0 or 6. Pegged requires <i>ExecInst</i> to be P, R, or M, and requires <i>MaxFloor</i> to be 0.



Price	50	8	BinaryPrice	If <i>OrdType</i> is 2 (limit), <i>Price</i> must be an applicable minimum trading increment. If <i>OrdType</i> is P (peg), <i>Price</i> must specify a cap price as an applicable minimum trading increment, or a ½ increment if <i>ExecInst</i>=M (mid). If <i>OrdType</i> is 5 (MOC), <i>Price</i> must be 0.
Capacity	58	1	Text	The capacity for the order. Required on all orders. A = Agency P = Principal X = Mixed
Side	59	1	Text	1 = Buy 2 = Sell 5 = Sell Short
Symbol	60	6	Alphanumeric	Instrument symbol (upper case alphanumeric)
TimeInForce	66	1	Text	0 = DAY (default) 1 = GTC (Good Till Cancel). 3 = IOC (portion not filled immediately is cancelled). 4 = FOK (an IOC where the entire size must be filled immediately, otherwise the order will be cancelled back). 6 = GTD. Expires at the specified: <i>ExpireTime</i> or end of day, or <i>ExpireDate</i> for multi-day orders.
MinQty	67	4	Binary	Minimum fill quantity for orders. Required if <i>MEQSE</i> is true. Accepted only on IOC, MOC, and Pegged orders. If <i>MEQSE</i> is false, multiple consecutive fills may be created such that their combined size satisfies the <i>MinQty</i> requirement. When the remaining size on an order is less than the defined <i>MinQty</i>, <i>LeavesQty</i> is treated as the <i>MinQty</i>.
MaxFloor	71	4	Binary	Portion of <i>OrderQty</i> to display. Used for iceberg orders and hidden orders. Limit orders (<i>OrdType</i> = 2) having <i>MaxFloor</i> > 0 are iceberg orders. For iceberg orders, <i>MaxFloor</i> is the displayed quantity. The balance is reserve. The displayed quantity of each order at a price level is decremented first. Limit orders (<i>OrdType</i>=2) having <i>MaxFloor</i> = 0 will display their full size.



				Pegged orders (<i>OrdType</i> = P) and MOC orders (<i>OrdType</i> = 5) must use <i>MaxFloor</i> = 0, which hides the entire quantity. Ignored if order is IOC or FOK.
ExpireTime	75	8	DateTime	Required for GTD order (<i>TimeInForce</i> = 6), <i>ExpireTime</i> specifies the date-time (in UTC) when the order expires. GTD orders will expire at the earlier of the end of the current trading day and the <i>ExpireTime</i>.
ClearingParticipantID	83	4	Binary	The CHES clearing participant identifier. Must be a valid 5-digit CHES PID.
ClearingAccount	87	10	Alphanumeric	Supplemental identifier. Recorded and made available on order acknowledgements. Available via Drop feeds. This field may be blank. 10 character alphanumeric. Spaces, symbols, or special characters are not allowed. This field is not sent to CHES.
Undisclosed	97	1	Boolean	If true, indicates an undisclosed order. Y = True N = False
ClientCrossRef	98	15	Text	Can be used to provide additional participant-side cross reference information.
ShortSellNakedQty	113	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is naked. Ignored unless <i>Side</i> = 5
ShortSellCoveredQty	117	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is covered. Ignored unless <i>Side</i> = 5
ShortSellLongQty	121	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is owned by the participant who placed the order. Orders having <i>Side</i> = 5 (sell short) will be rejected unless <i>ShortSellNakedQty</i> + <i>ShortSellCoveredQty</i> + <i>ShortSellLongQty</i> is equal to the <i>OrderQty</i> and <i>ShortSellLongQty</i> < <i>OrderQty</i>. Ignored unless <i>Side</i> = 5



RiskGroupID	125	2	Binary	Used to group orders for use in order purges where multiple orders can be cancelled by specifying a list of <i>RiskGroupIDs</i>. A zero value is treated as "no <i>RiskGroupID</i>".
NoTradeFeat	127	1	Text	Ignored if <i>NoTradeKey</i> is not set. Declares the handling of self-trading. U = No self trade protection N = Cancel Newest O = Cancel Oldest B = Cancel Both S = Cancel Smallest D = Decrement larger/Cancel Smaller d = Same as D above, but only decrement <i>LeavesQty</i>. Do not restate <i>OrderQty</i>. X = Booking Purpose Trade; the resultant trade is reported to CHES as a booking purpose trade and as a cancel on public market data feeds. NULL (0x00) = Apply the port default. If the older and newer orders in a self-trade have conflicting instructions, the instruction of the newer order will be honoured, except that if the inbound order specifies Decrement and the resting order does not, and the resting order is larger, then both orders will be cancelled. This exception is to protect the order entry software for the resting order from receiving an unexpected restatement message.
NoTradeKey	128	10	Text	Interactions of orders from the same participant (defined by reference to the first 3 digits of the trading PID) with the same <i>NoTradeKey</i> value will be managed by the newer order's <i>NoTradeFeat</i> instruction.
MEQSE	138	1	Text	If true, then any single fill will be for at least <i>MinQty</i> shares. Y = True N = False If True, then the order will be rejected unless <i>MinQty</i> is also specified or the <i>OrdType</i> is not 5 or P (MOC or Pegged).



OriginOfTrans	139	20	Text	Market Integrity Rule defined field for Origin of Order (ex. ACN, ABN, CHESS HIN).
IntermediaryID	159	10	Text	Market Integrity Rule defined field for Intermediary Identifier–may be populated with AFS license number. Characters in ASCII range 32-126 are allowed.
DirectedWholesaleIndicator	169	1	Boolean	Market Integrity Rule defined field to identify wholesale participant. Y = True N = False
RemoveCrossingFromClearing	170	1	Boolean	If "Y", instructs CXA on how to process crossed trades with CHESS. Please contact CXA to confirm settings. Y = True N = False
BrokerPreferencing	171	1	Text	Y = match with other orders using broker preferencing when possible. N = do not apply broker preferencing NULL (0x00) = apply port default

NewOrderAUEquitiesV2

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	176
MessageType	4	2	Binary	BD 0B (3005)
MatchingUnit	6	1	Binary	Zero - from participant message
Reserved	7	1	Binary	MUST be zero from participant
SequenceNumber	8	4	Binary	(Sequenced by Participant)
Account	12	10	Text	Used by a trading participant to provide a broker cross reference. Valid characters are ASCII 32-126. Reflected back on messages associated with this order.
TradingParticipantID	22	2	Binary	The (4 digit) trading participant identifier. A zero value will be populated with the port default (see Port Attributes section)
ClOrdID	24	20	Text	Unique Id chosen by the participant. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon, pipe, 'at' (@), and double quotes (") .



				If the <i>ClOrdID</i> matches a live order, the order will be rejected as duplicate. A leading tilde (~) cannot be sent on any <i>ClOrdID</i> and will result in a reject. These are reserved for internal use by CXA and could be received because of a CXA-generated <i>ClOrdID</i>. Note: Although CXA only enforces uniqueness of <i>ClOrdID</i> values among currently live orders, using unique <i>ClOrdID</i> values is strongly recommended.
ExecInst	44	1	Text	All values not defined below are rejected. Ignored if blank (0x00). P = Market Peg (peg Buy [Sell] to NBBO Offer [Bid], one tick within NBBO) R = Primary Peg (peg Buy [Sell] to NBBO Bid [Offer], one tick within NBBO) M = Midpoint (peg to NBBO Midpoint) j = BestX Order (insert the limit order at the best visible price on same side). Not applicable to IOC or FOK. k = MarketX Order (insert the limit order against the best visible price on opposite side).
OrderQty	45	4	Binary	Order quantity. System limit is 999,999,999.
OrdType	49	1	Text	2 = Limit 5 = Market on Close (MOC) P = Pegged MOC requires <i>MaxFloor</i> to be 0 if <i>TimeInForce</i> is 0 or 6. Pegged requires <i>ExecInst</i> to be P, R, or M, and requires <i>MaxFloor</i> to be 0.
Price	50	8	BinaryPrice	If <i>OrdType</i> is 2 (limit), <i>Price</i> must be an applicable minimum trading increment. If <i>OrdType</i> is P (peg), <i>Price</i> must specify a cap price as an applicable minimum trading increment, or a ½ increment if <i>ExecInst</i>=M (mid). If <i>OrdType</i> is 5 (MOC), <i>Price</i> must be 0.
Capacity	58	1	Text	The capacity for the order. Required on all orders. A = Agency P = Principal X = Mixed



Side	59	1	Text	1 = Buy 2 = Sell 5 = Sell Short
Symbol	60	6	Alphanumeric	Instrument symbol (upper case alphanumeric)
TimeInForce	66	1	Text	0 = DAY (default). 1 = GTC (Good Till Cancel). 3 = IOC (portion not filled immediately is cancelled). 4 = FOK (an IOC where the entire size must be filled immediately, otherwise the order will be cancelled back). 6 = GTD. Expires at the specified: • <i>ExpireTime</i> or end of day, or • <i>ExpireDate</i> for multi-day orders.
MinQty	67	4	Binary	Minimum fill quantity for orders. Required if <i>MEQSE</i> is true. Accepted only on IOC, MOC, and Pegged orders. If <i>MEQSE</i> is false, multiple consecutive fills may be created such that their combined size satisfies the <i>MinQty</i> requirement. When the remaining size on an order is less than the defined <i>MinQty</i> , <i>LeavesQty</i> is treated as the <i>MinQty</i> .
MaxFloor	71	4	Binary	Portion of <i>OrderQty</i> to display. Used for iceberg orders and hidden orders. Limit orders (<i>OrdType</i> = 2) having <i>MaxFloor</i> > 0 are iceberg orders. For iceberg orders, <i>MaxFloor</i> is the displayed quantity. The balance is reserve. The displayed quantity of each order at a price level is decremented first. Limit orders (<i>OrdType</i> =2) having <i>MaxFloor</i> = 0 will display their full size. Pegged orders (<i>OrdType</i> = P) and MOC orders (<i>OrdType</i> = 5) must use <i>MaxFloor</i> = 0, which hides the entire quantity. Ignored if order is IOC or FOK.
ExpireTime	75	8	DateTime	Required for GTD order (<i>TimeInForce</i> = 6), <i>ExpireTime</i> specifies the date-time (in UTC) when the order expires. GTD orders will expire at the earlier of the end of the current trading day and the <i>ExpireTime</i> .
ClearingParticipantID	83	4	Binary	The CHES clearing participant identifier. Must be a valid 5-digit CHES PID.



ClearingAccount	87	10	Alphanumeric	Supplemental identifier. Recorded and made available on order acknowledgements. Available via Drop feeds. This field may be blank. 10 character alphanumeric. Spaces, symbols, or special characters are not allowed. This field is not sent to CHES.
Undisclosed	97	1	Boolean	If true, indicates an undisclosed order. Y = True N = False
ClientCrossRef	98	15	Text	Can be used to provide additional participant-side cross reference information.
ShortSellNakedQty	113	4	Binary	Defines the portion of OrderQty (38) that is naked. Ignored unless Side = 5
ShortSellCoveredQty	117	4	Binary	Defines the portion of OrderQty (38) that is covered. Ignored unless Side = 5
ShortSellLongQty	121	4	Binary	Defines the portion of OrderQty (38) that is owned by the participant who placed the order. Orders having Side = 5 (sell short) will be rejected unless ShortSellNakedQty + ShortSellCoveredQty + ShortSellLongQty is equal to the OrderQty and ShortSellLongQty < OrderQty. Ignored unless Side = 5
RiskGroupID	125	2	Binary	Used to group orders for use in order purges where multiple orders can be cancelled by specifying a list of RiskGroupIDs. A zero value is treated as "no RiskGroupID".
NoTradeFeat	127	1	Text	Ignored if NoTradeKey is not set. Declares the handling of self-trading. U = No self trade protection N = Cancel Newest O = Cancel Oldest B = Cancel Both S = Cancel Smallest D = Decrement larger/Cancel Smaller



				d = Same as D above, but only decrement <i>LeavesQty</i>. Do not restate <i>OrderQty</i>. X = Booking Purpose Trade; the resultant trade is reported to CHES as a booking purpose trade and as a cancel on public market data feeds. NULL (0x00) = Apply the port default. If the older and newer orders in a self-trade have conflicting instructions, the instruction of the newer order will be honoured, except that if the inbound order specifies Decrement and the resting order does not, and the resting order is larger, then both orders will be cancelled. This exception is to protect the order entry software for the resting order from receiving an unexpected restatement message.
NoTradeKey	128	10	Text	Interactions of orders from the same participant (defined by reference to the first 3 digits of the trading PID) with the same <i>NoTradeKey</i> value will be managed by the newer order's <i>NoTradeFeat</i> instruction.
MEQSE	138	1	Text	If true, then any single fill will be for at least <i>MinQty</i> shares. Y = True N = False If True, then the order will be rejected unless <i>MinQty</i> is also specified or the <i>OrdType</i> is not 5 or P (MOC or Pegged).
OriginOfTrans	139	20	Text	Market Integrity Rule defined field for Origin of Order (ex. ACN, ABN, CHES HIN).
IntermediaryID	159	10	Text	Market Integrity Rule defined field for Intermediary Identifier—may be populated with AFS license number. Characters in ASCII range 32-126 are allowed.
DirectedWholesaleIndicator	169	1	Boolean	Market Integrity Rule defined field to identify wholesale participant. Y = True N = False
RemoveCrossingFromClearing	170	1	Boolean	If "Y", instructs CXA on how to process crossed trades with CHES. Please contact CXA to confirm settings. Y = True



				N = False
BrokerPreferencing	171	1	Text	Y = match with other orders using broker preferencing when possible. N = do not apply broker preferencing NULL (0x00) = apply port default
RoutingInst	172	1	Text	P = Post Only (never take liquidity) where <i>OrdType</i> =2 (Limit Order) and <i>TimeInForce</i> =0 (DAY) or 6 (GTD). F = Focused Nearpoint (only eligible to trade with opposing Farpoint) where <i>OrdType</i> =P (Pegged order) and <i>ExecInst</i> =R (Primary / Nearpoint). Defaults to port setting if NULL (0x00)
DisplayIndicator	173	1	Text	Treatment of Post Only orders on entry if creating a locked NBBO. All Post Only orders on entry which would create a crossed NBBO are cancelled back. V = Post Only orders which would lock the NBBO on entry are allowed to do so. R = Cancel back the Post Only order on entry if it were to create a locked NBBO. Defaults to port setting if NULL (0x00).
ExpireDate	174	4	Date	Only applicable for <i>TimeInForce</i> (59) = '6' (GTD) orders, specifies the date in "YYYYMMDD" format when the order expires. GTD orders with <i>ExpireDate</i> will expire at the earlier of the GTC Date Refresh and the <i>ExpireDate</i> . Required if <i>TimeInForce</i> is 6 (GTD) and <i>ExpireTime</i> is not specified. Ignored if <i>TimeInForce</i> is not 6 (GTD) or if <i>ExpireTime</i> is present.

Modify Order

Request to modify an order. Only *Price*, *OrderQty*, *MinQty*, *MaxFloor* and *ExpireDate* may be adjusted. Modifies will result in a loss of time priority unless the modification involves only one or more of the following:

- a decrease in *OrderQty*,
- a change to *MaxFloor* (for Iceberg orders),
- a change to *ExpireDate* (GTD orders only)



Changes in *OrderQty* results in an adjustment of the current order's *OrderQty*. The new *OrderQty* does not directly replace the current order's *LeavesQty*. Rather, a delta is computed from the current *OrderQty* and the replacement *OrderQty*. This delta is then applied to the current *LeavesQty*. If the resulting *LeavesQty* is less than or equal to zero, the order is cancelled. This results in safer behavior when the modification request overlaps partial fills for the current order, leaving the Participant in total control of the share exposure of the order.

If *OrderQty* is changed for a Sell Short order (*Side*=5), then the *ShortSellLongQuantity*, *ShortSellNakedQuantity*, and *ShortSellCoveredQuantity* fields are required to be correctly populated based on the new *OrderQty*.

The *MinQty* is always processed by the Exchange. A *MinQty* of 0 will cause any existing *MinQty* on the order to be removed. Participants may specify the current *MinQty* of the order to avoid any unwanted change to *MinQty*. Any change to *MinQty* will cause a loss of time priority.

MaxFloor may only be changed for Iceberg orders. A change in *MaxFloor* takes effect on the next iceberg reload. It may not be changed for Hidden order types (Pegged or MOC). If *MaxFloor* is 0, then it is ignored.

ExecInst may be specified as BestX (j) or MarketX (k) as a pricing option when modifying any visible limit order, irrespective of the *ExecInst* originally entered on the limit order. An *ExecInst* of BestX(j) or MarketX (k) will always lose time priority. If *Price* is also specified, then the order's limit will be adjusted to the less aggressive of current BBO and the specified *Price*. If *ExecInst* is ASCII NUL (0x00), it is ignored. Other values of *ExecInst*, if specified, must match the value from the original order or the Modify will be rejected.

Multi-day orders will have their expiration date updated when amended as follows:

- For GTC orders, the system-defined 'GTC Date Refresh' number of days from the current day resets the expiration date.
- For GTD orders, where *ExpireDate* was used in the original order and the *ExpireDate* is being amended, the order will have the new *ExpireDate* applied.
- For GTD orders, where *ExpireDate* was used in the original order and the *ExpireDate* is not specified in the amend request, the order's *ExpireDate* remains unchanged.

A maximum of 1,679,615 Modify Order requests may be made to a single order each trading day. Once the 1,679,615th modification is made, then the next user-generated message on the order should be a Cancel Order request.

ModifyOrderAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	86
MessageType	4	2	Binary	BA 0B (3002)
MatchingUnit	6	1	Binary	Zero - from participant message
Reserved	7	1	Binary	MUST be zero from participant
SequenceNumber	8	4	Binary	(Sequenced by Participant)



TradingParticipantID	12	2	Binary	The (4 digit) trading participant identifier. A zero value will be populated with the port default (see Port Attributes section)
ClOrdID	14	20	Text	Unique Id chosen by the participant. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon, pipe, 'at' (@), and double quotes ("). If the ClOrdID matches a live order, the order will be rejected as duplicate. A leading tilde (~) cannot be sent on any ClOrdID and will result in a reject. These are reserved for internal use by CXA and could be received because of a CXA-generated ClOrdID. Note: Although CXA only enforces uniqueness of ClOrdID values among currently live orders, using unique ClOrdID values is strongly recommended.
ExecInst	34	1	Text	All values not defined below are rejected. Ignored if blank (0x00). P = Market Peg (peg Buy [Sell] to NBBO Offer [Bid], one tick within NBBO) R = Primary Peg (peg Buy [Sell] to NBBO Bid [Offer], one tick within NBBO) M = Midpoint (peg to NBBO Midpoint) j = BestX Order (insert the limit order at the best visible price on same side). Not applicable to IOC or FOK. k = MarketX Order (insert the limit order against the best visible price on opposite side). The message will be rejected if ExecInst is P, R, or M and does not match the current ExecInst of the order.
OrderQty	35	4	Binary	Order quantity. System limit is 999,999,999.
OrigClOrdID	39	20	Text	The ClOrdID of the original order. In the case of multiple changes to a single order, this will be the ClOrdID of the most recent accepted change.



Price	59	8	BinaryPrice	For the original order's <i>OrdType</i> , If <i>OrdType</i> is 2 (limit), <i>Price</i> must be an applicable minimum trading increment. If <i>OrdType</i> is P (peg), <i>Price</i> must specify a cap price as an applicable minimum trading increment, or a ½ increment if <i>ExecInst</i> =M (mid). If <i>OrdType</i> is 5 (MOC), <i>Price</i> must be 0.
MinQty	67	4	Binary	Minimum fill quantity for orders.
MaxFloor	71	4	Binary	If <i>OrdType</i> is 2 (limit), <i>MaxFloor</i> can be specified to a value > 0. Otherwise, <i>MaxFloor</i> must be 0.
ShortSellNakedQty	75	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is naked. Ignored unless <i>Side</i> = 5
ShortSellCoveredQty	79	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is covered. Ignored unless <i>Side</i> = 5
ShortSellLongQty	83	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is owned by the participant who placed the order. Orders having <i>Side</i> = 5 (sell short) will be rejected unless <i>ShortSellNakedQty</i> + <i>ShortSellCoveredQty</i> + <i>ShortSellLongQty</i> is equal to the <i>OrderQty</i> and <i>ShortSellLongQty</i> < <i>OrderQty</i> . Ignored unless <i>Side</i> = 5
CancelOrigOnReject	87	1	Text	Y = Cancel original order if modification fails. N = Leave original order alone. NULL (0x00) = Apply port default

ModifyOrderAUEquitiesV2

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	90
MessageType	4	2	Binary	BE 0B (3006)
MatchingUnit	6	1	Binary	Zero - from participant message
Reserved	7	1	Binary	MUST be zero from participant
SequenceNumber	8	4	Binary	(Sequenced by Participant)



TradingParticipantID	12	2	Binary	The (4 digit) trading participant identifier. A zero value will be populated with the port default (see Port Attributes section).
ClOrdID	14	20	Text	Unique Id chosen by the participant. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon, pipe, 'at' (@), and double quotes ("). If the ClOrdID matches a live order, the order will be rejected as duplicate. A leading tilde (~) cannot be sent on any ClOrdID and will result in a reject. These are reserved for internal use by CXA and could be received because of a CXA-generated ClOrdID. Note: Although CXA only enforces uniqueness of ClOrdID values among currently live orders, using unique ClOrdID values is strongly recommended.
ExecInst	34	1	Text	All values not defined below are rejected. Ignored if blank (0x00). P = Market Peg (peg Buy [Sell] to NBBO Offer [Bid], one tick within NBBO) R = Primary Peg (peg Buy [Sell] to NBBO Bid [Offer], one tick within NBBO) M = Midpoint (peg to NBBO Midpoint) j = BestX Order (insert the limit order at the best visible price on same side). Not applicable to IOC or FOK. k = MarketX Order (insert the limit order against the best visible price on opposite side). The message will be rejected if ExecInst is P, R, or M and does not match the current ExecInst of the order.
OrderQty	35	4	Binary	Order quantity. System limit is 999,999,999.
OrigClOrdID	39	20	Text	The ClOrdID of the original order. In the case of multiple changes to a single order, this will be the ClOrdID of the most recent accepted change.



Price	59	8	BinaryPrice	For the original order's <i>OrdType</i>, If <i>OrdType</i> is 2 (limit), <i>Price</i> must be an applicable minimum trading increment. If <i>OrdType</i> is P (peg), <i>Price</i> must specify a cap price as an applicable minimum trading increment, or a ½ increment if <i>ExecInst</i>=M (mid). If <i>OrdType</i> is 5 (MOC), <i>Price</i> must be 0.
MinQty	67	4	Binary	Minimum fill quantity for orders.
MaxFloor	71	4	Binary	If <i>OrdType</i> is 2 (limit), <i>MaxFloor</i> can be specified to a value > 0. Otherwise, <i>MaxFloor</i> must be 0.
ShortSellNakedQty	75	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is naked. Ignored unless <i>Side</i> = 5
ShortSellCoveredQty	79	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is covered. Ignored unless <i>Side</i> = 5
ShortSellLongQty	83	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is owned by the participant who placed the order. Orders having <i>Side</i> = 5 (sell short) will be rejected unless <i>ShortSellNakedQty</i> + <i>ShortSellCoveredQty</i> + <i>ShortSellLongQty</i> is equal to the <i>OrderQty</i> and <i>ShortSellLongQty</i> < <i>OrderQty</i>. Ignored unless <i>Side</i> = 5
CancelOrigOnReject	87	1	Text	Y = Cancel original order if modification fails. N = Leave original order alone. NULL (0x00) = Apply port default
ExpireDate	88	4	Date	Only applicable for <i>TimeInForce</i> (59) = '6' (GTD) orders and where <i>ExpireDate</i> was accepted on the new order, specifies the date in "YYYYMMDD" format when the order expires. GTD orders with <i>ExpireDate</i> will expire at the earlier of the GTC Date Refresh and the <i>ExpireDate</i>. If not specified, when amending a multi-day GTD order which contains <i>ExpireDate</i>, the order's expiration date will remain unchanged.



Cancel Order

Request to cancel a single order.

CancelOrderAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	32
MessageType	4	2	Binary	BB 0B (3003)
MatchingUnit	6	1	Binary	Zero - from participant message
Reserved	7	1	Binary	MUST be zero from participant
SequenceNumber	8	4	Binary	(Sequenced by Participant)
TradingParticipantID	12	2	Binary	The (4 digit) trading participant identifier. A zero value will be populated with the port default (see " Error! Reference source not found.. Error! Reference source not found. ").
OrigClOrdID	14	20	Text	The <i>ClOrdID</i> of the original order.

Purge Orders

Request to cancel a group of orders across all of the participant's sessions. The Purge Orders message will only be accepted dedicated purge ports (see "0 - BOE Purge Ports").

Participants may choose to implement one or more of the following filters:

1. *PID* Filter – optionally cancel based on all four digits of the Trading Participant Identifier (PID). Set using first character of *MassCancelInst* and sending *OnBehalfOfCompld*.
2. *Symbol* Filter – optionally cancel based on symbol. Set by sending a valid symbol in the *Symbol* fields. Cannot be combined with *RiskGroupID* filter.
3. *RiskGroupID* Filter – optionally cancel based on *RiskGroupID*. A maximum of 10 *RiskGroupIDs* may be included on a single Purge Request message. Set by populating *RiskGroupIDCnt* to a non-zero value. Cannot be combined with *Symbol* filter.
4. *TargetMatchingUnit* Filter – *CustomGroupID* or *PID* purges with no *Symbol* filter may be directed to a specific matching unit using the *MatchingUnit* optional field. If *TargetMatchingUnit* is zero or not specified, then these purge types will be sent to all matching units.

Participants may use the second character of *MassCancelInst* to set the acknowledgement style. If a single Purge Acknowledgement is selected, then *MassCancelID* must be sent.

The system limits the rate at which identical Purge Request messages can be submitted to the system. Requests are restricted to twenty (20) messages per second per port.



An identical purge message is defined as a message having all the same *RiskGroupID*, *Symbol*, *TradingParticipantID*, and *TargetMatchingUnit* field values as a previously received message.

PurgeOrdersAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	58 + (<i>RiskGroupIDCnt</i> * 2)
MessageType	4	2	Binary	BC 0B (3004)
MatchingUnit	6	1	Binary	Zero - from participant message
Reserved	7	1	Binary	MUST be zero from participant
SequenceNumber	8	4	Binary	(Sequenced by Participant)
TradingParticipantID	12	2	Binary	The (4 digit) trading participant identifier. Required for service bureau purge ports.
MassCancelInst	14	16	Text	At least one character must be provided (PID Filter). Contiguous characters must be specified up to total length. Truncated (unspecified) characters will default to values indicated below. 1st Character : PID Filter A = No filtering by PID is performed. F = All orders that were sent under the PID specified in <i>TradingParticipantID</i> will be cancelled. 2nd Character : Acknowledgement Style M = (default) Individual Execution Reports are sent for each cancelled order. S = Single Purge Acknowledgement sent once all cancels have been processed. Single Purge Acknowledgement will contain <i>MassCancelId</i> and <i>CancelledOrderCount</i> . <i>MassCancelId</i> must be specified, or the Purge Request will be rejected. B = Both individual Execution Reports and single Purge Acknowledgement will be sent. Also requires <i>MassCancelId</i> to be specified or the Purge Request will be rejected. 3rd Character : Order Scope D = (default) Purge Day orders M = Purge GTC and GTD orders
MassCancelId	30	20	Text	User-defined identifier of the mass cancel or purge request.
Symbol	50	6	Alphanumeric	Instrument symbol (upper case alphanumeric)



TargetMatchingUnit	56	1	Binary	Matching unit to which the purge should be restricted. Zero is considered "all matching engines".
RiskGroupIDCnt	57	1	Binary	Number of repeating <i>RiskGroupID</i> included in this message. Value 0 to 10.
RiskGroupID	58	2	Binary	Used to group orders for use in order purges where multiple orders can be cancelled by specifying a list of <i>RiskGroupIDs</i> .

CXA to Participant

Order Acknowledgement

Order Acknowledgement messages are sent in response to a New Order message. The message corresponds to a FIX Execution Report with *ExecType* (150) = 0 (New). Order Acknowledgement messages do not indicate how or if the order was executed or cancelled. Note that the Order Acknowledgement of an IOC order (*TimeInForce* = 3) will be immediately followed by zero or more Order Execution (fill) messages and at most one Order Cancelled message (for any remaining size).

OrderAcknowledgementAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	202
MessageType	4	2	Binary	AD 0D (3501)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	(Sequenced per MatchingUnit by CXA)
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
Account	20	10	Text	(Copied from order)
TradingParticipantID	30	2	Binary	(Copied from order / port default)
ClOrdID	32	20	Text	(Copied from order)
ExecInst	52	1	Text	(Copied from order)
OrderID	53	8	Binary	Order identifier supplied by CXA. This identifier corresponds to the identifiers used in CXA market data products.
OrderQty	61	4	Binary	(Copied from order)
OrdType	65	1	Text	(Copied from order)



Price	66	8	BinaryPrice	(Copied from order)
Capacity	74	1	Text	(Copied from order)
Side	75	1	Text	(Copied from order)
Symbol	76	6	Alphanumeric	(Copied from order)
TimeInForce	82	1	Text	(Copied from order)
MinQty	83	4	Binary	(Copied from order)
MaxFloor	87	4	Binary	(Copied from order)
ExpireTime	91	8	DateTime	(Copied from order)
ClearingParticipantID	99	4	Binary	(Copied from order)
ClearingAccount	103	10	Alphanumeric	(Copied from order)
Undisclosed	113	1	Boolean	(Copied from order)
ClientCrossRef	114	15	Text	(Copied from order)
ShortSellNakedQty	129	4	Binary	(Copied from order)
ShortSellCoveredQty	133	4	Binary	(Copied from order)
ShortSellLongQty	137	4	Binary	(Copied from order)
RiskGroupID	141	2	Binary	(Copied from order)
NoTradeFeat	143	1	Text	(Copied from order / port default)
NoTradeKey	144	10	Text	(Copied from order)
MEQSE	154	1	Text	(Copied from order)
OriginOfTrans	155	20	Text	(Copied from order)
IntermediaryID	175	10	Text	(Copied from order)
DirectedWholesaleIndicator	185	1	Boolean	(Copied from order)
RemoveCrossingFromClearing	186	1	Boolean	(Copied from order)
BrokerPreferencing	187	1	Boolean	(Copied from order)
WorkingPrice	188	8	BinaryPrice	The Price at which an order is effectively working in the book.
BaseLiquidityIndicator	196	1	Alphanumeric	Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity - Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity
SubLiquidityIndicator	197	1	Text	Additional information about the liquidity of an order. CXA may add additional values without notice.



				Participants must gracefully ignore unknown values. NULL (0x00) = No Additional Information I = Added Hidden Liquidity that was price improved J = Added Liquidity NBBO Joiner K = Added Liquidity from the hidden (reserve) portion of an iceberg order S = Added Liquidity NBBO Setter
RoutingInst	198	1	Text	(Copied from order)
DisplayIndicator	199	1	Text	(Copied from order)
ExpireDate	200	4	Date	Date of order expiration (last day the order can trade) if <i>TimeInForce</i> is: • 1 (GTC) or • 6 (GTD) and <i>ExpireDate</i> specified.

(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

Order Rejected

Order Rejected messages are sent in response to a New Order which must be rejected. This message corresponds to a FIX Execution Report with *ExecType* (150) = 8 (Rejected). Order Rejected messages are unsequenced.

OrderRejectedAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	101
MessageType	4	2	Binary	AE 0D (3502)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	<i>(Unsequenced: always 0)</i>
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
TradingParticipantID	20	2	Binary	The (4 digit) trading participant identifier.
ClOrdID	22	20	Text	Client order identifier of the rejected order.
OrderRejectReason	42	1	Text	See Section '0 - Order Reason Codes'.
Text	43	60	Text	Human readable text with more information.



(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

Order Modified

Order Modified messages are sent in response to a Modify Order to indicate that the order has been successfully modified.

In some cases, the last message to be received on an order's lifecycle will be an Order Modified message. The way to know the order is no longer live is to inspect *LeavesQty*. An example of this would be modification of an order while an execution is being generated, resulting in the order being reduced to zero outstanding quantity.

OrderModifiedAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	115
MessageType	4	2	Binary	AF 0D (3503)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	(Sequenced per MatchingUnit by CXA)
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
TradingParticipantID	20	2	Binary	The (4 digit) trading participant identifier.
CLOrdID	22	20	Text	The <i>CLOrdID</i> of the modified order.
ExecInst	42	1	Text	The execution instruction of the modified order.
OrderQty	43	4	Binary	Order quantity. System limit is 999,999,999.
OrigCLOrdID	47	20	Text	The <i>CLOrdID</i> of the original order.
Price	67	8	BinaryPrice	The limit or peg price of the order after modification.
MinQty	75	4	Binary	The minimum execution quantity after modification. 0 if no <i>MinQty</i> applies to the order.
MaxFloor	79	4	Binary	The maximum displayed value of the order after modification. 0 if no <i>MaxFloor</i> applies to the order.
LeavesQty	83	4	Binary	Quantity still open for further execution. If zero, the order is complete.



SecondaryOrderID	87	8	Binary	CXA PITCH <i>OrderId</i> for the displayed portion of an iceberg order after a Modify Order increased the size of the iceberg order, otherwise 0.
ShortSellNakedQty	95	4	Binary	Copied from ModifyOrder
ShortSellCoveredQty	99	4	Binary	Copied from ModifyOrder
ShortSellLongQty	103	4	Binary	Copied from ModifyOrder
WorkingPrice	107	8	Binary	The Price at which an order is effectively working in the book.
BaseLiquidityIndicator	115	1	Alphanumeric	Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity - Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed LiquidityIndicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed LiquidityIndicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity
SubLiquidityIndicator	116	1	Text	Additional information about the liquidity of an order. CXA may add additional values without notice. Participants must gracefully ignore unknown values. NULL (0x00) = No Additional Information I = Added Hidden Liquidity that was price improved J = Added Liquidity NBBO Joiner K = Added Liquidity from the hidden (reserve) portion of an iceberg order S = Added Liquidity NBBO Setter

(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

OrderModifiedAUEquitiesV2

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	119



MessageType	4	2	Binary	B9 0D (3513)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	(Sequenced per MatchingUnit by CXA)
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
TradingParticipantID	20	2	Binary	The (4 digit) trading participant identifier.
CLOrdID	22	20	Text	The <i>CLOrdID</i> of the modified order.
ExecInst	42	1	Text	The execution instruction of the modified order.
OrderQty	43	4	Binary	Order quantity. System limit is 999,999,999.
OrigCLOrdID	47	20	Text	The <i>CLOrdID</i> of the original order.
Price	67	8	BinaryPrice	The limit or peg price of the order after modification.
MinQty	75	4	Binary	The minimum execution quantity after modification. 0 if no <i>MinQty</i> applies to the order.
MaxFloor	79	4	Binary	The maximum displayed value of the order after modification. 0 if no <i>MaxFloor</i> applies to the order.
LeavesQty	83	4	Binary	Quantity still open for further execution. If zero, the order is complete.
SecondaryOrderID	87	8	Binary	CXA PITCH <i>OrderID</i> for the displayed portion of an iceberg order after a Modify Order increased the size of the iceberg order, otherwise 0.
ShortSellNakedQty	95	4	Binary	Copied from ModifyOrder
ShortSellCoveredQty	99	4	Binary	Copied from ModifyOrder
ShortSellLongQty	103	4	Binary	Copied from ModifyOrder
WorkingPrice	107	8	Binary	The Price at which an order is effectively working in the book.
BaseLiquidityIndicator	115	1	Alphanumeric	Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity - Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity



SubLiquidityIndicator	116	1	Text	Additional information about the liquidity of an order. CXA may add additional values without notice. Participants must gracefully ignore unknown values. NULL (0x00) = No Additional Information I = Added Hidden Liquidity that was price improved J = Added Liquidity NBBO Joiner K = Added Liquidity from the hidden (reserve) portion of an iceberg order S = Added Liquidity NBBO Setter
ExpireDate	117	4	Date	Date of order expiration (last day the order can trade) if <i>TimeInForce</i> is: • 1 (GTC) or • 6 (GTD) and <i>ExpireDate</i> specified.

(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

Modify Rejected

Modify Rejected messages are sent in response to a Modify Order for an order which cannot be modified. Modify Rejected messages are unsequenced.

This message corresponds to a FIX Execution Report with *MsgType* (35) = 9 (Order Cancel Reject) and *CxlRejResponseTo* (434) = 2 (Order Cancel/Replace Request).

ModifyRejectedAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	121
MessageType	4	2	Binary	B0 0D (3504)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	(Unsequenced: always 0)
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
TradingParticipantID	20	2	Binary	The (4 digit) trading participant identifier.
ClOrdID	22	20	Text	ClOrdID of the Modify Order.
OrigClOrdID	42	20	Text	The ClOrdID of the original order.
ModifyRejectReason	62	1	Text	See Section '0 - Order Reason Codes'.



Text	63	60	Text	Human readable text with more information.
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(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

Order Restated

When an Iceberg order reloads displayed quantity will receive an order restatement. If an order is cancelled or reduced due to Self-Trade Protection instructions (see [NoTradeFeat](#)), the order will be restated with reductions to *OrderQty* and/or *LeavesQty*. Note that *LeavesQty* may be reduced to 0, indicating that the order has effectively been cancelled for Self-Trade Protection.

OrderRestatedAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	86
MessageType	4	2	Binary	B1 0D (3505)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	(Sequenced per MatchingUnit by CXA)
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
TradingParticipantID	20	2	Binary	The (4 digit) trading participant identifier.
ClOrdID	22	20	Text	The Client Order ID of the order being restated.
OrderID	42	8	Binary	Order identifier supplied by CXA. This identifier corresponds to the identifiers used in CXA market data products.
OrderQty	50	4	Binary	Order quantity. This may be less than the original OrderQty on the order.
Price	54	8	BinaryPrice	The Limit or Cap Price of the order. 0 for MOC.
LeavesQty	62	4	Binary	Quantity still open for further execution. If zero, the order is complete.
SecondaryOrderID	66	8	Binary	CXA <i>OrderId</i> of contra side of prevented match, or CXA PITCH <i>OrderId</i> for displayed portion of iceberg order after reloading.
LastPx	74	8	BinaryPrice	If <i>RestatementReason</i> =W, this is the price of the execution avoided by Self-Trade Protection. Equivalent to <i>PreventedTradePx</i> (7903) in FIX. Otherwise, zero.



LastShares	82	4	Binary	If <i>RestatementReason=W</i>, this is the size of the execution avoided by Self-Trade Protection. Equivalent to <i>PreventedTradeLiquidityIndicator</i> (7905) in FIX. Otherwise, zero.
BaseLiquidityIndicator	86	1	Text	For the trade avoided by self-trade, indicates whether the trade would have added or removed order liquidity. Equivalent to <i>PreventedTradePx</i> (7903) in FIX. A = Added Liquidity R = Removed Liquidity NULL (0x00) = n/a
RestatementReason	87	1	Text	The reason for this Order Restated message. r = Iceberg order reload W = Would have self-traded R = Replaced by another Port (i.e. Purge-Amend Port)

Order Execution

An Order Execution is sent for each fill on an order.

Rather than returning a monetary value indicating the rebate or charge for an execution, the *FeeCode* is an indication of a fee classification corresponding to an item on the venue's fee schedule.

OrderExecutionAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	114
MessageType	4	2	Binary	B2 0D (3506)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	(Sequenced per MatchingUnit by CXA)
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
TradingParticipantID	20	2	Binary	The (4 digit) trading participant identifier.
ClOrdID	22	20	Text	The Client Order ID of the traded order.



ExecID	42	8	Binary	Execution Id. Unique across all matching units on a given day. Note: ExecIDs will be represented on ODROP and FIXDROP ports as base 36 ASCII.
LastCapacity	50	1	Text	Capacity of the order. 1 = Agent 2 = Cross as Agent 3 = Cross as Principal 4 = Principal 5 = Mixed 6 = Cross as Mixed Values of 2, 3, or 6 indicate that the client has executed against themselves. Crossing is determined by reference to the first 3 digits of the trading participant ID.
LastMkt	51	4	Alphanumeric	Supported MIC code values are as follows: CXAC = Limit CXAP = Mid-Point CXAN = Near Point CXAF = Far Point CXAM = MOC Note: This value is determined by the venue of the resting or "Maker" order in a trade pair. Both sides of the trade contain the same value.
LastPx	55	8	BinaryPrice	Price of this fill. For MOC Order executions, this price is the indicative price of the fill.
LastShares	63	4	Binary	Executed quantity.
Side	67	1	Text	1 = Buy 2 = Sell 5 = Sell Short
Symbol	68	6	Alphanumeric	Instrument symbol (upper case alphanumeric)
LeavesQty	74	4	Binary	Quantity still open for further execution. If zero, the order is complete.
SecondaryOrderID	78	8	Binary	Denotes an alternative <i>OrderID</i> which is present on CXA market data feeds (for example, to hide that a reserve (iceberg) order has reloaded). Otherwise, SecondaryOrderID will be 0.
ClearingParticipantID	86	4	Binary	The CHES clearing participant identifier. Must be a valid 5-digit CHES PID.



PriceImprovement	90	8	BinaryPrice	Amount of price improvement against the primary best bid/offer at the time of execution. Zero if no improvement was made or if there is no primary best bid or offer at the time of execution.
TransactID	98	10	Alphanumeric	Transaction Identifier as sent to CHES for this order execution.
OnMarketCrossType	108	1	Text	Type of on-market crossing. B = Trade was the result of a broker preferred crossing NULL (0x00) = other
TradeReportType	109	1	Text	X = Booking purpose trade. NULL (0x00) = normal trade.
BaseLiquidityIndicator	110	1	Text	Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity C = Auction / Uncrossing
SubLiquidityIndicator	111	1	Text	Additional information about the liquidity of an order. CXA may add additional values without notice. Participants must gracefully ignore unknown values. NULL (0x00) = No Additional Information I = Added Hidden Liquidity that was price improved J = Added Liquidity NBBO Joiner K = Added Liquidity from the hidden (reserve) portion of an iceberg order S = Added Liquidity NBBO Setter O = Opening Auction or intra-day auction trade e = Closing Auction trade h = Halt Auction (Re-Opening) trade
ContraParticipantID	112	2	Binary	Trading Participant Identifier (PID) of the counter party on a trade. "0" If unattributed.
FeeCode	114	2	Alphanumeric	Indicates fee associated with an execution. Fee codes are published in the pricing schedule. New fee codes may be sent with little notice. Participants are encouraged to code their systems to accept unknown fee codes.

(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)



Order Cancelled

OrderCancelledAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	41
MessageType	4	2	Binary	B3 0D (3507)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	<i>(Sequenced per MatchingUnit by CXA)</i>
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
TradingParticipantID	20	2	Binary	The (4 digit) trading participant identifier.
ClOrdID	22	20	Text	Client Order ID of the cancelled order.
CancelReason	42	1	Text	See Section '0 - Order Reason Codes'.

(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

Cancel Rejected

A Cancel Rejected message is sent in response to a Cancel Order message to indicate that the cancellation cannot occur. Cancel Rejected messages are unsequenced.

CancelRejectedAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	101
MessageType	4	2	Binary	B4 0D (3508)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	<i>(Unsequenced: always 0)</i>
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
TradingParticipantID	20	2	Binary	The (4 digit) trading participant identifier.
ClOrdID	22	20	Text	The Client Order ID of the Cancel Order message.
CancelRejectReason	42	1	Text	See Section '0 - Order Reason Codes'.
Text	43	60	Text	Human readable text with more information.



(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

Order Execution Restated

Order Execution Restated messages will be issued for all (unbroken) fills of MOC orders after the closing price has been determined. The *LastPx* value will inform the Participant of the final trade price for the MOC transaction.

ExecutionRestatementAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	83
MessageType	4	2	Binary	B5 0D (3509)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	(Sequenced per MatchingUnit by CXA)
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
TradingParticipantID	20	2	Binary	The (4 digit) trading participant identifier.
ClOrdID	22	20	Text	The Client Order ID of the traded order.
ExecID	42	8	Binary	Execution Id. Unique across all matching units on a given day. Note: ExecIDs will be represented on ODROP and FIXDROP ports as base 36 ASCII.
LastPx	50	8	BinaryPrice	Price of this fill.
LastShares	58	4	Binary	Executed quantity.
Side	62	1	Text	1 = Buy 2 = Sell 5 = Sell Short
Symbol	63	6	Alphanumeric	Instrument symbol (upper case alphanumeric)
TransactID	69	10	Alphanumeric	Transaction Identifier as sent to CHES for this order execution.
BaseLiquidityIndicator	79	1	Text	Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity
ContraParticipantID	80	2	Binary	Trading Participant Identifier (PID) of the counter party on a trade. "0" If unattributed.
FeeCode	82	2	Alphanumeric	Indicates fee associated with an execution. Fee codes are published in the pricing schedule. New fee codes



				may be sent with little notice. Participants are encouraged to code their systems to accept unknown fee codes.
ExecRestatementReason	84	1	Text	The reason for this Order Execution Restated message. R = Market on close re-pricing.

(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

Purge Acknowledgement

A Purge Acknowledgment is an unsequenced message sent when a Purge Orders message requesting an order purge has completed cancelling all individual orders.

PurgeAcknowledgementAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	42
MessageType	4	2	Binary	B6 0D (3510)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	(Unsequenced: always 0)
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
MassCancelID	20	20	Text	User-defined identifier of the mass cancel or purge request.
CancelledOrderCount	40	4	Binary	Number of orders cancelled.

(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

Purge Rejected

A Purge Rejected message is sent in response to a Purge Orders message to indicate that the mass cancellation cannot occur. Purge Rejected messages are unsequenced.

PurgeRejectedAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	99
MessageType	4	2	Binary	B7 0D (3511)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	(Unsequenced: always 0)



TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
MassCancelID	20	20	Text	User-defined identifier of the mass cancel or purge request.
PurgeRejectReason	40	1	Text	Reason for the purge rejection. See Section '0 - Order Reason Codes'.
Text	41	60	Text	Human readable text with more information.

(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

Trade Cancel or Correct

Used to provide notification that a trade has been cancelled (busted) or corrected (price change only). The *CorrectedPrice* field will be set to 0 for cancelled trades and to the new trade price for corrected trades (note that currently CXA only supports trade cancellations, therefore *CorrectedPrice* will always be 0).

TradeCancelCorrectAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	98
MessageType	4	2	Binary	B8 0D (3512)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	(Sequenced per MatchingUnit by CXA)
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
TradingParticipantID	20	2	Binary	The (4 digit) trading participant identifier.
ClOrdID	22	20	Text	Client Order ID of the traded order
ExecRefID	42	8	Binary	Refers to the <i>ExecId</i> of the fill being cancelled or corrected.
LastPx	50	8	BinaryPrice	Price of this fill.
LastShares	58	4	Binary	Executed quantity.
OrigTime	62	8	DateTime	<i>TransactionTime</i> of the original trade.
Side	70	1	Text	1 = Buy 2 = Sell 5 = Sell Short
Symbol	71	6	Alphanumeric	Instrument symbol (upper case alphanumeric)
ClearingParticipantID	77	4	Binary	The CHES clearing participant identifier. Must be a valid 5-digit CHES PID.



TransactID	81	10	Alphanumeric	Transaction Identifier as sent to CHES for this order execution.
CorrectedPrice	91	8	BinaryPrice	The corrected price of the trade, or 0 for a trade cancellation.
BaseLiquidityIndicator	99	1	Text	Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity C = Auction / Uncrossing.

(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

Carried Restatement

The Carried Restatement message is used to indicate the restoration of a multi-day GTC or GTD orders at the start of a new business day.

CarriedRestatementAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	192
MessageType	4	2	Binary	BA 0D (3514)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	(Sequenced per MatchingUnit by CXA)
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
Account	20	10	Text	(Copied from order)
TradingParticipantID	30	2	Binary	(Copied from order / port default)
CLOrdID	32	20	Text	(Copied from order)
ExecInst	52	1	Text	(Copied from order)
OrderID	53	8	Binary	Order identifier supplied by CXA. This identifier corresponds to the identifiers used in CXA market data products.
OrderQty	61	4	Binary	(Copied from order)
OrdType	65	1	Text	(Copied from order)
Price	66	8	BinaryPrice	(Copied from order)
Capacity	74	1	Text	(Copied from order)
Side	75	1	Text	(Copied from order)
Symbol	76	6	Alphanumeric	(Copied from order)



<u>TimeInForce</u>	82	1	Text	(Copied from order)
<u>MinQty</u>	83	4	Binary	(Copied from order)
<u>MaxFloor</u>	87	4	Binary	(Copied from order)
<u>ExpireTime</u>	91	8	DateTime	(Copied from order)
<u>ClearingParticipantID</u>	99	4	Binary	(Copied from order)
<u>ClearingAccount</u>	103	10	Alphanumeric	(Copied from order)
<u>Undisclosed</u>	113	1	Boolean	(Copied from order)
<u>ClientCrossRef</u>	114	15	Text	(Copied from order)
<u>ShortSellNakedQty</u>	129	4	Binary	(Copied from order)
<u>ShortSellCoveredQty</u>	133	4	Binary	(Copied from order)
<u>ShortSellLongQty</u>	137	4	Binary	(Copied from order)
<u>RiskGroupID</u>	141	2	Binary	(Copied from order)
<u>NoTradeFeat</u>	143	1	Text	(Copied from order / port default)
<u>NoTradeKey</u>	144	10	Text	(Copied from order)
<u>MEQSE</u>	154	1	Text	(Copied from order)
<u>OriginOfTrans</u>	155	20	Text	(Copied from order)
<u>IntermediaryID</u>	175	10	Text	(Copied from order)
<u>DirectedWholesaleIndicator</u>	185	1	Boolean	(Copied from order)
<u>RemoveCrossingFromClearing</u>	186	1	Boolean	(Copied from order)
<u>BrokerPreferencing</u>	187	1	Boolean	(Copied from order)
<u>RoutingInst</u>	188	1	Text	(Copied from order)
<u>DisplayIndicator</u>	189	1	Text	(Copied from order)
<u>ExpireDate</u>	190	4	Date	Date of order expiration (last day the order can trade) if <i>TimeInForce</i> is: • 1 (GTC) or • 6 (GTD) and <i>ExpireDate</i> specified.

(New fields may be introduced at the end of this message. Consequently, Participants must treat any additional bytes present as undefined values.)

Done For Day

Done For Day messages in BOE represent orders persisted during the current day session to carry over to the next session and will be sent after the end of trading for the associated product and before system recycle.

DoneForDayAUEquitiesV1

Field Name	Offset	Length	Data Type	Description
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StartOfMessage	0	2	Binary	B0 E3 (58288)
MessageLength	2	2	Binary	44
MessageType	4	2	Binary	BB 0D (3515)
MatchingUnit	6	1	Binary	
Reserved	7	1	Binary	Value sent to participant not specified
SequenceNumber	8	4	Binary	<i>(Sequenced per MatchingUnit by CXA)</i>
TransactionTime	12	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
ClOrdID	20	20	Text	Client Order ID of the traded order
Symbol	40	6	Alphanumeric	Instrument symbol (upper case alphanumeric)

Application Message Fields

Field Name	FIX Field Name	Length	Data Type	Description
Account	1	10	Text	Used by a trading participant to provide a broker cross reference. Valid characters are ASCII 32-126.
BaseLiquidityIndicator	9730	1	Alphanumeric	Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity C = Auction / Uncrossing
BrokerPreferencing	8182	1	Text	Y = match with other orders using broker preferencing when possible. N = do not apply broker preferencing NULL (0x00) = apply port default
CancelledOrderCount	7696	4	Binary	Number of orders cancelled.
CancelOrigOnReject	9619	1	Alpha	Y = Cancel original order if modification fails. N = Leave original order alone. NULL (0x00) = Apply port default
CancelReason	58**	1	Text	See Section '0 - Order Reason Codes'.



CancelRejectReason	58**	1	Text	See Section '0 - Order Reason Codes'.
Capacity	47	1	Alphanumeric	The capacity for the order. Required on all orders. A = Agency P = Principal X = Mixed
ClearingAccount	440	10	Alphanumeric	Supplemental identifier. Recorded and made available on order acknowledgements. Available via Drop feeds. This field may be blank. 10 character alphanumeric. Spaces, symbols, or special characters are not allowed. This field is not sent to CHES.
ClearingParticipantID	439	4	Binary	The CHES clearing participant identifier. Must be a valid 5-digit CHES PID.
ClientCrossRef	6802	15	Text	Can be used to provide additional participant-side cross reference information.
CIOrdID	11	20	Text	Unique Id chosen by the participant. Characters in the ASCII range 33-126 are allowed, except for comma , semicolon , pipe , 'at' (@) , and double quotes (") . If the CIOrdID matches a live order, the order will be rejected as duplicate. A leading tilde (~) cannot be sent on any CIOrdID and will result in a reject. These are reserved for internal use by CXA and could be received because of a CXA-generated CIOrdID. Note: Although CXA only enforces uniqueness of CIOrdID values among currently live orders, using unique CIOrdID values is strongly recommended.
ContraParticipantID	9862	2	Binary	Trading Participant Identifier (PID) of the counter party on a trade. "0" If unattributed.



CorrectedPrice	9620	8	BinaryPrice	The corrected price of the trade, or 0 for a trade cancellation.
DirectedWholesaleIndicator	8140	1	Text	Market Integrity Rule defined field to identify wholesale participant. Y = True N = False
DisplayIndicator	9479	1	Text	Treatment of Post Only orders on entry if creating a locked NBBO. V = Default. Post Only orders which would lock the NBBO on entry are allowed to do so. R = Cancel back a Post Only order on entry if it were to create a locked NBBO. All Post Only orders on entry which would create a crossed NBBO are cancelled back.
ExecId	17	8	Binary	Execution Id. Unique across all matching units on a given day. Note: ExecIDs will be represented on ODROP and FIXDROP ports as base 36 ASCII.1
ExecInst	18	1	Text	All values not defined below are rejected. Ignored if blank (0x00). P = Market Peg (peg Buy [Sell] to NBBO Offer [Bid], one tick within NBBO) R = Primary Peg (peg Buy [Sell] to NBBO Bid [Offer], one tick within NBBO) M = Midpoint (peg to NBBO Midpoint) j = BestX Order (insert the limit order at the best visible

1 Example conversion:

Decimal	Base 36
28294005440239	A1234B567
76335905726621	R248BC23H
728557228187	09AP05V2Z



				price on same side). Not applicable to IOC or FOK. k = MarketX Order (insert the limit order against the best visible price on opposite side).
ExecRefId	19	8	Binary	Refers to the <i>ExecId</i> of the fill being cancelled or corrected.
ExecRestatementReason	n/a	1	Text	The reason for this Order Execution Restated message. R = Market on close re-pricing.
ExpireTime	424	8	DateTime	Required for GTD order (<i>TimeInForce</i> = 6), <i>ExpireTime</i> specifies the date-time (in UTC) when the order expires. GTD orders will expire at the earlier of the end of the current trading day and the <i>ExpireTime</i> .
ExpireDate	432	4	Date	Only applicable for <i>TimeInForce</i> (59) = '6' (GTD) orders. Specifies the date on which a GTD order will expire using format "YYYYMMDD". Orders will expire at the end of the <i>ExpireDate</i> . Ignored if the date is on or before the current date. Required if <i>TimeInForce</i> is 6 (GTD) and <i>ExpireTime</i> is not specified. Ignored if <i>TimeInForce</i> is not 6 (GTD) or if <i>ExpireTime</i> is present.
FeeCode	9882	2	Alphanumeric	Indicates fee associated with an execution. Fee codes are published in the pricing schedule. New fee codes may be sent with little notice. Participants are encouraged to code their systems to accept unknown fee codes.
IntermediaryID	8139	10	Text	Market Integrity Rule defined field for Intermediary Identifier—may be populated with AFS license number. Characters in ASCII range 32-126 are allowed.
LastCapacity	29	1	Text	Capacity of the order. 1 = Agent



				2 = Cross as Agent 3 = Cross as Principal 4 = Principal 5 = Mixed 6 = Cross as Mixed Values of 2, 3, or 6 indicate that the client has executed against themselves. Crossing is determined by reference to the first 3 digits of the trading participant ID.
LastMkt	30	4	Alphanumeric	Supported MIC code values are as follows: CXAC = Limit CXAP = Mid-Point CXAN = Near Point CXAF = Far Point CXAM = MOC Note: This value is determined by the venue of the resting or "Maker" order in a trade pair. Both sides of the trade contain the same value.
LastPx	31	8	BinaryPrice	Price of this fill.
LastShares	32	4	Binary	Executed quantity.
LeavesQty	151	4	Binary	Quantity still open for further execution. If zero, the order is complete.
MassCancelID	7695	20	Text	User-defined identifier of the mass cancel or purge request.
MassCancelInst	7700	16	Text	At least one character must be provided (PID Filter). Contiguous characters must be specified up to total length. Truncated (unspecified) characters will default to values indicated below. 1st Character : PID Filter A = No filtering by PID is performed. F = All orders that were sent under the PID specified in <i>TradingParticipantID</i> will be cancelled. 2nd Character : Acknowledgement Style



				M = (default) Individual Execution Reports are sent for each cancelled order. S = Single Purge Acknowledgement sent once all cancels have been processed. Single Purge Acknowledgement will contain <i>MassCancelled</i> and <i>CancelledOrderCount</i>. <i>MassCancelled</i> must be specified, or the Purge Request will be rejected. B = Both individual Execution Reports and single Purge Acknowledgement will be sent. Also requires <i>MassCancelled</i> to be specified or the Purge Request will be rejected. 3rd Character : Order Scope D = (default) Purge Day orders M = Purge GTC and GTD orders
MaxFloor	111	4	Binary	Portion of <i>OrderQty</i> to display. Used for iceberg orders and hidden orders. Limit orders (<i>OrdType</i> = 2) having <i>MaxFloor</i> > 0 are iceberg orders. For iceberg orders, <i>MaxFloor</i> is the displayed quantity. The balance is reserve. The displayed quantity of each order at a price level is decremented first. Limit orders (<i>OrdType</i>=2) having <i>MaxFloor</i> = 0 will display their full size. Pegged orders (<i>OrdType</i> = P) and MOC orders (<i>OrdType</i> = 5) <u>must</u> use <i>MaxFloor</i> =0, which hides the entire quantity. Ignored if order is IOC or FOK.
MEQSE	8081	1	Text	If true, then any single fill will be for at least <i>MinQty</i> shares. Y = True N = False If True, then the order will be rejected unless <i>MinQty</i> is also



				specified or the <i>OrdType</i> is not 5 or P (MOC or Pegged).
MinQty	110	4	Binary	Minimum fill quantity for orders. Required if <i>MEQSE</i> is true. Accepted only on IOC, MOC, and Pegged orders. If <i>MEQSE</i> is false, multiple consecutive fills may be created such that their combined size satisfies the <i>MinQty</i> requirement. When the remaining size on an order is less than the defined <i>MinQty</i>, <i>LeavesQty</i> is treated as the <i>MinQty</i>.
ModifyRejectReason	103	1	Text	See Section '0 - Order Reason Codes'.



NoTradeFeat	7713	1	Alpha	Ignored if <i>NoTradeKey</i> is not set. Declares the handling of self-trading. U = No self trade protection N = Cancel Newest O = Cancel Oldest B = Cancel Both S = Cancel Smallest D = Decrement larger/Cancel Smaller d = Same as D above, but only decrement <i>LeavesQty</i>. Do not restate <i>OrderQty</i>. X = Booking Purpose Trade; the resultant trade is reported to CHES as a booking purpose trade and as a cancel on public market data feeds. NULL (0x00) = Apply the port default. If the older and newer orders in a self-trade have conflicting instructions, the instruction of the newer order will be honoured, except that if the inbound order specifies Decrement and the resting order does not, and the resting order is larger, then both orders will be cancelled. This exception is to protect the order entry software for the resting order from receiving an unexpected restatement message.
NoTradeKey	7714	10	Text	Interactions of orders from the same participant (defined by reference to the first 3 digits of the trading PID) with the same <i>NoTradeKey</i> value will be managed by the newer order's <i>NoTradeFeat</i> instruction.
OnMarketCrossType	8183	1	Text	Type of on-market crossing. B = Trade was the result of a broker preferred crossing NULL (0x00) = other



OrderID	37	8	Binary	Order identifier supplied by CXA. This identifier corresponds to the identifiers used in CXA market data products.
OrderQty	31		Binary	Order quantity. System limit is 999,999,999.
OrderRejectReason	103	1	Text	See Section '0 - Order Reason Codes'.
OrdType	40	1	Alphanumeric	2 = Limit 5 = Market on Close (MOC) P = Pegged MOC requires <i>MaxFloor</i> to be 0 if <i>TimeInForce</i> is 0 or 6. Pegged requires <i>ExecInst</i> to be P, R, or M, and requires <i>MaxFloor</i> to be 0.
OrigClOrdID	41	20	Text	The <i>ClOrdID</i> of the original order.
OriginOfTrans	8138	20	Text	Market Integrity Rule defined field for Origin of Order (ex. ACN, ABN, CHESS HIN).
OrigTime	42	8	DateTime	<i>TransactionTime</i> of the original trade.
Price	44	8	BinaryPrice	If <i>OrdType</i> is 2 (limit), <i>Price</i> must be an applicable minimum trading increment. If <i>OrdType</i> is P (peg), <i>Price</i> must specify a cap price as an applicable minimum trading increment, or a ½ increment if <i>ExecInst</i> =M (mid). If <i>OrdType</i> is 5 (MOC), <i>Price</i> must be 0.
PriceImprovement	639	8	BinaryPrice	Amount of price improvement against the primary best bid/offer at the time of execution. Zero if no improvement was made or if there is no primary best bid or offer at the time of execution.
PurgeRejectReason	58**	1	Text	Reason for the purge rejection. See Section '0 - Order Reason Codes'.



RemoveCrossingFromClearing	8177	1	Text	If "Y", instructs CXA on how to process crossed trades with CHESSE. Please contact CXA to confirm settings. Y = True N = False
RestatementReason	n/a	1	Text	The reason for this Order Restated message. r = Iceberg order reload W = Would have self-traded
RiskGroupID	7699	2	Binary	Used to group orders for use in order purges where multiple orders can be cancelled by specifying a list of <i>RiskGroupIDs</i> .
RiskGroupIDCnt	7698	1	Binary	Number of repeating <i>RiskGroupID</i> included in this message. Value 0 to 10.
RoutingInst	9303	1	Text	Indicates the order is a Post Only order. P = Post Only (never take liquidity)
SecondaryOrderID	198	8	Binary	Present on a Self-Trade Protection triggered restatement, on an iceberg reload restatement, and on an Order Modified acknowledgement that increases the size of an iceberg order. CXA <i>OrderID</i> of contra side of prevented match, or CXA PITCH <i>OrderID</i> for displayed portion of an iceberg order after reload, or CXA PITCH <i>OrderID</i> for the displayed portion of an iceberg order after a Modify Order increased the size of the iceberg order.
ShortSellNakedQty	6803	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is naked.
ShortSellCoveredQty	6804	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is covered.
ShortSellLongQty	6805	4	Binary	Defines the portion of <i>OrderQty</i> (38) that is owned by the participant who placed the order.



				Orders having <i>Side</i> = 5 (sell short) will be rejected unless <i>ShortSellNakedQty</i> + <i>ShortSellCoveredQty</i> + <i>ShortSellLongQty</i> is equal to the <i>OrderQty</i> and <i>ShortSellLongQty</i> < <i>OrderQty</i> .
Side	54	1	Text	1 = Buy 2 = Sell 5 = Sell Short
SourceMatchingUnit	-	1	Binary	The matching unit reporting the purge.
SubLiquidityIndicator	9730 *	1	Text	Additional information about the liquidity of an order. CXA may add additional values without notice. Participants must gracefully ignore unknown values. NULL (0x00) = No Additional Information I = Added Hidden Liquidity that was price improved J = Added Liquidity NBBO Joiner K = Added Liquidity from the hidden (reserve) portion of an iceberg order S = Added Liquidity NBBO Setter O = Opening Auction or intra-day auction trade. e = Closing Auction trade. h = Halt Auction (Re-Opening)
Symbol	55	6	Alphanumeric	Instrument symbol (upper case alphanumeric)
TargetMatchingUnit	-	1	Binary	Matching unit to which the purge should be restricted. Zero is considered "all matching engines".
Text	58	60	Text	Human readable text with more information.
TimeInForce	59	1	Text	0 = DAY (default) 1 = GTC (Good Till Cancel). 3 = IOC (portion not filled immediately is cancelled). 4 = FOK (an IOC where the entire size must be filled immediately, otherwise the order will be cancelled back).



				6 = GTD. Expires at the specified: • <i>ExpireTime</i> or end of day, or • <i>ExpireDate</i> for multi-day orders.
TradeReportType				X = Booking purpose trade. NULL (0x00) = normal trade.
TradingParticipantID	115	2	Binary	The (4 digit) trading participant identifier.
TransactID	6807	10	Alphanumeric	Transaction Identifier as sent to CHES for this order execution.
TransactionTime	60	8	DateTime	The time the event occurred in the Matching Engine (not the time the message was sent).
Undisclosed	6801	1	Text	If true, indicates an undisclosed order. Y = True N = False
WorkingPrice	9690	8	BinaryPrice	The Price at which an order is effectively working in the book.

** In FIX, the first character of Tag 58 (Text) provides the reason code related to the subsequent human-readable text.

Order Reason Codes

The following is a list of all reason codes used by CXA. These reason codes are used in a variety of contexts (order cancellations and order rejections). All reasons are not valid in all contexts. The reason code will be followed by free-form text. The specific text the system delivers may vary from the text listed below to provide clarification of the reject reason. CXA may add additional reason codes without notice. Participants must gracefully ignore unknown values.

A = Admin

- Most rejects due to field validation errors will be reported with a reason of Admin.

D = Duplicate identifier (e.g., *ClOrdID*)

- Duplicate *ClOrdID* detected. Note that CXA will not detect every possible occurrence of a duplicate by a participant.

H = Halted

I = Incorrect data centre

- Message directed to the DR data centre

K = Order rate threshold exceeded

L = Order would lock or cross NBBO

N = Ran out of liquidity to execute against

- Cancel reason for the unexecuted size of an IOC/FOK order.

O = *ClOrdID* does not match a known order

U = User requested

W = Add liquidity only order would remove



X = Order expired

- Cancellation of an expired GTD order

Y = Symbol not supported

Z = Unforeseen reason

o = Max open orders count exceeded

y = Order received by CXA during replay

z = Session end



Port Attributes

Attribute	Default	Description
Allowed Trading PID(s)	Port Owner's PID	Trading PID(s) allowed for the port.
Enable MOCs	Yes	Allow or disallow Market-On-Close (MOC) order type.
Enable Pegs	Yes	Allow or disallow all pegged orders.
Enable Primary Pegs	Yes	Allow or disallow primary peg orders.
Enable Market Pegs	Yes	Allow or disallow market peg orders.
Enable Midpoint Pegs	Yes	Allow or disallow midpoint peg orders.
Enable Broker Preference	No	Allow or disallow broker preferencing.
Allow Test Symbols Only	No	Allow or disallow orders in non-test symbols.
Maximum Notional Value Per Order	Unlimited	Configurable maximum notional dollar value allowed on any individual order.
Maximum Order Size	999,999,999	Maximum number of shares allowed per order.
Cancel on ME Disconnect	No	When set to "No", this setting allows orders to remain open on a Matching Unit failover. When set to "Yes", all open orders associated with a session are immediately cancelled in the event of loss of connectivity to a Matching Unit. If a failover takes longer than five minutes, then all orders are cancelled unconditionally. When set to "Day", Cancel Day orders only and do not cancel GTC or GTD orders, in the event of a Matching Unit failover.
Cancel on Disconnect	Option #1	CXA will offer Participants two options for cancelling orders because of a session disconnect: 1. Cancel All Open Orders (includes Market-On-Close orders) (default) 2. Do Not Cancel Any Open Orders 3. Cancel Day orders only and do not cancel GTC or GTD orders.
Default NoTradeFeat	N (cancel newest)	Specifies default value for NoTradeFeat (7713).
Default Post Only	Blank	If set to "P", all eligible Lit orders to be Post Only. Eligible includes: • Limit (OrdType = 2), and • TimeInForce = 0 (Day) or 1 (GTC) or 6 (GTD).



Default Post Only Lock Instruction	V	When a different default Post Only locked NBBO behaviour is desired for Post Only orders, this port attribute may be used. See <i>DisplayIndicator</i> .
Cancel on Reject	Yes	Cancels an order upon a modify reject for that order.
Cancel on Halt	No	Cancel open orders for a symbol upon a halt. When set to "Day", Cancel Day orders only and do not cancel GTC or GTD orders, in the event of a halt.
Reject Orders on Drop Port Disconnect	No	Allows a participant to associate one or more drop port(s) to an order entry port(s). Once the association has been established, if no drop ports associated with an order entry port are connected, reject orders on the order entry port until at least one of the drop port session connections have been established.
Reject Orders on DROP Port Timeout (s)	30	Only applicable for sessions where "Reject Orders on Drop Port Disconnect" has been enabled. When the last associated drop port for the order entry session has disconnected, the reject/cancel actions will be taken on the order entry session if an associated drop port has not re-established its connection in the defined time. Minimum value allowed is 20.
Cancel Open Orders on Drop Port Disconnect	No	Only applicable for sessions where "Reject Orders on Drop Port Disconnect" has been enabled. If all drop ports associated with an order entry port become disconnected, cancel all open orders on the order entry port.
Port Order Rate Threshold	Default = 4000 msgs/sec Maximum allowed = 4000 msgs/sec	The maximum allowed message rate on the session. When the first non-administrative message is received, a one second window begins. During the second no more than 3,999 additional non-administrative messages will be allowed within that window. If the rate is exceeded all new orders in the time window are rejected, modifies are treated as cancels, and cancels are processed.
Default Trading PID	none	The default trading PID to apply to messages from participants.



Support

Please direct questions or comments regarding this specification to TradeDeskAU@cboe.com.



Appendix A – Login Strategies

Login Message Flow

On a successful login, the following is the sequence of messages to expect. Note that after sending a Login Request, participants should wait for both a Login Response of “Accepted” as well as a Replay Complete message before sending new application messages.

Direction	Message
Participant → CXA Au	Login Request
Participant ← CXA Au	Login Response (A = Accepted)
Participant ← CXA Au	For each matching unit, all messages for the participant having sequence number greater than the seq # in the login request for that unit. Possibly no such messages are transmitted, for instance on the first login of the day.
Participant ← CXA Au	Replay Complete
Participant ↔ CXA Au	(Begin normal flow: Order traffic, or Heartbeats at 1/sec)

Recommended Login

“Request replay of everything that you missed”

The login protocol supports a variety of options for how a participant may want to approach reconciling sequence numbers and messages after a disconnection. For most participants, the following Login strategy is the simplest approach to support a robust, lossless login experience:

Field Name	Value	Comment
StartOfMessage	BO E3	
MessageLength	1E 00	30
MessageType	01 00	1 (login request)
MatchingUnit	00	
Reserved	00	
SequenceNumber	00	(unsequenced)
SessionId	41 42 43 44	(ex. “ABCD”) - Session Id as supplied by CXA
SessionSubId	30 30 30 31	(ex. “0001”) Session Sub Id as supplied by CXA
Password	61 62 63 64 65 66 67 68 69 6A	(ex. “abcdefghij”) Password
ReplayUnspecifiedUnit	52	“R” - Replay unknown units.
NumberOfUnits	02	There are 2 rows in the array below, representing the 2 system matching units.
UnitNumber	01	Matching unit #1



UnitSequence	00 00 00 00	Last SequenceNumber that participant received with MatchUnit=1. Zero if participant has not received anything for MatchUnit=1, for instance as the first login of the day.
UnitNumber	02	Matching unit #2
UnitSequence	00 00 00 00	Last SequenceNumber that participant received with MatchUnit=1. Zero if participant has not received anything for MatchUnit=2, for instance as the first login of the day.

Other Login Strategies

No Replay

"Just start with the next live event"

If the participant is confident that they are disinterested in any missed messages, they may elect to Skip (S) unspecified units and specify no units. This can be used as an initial login. Differences from the recommended login are in **Bold**.

Field Name	Value	Comment
StartOfMessage	BO E3	
MessageLength	1E 00	30
MessageType	01 00	1 (login request)
MatchingUnit	00	
Reserved	00	
SequenceNumber	00	(unsequenced)
SessionId	41 42 43 44	(ex. "ABCD") - Session Id as supplied by CXA
SessionSubId	30 30 30 31	(ex. "0001") Session Sub Id as supplied by CXA
Password	61 62 63 64 65 66 67 68 69 6A	(ex. "abcdefghij") Password
ReplayUnspecifiedUnit	53	"S" – Skip replay of unspecified units.
NumberOfUnits	00	There are no rows in the array below.

Fail
Login
if any
units
are

unspecified

A minor variation on the "Recommended Login", this strategy will fail the login if not all known units are specified. This would provide some protection against a misconfiguration, or the unexpected introduction of additional matching units at CXA (although CXA would provide extensive notice and planning before introducing additional units). Differences from the recommended login are in **Bold**.

Field Name	Value	Comment
StartOfMessage	BO E3	



MessageLength	1E 00	30
MessageType	01 00	1 (login request)
MatchingUnit	00	
Reserved	00	
SequenceNumber	00	(unsequenced)
SessionId	41 42 43 44	(ex. "ABCD") - Session Id as supplied by CXA
SessionSubId	30 30 30 31	(ex. "0001") Session Sub Id as supplied by CXA
Password	61 62 63 64 65 66 67 68 69 6A	(ex. "abcdefghij") Password
ReplayUnspecifiedUnit	46	"F" – Fail unknown units.
NumberOfUnits	02	There are 2 rows in the array below, representing the 2 system matching units.
UnitNumber	01	Matching unit #1
UnitSequence	00 00 00 00	Last SequenceNumber that participant received with MatchUnit=1. Zero if participant has not received anything for MatchUnit=1, for instance as the first login of the day.
UnitNumber	02	Matching unit #2
UnitSequence	00 00 00 00	Last SequenceNumber that participant received with MatchUnit=1. Zero if participant has not received anything for MatchUnit=2, for instance as the first login of the day.



Revision History

Document Version	Date	Description
1.0.0	03/05/22	Initial draft.
1.0.1	26/07/22	Updated field position and offsets on multiple messages. Corrected Symbol length and type in multiple messages. Removed Capacity field from the Trade Cancel/Correct message. Fixed text for "Cancel on Reject" port attribute to be specific to modify messages. Corrected values for RestatementReason field (L=reload, W=would wash). Updated MEQSE field to be for MOC and Pegs only (no limits).
1.0.2	04/08/22	Corrected field offset values for Cancel Order messages. Corrected MessageLength and RiskGroupID offset for Purge Orders messages. Corrected layout and table formatting of ShortSellNakedQty, ShortSellCoveredQty, BrokerPreferencing, and WorkingPrice for Order Acknowledgement messages. Corrected RestatementReason references in LastPx and LastShare for Order Restated messages. Updated RestatementReason value for "would wash" from R to W.
1.0.3	15/08/22	Corrected valid characters for Account field.
1.0.4	26/08/22	Updated SubLiquidityIndicator: removed code 'm', added codes I, J, K, S. Updated example Login Request message in section 3.1.1.1.
1.0.5	20/09/22	Removed "not applicable for IOC, FOK" from MarketX. Added references to equivalent FIX tags in Order Restated.
1.0.6	14/10/22	Corrected the Type values in Table 2 – Application Message Types.
1.0.7	07/11/22	Corrected RestatementReason code for iceberg reload from "L" to "r".
1.0.8	21/11/22	Updated description of RiskGroupID. Corrected description of MinQty when LeavesQty < MinQty. Updated MessageLength description in sections 4.1.1. through 4.2.12.1, with the exception of section 4.1.4.1.



1.0.9	10/01/23	Corrected <i>IntermediaryID</i> data type to alphanumeric in section 4.3
1.0.10	31/01/23	Remove "otherwise 0" from <i>Price</i> description since a cap price is required on pegged order. Added <i>BaseLiquidityIndicator</i> and <i>SubLiquidityIndicator</i> to Order Acknowledgement message.
1.0.11	17/05/23	Corrected specification language on valid characters for <i>Account</i> , <i>ClearingAccount</i> , and <i>IntermediaryID</i> fields. No underlying code changes. Removed "Cancel Continuous Book Orders Only (default)" from "Cancel on Disconnect" port attribute, and changed default option to "Cancel All Open Orders (includes Market-On-Close orders)".
1.0.12	24/01/24	Clarified valid characters for <i>ClearingAccount</i> and updated data type to Alphanumeric. No underlying code changes.
1.0.13	26/02/24	Updated section 1.5 to include latency expectations as well as Members' responsibility to monitor the status of the messages they send to the exchange.
1.0.14	30/04/24	Addition of Post Only Orders, including <i>RoutingInst</i> and <i>DisplayIndicator</i> to: • New Order Single V2 • Order Acknowledgement V1 • Port attributes. Post-Only order updates are temporarily displayed in green font for clarity. Addition of multi-day orders GTC and GTD with expiry date: • New Order Single V2 • Purge Port • Order Acknowledgement V1 • Port attributes Multi-Day order updates are temporarily displayed in blue font for clarity. Addition of Auction trade indicators: • Order Execution message. Auction updates are temporarily displayed in red font for clarity.
1.0.15	24/05/24	Post Only Orders: • Adjusted the <i>RoutingInst</i> field size to 1 character
1.0.16	03/07/24	Addition of four new messages for multi-day orders: • ModifyOrderAUEquitiesV2 to allow clients to migrate from V1 to V2 overtime • OrderModifiedAUEquitiesV2 to allow clients to migrate from V1 to V2 overtime



		• CarriedRestatementAUEquitiesV1 to provide details of multi-day orders that were persisted overnight • DoneForDayAUEquitiesV1 to provide details of multi-day orders that will be persisted at end of day Support of multi-day GTD <i>ExpireDate</i> modification.
1.0.17	03/06/26	Rebrand



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Document ID: CXA-BOE-AUG26, as at 3 August 2026

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