



## Automated Trade Reporting

# SOLA<sup>®</sup> ATR Specifications Guide for BOX

***Confidential***

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## Document History

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Version	Date	Change Description
1.0	2003/04	First draft
1.1	2003/08	Changes in message type 30 & 31 New section on 'BOX Contacts' (sec. 7)
1.2		Add details in section 3. BOX-ATR Definition.
1.3	2005/08	Inserted changes to order origin codes in message type 30, 31, 35, 36, 40, 41, 45, 46 field 'Account Type' (RFC BX05-0029).
1.4	2005/10	Trader ID is added to the Sub Trader ID field in the ATR messages 30, 31, 35 and 36. (BX05-0080).
1.5	2006/01	5.2.9 Add V, W values to Account Type (RFC BX05-0016)
1.6	2006/03	Minor corrections
1.7	2007-02-07	Latest version placed on Intranet
1.8	2008-06-05	Conversion to FrameMaker Symbology Initiative Modifications. A new format will be used for the following message types: <ul style="list-style-type: none"> <li>- Message Type 30 - Trade</li> <li>- Message Type 31 - Trade Cancel</li> <li>- Message Type 35 - As Of Trade</li> <li>- Message Type 36 - As Of Trade Cancellation</li> <li>- Message Type 40 - Allocation</li> <li>- Message Type 41 - Allocation Cancel</li> <li>- Message Type 45 - As Of Trade Allocation</li> <li>- Message Type 46 - As Of Trade Allocation Cancel</li> </ul>
1.9	2009-03-11	Modifications to add Order Identification by the addition of new fields: <ul style="list-style-type: none"> <li>- Client Order ID</li> <li>- Client Memo</li> </ul> with existing field Client Account Number. These three fields provide Order Identification Addition of a new field: <ul style="list-style-type: none"> <li>- Liquidity Status</li> </ul>

Version	Date	Change Description
1.10	2010-03-15	<p>Modifications pertaining to Give-Up functionality include the following (APPW):</p> <ul style="list-style-type: none"> <li>• New field, TradeType added to the end of the following ATR messages: <ul style="list-style-type: none"> <li>– Message Types 30, 31, 35, 36, 40, 41, 45, and 46</li> </ul> </li> <li>• Four new message types: <ul style="list-style-type: none"> <li>– Message Type 50 - GiveUp</li> <li>– Message Type 51 - GiveUpCancel</li> <li>– Message Type 55 - AsOfGiveUp</li> <li>– Message Type 56 - AsOfGiveUpCancel</li> </ul> </li> <li>• New message types have the same content as message type 30, plus new fields of: <ul style="list-style-type: none"> <li>– GiveUpSource</li> <li>– GiveUpDestination</li> <li>– TradeType</li> </ul> </li> </ul>
	2010-08-13	Robert Bessette added definitions to TradeType values for messages 30 & 31.
1.11	2011-10-21	<ul style="list-style-type: none"> <li>• Removed the field TradeType from the GiveUp Message Type 50 since this field is already included in the Trade Message Type 30 upon whose structure the GiveUp message type is based:</li> <li>• Added values for Solicitation and Facilitation to Trade Type in the Trade Message Type 30.</li> <li>• Allocation and Give-Up messages will also contain these values for Trade Type:</li> <li>• Added 'T: Professional Customer' to Account Type in the Trade Message Type 30</li> </ul> <p>Modification to increase field length of Message Header from 22 to 24 bytes.</p> <p>Modification to increase field length from 3 to 4 bytes in the following message types and respective field names:</p> <ul style="list-style-type: none"> <li>• Message Type 09, field <ul style="list-style-type: none"> <li>• Member Number</li> </ul> </li> <li>• Message Type 30, fields <ul style="list-style-type: none"> <li>• CMTA Broker</li> <li>• Executing Broker</li> </ul> </li> <li>• Message Type 50, fields <ul style="list-style-type: none"> <li>• GiveUpSource</li> <li>• GiveUpDestination</li> </ul> </li> </ul>
1.12	2011-12-23	<p>Correction to value 'M' in field TradeType.</p> <ul style="list-style-type: none"> <li>• Should be 'TPR Trade - A trade done by a Third Party Router'</li> </ul>

Version	Date	Change Description
1.13	2013-02-26	<p>Increase the field <i>TradeNumber</i> from 6 to 15 characters to accommodate the new <i>UniqueTradeId</i> field, in the following message types:</p> <ul style="list-style-type: none"> <li>• Message Type 30 - Trade</li> <li>• Message Type 31 - Trade Cancel</li> <li>• Message Type 35 - As of Trade</li> <li>• Message Type 36 - As of Trade Cancellation</li> <li>• Message Type 40 - Allocation</li> <li>• Message Type 41 - Allocation Cancel</li> <li>• Message Type 45 - As of Trade Allocation</li> <li>• Message Type 46 - As of Trade Allocation Cancel</li> <li>• Message Type 50 - GiveUp</li> <li>• Message Type 51 - GiveUp Cancel</li> <li>• Message Type 55 - As of GiveUp</li> <li>• Message Type 56 - As of GiveUp Cancel</li> </ul>
2.0	2014-08-28	<p>Updated the definition of the field <i>Account Type</i> to the <i>Trade</i> Message type structure.</p> <p>Added the field <i>Opposite Account Type</i> to the <i>Trade</i> Message type structure.</p> <p>Updated the length of all messages.</p>

## Document Notes

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Date	Description
2011-10-05	Converted to latest FrameMaker template
2014-08-28	<p>Replaced Erik LeGuehennec with Robert Bessette as Author and with Etienne Charlebois as Approver.</p> <p>Added Vishal Chunnoo as Reviewer</p> <p>Replaced Jean-Francois Bertrand with Etienne Charlebois as Owner.</p>

# Typographic Conventions

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Convention	Meaning
Abbreviated menu commands	This document uses abbreviated menu. Example: "Click <b>Display &gt; Toolbars &gt; Standard</b> " means that you should click the <b>Display</b> menu, point to <b>Toolbars</b> , and click the <b>Standard</b> entry.
<b>Boldface type</b>	<b>Boldface</b> type is used for commands, keywords, file names URLs, or other information that you must use literally. Name of windows, dialogs, and other controls appear in boldface type.
Initial Capital Letters	The first letter of the names of menus, dialog boxes, dialog box elements, and commands are capitalized.
<Text in angle brackets>	Angle brackets are used for variables and values that you must provide.
<b>Emphasized type</b>	Emphasized type is used for words and phrases that need to be emphasized, as for new terms defined in the text. Italicized type is also used for foreign languages terms.
Monospace	Code and script examples appear in a monospace font.
Plus sign in text	Keyboard shortcuts are indicated by a plus sign separating key names. For example, <b>Ctrl+F1</b> means that you must press the <b>Ctrl</b> and <b>F1</b> keys at the same time.

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# Section 1 Introduction

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## 1.1 Purpose

The purpose of this document is to present the specifications of the Boston Options Exchange Automated Trade Reporting (BOX-ATR) data feed service.

## 1.2 ATR Service Description

The BOX-ATR service consists of a private real time feed containing transactions, Give-Ups, and Allocations performed on BOX. The 'private' feature means that firms having active connections to the BOX-ATR Server receive only the following trades:

- Trades (regular and 'As Of'), Give-Ups, and allocations in which they are the Executing Participant
- Trades (regular and 'As Of'), Give-Ups, and allocations in which they are the Clearer
- Give-Ups (regular and 'As Of') and allocations in which they are the receiving firm of a Give-Up

Trades, Give-Ups, and allocations are on instruments traded on BOX only. These include the trades done on BOX to offset trades executed through third-party routers at an away exchange.

## 1.3 Notation Conventions

This section describes the notation convention for elements of the BOX-ATR specifications.

- In the Data Type column, the:
  - 'N' character means numeric values from 0 to 9
  - 'A' character means any US-ASCII alpha or numeric character
  - Elements separated by a vertical line '|' are alternatives
- Values are shown between square brackets '[' ]'
- [blank] means one space (ASCII 32)

The terms 'Participant' and 'BOX-ATR Client' are used throughout the document, and designate the participant application that processes the BOX-ATR feed.

## 1.4 Communication

The BOX-ATR service is provided through a standard TCP/IP communication link. A specific IP Port will be chosen by BOX for providing the BOX-ATR data feed service. The Participant must maintain a configuration that identifies the BOX-ATR Server IP Address, IP Port Number, and the Participant ID for Login.

**Note:** BOX-ATR service set-up, IP addresses, and IP Port Number must be obtained from your BOX Implementation Coordinator.

The BOX-ATR Client is responsible for initiating communications with the BOX-ATR Server.

Each firm must ensure that its BOX-ATR Client has a configuration file to control the time and destination of the connection, and is responsible for initiating the connection to the BOX-ATR server in a timely manner.

**Note:** The BOX-ATR server does not initiate any TCP/IP communications sessions with the BOX-ATR Client.

After the BOX-ATR Client program has made the connection to the BOX-ATR Server, it must transmit a Login message to identify and authenticate itself.

## Section 2 Message Formats and Definitions

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The following messages are supported in this version of the BOX-ATR data service feed:

MESSAGE NAME	MESSAGE TYPE	SOURCE	
		CLIENT (PARTICIPANT)	SERVER (BOX)
Start Of Day	00		✓
Start Of Day ACK	01	✓	
Circuit Assurance	02		✓
Circuit Response	03	✓	
Restart Request	04	✓	
Restart Accepted	05		✓
End Of Trading	08		✓
Client Signon	09	✓	✓
Trade	30		✓
Trade Cancel	31		✓
As Of Trade	35		✓
As Of Trade Cancel	36		✓
Allocation	40		✓
Allocation Cancel	41		✓
As Of Trade Allocation	45		✓
As Of Trade Allocation Cancel	46		✓
GiveUp	50		✓
GiveUpCancel	51		✓
AsOfGiveUp	55		✓
AsOfGiveUpCancel	56		✓
Ack Message	98	✓	✓
Error Message	99		✓

All messages sent by the BOX-ATR server are numbered sequentially starting at 1 every day of trading. The participant response must be numbered in its own similar sequence.

All messages have pre-defined lengths and consist of a generic header, a specific body, and an End-of-Text (ETX) character.

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES	
Message Header	24	A		
Body of message	Up to 155 bytes	N	<b>Message Body</b>	
			<b>Nbr. of Bytes</b>	
			00 Start Of Day	0
			01 Start Of Day Ack	0
			02 Circuit Assurance	0
			03 Circuit Response	0
			04 Restart Request	6
			05 Restart Accepted	0
			08 End Of Trading	0
			09 Client Signon	10
			30 Trade	148
			31 Trade Cancel	148
			35 As Of Trade	148
			36 As Of Trade Cancel	148
40 Allocation	148			
41 Allocation Cancel	148			
45 As Of Trade Allocation	148			
46 As Of Trade Allocation Cancel	148			
50 Give Up	156			
51 Give Up Cancel	156			
55 As Of Give Up	156			
56 As Of Give Up Cancel	156			
98 Ack Message	0			
99 Error Message	80			
ETX	1	A	ASCII character 0x03	

## 2.1 Message Header (24 bytes)

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Source	4	A	Contains the mnemonic of the message source. [BOX ] - For BOX or the firm's clearing number.
Destination	4	A	Contains the mnemonic of the message destination. [BOX ] - For BOX or the firm's clearing number.
Message Type	2	N	[00] Start of Day [01] Start of Day Ack [02] Circuit Assurance [03] Circuit Response [04] Restart Request [05] Restart Accepted [08] End of Trading [09] Client Signon [30] Trade [31] Trade Cancel [35] As Of Trade [36] As Of Trade Cancel [40] Allocation [41] Allocation Cancel [45] As Of Trade Allocation [46] As Of Trade Allocation Cancel [50] Give Up [51] Give Up Cancel [55] As Of GiveUp [56] As Of GiveUp Cancel [98] Ack Message [99] Error Message
Message Flag	1	A	[R] Re-transmitted message [D] Duplicated message [blank] Normal message
Control Byte	1	A	Unused. Always [blank]

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Sequence Number	6	N	This field is the official message number formatted by the sender. This number must be reset every morning to 1 and is normally incremented by one with each message sent. In the [1,999999] range, right justified, zero padded.
Ack Sequence Number	6	N	This field is the original outbound number of the message for which this response or ACK is issued. In the [1,999999] range, right justified, zero padded.

## 2.2 Body of Message

### 2.2.1 Message Type 00 - Start Of Day (24 bytes)

This message is used to advise the other side about initiation of application to application communication. This message must be acknowledged with a "START OF DAY ACK".

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Message Header	24		Refer to section <a href="#">2.1, Message Header (24 bytes)</a>

### 2.2.2 Message Type 01 - Start Of Day Ack (24 bytes)

This message is sent in acknowledgement to the "START OF DAY" to advise the BOX-ATR Server that it is ready to exchange messages.

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Message Header	24		Refer to section <a href="#">2.1, Message Header (24 bytes)</a> ACK SEQUENCE NUMBER must be the number of the START OF DAY message.



### 2.2.3 Message Type 02 - Circuit Assurance (24 bytes)

This message is sent by the BOX-ATR server to verify that the other side's application is running correctly. It is sent during day at a fixed time interval (5 minutes). The receiver of this message should send a "circuit response" message within 3 minutes of receipt of this message. If the response is not detected within this time interval, then the program should treat this situation as a possible failure of the communications link or partner program. The ATR server may force a link disconnect should there be no response to circuit assurance, and the client program should be prepared for this possibility. Note that the circuit assurance message may appear at any time during the session, even as part of the connection establishment handshake.

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Message Header	24		Refer to section <a href="#">2.1, Message Header (24 bytes)</a> The SEQUENCE NUMBER and ACK SEQUENCE NUMBER fields may contain zero to reduce the need for the client program to track these messages for retransmit or restart situations

### 2.2.4 Message Type 03 - Circuit Response (24 bytes)

This message is a response to a circuit assurance message. It should be returned promptly upon the receipt of the circuit assurance message.

Field Name	Length (Bytes)	Data Type	Definition / Validation Rules
Message Header	24		Refer to section <a href="#">2.1, Message Header (24 bytes)</a> ACK SEQUENCE NUMBER must be the sequence number of the CIRCUIT ASSURANCE message. The Sequence number MUST be zero

## 2.2.5 Message Type 04 - Restart Request (30 bytes)

The BOX-ATR client application uses this to restart its communications session. When the BOX-ATR client sends this message, the body sequence number indicates which message number will be the first sent. When the BOX-ATR client sends a restart request, this number is used to request that the BOX-ATR server begin its restart at this sequence number. Once the restarted messages are sent, the BOX-ATR server will begin transmitting messages in the normal sequence.

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Message Header	24		Refer to section <a href="#">2.1, Message Header (24 bytes)</a>
Sequence Number	6	N	If the sequence number is higher than any message number known to the ATR server, it will use the last message known to it. In the [1,999999] range, right justified, zero padded

## 2.2.6 Message Type 05 - Restart Accepted (24 bytes)

This message is the normal response to a restart request message.

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Message Header	24		Refer to section <a href="#">2.1, Message Header (24 bytes)</a> ACK SEQUENCE NUMBER must be the message number of the RESTART REQUEST message.

### 2.2.7 Message Type 08 - End Of Trading (24 bytes)

This message is sent by BOX to advise firms about the end of trading. After the End of trading has been received, the BOX-ATR client may request retransmission of any messages it needs prior to the eventual shutdown of ATR for the business day.

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Message Header	24		Refer to section <a href="#">2.1, Message Header (24 bytes)</a>

### 2.2.8 Message Type 09 - Client Signon (34 bytes)

This message must be the first message sent by the client after establishing (or re-establishing) its TCP/IP session with the server. If the initial sequence number is higher than any message number known to the ATR server, it will use the last message known to it.

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Message Header	24		Refer to section <a href="#">2.1, Message Header (24 bytes)</a>
Member Number	4	N	In the [0001,9999] range Right justified, zero padded
Initial Sequence Number	6	N	The ATR server will begin at this specific sequence number In the [1,999999] range Right justified, zero padded

## 2.2.9 Message Type 30 - Trade (173 bytes)

Message sent by BOX-ATR server that contains trade information.

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Message Header	24		Refer to section <a href="#">2.1, Message Header (24 bytes)</a>
Trade Number	15	A	Standard TradeId consisting of: <ul style="list-style-type: none"> <li>Side field: only the first letter of the verb, i.e., "B" for Buy and "S" for Sell</li> <li>InstrumentId and GroupId field</li> <li>TradeId field</li> </ul>
Transaction Type	1	A	Side of the trader in the present trade B: Buy S: Sell
Timestamp	6	A	Time at which the trade occurred (Eastern Time) HHMMSS
Symbol	30	A	Instrument symbol Left justified, Blank padded
Expiration Date	6	A	Expiration date of the instrument YYMMDD
Strike Price	8	N	Option Strike Price. The format is defined by the new field 'Strike Price Fraction Indicator'. Filled with zero when the instrument is not an option Right justified, Zero padded
Strike Price Fraction Indicator	1	A	Define the number of decimal places or fraction positions.
Option Type	1	A	C: Call P: Put Blank: If not an option
Volume	8	N	Volume of the trade Right justified, Zero padded
Price (x 10000)	8	N	Transaction price Right justified, Zero padded
CMTA Broker	4	N	Contains the numeric portion of the BOX participant ID who will receive the trade in a CMTA deal.

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Account Type	1	A	Account type of the executing broker of the trade 6: Public Customer 7: Broker Dealer 8: Market Maker T: Professional Customer W: Broker Dealer cleared as Customer X: Away Market Maker
Sub-trader ID	3	A	The Market maker OCC sub-account field is provided for fields 'Allocation' message (40) and 'Allocation Cancel' message (41) only. The 'Sub-trader ID' field is not only provided in 'Allocation' (40) and 'Allocation Cancel' (41) messages.  For message 'Trade' (30), 'Trade Cancel' (31), 'As Of Trade' (35) and 'As Of Trade Cancel' (36) message, contains the last 3 digits of the Trader ID.
Open Close	1	A	Position of the trade O: Open C: Close
Executing Broker	4	N	Contains the numeric portion of the BOX participant ID executing the trade In the [0001,9999] range Right justified, zero padded
Client Account Number	12	A	Left justified, right blank filled Used with Client Order ID and Client Memo for Order Identification.
Client Order ID.	20	A	Left justified, right blank filled Used with Client Account Number and Client Memo for Order Identification.
Client Memo	16	A	Left justified, right blank filled Used with Client Account Number and Client Order ID for Order Identification.
Liquidity Status	1	A	Possible values: '?' Unknown ' ' None 'M' Maker 'T' Taker

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
TradeType	1	A	Possible values: 'N' Normal - A regular trade 'O' CrossedOrders - A trade with the same Firm ID on both sides 'T' TraderCrossedOrders - A trade with the same Trader ID on both sides 'M' TPR Trade - A trade done by a Third Party Router 'P' PIP - A trade done at the end of a PIP auction 'F' FirmDo - A trade resulting from a Directed Order 'A' AsOf - A trade entered by the BOX MOC to correct a trade executed on a previous day 'E' Late - A trade entered by the BOX MOC to correct a trade executed on the same day 'S' Solicitation - A trade done as part of a Solicitation auction 'I' Facilitation - A trade done as part of a Facilitation auction
Contra Account Type	1	A	Account type of the opposite executing broker of the trade 6: Public Customer 7: Broker Dealer 8: Market Maker T: Professional Customer W: Broker Dealer cleared as Customer X: Away Market Maker

**| 2.2.10 Message Type 31 - Trade Cancel (173 bytes)**

Message sent by BOX-ATR server that contains Transaction cancellation information. Use the same structure as Trade message type.

**| 2.2.11 Message Type 35 - As Of Trade (173 bytes)**

Message sent by BOX-ATR server that contains 'As Of Trade' information. Use the same structure as Trade message type.

**| 2.2.12 Message Type 36 - As Of Trade Cancellation (173 bytes)**

Message sent by BOX-ATR server that contains 'As Of Trade' cancellation information. Use the same structure as Trade message type.

**| 2.2.13 Message Type 40 - Allocation (173 bytes)**

Message sent by BOX-ATR server that contains Allocation information. Use the same structure as Trade message type.

**| 2.2.14 Message Type 41 - Allocation Cancel (173 bytes)**

Message sent by BOX-ATR server that contains Allocation cancel information. Use the same structure as Trade message type.

**| 2.2.15 Message Type 45 - As Of Trade Allocation (173 bytes)**

Message sent by BOX-ATR server that contains 'As Of Trade' Allocation information. Use the same structure as Trade message type.

**| 2.2.16 Message Type 46 - As Of Trade Allocation Cancel (173 bytes)**

Message sent by BOX-ATR server that contains 'As Of Trade' Allocation cancel information. Use the same structure as Trade message type.

### 2.2.17 Message Type 50 - Give-Up (181 bytes)

Message sent by BOX-ATR server that contains Give Up information. Use the same structure as Trade message type, plus the following fields:

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
GiveUpSource	4	A	Firm ID that is giving up the trade, as per the same field defined in the Give-Up Agreement.
GiveUpDestination	4	A	Firm ID to which the trade is given up, as per the same field defined in the Give-Up Agreement.

### 2.2.18 Message Type 51 - Give-Up Cancel (181 bytes)

Message sent by BOX-ATR server that contains Give Up Cancel information. Use the same structure as GiveUp message type.

### 2.2.19 Message Type 55 - As Of Give-Up (181 bytes)

Message sent by BOX-ATR server that contains 'As Of Give Up' information. Use the same structure as GiveUp message type.

### 2.2.20 Message Type 56 - As Of Give-Up Cancel (181 bytes)

Message sent by BOX-ATR server that contains 'As Of Give Up Cancel' information. Use the same structure as GiveUp message type.

### 2.2.21 Message Type 98 - Ack Message (24 bytes)

This message is sent as an acknowledgement of another message. This acknowledgement is sent only for messages with the control byte flag set (value = "Y") in its header.

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Message Header	24		Refer to section <a href="#">2.1, Message Header (24 bytes)</a>



### 2.2.22 Message Type 99 - Error Message (up to 104 bytes)

Message sent by the BOX-ATR server when an error occurs on a message received from a firm.

FIELD NAME	LENGTH (BYTES)	DATA TYPE	DEFINITION / VALIDATION RULES
Message Header	24		Refer to section <a href="#">2.1, Message Header (24 bytes)</a> ACK SEQUENCE NUMBER must be the number of the message that is in error
Error Text	80	A	Refer to <a href="#">Appendix A, Error Messages</a> Contains the error description.

### 2.2.23 End-Of-Text (ETX)

An End-of-Text (ETX) ASCII character must follow each TCP/IP message sent or received by the BOX-ATR server. This delimiter character is hexadecimal 03 (0x03), and must appear only at the end of message content.



## Appendix A Error Messages

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ERROR TEXT	DESCRIPTION
Invalid message type	The message type provided in the header message is invalid.
Invalid firm identifier	The firm identifier provided in the header message is invalid. The firm identifier must be configured in the system of the BOX in order to the BOX-ATR server to recognize them.
Invalid sequence number	The value of the 'Sequence Number' field in the header message is not a numeric. The value of the 'Sequence Number' field in the Restart Request message is not a numeric.
Invalid sequence	The received message is out of sequence.
Not Signon	The Signon message is invalid. No valid Signon message has been received.



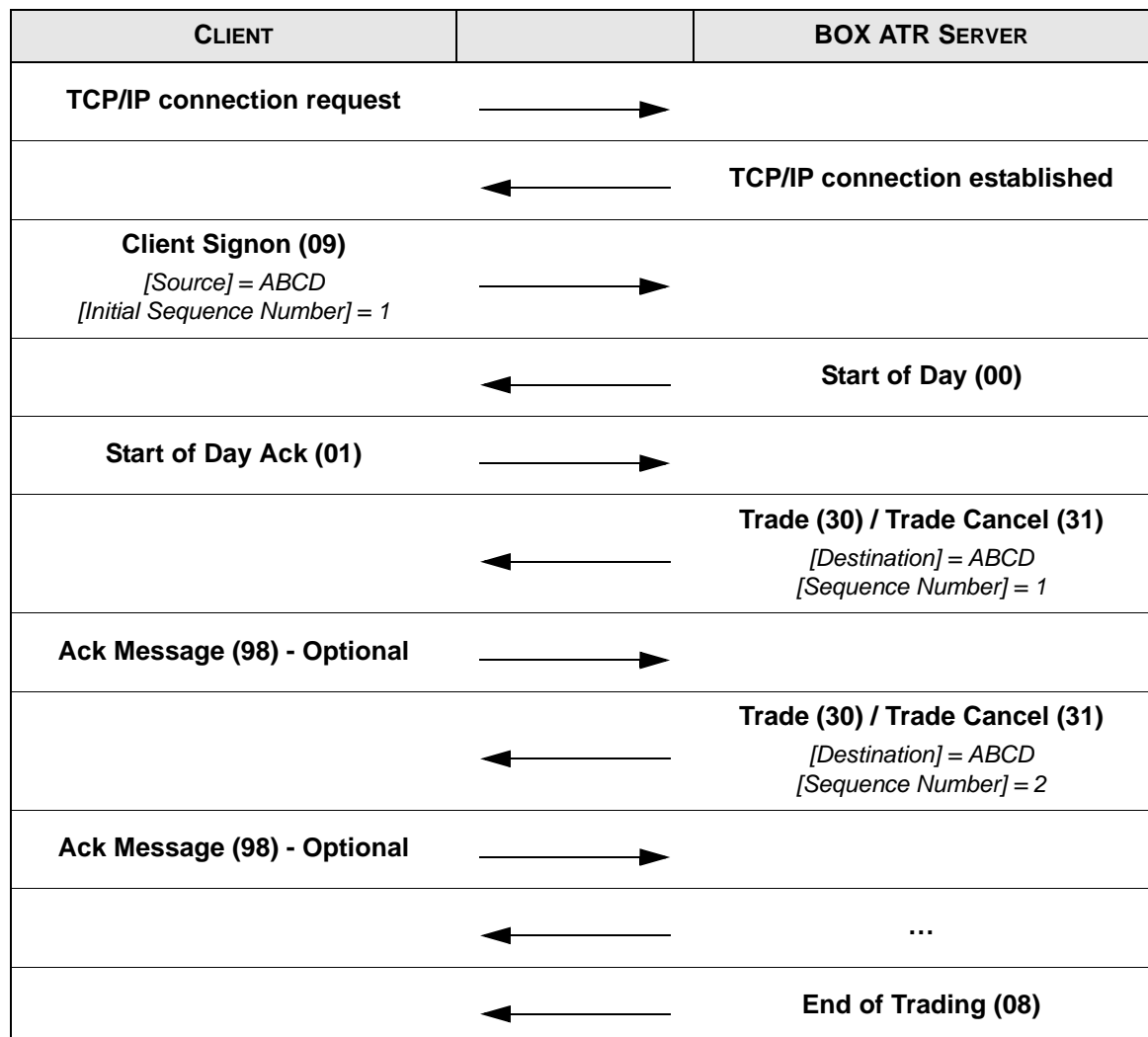
## Appendix B Normal Connection

### B.1 Connection Examples

#### Single TCP/IP Connection, Single ATR Logical Connection

Trade and Trade Cancel messages for Participant 'ABCD' are sent over one TCP/IP connection and on one ATR logical connection.

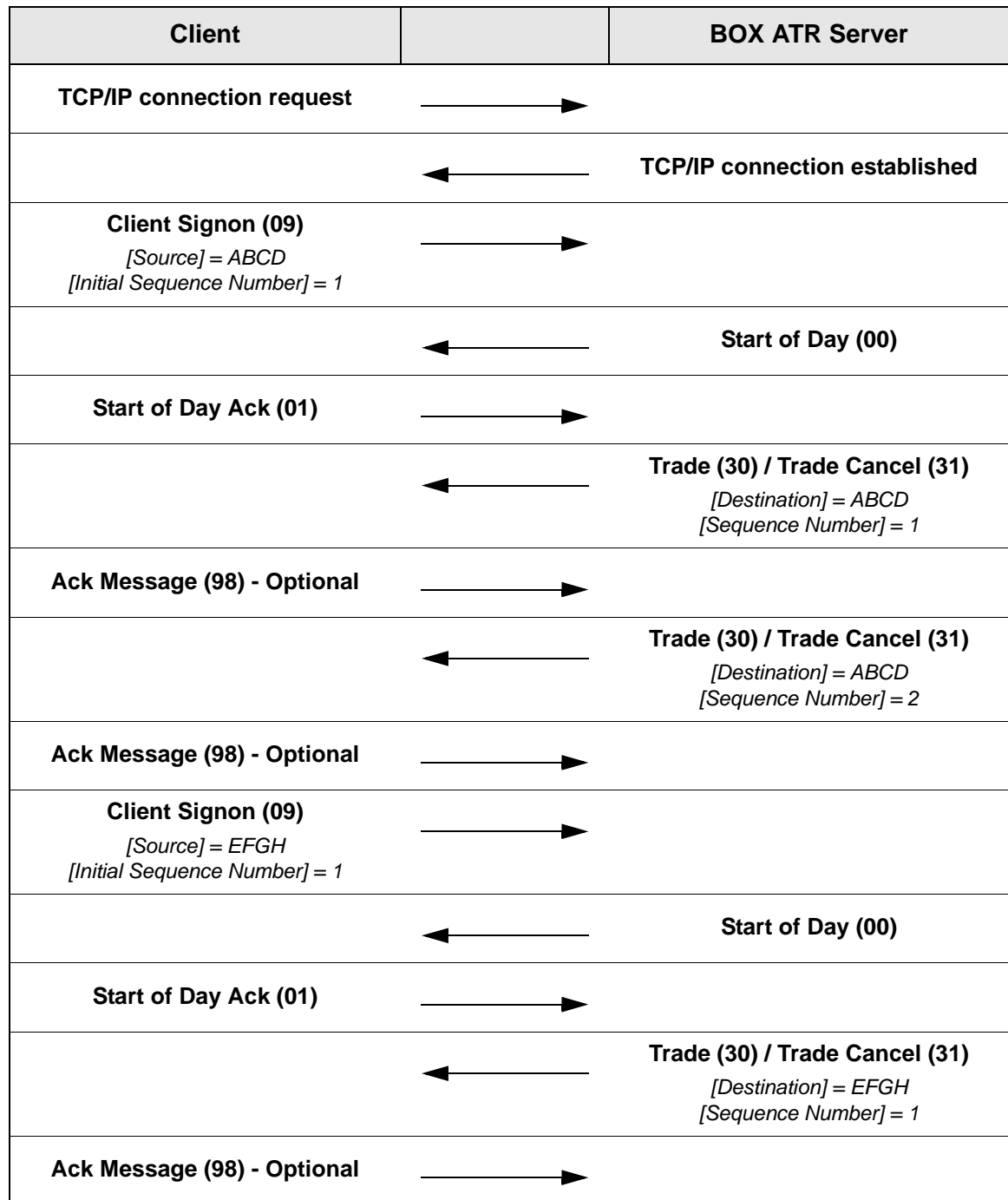
**Figure 1:** Single TCP/IP Connection, Single ATR Logical Connection



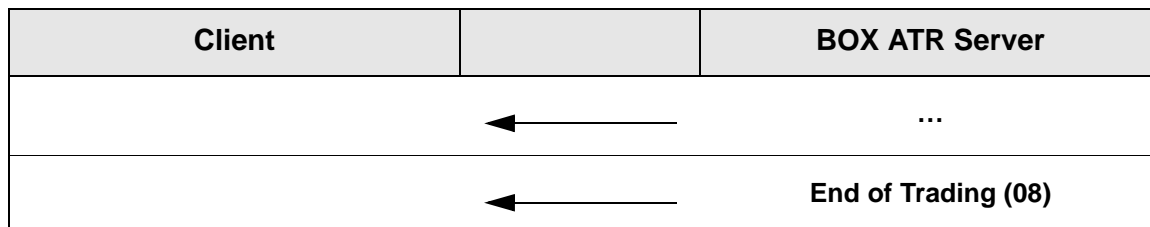
### Single TCP/IP Connection, Multiple ATR Logical Connections, Different Participants

Trade and Trade Cancel messages for Participant 'ABCD' and 'EFGH' are sent simultaneously over the same TCP/IP connection, but on different ATR logical connections, each having their own sequence number.

**Figure 2:** Single TCP/IP Connection, Multiple ATR Logical Connections, Different Participants



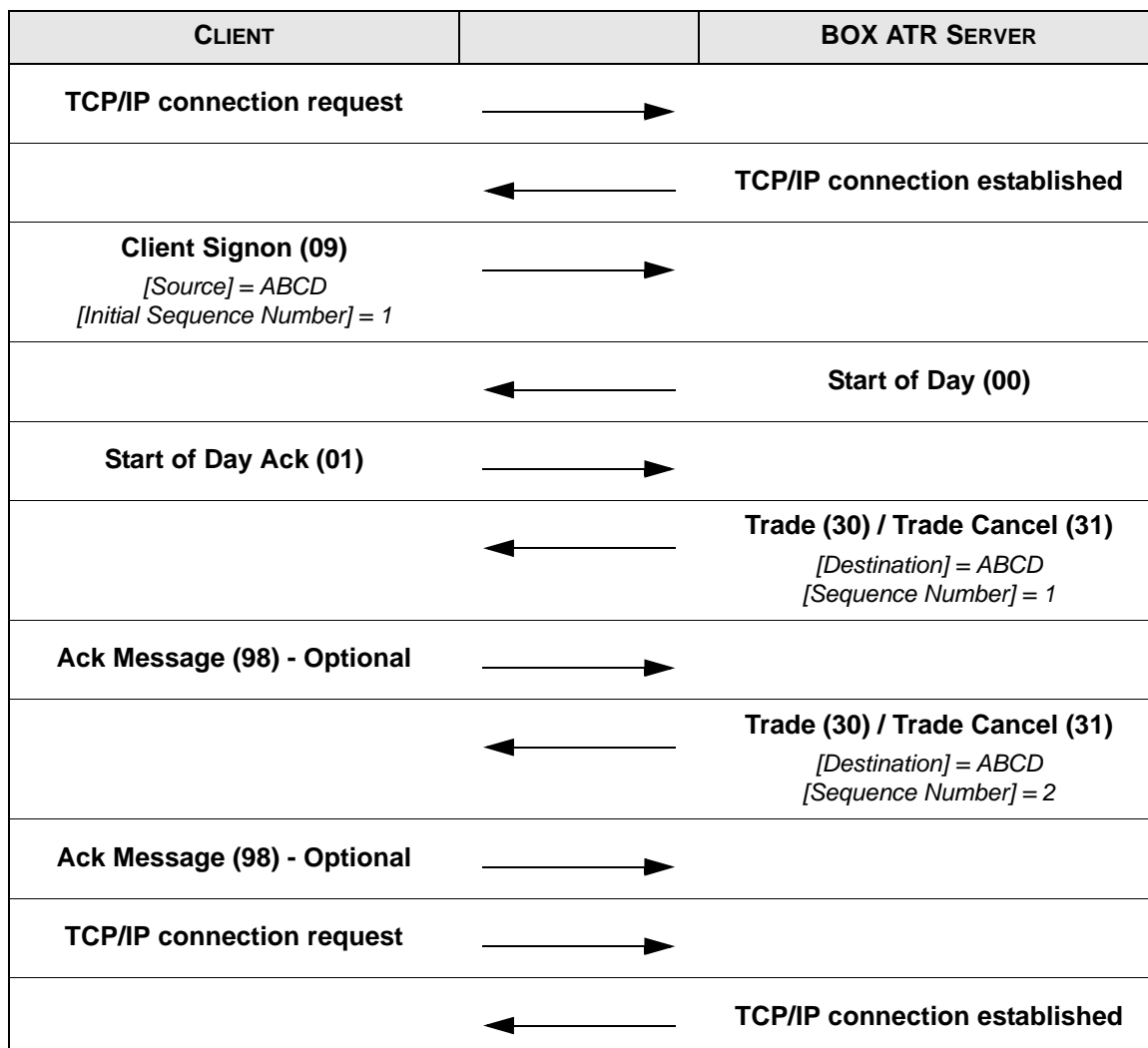
**Figure 2:** Single TCP/IP Connection, Multiple ATR Logical Connections, Different Participants



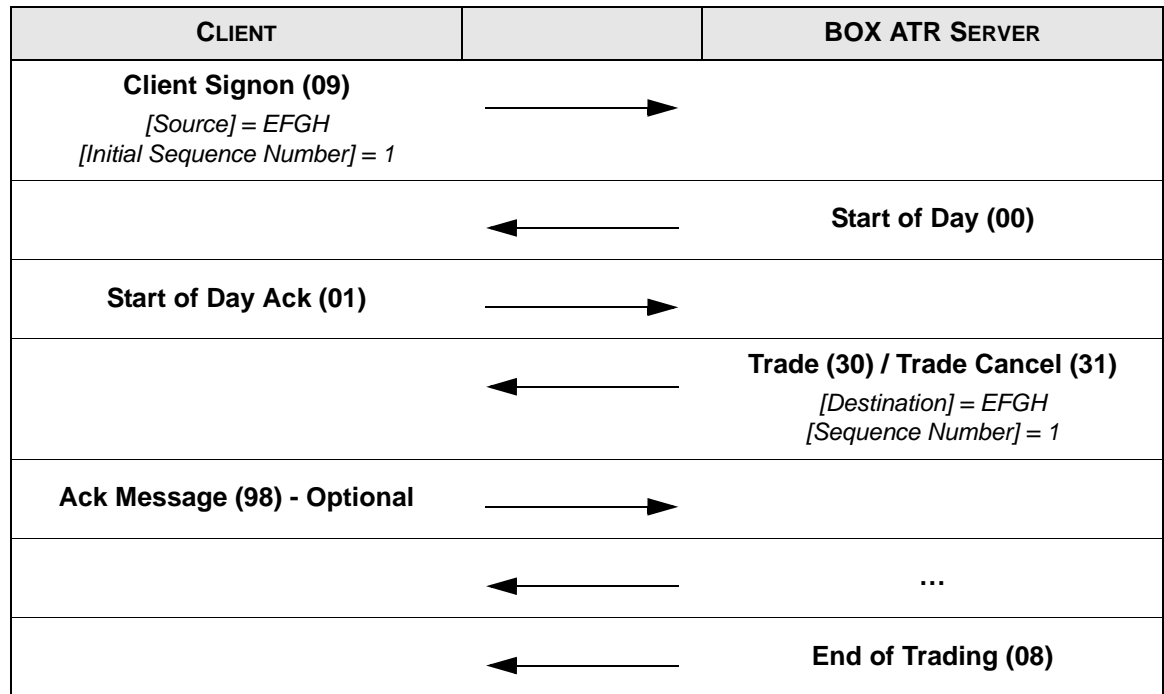
**Multiple TCP/IP Connection, Multiple ATR Logical Connections, Different Participants**

Trade and Trade Cancel messages for Participant 'ABCD' and 'EFGH' are sent simultaneously over different TCP/IP connections, and on different ATR logical connections, each having their own sequence number.

**Figure 3:** Multiple TCP/IP Connection, Multiple ATR Logical Connections, Different Participants



**Figure 3:** Multiple TCP/IP Connection, Multiple ATR Logical Connections, Different Participants





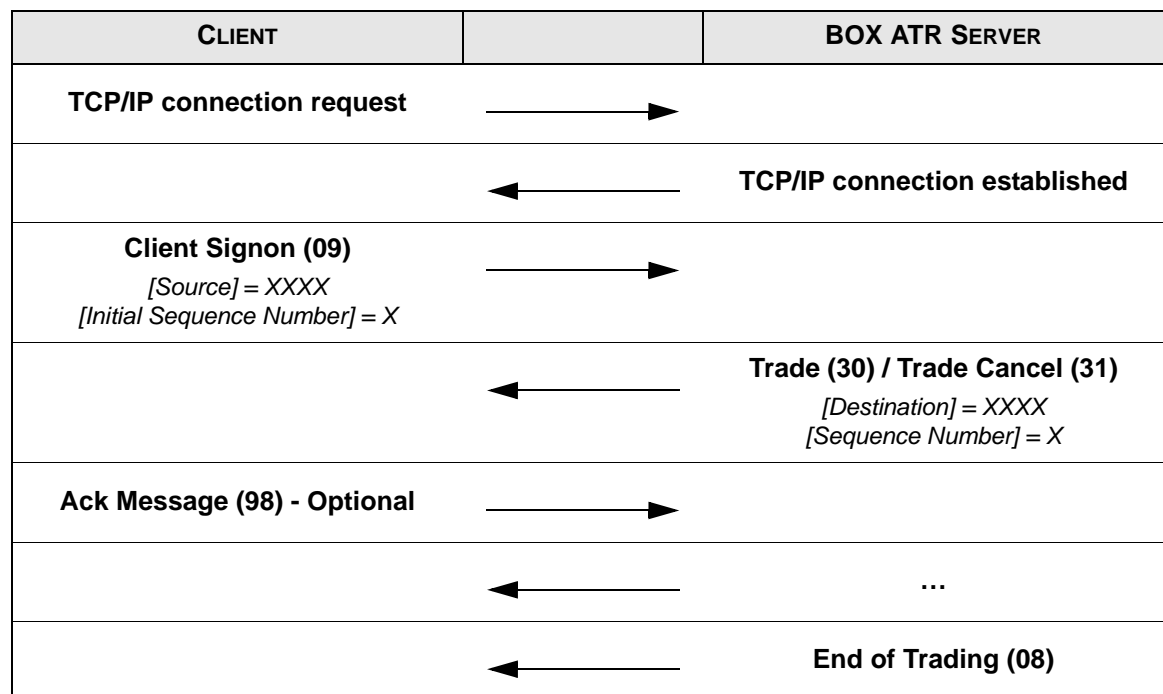
## Appendix C Recovery Connection

### C.1 Recovery Connection Example

### C.2 Single TCP/IP Connection, Single ATR Logical Connection

Trade and Trade Cancel messages for Participant 'XXXX' are sent over one TCP/IP connection and on one ATR logical connection.

**Figure 4:** Recovery — Single TCP/IP Connection, Single ATR Logical Connection



**Note:** For situations where there are more than one TCP/IP connections and more than one ATR logical connections, refer to [Appendix B, Normal Connection](#). [Appendix B, Normal Connection](#)



## Appendix D Contacts

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The following includes a listing of names for the BOX staff members which you may occasionally need to contact.

### **ISV Support**

Please contact your Implementation Coordinator

### **Technical Help Desk**

Toll Free: 1-866-905-3535

Email: [boxsupport@bostonoptions.com](mailto:boxsupport@bostonoptions.com)







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