Computer–to-Computer Interface (CTCI)
Programming Specifications

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1 Introduction

1.1 Document Overview

This document contains the subscriber requirements for using NASDAQ's Computer-to-Computer Interface (CTCI) to access the NASDAQ market center[1]. The document outlines only the messages transmitted via CTCI and not via other entry points to NASDAQ.

This document should be used by NASDAQ member firms acting on their own behalf and by third party software vendors/service bureaus acting on behalf of a NASDAQ participant.

The document contains these sections:

- Standard input messages;
- Standard output messages;
- ACES;
- NASDAQ market center trading;
- Appendix A: TCP/IP Connection;
- Appendix B: IBM WebSphere MQ; and

The standard input and output sections detail the formats for messages to and from the NASDAQ Switch. The other sections detail the input and output messages that are specific to a particular application. Appendix A describes how a subscriber can submit and receive messages to and from the CTCI using the TCP/IP protocol. Appendix B provides a link to *CTCI WebSphere MQ V1.1 Subscriber Intercommunication Specification.* Appendix C offers a trade reporting-specific list of terms.

These conventions are used throughout the document:

- Fields defined as required must be present in the message.
- Fields defined as alphabetic can only hold A-Z (no spaces or numbers).
- Fields defined as numeric can only hold 0-9 (no spaces or alpha characters).
- Embedded spaces cannot be entered in alphabetic or numeric fields.
- Messages are limited to 1024 characters (including the header and trailer).
- Lines within messages are limited to 253 characters, including the end-of-line delimiter.
- All lines are terminated by a CR/LF pair.
- Fields within square brackets are optional.
- Multiple fields within brackets must all be present if any are.

[1] MFQS and TRACE specifications are in separate documents.
http://www.nasdaqtrader.com/asp/ctcidisclaim4.asp#MFQS
http://www.nasd.com/mkt_sys/trace_techspec.asp

1.2 CTCI Overview

NASDAQ provides a CTCI facility that allows subscribers to record and to report NASDAQ securities transactions from their computer systems to NASDAQ's computer systems via the NASDAQ Message Switch (Switch) using a two-way communications link over dedicated point-to-point circuits. ACES and NASDAQ market center trading are all available via the CTCI.

There are nearly 500 circuits in production, handling more than 2 million transactions a day. CTCI uses a Transmission Control Protocol/Internet Protocol (TCP/IP) interface connection that allows incremental bandwidth.

NASDAQ supports IBM WebSphere MQ over the CTCI TCP/IP interface connection. IBM WebSphere MQ, a message queue middleware that extends business applications and enables them to communicate with one another, offers customers the ability to incorporate different systems a common messaging infrastructure. CTCI TCP/IP customers may implement WebSphere MQ software to facilitate interaction between their computer-to-computer-interface and other internal systems. See Appendix B: IBM WebSphere MQ.

CTCI Frequently Asked Questions can be found on the NASDAQ Trader website at: http://www.nasdaqtrader.com/trader/tradingservices/productservices/productdescriptions/ctcifaqs.stm.

1.3 Allowable Subscriber Entry Times

Entry of	Start time	End time
ACES Orders	7:00, but will not be delivered until 8:00	18:30, but cancel and cancel/replace are accepted until the switch is taken down
ADMIN or SUPER Messages	Anytime switch is up. These are not orders but admin messages or retransmission requests.	Until switch taken down
Money Market Prices	9:00	17:55 cutoff for newspaper dissemination; can be entered until 19:00 for level one dissemination
Mutual Fund Prices	9:00	17:55 cutoff for newspaper dissemination; can be entered until 19:00 for level one dissemination
NASDAQ Market Center Trading Orders	7:30	16:00

ACES orders can be entered as early as 7:00 a.m., Eastern Time (ET), although orders entered between 7:00 a.m. and 7:59.59 a.m. will not be delivered until 8:00 a.m., ET. The ACES system will accept cancel orders after 6:30 p.m., ET, but will not accept new or cancel/replace orders at that time. There is no message delivery after 6:30 p.m., ET; therefore, no cancellation messages will be sent to either side. At 6:30 p.m., ET, all day orders are auto-canceled in the ACES system.

The **NASDAQ market center trading** pre-opening session begins at 7:30 a.m. ET, when order/quote entry is allowed. You can enter market and limit orders that will be executed during market hours (9:30 a.m. to 4:00 p.m., ET). Both Inside Calculation and Display Quote calculation also commence at 7:30 a.m. Beginning at 9:20 a.m. ET, you can send Trade or Move messages to other market participants (except for the MPID “SIZE”) to attempt to resolve possible locked/crossed markets. If participants do not resolve a locked/crossed situation during the Trade or Move period, NASDAQ will implement an Auto-Ex processing system at 9:29:30 a.m. ET. Trading executions begin at 9:30 a.m. ET and end at 4:00 p.m. ET. The after-hours session closes at 6:30 p.m.

1.4 NASDAQ Customer Support Information


CTCI Help Desk 203-385-6332


CTCI E-mail SMCTCI@NASDAQ.com

Type of Support	Contact
Trade Reporting Operations	203-378-0166 203-385-6382 fax
Customer Test Support	800-288-3783
Emergency Market Close	800-677-7997
Form T Fax	240-386-5134
Market Data Integrity	203-375-9609
Market Data Integrity Fax	203-385-6381
Miscellaneous Trading Support	800-219-4861
NASDAQ Technical Support Help Desk	800-243-4284 203-385-6280 fax
Public Information	800-289-9999
Subscriber Services	800-777-5606
Trading Services	800-219-4861
Training	212-858-4424

1.5 Communication Protocols

Computerized firms that elect to use the CTCI will conform to the TCP/IP protocol detailed in Appendix A.

The subscriber is responsible for all line and equipment costs required for the use of the CTCI. In the TCP/IP environment, the system will support bandwidth from 56 kbps up to full T1 rates. A subscriber may order a redundant line(s) for backup.

CTCI permits a firm acting as a Service Bureau to interface with NASDAQ applications on behalf of multiple firms. Two station configuration methods for this Service Bureau capability are available:

1. One or more stations can be defined for each Service Bureau client. Since each client station will be configured and used just as if it were a direct link to the actual client, *no* Service Bureau-specific message formatting rules contained herein apply to this type of configuration.

2. Multiple clients can be associated to one or more Service Bureau stations. Since the Service Bureau station will be configured and used on behalf of multiple clients, *all* Service Bureau-specific message formatting rules contained herein apply to this type of configuration.

2 Standard Input Messages

The NASDAQ Message Switch supports three types of input messages:

- Application (section 2.2);
- ADMIN (section 2.3); and
- SUPER (section 2.4).

Application messages carry application-specific data in the message body to the NASDAQ application system designated in the message header. For example, an order entry message is an application message.

ADMIN messages are text messages sent to and logged in the Switch as communication checks.

SUPER messages are used to communicate with the NASDAQ Message Switch itself. These messages are used to notify the switch of the status of the user station, to turn sequence number checking on or off, to reset the sequence numbers, and to initiate retransmission of missed or lost CTCI output messages.

2.1 General Message Format

Input messages consist of:

- a message header that defines the message origin, category, and destination;
- a message body that consists of one or more lines of text; and
- an optional message trailer that consists of one line of text carrying the message sequence number.

Message headers, body, and trailers are constructed from lines of text. Each line consists of one or more data fields. All lines except the last line must be terminated with an end-of-line delimiter, which is either a Carriage Return/Line Feed pair <CR/LF> or a single Line Feed <LF> (for the sake of uniformity only the <CR/LF> pair will be used throughout this document to represent the end-of-line delimiter). Some of the data fields may be optional depending on the message category or destination. When an optional field is omitted and the result is a blank line the required end-of-line delimiter must still be provided.

Messages delivered to the NASDAQ Message Switch via TCP/IP are enclosed within a message envelope consisting of a 13-byte header and a 2-byte sentinel ("UU"). These 15 bytes are in addition to the header, body, and trailer described here. Transmission of blocked messages is not permitted, that is, each 15 byte "message envelope" must contain only one message, regardless of the message destination. Please see Appendix A: TCP/IP Connection for more details.

2.1.1 Message Header Format

Line 0:	[Origin] **<CR/LF>**
Line 1:	[Data] **<CR/LF>**
Line 1A:	[Category] **space** [Destination] **<CR/LF>**
Blank Line:	**<CR/LF>**

The header consists of four lines. The first line is line 0 and contains the origin of the message. The second line is line 1 and contains the data. The third line is line 1a and contains the category and destination of the message. The fourth line is always a blank line.

2.1.2 Message Body Format

Line 2:	[first line of message body]	**<CR/LF>**
Line 3:	[possible 2nd line]	**<CR/LF>**
Line n:	[possible additional lines]	**<CR/LF>**

The body consists of one or more lines. The first line is always line 2. For application messages, the content of the message body varies according to the destination application and the function being specified. For ADMIN messages, the body consists of one or more lines of user-defined text. For SUPER messages, the body consists of one or more lines of Switch-defined text.

2.1.3 Message Trailer Format

Trailer 1: [trailer data]

The trailer consists of a single line carrying the message sequence number. If the user elects to provide message sequence numbers for validation by the Switch, the message trailer line is required for all input messages. If the user elects not to provide message sequence numbers for validation by the Switch, the message trailer line can be omitted from ADMIN and application input messages. It cannot be omitted for SUPER messages. The message trailer is the last line of a message and is, therefore, never terminated with a <CR/LF>.

The NASDAQ Switch supports four input message trailer formats:

Format	Description	Examples
Format 1	A fixed 4-digit, zero-filled sequence number.	0034
Format 2	A hyphen (-), followed by a 1-4 digit sequence number.	-34
Format 3	The letters "OL" followed by an optional third alphabetic character and/or a space followed by a 1-4 digit sequence number. The sequence number can be zero-filled if desired. This sequence can appear anywhere on the last line. A space is used to separate the sequence number from any following user-defined data.	OL34 OLX 0034 [user-defined data]OLX 0034[*space*user-defined data]
Format 4	A 1-4 digit sequence number at the beginning of the line, followed by a space and a user-defined character string starting with a *non-numeric* character. The sequence number can be zero-filled if desired.	34*space*AXD 0034*space*/200008041717

If a user elects to provide message sequence numbers for validation by the Switch, the following should be kept in mind:

1. The allowed range for sequence numbers is 0001 to 9999.
2. Once 9999 is reached, the number rolls over to 0001 (not 0000), and any currently outstanding gaps for the station will be erased.
3. Each station requires its own unique sequence number series.
   For example:
   - The first message from Station 1 will be number 0001.
   - The second message from Station 1 will be number 0002.
   - If the next message is from Station 2, it will be number 0001, starting a new series specifically for Station 2.

4. The Switch will issue a NUMBER GAP message to any station where a gap in the provided message sequence numbers has been detected. The user is strongly urged to fill any gap (by retransmitting the missed message including the original i.e., missing, sequence number) as soon as possible, as the Switch allows only 16 outstanding gaps per station.
5. The sequence number in the required trailer of SUPER messages can have any value because this message type is never used to detect or fill a gap.
6. The station input sequence number, maintained by the Switch:
    - has value of the next expected sequence number from the user without exception;
    - has a start-of-day value of 0001;
    - can be altered programmatically with SUPER messages;
    - can be altered manually by NASDAQ Tandem Operations staff;
    - all input messages, including SUPER messages, “consume” a station input sequence number. For example, if two non-SUPER messages are sent with the legitimate sequence numbers 0041 and 0042, then two SYSTEM CHECK (SUPER) messages are sent with sequence number values of 0001 and 0100, and then another non-SUPER message is sent, then the SUPER message sequence numbers will not be flagged as out of the ordinary in any way. The non-SUPER message sent must contain the input sequence number 0045 because the two SUPER messages “consumed” the input sequence numbers 0043 and 0044.
7. The subscriber may retransmit a SUPER message, but the message will not fill a gap reported by any NUMBER GAP message. A self-addressed ADMIN message should be sent to fill a gap caused by a missed SUPER message.
8. A SUPER message should never be the first message sent to a station when a session is restored after a communication outage. If messages were in-flight when the session was lost, any SUPER message sent to stations as the first message following session reestablishment will adversely affect input gap detection, and one or more missing messages from the previous session will not be reported with a NUMBER GAP message. It is recommended that a self-addressed ADMIN message be the first message sent to stations when a session is re-established.

To read more about ADMIN messages, see section 2.3. To read more about SUPER messages, see section 3.2. Number Gap Messages are explained in section 3.2.2.

2.2 Application Messages

Application messages carry application-specific data in the message body to the NASDAQ application system designated in the message header. Please see section **Error! Reference source not found.** for additional trade reporting information.

2.2.1 Message Header Format

Input Application Message Header Format

Line 0: [Entry Originator] **<CR/LF>**
Line 1: [Branch Office] **space** [Branch Office Seq. #] **<CR/LF>**
Line 1A: **Category space Destination <CR/LF>**
Blank Line: **<CR/LF>**

Examples for line 1:

ABCD**space**1234**<CRLF>**

A**space**7**<CRLF>**

DR 2850/120601**<CRLF>** (optional format for ACES only)

Line	Field	Description	Req'd
0	Entry Originator	1 to 6 characters For service bureaus, the field must contain the 4-character MMID (as specified by the NASD) of the firm represented by the transaction. The NASDAQ Switch will populate the field if it is not supplied.	Y for firms acting as a service bureau & when either "PMXR" or "PMXN" is used in the destination field, even if the user is not a service bureau N for firms not acting as a service bureau
	<CR/LF>	line delimiter	Y even if the Entry Originator field is not entered
1	Branch Office*	1 to 4 alpha characters. Used to denote the firm's branch office.	Y for ACES
	Branch Office Seq. #	1 to 4 numeric characters	Y for ACES and NASDAQ market center
	Optional Entry date (ACES only)		N
	<CR/LF>	line delimiter	Y

Line	Field	Description	Req'd
1A**	Category	"ORDER" or "OTHER" For NNMS and NASDAQ market center, this field must contain the string "ORDER". For all other NASDAQ applications this field must contain the string "OTHER".	Y
	space	field separator	Y if destination is filled in
	Destination	For **ACES**: Must contain one of the following: A lower case "c", or "ACES" followed by a space and the MMID of the ACES market maker. If the MMID is included in the message body it can be omitted from this line. "ACESP" for messages from an ACES market maker that are to be "passed through" to the order entry firm. For **NASDAQ market center**: A lower case "b" followed by a space and the MMID of the preferenced market maker. If not preferenced, the MMID can be omitted.	Y
	<CR/LF>	line delimiter	Y
blank line	<CR/LF>	line delimiter used to separate the message header from the message body	Y

* If you are entering a trade reporting message, the format of the branch sequence allows for 1-8 alphanumeric with embedded spaces. See section **Error! Reference source not found.**.

** Line 1A is required for all new CTCI users. When omitted, the destination of the message is determined by the content of the SECID field in the message body. New CTCI users should always populate the destination field as omission of the destination may cause incorrect routing. Current CTCI users are encouraged to do this as well.

2.2.2 Message Body Format

ADMIN message body format is discussed in section 2.3.2. SUPER message body format is discussed in sections 3.2.1.1 and 3.2.1.2.

The body of each application message (versus SUPER or ADMIN) sent from the user to the Switch is application-specific. Please refer to one of the following sections for information about the format of the application message body:

- ACES messages are described in Section 4.
- NASDAQ market center trading messages are described in Section 5.

2.2.3 Message Trailer Format

Trailer 1: [trailer data]

The NASDAQ Switch supports four input message trailer formats:

Format	Description	Examples
Format 1	A fixed 4-digit, zero-filled sequence number.	0034
Format 2	A hyphen (-), followed by a 1-4 digit sequence number.	-34
Format 3	The letters "OL" followed by an optional third alphabetic character and/or a space followed by a 1-4 digit sequence number. The sequence number can be zero-filled if desired. This sequence can appear anywhere on the last line. A space is used to separate the sequence number from any following user-defined data.	OL34 OLX 0034 [user-defined data]OLX 0034[spaceuser-defined data]
Format 4	A 1-4 digit sequence number at the beginning of the line, followed by a space and a user-defined character string starting with a *non-numeric* character. The sequence number can be zero-filled if desired.	34spaceAXD 0034space/200008041717

2.3 Admin Messages

Input Admin messages should be used in the following recovery situations.

- A self-addressed ADMIN message should be sent in place of a SUPER message when the Switch sends the user a NUMBER GAP message (see Section 4) and the gap corresponds to a missed SUPER message; the sequence number of the missing SUPER message must be used by this ADMIN message in order to remove the gap created by the missed SUPER message. If necessary, the SUPER message can be resent after the gap has been filled by the ADMIN message.
- When a session is restored after a communications problem, an ADMIN message should be the first message sent to a station, so that the input gap detection by the Switch is accurate. An application message may also be used for this purpose.

When an ADMIN message is used as described above, it is recommended that the destination field on Line 1A be populated with a value that will cause the message to be routed back to the originator; the user can obtain the "address" for this specific purpose from the output message trailer <DestId> field, described in section 3.1.3. Such a self-addressed message not only handles the situations described above, but also proves to the user that data can flow in both directions.

2.3.1 Message Header Format

Input Admin Message Header Format

Line 0: <Originator>**<CR/LF>**
Line 1: **<CR/LF>**
Line 1A: <Category>**space**<Destination>**<CR/LF>**
Blank Line: **<CR/LF>**

Line	Field	Description	Req'd
0	Entry Originator	1 to 6 characters The NASDAQ Switch will populate the field if it is not supplied.	N for firms not acting as a service bureau
	<CR/LF>	line delimiter	Y even if the Entry Originator field is not entered
1	Variable Data	0 to 253 characters Field that the CTCI subscriber may use to enter any data.	N
	<CR/LF>	line delimiter	Y
1a	Category	"ADMIN" Identifies the message category. This field must contain the string "ADMIN".	Y

Line	Field	Description	Req'd
	space	field separator	Y
	Destination	1 to 6 character address code Holds the address of the message destination. It is recommended that this field be populated with an address that will route it back to the originator (a "self-addressed" message). The NASDAQ Customer Subscriber Test group (CST) can provide the user with the appropriate destination code for use in sending themselves self-addressed Admin messages.	Y
	<CR/LF>	line delimiter	Y
blank	<CR/LF>	Blank line used to separate the message header from the message body.	Y

2.3.2 Message Body Format

Input Admin Message Body Format

Line 2: [Variable Data] **<CR/LF>**
Line 3 … : [Additional Data] **<CR/LF>**

Line	Field	Description	Req'd
2	Variable Data	Free form text. of an Admin Message. This is a free format message containing information destined for the individual address identified in the Destination field of the message header.	Y
	<CR/LF>	line delimiter	Y
3	Additional Data	Free form additional lines of message text. Each line requires a <CR/LF> to separate it from the following line.	N

2.3.3 Message Trailer Format

Trailer 1: [trailer data]

The NASDAQ Switch supports four input message trailer formats:

Format	Description	Examples
Format 1	A fixed 4-digit, zero-filled sequence number.	0034
Format 2	A hyphen (-), followed by a 1-4 digit sequence number.	-34

Format	Description	Examples
Format 3	The letters “OL” followed by an optional third alphabetic character and/or a space followed by a 1-4 digit sequence number. The sequence number can be zero-filled if desired. This sequence can appear anywhere on the last line. A space is used to separate the sequence number from any following user-defined data.	OL34 OLX 0034 [user-defined data]OLX 0034[*space*user-defined data]
Format 4	A 1-4 digit sequence number at the beginning of the line, followed by a space and a user-defined character string starting with a *non-numeric* character. The sequence number can be zero-filled if desired.	34*space*AXD 0034*space*/200008041717

2.4 SUPER Messages

Input SUPER messages are used to communicate with the NASDAQ Message Switch. These messages are used to notify the switch of the status of the user station, to turn sequence number checking on or off, to reset the sequence numbers, and to initiate retransmission of missed or lost CTCI output messages.

2.4.1 Message Header Format

Line 0: [Entry Originator] **<CR/LF>**
Line 1: [Variable Data] **<CR/LF>**
Line 1A: [Category] **<CR/LF>**
Blank Line: **<CR/LF>**

Line	Field	Description	Req'd
0	Entry Originator	1 to 6 characters For service bureaus, the field must contain the 4-character MMID (as specified by the NASD) of the firm represented by the transaction. The NASDAQ Switch will populate the field if it is not supplied.	Y for firms acting as a service bureau N for firms not acting as a service bureau
	<CR/LF>	line delimiter	Y even if the Entry Originator field is not entered
1	Variable Data	0-253 characters Field which the CTCI subscriber may use to enter any data.	N
	<CR/LF>	line delimiter	Y
1a	Category	"SUPER" Identifies the message category. This field must contain the string "SUPER". SUPER messages do not have a destination field.	Y
	<CR/LF>	line delimiter	Y
blank	<CR/LF>	blank line used to separate the message header from the message body.	Y

2.4.2 Message Body Format

In order to be processed automatically by the Switch, the message body portion of a SUPER Message must match one of the expected SUPER message formats. If the text does not conform to one of the specified formats, the message will be rejected.

Line 2: **[Function Text]**
Line 3-n: **[Additional Lines of Text as required]**

Line	Field	Description	Req'd
2	Function Text	See the following table for the supported SUPER message functions. In some cases, the Function Text may consist of multiple lines, with a <CR/LF> between each one. The last line does not require a <CR/LF> as a terminator.	Y

SUPER Message Functions

SUPER Function Text	Processing
GOOD MORNING	Indicates the subscriber is ready to begin receiving messages from the Switch.
GOOD NIGHT	Indicates the subscriber has no further traffic to send and is no longer prepared to receive traffic. This command will cause the station output queue to be drained.
SUSPEND SEQ CHECK	Instructs the Switch to suspend input sequence number checking for this subscriber station. This command is only valid if sequence checking was previously instituted.
ALLOW SEQ CHECK	Instructs the Switch to resume input sequence number checking from the next received input sequence number. This command is only valid if suspension of sequence checking was previously instituted.
SYSTEM CHECK	A test message allowing a subscriber to check its ability to communicate with the Switch.
RESET ORDER SEQ<CR/LF> nnnn or RESET ORDER SEQ<CR/LF> ANY	Instructs the Switch to expect a new input sequence number. Two options are provided: nnnn - Numeric string specifying the sequence number provided with the next input message. ANY - Literal indicating that sequence number checking is to commence from the sequence number of the next input message. Either form of this message will erase all previously created number gaps.
REVERT TO SEQ 1	Instructs the Switch to reset to start-of-day numbering in both directions (input and output). This message will erase all previously created number gaps.
RESTART LAST RCVD<CR/LF> nnnn	Instructs the Switch that a subscriber switching facility has been restored after a failure.

SUPER Function Text	Processing
	The Switch will reset the next output sequence number to nnnn + 1, where nnnn is typically the last message sequence number that had been received by the subscriber.
RTVL LAST OUT [mm] or RTVL OUT nnnnn mm Other options: ROUTE=[ADDR] ID=[SID]	Permits a subscriber to request a resend of messages previously transmitted by the Switch. The optional field mm is the number of messages to be retrieved and must be between 1 and 15 (default is 1). If more than 15 messages are requested then multiple SUPER messages must be used. LAST OUT mm instructs the Switch to resend the most recent mm messages. OUT nnnnn mm instructs the Switch to resend mm messages starting with the message which had output retrieval number nnnnn. Valid values for nnnnn are 1 through 65535. Retrieval of INPUT messages is no longer supported. If the "ROUTE=" option is used, the retrieved messages will be sent to <ADDR>. If the "ID=" option is used, the retrieved messages will be messages belonging to the station defined by <SID>. A station may only use the ROUTE= and ID= options if it has been granted those privileges. NOTE: The previous specification showed <CR/LF> after the RTVL. This is still a valid input format. However, the response to this command echoes this information as a single line, i.e., no <CR/LF> after RTVL. While both formats are acceptable, we choose to represent it in this spec with a single line in an attempt to avoid confusion.
NUMBER GAP nnnnn or NUMBER GAP nnnnn nnnnn Other options: ROUTE=[ADDR] ID=[SID]	As input to the Switch: Indicates that a subscriber has detected a gap in the Switch assigned output sequence number and is requesting the resend of the message originally sent with retrieval number nnnnn. The Switch will resend the related message with a new output sequence number; the optional second trailer line in the output message will indicate the retrieval number previously assigned to the message i.e., nnnnn. Up to two messages can be retrieved by a single NUMBER GAP message (nnnnn nnnnn denotes 2 distinct retrieval numbers, not a range). Valid values for nnnnn are 1 through 65535 only.

SUPER Function Text	Processing
	See the discussion of the RTVL command for info about the optional ROUTE= and ID= fields. NOTE: The previous specification showed <CR/LF> after the NUMBER GAP. This is still a valid input format. However, the response to this command echoes this information as a single line, i.e., no <CR/LF> after NUMBER GAP. While both formats are acceptable, we choose to represent it in this spec with a single line in an attempt to avoid confusion.

Because the station output queue is a first-in-first-out (FIFO) queue, the subscriber CTCI design must take into account the fact that SUPER message rejects and acknowledgements are always appended to the existing (and potentially deep) queue. There is currently no way to push output messages onto the top of an output queue.

2.4.3 Message Trailer Format

Trailer 1: [trailer data]

The NASDAQ Switch supports four input message trailer formats:

Format	Description	Examples
Format 1	A fixed 4-digit, zero-filled sequence number.	0034
Format 2	A hyphen (-), followed by a 1-4 digit sequence number.	-34
Format 3	The letters "OL" followed by an optional third alphabetic character and/or a space followed by a 1-4 digit sequence number. The sequence number can be zero-filled if desired. This sequence can appear anywhere on the last line. A space is used to separate the sequence number from any following user-defined data.	OL34 OLX 0034 [user-defined data]OLX 0034[*space*user-defined data]
Format 4	A 1-4 digit sequence number at the beginning of the line, followed by a space and a user-defined character string starting with a *non-numeric* character. The sequence number can be zero-filled if desired.	34*space*AXD 0034*space*/200008041717

3 Standard Output Messages

3.1 General Message Format

Output messages consist of:

- a message header that defines the start of the message, its origin, its destination, its output sequence number, and the message type;
- a message body that consists of one or more lines of text; and
- an optional message trailer that carries the date and time, the message retrieval number, and other information.

Messages sent from the NASDAQ Message Switch via TCP/IP are enclosed within a message envelope consisting of a 13-byte header and a 2-byte sentinel ("UU"). These 15 bytes are in addition to the header, body, and trailer described here. Please see Appendix A for more details.

Message headers and trailers are constructed from lines of text. Each line consists of one or more data fields and is terminated by a Carriage Return/Line Feed pair <CR/LF>.

An output message header consists of up to 4 fields with a user defined field separator between each field. The separator defaults to space if the user has not specified something else. The user can select which fields they would like to receive and can specify the order in which the fields should be placed in the header.

Assuming that the user has elected to receive all fields in the default order, the format is as follows:

3.1.1 Message Header Format

The message header format is one line containing four fields. The field separators can, however, be <CR/LF>, which makes the message header four lines.

Line 1:	[Destination Code]	[field separator]
	[Originator Code]	[field separator]
	[Sequence Number]	[field separator]
	[Message Type]	**<CR/LF>**

Line	Field	Description
1	Destination Code	The Destination Code is a 1-6 character identifier that defaults to the Station ID of the user. The user may specify a custom code. Custom codes may also be specified for each message. See field 4. The user may elect not to receive this field.
	Field Separator	The field separator is defined by the user (**space**, **<CR/LF>**, **<LF>**, etc.). If the user does not specify a separator, a **space** is used by default.

Line	Field	Description
	Originator Code	The Originator Code is a 1-6 character identifier that defaults to the Station ID of the originator of the message. The user may specify custom Originator Codes for each message type. See field 4. The user may elect not to receive this field.
	Field Separator	The field separator is defined by the user (**space**, **<CR/LF>**, **<LF>**, etc.). If the user does not specify a separator, a **space** is used by default.
	Sequence Number	4 numeric characters. Output message sequence number. The number is in the range 0001 to 9999. When 9999 is reached, the number wraps to 0001 (0000 is not used). The "REVERT TO SEQ 1" Super Message resets this field. The user may elect not to receive this field.
	Field Separator	The user defines the field separator (**space**, **<CR/LF>**, **<LF>**, etc.). If the user does not specify a separator, a **space** is used by default.
	Message Type	The message type is a 1-character code that specifies the nature of the message. The user may select the user's own codes. If custom codes are not used, the defaults are as follows: R = Report A = Admin S = Status P = Super T = Other The type of an application output message is determined by the Category Field of Input Header Line 1A of the message input to the switch by the application. It does not indicate which application produced the message. Standard Input information is in section three of this document. The user may elect not to receive this field.
	<CR/LF>	Line delimiter. A **<CR/LF>** is used to separate the output message header from the message body. It is present even if the user elects not to receive any of the fields defined above.

As part of NASDAQ's on-going effort to maximize Switch performance and capacity, NASDAQ will require that the last three characters of the six-character Common Message Switch (CMS) output header Originator Code be reserved for NASDAQ's use. If you, therefore, plan to code your firm's internal systems to use the Originator Code to identify system of origin, you should compare the first three characters of the Originator Code.

Below are the three-letter codes that should be used to identify the system of origin:

System of Origin	(Mnemonic)
ACES Pass-Thru[SM]	ACE
NASDAQ Market Center	HSW
ITS	ITS
NASDAQ Market Center	HSW SOE

NASDAQ reserves the right to change an application mnemonic at any time.

3.1.2 Message Body Format

An output message body consists of one or more lines, with the first line referred to as Line 1. The number of lines and their content varies with the class of the message.

Line 1: [first line of message body] **<CR/LF>**
Line 2: [possible 2nd line] **<CR/LF>**
Line n: [possible additional lines] **<CR/LF>**

See Sections 3.1.4 - 3.3.2 for format information specific to each message class.

3.1.3 Message Trailer Format

An output message trailer consists of either one or two lines depending upon the type of message. Each line in the trailer is optional and the user may elect to not receive either one. If present, the format is as follows:

Trailer 1: [Date/Time]**space**[Dest ID]**slash**[Rtvl #]**<CR/LF>**
Trailer 2: [Resend]**space**[Alt Route]**space**[Poss Dup]

Line	Field	Description
Trailer 1	Date/Time	12 character numeric field. The format of the Date/Time field is HHMMSSDDMMYY (hours, minutes, seconds, day, month, year).
	space	Field separator.
	DestID	1-6 character Destination Station ID. This is identical to the default Destination Code found in the output message header. It is not affected if the user chooses to have a custom Destination Code.
	slash	Field separator (/).
	Rtvl #	4 or 6 character numeric field. The switch maintains a 6-digit retrieval number (RN) from 000001 to 065535. When 065535 is reached, the number wraps to 000001. A user will receive

Line	Field	Description
		the default 4-digit RN or can choose to receive the 6-digit RN (recommended). The 4-digit RN is merely the rightmost 4 digits of the number maintained by the switch. The 4-digit wrapping sequence is [00]0001 to [00]9999, [01]0000 to [01]9999, [02]..., [06]0000 to [06]5535, [00]0001 to [00]9999 and so on.
	<CR/LF>	Line delimiter. The **<CR/LF>** is only present if the trailer includes Trailer Line 2.
Trailer 2*	Resend	An optional **"RSND"** followed by **[destID] / [Rtvl #].** Used when the switch resends a message (due to an input Super RTVL or Super Number Gap message). The switch places the character string "RSND" in this field, followed by a 1-6 character Destination Id, a **slash**, and the 4 or 6 character retrieval number of the original message. Optional.
	space	Field separator. A **space** will be present if another field follows the Resend field
	Alt Route	Holds the 1-6 character Destination ID of the original location the message was addressed to when the message has been rerouted. Optional.
	space	Field separator. A **space** will be present if another field follows the Alt Route field.
	Poss Dup	An optional "**PD**". Holds the string value "PD" if the switch needs to indicate that this message may possibly be a duplicate of an earlier attempt to deliver the message. Optional.

*Trailer Line 2 is present only when the Switch must indicate unusual situations to the user (message resend, alternate routing, possible duplicate message). If the line is present, it will consist of one, two, or all three of the fields, with a **space** between each one.

A message that successfully passes the Switch validation and safestore procedures is forwarded to the specified application, which performs additional validation on the text of the message. If an error is detected, the user will receive a reject message explaining why the original message could not be processed. All reject messages sent from applications will be forwarded to the subscriber via the Switch and will be contained in a Standard Switch Output Message.

If the text from an application is too large, the Switch will replace the text with the character string "-->" so that the message does not exceed 1024 characters. This string replaces the entire echo.

See section 3.3.2 for additional reject information.

3.1.4 Message Numbers

Each output message delivered by the Switch is assigned two numbers:

1. A Message Sequence Number located in the output header.
2. A Message Retrieval Number located in the output trailer.

The Message Sequence and Message Retrieval numbers are independently maintained for each station and will normally be sequential.

The user detects missing messages by monitoring the Message Sequence Number for gaps, but must request message retrievals by using the Message Retrieval Number. The Message Sequence Number may wrap, be set back to 0001 via a REVERT TO SEQ 1 (SUPER) Message, or be manually altered by the Tandem Operations Staff, at any time so the Message Retrieval Number is necessary to uniquely identify all transmitted messages.

The Retrieval Number wraps to 0 after 65,535. Only the most recently output 65,535 messages are ever retrievable, so if output message counts for a particular station are expected to exceed 65,535 during the trading day the user may opt to configure multiple stations and employ the Switch's Balanced Delivery feature.

"Balanced Delivery" is a Message Switch configuration feature that allows subscriber-bound messages to be queued in round robin fashion to more than one output queue. This technique spreads like-addressed output messages over many output stations, effectively reducing the number of messages transmitted per station while increasing overall throughput.

This feature requires that multiple stations be configured for the firm and that any addresses used to direct messages to the 'prime' station queue be added to our Balanced Delivery Configuration (BDFILE) file. Configuration must be coordinated and tested with the NASDAQ Testing Facility (NTF).

3.2 SUPER Messages

3.2.1 Message Acknowledgment

Super Messages received by the Switch are subject to message validation, except that the Switch does not validate the value of the message sequence number contained in the trailer of a message. If the Switch rejects the message, a reject message is sent to the user. If the Switch accepts the message, a response is sent to the user to indicate the disposition of the Super Message. The format of the Super Message Acknowledgment is the Standard Switch Output Message format, as described in Section 3.1. The Super Message Acknowledgment message is a STATUS message.

If the Super message was processed successfully, the body of the Super Acknowledgement message is formatted as follows:

3.2.1.1 Acknowledgement Message Body Format #1

Line 1: [message category] **<CR/LF>**
Line 2: [message text] **<CR/LF>**

Line	Field	Description
1	message category	"STATUS". This field identifies the message category and will contain "**STATUS**".
	<CR/LF>	Line delimiter
2	message text	"SUPER MSG PROCESSED". This field contains the string "SUPER MSG PROCESSED", indicating that the function requested in the Super message has been performed.

If the message could not be processed due to an error in content or formatting or it could not be processed immediately, the body will contain:

3.2.1.2 Acknowledgement Message Body Format #2

Line 1: [message category] **<CR/LF>**
Line 2: [message text] **<CR/LF>**
Line 3: [additional clarification] **<CR/LF>**
Line 4-n: [input msg echo] **<CR/LF>**

Line	Field	Description
1	message category	"STATUS". This field identifies the message category and will contain "**STATUS**".
	<CR/LF>	Line delimiter
2	message text	"SUPER MSG RECEIVED". This field contains the string "SUPER MSG RECEIVED", indicating that the switch received the Super message.
	<CR/LF>	Line delimiter

Line	Field	Description
3	additional clarification	Variable text.
	<CR/LF>	Line delimiter
4-n	input msg echo	Copy of the super message. These lines are a copy of the entire input Super message, including the header.
	<CR/LF>	Line delimiter

3.2.2 Number Gap Message

If input message sequence checking is enabled and the Switch receives a message with a sequence number other than the number expected, the Switch will generate either a Number Gap status message or a Sequence Number Reject message. This message will be formatted as a separate output message in the Standard Switch Output Message format, as described in Section 3.1. Number Gap messages are SUPER messages.

The body of the Number Gap message is formatted as follows:

Line 1: [message category] **<CR/LF>**
Line 2: [message type] **<CR/LF>**
Lines 3 - 6: [nnnn] [nnnn] [nnnn] [nnnn] **<CR/LF>**

Line	Field	Description
1	message category	"STATUS". This field identifies the message category and will contain "**STATUS**".
	<CR/LF>	Line delimiter.
2	message type	"NUMBER GAP". This field contains the string "NUMBER GAP", indicating that this is a Number Gap message from the switch.
	<CR/LF>	Line delimiter.
3-6	nnnn nnnn nnnn nnnn	Up to 4 sets of 4 numeric characters. A number gap message can report up to 16 gaps, with up to 4 **space** separated sequence numbers on each line. The value **nnnn** represents the input sequence number of a missed message.
	<CR/LF>	Line delimiter

When 16 gaps become outstanding then all subsequent input will be rejected (reason: REJ-INVALID MSG SEQ NO) until one of the following occurs:

- one or more missing messages are resent with the original sequence number;
- one or more gaps are filled with the "self-addressed" ADMIN message (see Section 3.3);
- the station gap table is erased upon receipt of either the REVERT TO SEQ 1 or RESET ORDER SEQUENCE (SUPER) message;
- The Tandem Operations Staff manually sets the next expected input sequence number, which also erases the station gap table.

3.3 Reject Messages

3.3.1 Switch Reject Messages

The Switch rejects a message received from a CTCI subscriber when the message fails to pass one of the Switch validation tests. The subscriber will receive a reject message in the Standard Switch Output Message format, as described in Section 3.1. All reject messages are STATUS messages.

The body of a reject message is formatted as follows:

Line 1:	[message category]		**<CR/LF>**
Line 2:	[message type]	[reason]	**<CR/LF>**
Lines 3 - n:	[input msg Echo]		**<CR/LF>**

Line	Field	Description
1	message category	"STATUS" This field identifies the message category and will contain "STATUS".
	<CR/LF>	Line delimiter
2	message type	"REJ-" This field contains the string "REJ-", indicating that this is a Reject message from the switch.
	Reason	Fixed text. This field indicates the reason for the rejection. If there was a problem with the input message, the following text may be reported in the reason field: • MSG EXCEEDS MAX SIZE, message is greater than 1024 chars • INVALID FIRM, origin code is invalid • INVALID BRID/SEQ NO, branch office identifier is invalid • INVALID CATEGORY, category is invalid • DESTINATION INVALID, destination code is invalid • FORMAT ERROR, message is not in the proper format • INVALID MSG SEQ NO, message sequence number is missing, badly formatted, equal to zero, or the maximum number of gaps (16) was exceeded • SEQ NO REPEATED, sequence number duplicates the number of an earlier message. The message will not be accepted. • TOO MANY DESTINATIONS, Admin Message contains too many destination codes. • NOT ACCEPTING INPUTS, input station has been closed by the System Operator or the User. • UNKNOWN STATION, MMID entered on Line 0 by a Service Bureau firm does not equal the first four characters of the station associated with the select address. • REJspace-spaceSYSTEM UNAVAILABLE, The destination

Line	Field	Description
		application/system is unavailable.
3-n	input msg echo	This is a copy of the entire rejected message, including the header and trailer.
	<CR/LF>	line delimiter

3.3.2 Application Reject Messages

A message that successfully passes the Switch validation and safestore procedures is forwarded to the specified application, which performs additional validation on the text of the message. If an error is detected, the user will receive a reject message explaining why the original message could not be processed. All reject messages sent from NASDAQ applications will be forwarded to the subscriber via the Switch and will be contained in General Output Message format, as described in Section 3.1. All reject messages are STATUS messages.

If the application cannot process a message received from the user it will generate a Status Message that will indicate why the message was rejected. The format of an application reject message body is as follows:

Application Reject Message Body

Line 1: [optional MMID] **<CR/LF>**
Line 2: [message category] **<CR/LF>**
Line 3: [reason] **<CR/LF>**
Line 4-n: [echo] **<CR/LF>**

Line	Field	Description
1	optional MMID	4 characters (if present). Contains the 4-character MMID of the entering firm or the MMID of the firm the Service Bureau is acting for. If this option is utilized for multi-station lines, it will equal the 4-character MMID associated with the station.
	<CR/LF>	Line delimiter
2	message category	“STATUS”. This field identifies the message category and will contain "STATUS".
	<CR/LF>	Line delimiter
3	reason	This field contains the text explaining why the application rejected the message.
	<CR/LF>	Line delimiter
4-n	Echo	These lines are a copy of the entire input Application message, including the header and trailer.
	<CR/LF>	Line delimiter

Because the Switch may change the category destination to "OTHER m" on inbound messages to NASDAQ market center, "OTHER m" is a valid Category/Destination combination for reject messages sent from NASDAQ market centerto Users (Line 4-n echo of original message). The destination code "m" is, however, not valid for inbound messages (user to NASDAQ market center). While NASDAQ market center does echo back the original message, the echo may contain "m" because the destination code was changed to "m" before NASDAQ market center received the message.

4 ACES Application Messages

This section provides the formats of the messages used when interfacing through the Switch to the ACES application.

ACES provides authorized market participants with the ability to route orders to market makers' order management systems. ACES acts as an order-routing tool between the firm entering orders and a market maker's order management system. ACES is a voluntary service for which market makers must register to be authorized subscribers. Once registered, market makers may authorize their order-entry customers to send them order flow.

Order entry firms can route orders directly to specified market makers via CTCI. Market Makers, in turn, route the execution messages to the order-entry firms through ACES. ACES does not offer automatic trade-reporting or locked-in clearing of transactions. ACES market makers must rely on Qualified Special Representatives (QSRs) or other arrangements to effect locked trades.

Orders in any security can be routed to a market maker through ACES. An order is unique within the system by a combination of the branch ID and sequence number, entry date, preferenced market maker and SECID. The branch ID and sequence number contains (1–4) alphabetic characters and (1–4) numeric characters. A space between the two portions of the field is no longer needed.

4.1 Order Entry Firm to ACES

4.1.1 Order Entry

Order Entry firms use this message to place an order. ACES sends the market maker firm a Market Maker Order message (4.2.1) in response.

SAMPLE MESSAGES

```
<SOH>
<STX> <ESC> 1 KOSE<LF>
TEST0004<LF>
OTHER c<LF>
<LF>
BUY<LF>
400 KR 21.00<LF>
GTC
<LF>
:KSEC<LF>
<ETX>

<SOH>
<STX> <ESC> 1 ROCK<LF>
THUR0005<LF>
OTHER c ROYL<LF>
<LF>
B<LF>
425 TAGS 4.05<LF>
<LF>
<LF>
<ETX>
```

Message Format

Line	Field	Description	Req'd
2	Side	1-5 alpha characters: B, S, BUY, SL, SSHRT.	Y
	<CR/LF>	Line delimiter.	Y
3	Quantity	1-8 numbers. Number of shares.	Y
	space	Field separator.	Y
	Security	Security identifier: 1-14 alpha characters.	Y
	space	Field separator.	Y
	Price	"MKT" denotes a market order and a price denotes a limit order. In the case of a stop order, a price denotes the stop trigger price.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifier	Price qualifier. Valid entries are OB, OPG, CLO, STP.	N
	space	Field separator.	Y

Line	Field	Description	Req'd
	Stop Price	The stop limit price. This field contains the limit price associated with an STP order once the trigger price has been reached. If the STP order does not have a second price, then the order is treated as a stop market order. The trigger price is indicated in the first price field on this line.	N
	<CR/LF>	Line delimiter.	Y
4a	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY. GTD YY to be assigned by ACES (if MMDD is > today, current year; if MMDD is < today, following year).	N
	<CR/LF>	Line delimiter.	Y
4b	Bunched	Bunched indicator: .B	N
	<CR/LF>	Line delimiter if 4b is present.	Y
4c	GU GUID	Constant "GU", space, GUID (Give-up firm ID).	Y
	<CR/LF>	Line delimiter.	Y
4d	:Preferenced MM	**:**MMID - Preferenced market maker ID if not specified in header.	Y if not in header
	<CR/LF>	Line delimiter if 4d is present.	Y
4e-x	Miscellaneous or Blank	Miscellaneous text (Max 10 lines). Or blank.	N
	<CR/LF>	Line delimiter.	N

4.1.2 Cancel Order

Order Entry firms submit this message to cancel an open order. Day orders do not require an entry date, but good-till-cancel orders do. ACES sends the order entry firm a Cancel message (4.2.2) in response.

SAMPLE MESSAGE

```
<SOH>
<STX> <ESC> 1 TSCOz<LF>
TOM1<LF>
OTHER ACES MADF<LF>
<LF>
CXL S<LF>
1400 HUH 3000.125<LF>
GTC<LF>
GU KDZZ<LF>
RE TOM1/061505<LF>
<ETX>
```

Message Format

Line	Field	Description	Req'd
2	CXL	Constant CXL, space, Buy/Sell Code (B, S, BUY, SL, SSHRT).	Y
	<CR/LF>	Line delimiter.	Y
3	Order Details	Same as original order.	Y
4a-d	Order Details	Same as original order.	Y
5	RE	Constant "RE".	Y
	Space	Field separator.	Y
	Branch Office Sequence #/Date	Branch ID Sequence #/Date of Order (MMDDYY).	Y
	<CR/LF>	Line delimiter.	Y

4.1.3 Cancel/Replace

Order Entry firms submit this message to cancel/replace an open order. Day orders do not require an entry date, but good-till-cancel orders do. ACES sends the order entry firm a Cancel/Replace message (4.2.3) in response.

SAMPLE MESSAGE

```
<SOH>
<STX> <ESC> 1 ROCK<LF>
CNRP6299<LF>
OTHER c ROYL<LF>
<LF>
S<LF>
300 TALK 3.75<LF>
DAY<LF>
<LF>
CXL B<LF>
100 TALK 3.85<LF>
DAY<LF>
<LF>
RE SAT0004/120796<LF>
<LF>
<ETX>
```

Message Format

Line	Field	Description	Req'd
2	Side	1-5 alpha characters: B, S, BUY, SL, SSHRT.	Y
	<CR/LF>	Line delimiter.	Y
3	Quantity	1-8 numbers. Number of shares.	Y
	space	Field separator.	Y
	Security	1-14 alpha character security identifier	Y
	space	Field separator.	Y
	Price	"MKT" to denote a market order, or a price to denote a limit order.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifier	Price qualifier (OB, OPG, CLO, STP).	N
	space	Field separator.	Y
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	<CR/LF>	Line delimiter.	Y
4a	Order Qualifier	AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y

Line	Field	Description	Req'd
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	<CR/LF>	Line delimiter.	Y
4b-d		Lines for bunched, Give-up, Preferenced MMID. See Order format 4.1.1.	N
5	CXL	Constant CXL, space, Buy/Sell Code (B, S, BUY, SL, SSHRT).	Y
	<CR/LF>	Line delimiter.	Y
6	Quantity	1-8 numbers. Number of shares.	Y
	space	Field separator.	Y
	Security	1-14 alpha character security identifier	Y
	space	Field separator.	Y
	Price	"MKT" to denote a market order, or a price to denote a limit order.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifier	OB, OPG, CLO, STP.	N
	space	Field separator.	Y
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	<CR/LF>	Line delimiter.	Y
7	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	<CR/LF>	Line delimiter.	Y
7b-d		Lines for bunched, give-up, Preferenced MMID. See Order Format 4.1.1.	N
8*	RE	Constant "RE".	Y
	space	Field separator.	Y
	Branch ID/Sequence Number	Branch ID Sequence #.	Y
	Date	Date of Order (MMDDYY). Where the default optional entry date is the current business date. Original order entry date is only other valid entry.	Y
	<CR/LF>	Line delimiter.	Y

* If line 1 is different than line 8, then the user will see line 1 upon completion of the execution.

4.2 ACES to Market Maker

ACES will forward orders received from the Order Entry firm to the Market Maker for execution. ACES will also forward Cancel and Cancel/Replace requests. The following sections describe the format of the text portion of the ACES CTCI Market Maker messages. The header and trailer portions of the message follow standard Switch output message formats.

ACES market maker output messages will always contain order entry date and currency (USD unless otherwise specified) when sent from the NASDAQ switch. They will contain optional entry fields only when submitted to ACES by an OE and indicated on the output message description. ACES will insert the space within the branch Id and sequence number.

4.2.1 Market Maker Order

ACES sends this message to a market maker in response to an order submitted by an order entry firm (4.1.1).

SAMPLE MESSAGE

```
KOSE
TEST 0003
OTHER c
<CR/LF>
BUY
400 KMGB 21
GTC
:KSEC

<CR/LF>
<CR/LF>
REPORT acKSEC
<CR/LF>
TEST 0003/061803
B
400 KMGB 21 USD
GTC
KOSE
```

Message Format

Line	Field	Description	Req'd
2	Side	1-5 alpha characters: B,S, SSHRT.	Y
	<CR/LF>	Line delimiter.	Y
3	Quantity	1-8 numbers, which is the number of shares.	Y
	space	Field separator.	Y
	Security	1-14 alpha character security identifier	Y
	space	Field separator.	Y
	Price	"MKT" to denote a market order, or a price to denote a limit order.	Y

Line	Field	Description	Req'd
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifier	Price qualifier. Valid entries are OB, OPG, CLO, STP.	N
	space	Field separator.	Y
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	<CR/LF>	Line delimiter.	Y
4	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY. GTD YY assigned by ACES (if MMDD is > today, current year; if MMDD is < today, following year).	N
	space	Field separator.	Y
	Bunched	Bunched indicator: .B	N
	<CR/LF>	Line delimiter.	Y
5	OEID	Order Entry ID.	**Y**
	.GUID	4-alpha character identifier of give-up firm.	N

4.2.2 Cancel

ACES sends this message to the market maker in response to an order canceled by the order entry firm (4.1.2).

SAMPLE MESSAGE

```
<CR/LF>
<CR/LF>
REPORT acKSEC
<CR/LF>
TEST 0001
CXL B
400 KMGB 21 USD
GTC
RE TEST 0001/062303
KOSE
```

Message Format

Line	Field	Description	Req'd
2	CXL	Constant 'CXL'	Y
	space	Field separator.	Y
	Side	B, S, SSHRT.	Y
	<CR/LF>	Line delimiter.	Y
3		Number of shares, security ID, price, optional currency, price qualifier (If STP, then an Optional Stop Price is allowed), order qualifiers, and TIF indicator (Same as original order).	Y
4a-c		Number of shares, security ID, price, optional currency, price qualifier (If STP, then an Optional Stop Price is allowed), order qualifiers, and TIF indicator (Same as original order).	Y
5	RE	Constant "RE".	Y
	space	Field separator.	Y
	Branch ID/Sequence Number/Date	Branch ID Sequence # / Date of Order (MMDDYY) to be cancelled.	Y
	<CR/LF>	Line delimiter.	Y
6	OEID	Order Entry ID.	Y
	.GUID	4-alpha character identifier of give-up firm.	N

4.2.3 Cancel/Replace

ACES sends this message to the market maker in response to an order canceled/replaced by the order entry firm (4.1.3).

SAMPLE MESSAGE

```
<CR/LF>
<CR/LF>
REPORT acKSEC
<CR/LF>
TEST 0002/062303
B
500 KMGB 21 USD
GTC
CXL B
400 KMGB 21 USD
GTC
RE TEST 0002/062303
KOSE
```

Message Format

Line	Field	Description	Req'd
2	Side	Side of new order (B, S, SSHRT).	Y
	<CR/LF>	Line delimiter.	Y
3	Order Details	Quantity / Security / Price / Currency / Price Qualifiers (OB, OPG, CLO, STP) / (If STP, then an Optional Stop Price is allowed) of new order.	Y
	<CR/LF>	Line delimiter.	Y
4	Order Qualifiers	AON, FOK, IOC, DNI, DNR, NH.	N
	space	Field separator.	Y
	TIF	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator: .B	N
	<CR/LF>	Line delimiter.	Y
5	CXL	Constant, CXL.	Y
	space	Field separator.	Y
	Side	B, S, SSHRT.	Y
	<CR/LF>	Line delimiter.	Y
6	Order Details	Quantity/Security/ Price/ Price Qualifier (OB, OPG, CLO, STP/ (If STP, then an Optional Stop Price is allowed) of order to be replaced.	Y
	<CR/LF>	Line delimiter.	Y
6a	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y

Line	Field	Description	Req'd
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator: .B	N
	<CR/LF>	Line delimiter.	Y
7	RE	Constant "RE".	Y
	space	Field separator.	Y
	Branch ID/Sequence Number/Date	Branch ID Sequence #/Date of Order (MMDDYY) to be cancelled.	Y
	<CR/LF>	Line delimiter.	Y
8	OEID	Order Entry ID.	**Y**
	.GUID	4-alpha character identifier of give-up firm.	N

4.3 Market Maker to ACES

A Market Maker will use several messages to transmit execution messages and related cancels from the firm's in-house system to ACES. A Market Maker does not have to, but may include the space in between the branch id and sequence number.

Each message contains the header, text, and trailer. The standard header information that comes from the Switch is contained in lines 0, 1 and 1a. Because this is an ACES message, the destination on Line 1a is "ACESP". Line 1b is a required blank line between the header and message text. The message text begins on Line 2. The trailer is always the message sequence number. Samples in this section do not contain trailers.

4.3.1 Order Confirm

The market maker uses this message to confirm receipt of an order. This message is optional, repeatable, and not required prior to any other order activity by the market maker. ACES will send an Order Confirm message (section 4.4.1) to the order entry firm upon receipt of this message.

SAMPLE MESSAGE

```
KSEC
TEST0001
OTHER ACESP
<CR/LF>
TEST0001/062503
B 400 KMGB 21
KOSE
UR HERE
```

Message Format

Line	Field	Description	Req'd
2	Branch ID/ Sequence Number/ Date	1-4 alpha and 1-4 numbers used to denote the Branch Office and Sequence Number, of the original order/ date of original order (mmddyy)	Y
	Side	B, S, SSHRT.	Y
	<CR/LF>	Line delimiter.	Y
3	Quantity	Number of shares.	Y
	Security	Security ID.	Y
	Price	MKT or Price.	Y
	Currency	The system will default to USD.	N
4	OEID.GUID	Order Entry ID. Optional Give-up ID.	Y
5	UR HERE	Order confirmation keyword.	Y

4.3.2 Reject

The market maker uses this message to reject an order. ACES will send a Reject message (section 4.4.2) to the order entry firm upon receipt of this message.

SAMPLE MESSAGES

```
<SOH>
<STX> <ESC> 1 KSEC<LF>
KSEC0031/022603<LF>
OTHER ACESP<LF>
<LF>
KOSE<LF>
STATUS<LF>
REJ - ERROR ERROR ERROR<LF>
KSEC0031/022603<LF>
S<LF>
500 KROL 21.99<LF>
DAY<LF>
KOSE<LF>
<ETX>

<SOH>
<STX> <ESC> 1 KSEC<LF>
KOSE0000<LF>
OTHER ACESP<LF>
<LF>
KOSE<LF>
STATUS<LF>
REJ NOWAY <LF>
KOSE0000<LF>
B<LF>
200 KROL 22.00<LF>
DAY<LF>
KOSE<LF>
<ETX>
```

Message Format

Line	Field	Description	Req'd
2	OEID	ID of order entry firm - 4 alpha characters.	Y
	<CR/LF>	Line delimiter.	Y
3	STATUS	Constant "STATUS".	Y
	<CR/LF>	Line delimiter.	Y
4	REJ	The constant "REJ - "	Y
	Reason	Rejection reason (1-40 alpha characters).	N
	<CR/LF>	Line delimiter.	Y

Line	Field	Description	Req'd
5	Branch ID/Sequence Number/Date	Branch ID/ Sequence # / mmddyy - 1-4 alpha and 1-4 numeric used to denote the Branch Office and Sequence Number, of the rejected order / date of original order (mmddyy)	**Y**
	<CR/LF>	Line delimiter.	Y
6	Side	B, S, BUY, SL, SSHRT	Y
	<CR/LF>	Line delimiter.	Y
7	Order Details	Quantity, Security, Price (optional currency), Price Qualifier (If STP, then an Optional Stop Price is allowed)	Y
	<CR/LF>	Line delimiter.	Y
8	Order Qualifier	AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y
9	OEID.GUID	Order entry firm id. Optional Give-up id.	Y

4.3.3 Execution Report

The market maker uses this message to indicate that the order has been executed. ACES will send an Execution Report message (section 4.4.3) to the order entry firm upon receipt of this message.

SAMPLE MESSAGE

```
<SOH>
<STX> <ESC> 1 KSEC<LF>
<LF>
OTHER ACESP<LF>
<LF>
TEST0055/032403<LF>
SLD<LF>
100 PJK 20<LF>
ON 20 LMT<LF>
FILLS<LF>
GTC<LF>
<LF>
KOSE KSEC100<LF>
<ETX>
```

Message Format

Line	Field	Description	Req'd
2	Branch ID/Sequence Number/Date	Branch ID of the ordering firm. Sequence Number of the original order/ Date of original order (mmddyy)	Y
	<CR/LF>	Line delimiter.	Y
3	Side	1-8 alpha characters: BOT, SLD, SLD SHRT.	Y
	<CR/LF>	Line delimiter.	Y
4	Quantity	1-8 numbers for the number of shares.	Y
	space	Field separator.	Y
	Security	Security Identifier of issue traded.	Y
	space	Field separator.	Y
	Price	Execution price of the order.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifier	OB, OPG, CLO, STP, if entered on order, else blank.	N
	<CR/LF>	Line delimiter.	Y
5	ON (price) (USD) LMT or ON MKT	Pricing information to differentiate between market (MKT) and limit orders (price then LMT). USD is an optional currency indicator.	Y
	<CR/LF>	Line delimiter.	Y

Line	Field	Description	Req'd
6	FILLS or LVS nnnn	Constant FILLS if execution fills order completely or LVS nnnn where nnnn is the balance of the partial execution.	Y
	<CR/LF>	Line delimiter.	Y
7	Order Qualifier	AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y
8	<CR/LF>	Blank line.	Y before clearing line
9	OEID	Order entry firm id.	Y
	space	Field separator.	Y
	MMIDnnnn	Market Maker and nnnn equal to the number of shares.	Y
	.GUID	4-character character identifier of the give up firm.	Y if a GU was entered
10	Misc Text or <CR/LF>	Miscellaneous text (20 chars; must start with “MISC”) or blank line.	N

4.3.4 Cancel Confirmation

The market maker uses this message to confirm the cancellation of an order, that is, to accept the cancel message sent by the order entry firm. ACES will send an Execution Report message (section 4.4.4) to the order entry firm upon receipt of this message.

SAMPLE MESSAGE

```
<SOH>
<STX> <ESC> 1 ROCK<LF>
<LF>
OTHER ACESP<LF>
<LF>
THUR0004<LF>
B 450 TALK 3.85 DAY<LF>
ROYL<LF>
UR OUT<LF>
<ETX>
```

Message Format

Line	Field	Description	Req'd
2	Branch ID/ Sequence Number/ Date	1-4 alpha followed by 1-4 numbers denoting the Branch Office and Sequence Number of the original order, plus its entry date.	Y
	<CR/LF>	Line delimiter.	Y
3	Side	B, S, SSHRT.	Y
	Quantity	Number of shares.	Y
	Security	Security ID.	Y
	Price	Order Price.	Y
	Currency	The system will default to USD.	N
	Price Qualifiers	OB, OPG, CLO, STP.	N
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	Order Qualifiers	AON, FOK, IOC, DNR, DNI, NH.	N
	Time In Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y
4	OEID.GUID	Order entry firm id and Give-up ID if necessary.	Y
5	UR OUT	Literal that confirms cancellation. Order is not marked as canceled until ACES receives this confirmation.	Y

4.3.5 Reject Cancel

The market maker uses this message to reject the cancel message sent by the order entry firm. ACES will send a Reject Cancel message (section 4.4.5) to the order entry firm upon receipt of this message.

SAMPLE MESSAGE

```
<SOH>
<STX> <ESC> 1 DLJP<LF>
DLJP0582<LF>
OTHER ACESP<LF>
<LF>
B 200 X 200.35 DAY<LF>
WUSA
UR REJ<LF>
<ETX>
```

Message Format

Line	Field	Description	Req'd
2	Branch ID/ Sequence Number/ Date	1-4 alpha and 1-4 numbers used to denote the Branch Office and Sequence Number, of the original order / date of original order (mmddyy)	Y
	<CR/LF>	Line delimiter.	Y
3	Side	B, S, SSHRT.	Y
	Quantity	Number of shares.	Y
	Security	Security ID.	Y
	Price	Order Price.	Y
	Price Qualifiers	OB, OPG, CLO, STP	N
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	Order Qualifiers	AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Time In Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y
4	OEID.GUID	Order entry firm Id. Optional Give-up ID.	Y
	<CR/LF>	Line delimiter.	Y
5	UR REJ	The constant “UR REJ” for Reject Notification.	Y
	<CR/LF>	Line delimiter.	Y

4.3.6 Cancel/Replace Confirmation

The market maker uses this message to confirm a cancel/replace message from an order entry firm, that is, to accept the cancel/replace sent by the market maker. ACES will send a Cancel/Replace Confirmation message (section 4.4.6) to the order entry firm upon receipt of this message.

SAMPLE MESSAGE

```
<SOH>
<STX> <ESC> 1 ROCK<LF>
THUR0005<LF>
OTHER ACESP<LF>
<LF>
THUR 0005<LF>
B 350 TALK 3.85 DAY<LF>
B 425 TACO 3.85 DAY<LF>
ROYL<LF>
UR OUT<LF>
<ETX>
```

Message Format

Line	Field	Description	Req'd
2	Branch ID/Sequence Number/ Date	1-4 alpha and 1-4 numbers used to denote the Branch Office and Sequence Number, of the original order/*optional* date of original order (mmddyy)	Y
	<CR/LF>	Line delimiter.	Y
3	Side	B, S, SSHRT.	Y
	Quantity	Number of shares.	Y
	Security	Security ID.	Y
	Price	Order Price.	Y
	Currency	The system will default to USD.	N
	Price Qualifiers	OB, OPG, CLO, STP	N
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	Order Qualifiers	AON, FOK, IOC, DNR, DNI, NH.	N
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y
4	Side	Beginning of details of new order that replaces canceled order. B, S, SSHRT.	Y
	Quantity	Number of shares.	Y
	Security	Security ID.	Y

Line	Field	Description	Req'd
	Price	Order Price.	Y
	Currency	The system will default to USD.	N
	Price Qualifiers	OB, OPG, CLO, STP.	N
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	Order Qualifiers	AON, FOK, IOC, DNR, DNI, NH.	N
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter. (Details of order being canceled.)	Y
5	OEID.GUID	Order entry firm id. Give-up ID if necessary.	Y
	<CR/LF>	Line delimiter.	Y
6	UR OUT	Literal that confirms cancellation. Order is not marked as canceled until ACES Passthru receives this confirmation.	Y
	<CR/LF>	Line delimiter.	Y

4.3.7 Reject Cancel/Replace

The market maker uses this message to reject a cancel/replace message from an order entry firm. ACES will send a Reject Cancel/Replace message (section 4.4.7) to the order entry firm upon receipt of this message.

SAMPLE MESSAGE

```
<SOH>
<STX> <ESC> 1 DLJP<LF>
DLJP0582<LF>
OTHER ACESP<LF>
<LF>
B 200 X 200.35 DAY<LF>
B 100 X 200.35  DAY<LF>
WUSA
UR REJ<LF>
<ETX>
```

Message Format

Line	Field	Description	Req'd
2	Branch ID/Sequence Number/ Date	1-4 alpha and 1-4 numbers used to denote the Branch Office and Sequence Number, of the original order / date of original order (mmddyy)	Y
	<CR/LF>	Line delimiter.	Y
3	Side	B, S, SSHRT.	Y
	Quantity	Number of shares.	Y
	Security	Security ID.	Y
	Price	Order Price.	Y
	Currency	The system will default to USD.	N
	Price Qualifiers	OB, OPG, CLO, STP.	N
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	Order Qualifiers	AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter. (Details of new order that replaces canceled order.)	Y
4	Side	B, S, SSHRT.	Y
	Quantity	Number of shares.	Y
	Security	Security ID.	Y
	Price	Order Price.	Y

Line	Field	Description	Req'd
	Price Qualifiers	OB, OPG, CLO, STP	N
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	Order Qualifiers	AON, FOK, IOC, DNR, DNI, NH.	N
	Time in Force	Time in Force indicator.	Y
	Space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter. (Details of order being canceled.)	Y
5	OEID	Order entry firm Id.	Y
	.GUID	Optional Give-up ID.	N
	<CR/LF>	Line delimiter.	Y
6	UR REJ	The constant “UR REJ” for Reject Notification.	Y
	<CR/LF>	Line delimiter.	Y

4.3.8 Update Corporate Action (Stock Split and Dividend Adjustment)

The market maker uses this message to update a corporate action. ACES will send an Update Corporate Action message (section 4.4.8) to the order entry firm upon receipt of this message.

Message Format

Line	Field	Description	Req'd
4	STATUS	Constant STATUS	
5	REJ - CORP UPDATE	Constant REJ – CORP UPDATE	
6	Branch ID/Sequence Number/Date	Branch ID (1-4 alpha characters) and sequence number (1-4 numerals) / Date of original order (mmddyy)	
7	Side	B, S, SSHRT	
8	Order details	Quantity/Security/ Price/ Price Qualifier (OB, OPG, CLO, STP) / (If STP, then an Optional Stop Price is allowed) of order to be replaced	
	<CR/LF>	Line delimiter	Y
9	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH	
	space	Field separator	Y
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator	Y
	Bunched	Bunched indicator (.B)	N
	<CR/LF>	Line delimiter	Y
10	CXL	Constant	
	Side	B, S, SSHRT	
11	Order Details	Quantity/Security/ Price/ Price Qualifier (OB, OPG, CLO, STP) / (If STP, then an Optional Stop Price is allowed) of order to be replaced	
12	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH	
	space	Field separator	Y
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator	Y
	Bunched	Bunched indicator (.B)	N
	<CR/LF>	Line delimiter	Y
13	RE	Constant "RE"	
	space	Field separator	Y
	Branch ID/Sequence	Branch ID Sequence # / Date of Order (MMDDYY) to be canceled	

Line	Field	Description	Req'd
	Number/Date		
	<CR/LF>	Line delimiter	Y
14	OEID	Order Entry Id	
	.GUID	Give up id if required	

4.3.9 Cancel Corporate Action

The market maker uses this message to cancel a corporate action. ACES will send a Cancel Corporate Action message (section 4.4.9) to the order entry firm upon receipt of this message.

Message Format

Line	Field	Description	Req'd
4	STATUS	Constant STATUS	
5	REJ - CORP PURGE	The constant "REJ – CORP PURGE"	
6	Branch ID/Sequence Number	Branch ID (1-4 alpha characters) and sequence number (1-4 numerals)	
7	CXL	Constant 'CXL'	
	space	Field separator.	Y
	Side	B, S, SSHRT.	
	<CR/LF>	Line delimiter.	Y
8	Order Details	Quantity, Security, price, optional currency, price qualifier (If STP, then an Optional Stop Price is allowed), order qualifiers, and Time in Force indicator (Same as original order).	
9	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	
	space	Field separator.	Y
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator (.B).	N
	<CR/LF>	Line delimiter.	Y
10	RE	Constant "RE".	
	space	Field separator.	Y
	BranchID/Sequence Number /Date	Branch ID Sequence # / Date of Order (MMDDYY) to be cancelled.	
	<CR/LF>	Line delimiter.	Y
11	OEID	Order Entry identifier.	
	.GUID	4-character alpha ID of Give up firm if required.	

4.4 ACES to Order Entry Firm

ACES order entry output messages will always contain order entry date and currency (USD unless otherwise specified) when sent from the NASDAQ switch. They will contain optional entry fields, such as order and price qualifier, only when originally submitted to ACES by an OE firm and indicated on the output message description. ACES will return the branch id. and sequence number to the Order Entry firm in the same format it was originally submitted to ACES. If a space was (allowed and) entered, then a space will be inserted back into the output messages.

4.4.1 Order Confirm

ACES sends this message to order entry firms when a market maker submits an Order Confirmation message (4.3.1). It will be sent for any type of order -- day, good-till-date, and good-till-cancel.

SAMPLE MESSAGE

```
<CR/LF>
<CR/LF>
REPORT acKOSE
<CR/LF>
TEST0001/062503
BUY 400 KMGB 21 USD
UR HERE
```

Message Format

Line	Field	Description	Req'd
2	Branch Id/Sequence Number/Date	Branch ID (1-4 alpha characters) and sequence number (1-4 numerals) / Date of original order (mmddyy)	Y
	<CR/LF>	Line delimiter.	Y
3	Side	1-5 alpha characters: B, S, BUY, SL, SSHRT	Y
	Quantity	Number of shares; 1-8 numbers	Y
	Security	1-14 alpha containing SEC ID	Y
	Price	MKT to denote a market order, or price to denote limit.	
	Currency	The system will default to USD.	N
	<CR/LF>	Line delimiter.	Y
4	UR HERE	Order Confirmation Notification	Y

4.4.2 Reject

This output message can be used both by the application and by market makers to order entry firms, but it is used primarily by the application. The message may be used by a MM to reject a new order if they are not in that security or by ACES if an order cannot be found (e.g., cancel request for GTC order missing entry date).

SAMPLE MESSAGE

```
KSECN2 ACES 0013 S
STATUS
REJ - INVALID FORMAT

OTHER ACESP

TEST0003/061803
KSEC
UR HERE

091416180603 KSECN2/0013
```

Message Format

Line	Field	Description	Req'd
2	STATUS	Constant “STATUS” to identify status.	Y
	<CR/LF>	Line delimiter.	Y
3	REJ - reason	“REJ -“ constant, following by the reason the order was rejected. If space precedes REJ, it is an ACES reject.	Y
	<CR/LF>	Line delimiter.	Y
4...n	TEXT OF ORIGINAL MESSAGE		Y
	<CR/LF>	Trailer line 1.	N

4.4.3 Execution Report

ACES sends this message to order entry firms when a market maker submits an Execution Report message (4.3.3).

SAMPLE MESSAGE

```
<CR/LF>
<CR/LF>
REPORT acKOSE
<CR/LF>
TEST0002/062403
BOT
400 KMGB 21 USD
ON 21 USD LMT
FILLS
GTC
<CR/LF>
0712 KSEC400
```

Message Format

Line	Field	Description	Req'd
2	Branch ID/Sequence Number/Date	1-4 alpha and 1-4 numbers used to denote the Branch Office and Sequence Number, of the original order / order entry date (mmddyy).	Y
	<CR/LF>	Line delimiter.	Y
3	Side	1-8 alpha characters: BOT, SLD, SLD SHRT.	Y
	<CR/LF>	Line delimiter.	Y
4	Quantity	1-8 numbers for number of shares.	Y
	space	Field separator.	Y
	Security	1-14 alpha character security id.	Y
	space	Field separator.	Y
	Price	Execution price.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifier	Price Qualifier	Y
	space	Field separator.	Y
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	<CR/LF>	Line delimiter.	Y
5	ON (price) (USD) LMT or ON MKT	Where (price) is the price entered in the original order for the limit or market order. USD is the default currency.	Y
	<CR/LF>	Line delimiter.	Y

Line	Field	Description	Req'd
6	FILLS or LVS nnnn	If the order was filled in its entirety, the line will contain “FILLS”. For partial executions, it will be “LVS nnnn”, where nnnn is the number of shares left after the execution.	Y
	<CR/LF>	Line delimiter.	Y
7	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y
8	<CR/LF>	Line delimiter. (A blank line must separate Line 7 from Line 9)	Y
9	OE Clearing Number	4-character clearing number of the firm who clears for the OE Firm.	Y
	space	Field separator.	Y
	MMID	Market Maker identifier.	Y
	Quantity	1-8 numbers that specify the number of shares.	Y
	.GUID	4 alpha character identifier of the give up firm.	Y if GU was entered
	<CR/LF>	Line delimiter.	Y
10	Misc Text	Must start with MISC. 20 characters max. This text is carried forward from the execution.	**N**
	<CR/LF>	Optional trailer lines 1 and 2.	N

4.4.4 Cancel Confirmation

ACES sends this message to order entry firms when a market maker submits a Cancel Confirmation message (4.3.4).

SAMPLE MESSAGE

```
KSEC
<CR/LF>
OTHER ACESP
<CR/LF>
TEST0001/061903
B 400 KMGB 21 GTC
KOSE
UR OUT
```

Message Format

Line	Field	Description	Req'd
2	Branch ID/Sequence Number/Date	Branch ID (1-4 alpha characters) and sequence number (1-4 numerals) / Date of original order (mmddyy)	Y
	<CR/LF>	Line delimiter.	Y
3	Side	1-5 alpha characters: B, S, BUY, SL, SSHRT.	Y
	space	Field separator.	Y
	Quantity	1-6 numbers. Number of shares.	Y
	space	Field separator.	Y
	Security	1-14 alpha character security identifier.	Y
	space	Field separator.	Y
	Price	"MKT" to denote a market order, or a price to denote a limit order.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifier	Price qualifier. Valid entries are OB, OPG, CLO, STP.	N
	space	Field separator.	Y
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	space	Field separator.	Y
	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	N
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y

Line	Field	Description	Req'd
4	UR OUT	Constant indicating Order Entry firm canceled an open order. This is a confirmation that ACES canceled the order within its file.	Y
	<CR/LF>	Line delimiter.	Y

4.4.5 Reject Cancel

ACES sends this message to order entry firms when a market maker submits a Reject Cancel message (4.3.5).

SAMPLE MESSAGE

```
KSEC
TEST0001
OTHER ACESP
<CR/LF>
TEST0001/062603
B 400 KMGB 21
KOSE
UR REJ
```

Message Format

Line	Field	Description	Req'd
2	Branch ID/Sequence Number/Date	1-4 alpha and 1-4 numbers used to denote the Branch Office and Sequence Number, of the original order / date of original order (mmddyy)	Y
	<CR/LF>	Line delimiter.	Y
3	Side	1-5 alpha characters: B, S, BUY, SL, SSHRT.	Y
	space	Field separator.	Y
	Quantity	1-8 numbers for the number of shares.	Y
	space	Field separator.	Y
	Security	1-14 alpha character security identifier.	Y
	space	Field separator.	Y
	Price	"MKT" to denote a market order, or a price to denote a limit order.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifier	Price qualifier. Valid entries are OB, OPG, CLO, STP.	N
	space	Field separator.	Y
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	space	Field separator.	Y
	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y
4	UR REJ	Update Notification.	

Line	Field	Description	Req'd
	<CR/LF>	Line delimiter.	Y
5	<CR/LF>	Trailer line.	N

4.4.6 Cancel/Replace Confirmation

ACES sends this message to order entry firms when a market maker submits a Cancel/Replace Confirmation message (4.3.6).

SAMPLE MESSAGE

```
KSEC
<CR/LF>
OTHER ACESP
<CR/LF>
TEST0001/061903
B 400 KMGB 21 GTC
KOSE
UR OUT
```

Message Format

Line	Field	Description	Req'd
2	Branch Office Sequence #	Branch ID (1-4 alpha characters) and sequence number (1-4 numerals) / Date of original order (mmddyy)	Y
	<CR/LF>	Line delimiter.	Y
3	Side	1-5 alpha characters: B, S, BUY, SL, SSHRT.	Y
	space	Field separator.	Y
	Quantity	1-6 numbers. Number of shares.	Y
	space	Field separator.	Y
	Security	1-14 alpha character security identifier.	Y
	space	Field separator.	Y
	Price	"MKT" to denote a market order, or a price to denote a limit order.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifier	Price qualifier. Valid entries are OB, OPG, CLO, STP.	N
	space	Field separator.	Y
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	space	Field separator.	Y
	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	N
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y

Line	Field	Description	Req'd
4	UR OUT	Constant indicating Order Entry firm canceled an open order. This is a confirmation that ACES canceled the order within its file.	Y
	<CR/LF>	Line delimiter.	Y

4.4.7 Reject Cancel/Replace

ACES sends this message to order entry firms when a market maker submits a Reject Cancel/Replace message (4.3.7).

SAMPLE MESSAGE

```
KSEC
TEST0001/062703
OTHER ACESP
<CR/LF>
TEST0001/062703
B 400 KMGB 21
B 400 KMGB 21
KOSE
UR REJ
```

Message Format

Line	Field	Description	Req'd
2	Branch ID/Sequence Number/Date	1-4 alpha and 1-4 numbers used to denote the Branch Office and Sequence Number, of the original order / date of original order(mmddyy)	Y
	<CR/LF>	Line delimiter.	Y
3	Side	B, S, BUY, SL, or SSHRT.	Y
	space	Field separator.	Y
	Quantity	1-8 numbers for number of shares.	
	space	Field separator.	Y
	Security	1-14 alpha character security id.	
	space	Field separator.	Y
	Price	Execution price.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifiers	OB, OPG ,CLO, STP.	N
	space	Field separator.	Y
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	space	Field separator.	Y
	Order Qualifiers	AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y

Line	Field	Description	Req'd
4	Side	1-5 alpha characters: B, S, BUY, SL, SSHRT.	Y
	space	Field separator.	Y
	Quantity	1-8 numbers for the number of shares.	Y
	space	Field separator.	Y
	Security	1-14 alpha character security identifier.	Y
	space	Field separator.	Y
	Price	"MKT" to denote a market order, or a price to denote a limit order.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifier	Price qualifier. Valid entries are OB, OPG, CLO, STP.	N
	space	Field separator.	Y
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	space	Field separator.	Y
	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y
5	UR REJ	Update Notification.	Y
	<CR/LF>	Line delimiter.	Y
6	<CR/LF>	Trailer line.	N

4.4.8 Update Corporate Action (Stock Split and Dividend Adjustment)

ACES sends this message to order entry firms when a market maker submits an Update Corporate Action message (4.3.8).

SAMPLE MESSAGE

```
KSEC
KSEC0121/061903
OTHER ACESP
<CR/LF>
KSEC0121/061903
B 100 KMGB 21 GTC
B 1000 KMGB 21 GTC
KOSE
UR UPD
```

Message Format

Line	Field	Description	Req'd
2	Branch ID/Sequence Number/date	Branch ID (1-4 alpha characters) and sequence number (1-4 numerals) / Date of original order (mmddyy)	Y
	<CR/LF>	Line delimiter.	Y
3	Side	1-5 alpha characters: B, S, BUY, SL, SSHRT	Y
	space	Field separator.	Y
	Quantity	Number of shares; 1-8 numbers	Y
	space	Field separator.	Y
	Security	1-14 alpha character security identifier	Y
	space	Field separator.	Y
	Price	"MKT" to denote a market order, or price to denote a limit order.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y
	Price Qualifier	Price qualifier. Valid entries are OB, OPG, CLO, STP.	N
	space	Field separator.	Y
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	space	Field separator.	Y
	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	N
	<CR/LF>	Line delimiter.	Y
4	UR UPD	Update Notification.	Y
	<CR/LF>	Line delimiter.	Y
5	<CR/LF>	Trailer line one.	N

Line	Field	Description	Req'd
6	<CR/LF>	Trailer line two.	N

4.4.9 Cancel Corporate Action

ACES sends this message to order entry firms when a market maker submits a Cancel Corporate Action message (4.3.9).

Message Format

Line	Field	Description	Req'd
4	STATUS	Constant STATUS	
5	REJ - CORP PURGE	The constant "REJ – CORP PURGE"	
6	Branch ID/Sequence Number	Branch ID (1-4 alpha characters) and sequence number (1-4 numerals)	
7	CXL	Constant 'CXL'	
	space	Field separator.	Y
	Side	B, S, SSHRT.	
	<CR/LF>	Line delimiter.	Y
8	Order Details	Quantity, security, price, optional currency, price qualifier (If STP, then an Optional Stop Price is allowed), order qualifiers, and TIF indicator (Same as original order).	
9	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	
	space	Field separator.	Y
	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Bunched	Bunched indicator (.B).	N
	<CR/LF>	Line delimiter.	Y
10	RE	Constant "RE".	
	space	Field separator.	Y
	Branch ID/Sequence Number /Date	Branch ID Sequence # / Date of Order (MMDDYY) to be cancelled.	
	<CR/LF>	Line delimiter.	Y
11	OEID	Order Entry identifier.	
	.GUID	4-character alpha ID of Give up firm if required.	

4.4.10 Purged Order

This message is generated by the application at the end of each business day to notify order entry firms of their expired orders (ex: day, GTD orders). Corresponding cancel messages are sent to market makers.

SAMPLE MESSAGE

```
KOSEN2 ACES3 0001 S
STATUS
REJECT - ORDER PURGED BY KOSE
TEST0002/061903
OTHER c

B
400 KMGB 21 USD
GTC
:KSEC

084856240603 KOSEN2/0001
```

Message Format

Line	Field	Description	Req'd
2	STATUS	Constant to identify status.	Y
	<CR/LF>	Line delimiter.	Y
3	REJ - ORD EXPIRED	Constant message indicating that order was purged the night before.	Y
	<CR/LF>	Line delimiter.	Y
4	Branch ID/Sequence Number/Date	1-4 alpha and 1-4 numbers used to denote the Branch Office and Sequence Number, of the original order / date of original order (mmddyy)	Y
	<CR/LF>	Line delimiter.	Y
5	CXL	Constant CXL	Y
	space	Field separator.	Y
	Side	B, S, BUY, SL, SSHRT.	Y
	<CR/LF>	Line delimiter.	Y
6	Quantity	1-8 numbers that represents the number of shares.	Y
	space	Field separator.	Y
	Security	1-14 alpha character security identifier.	Y
	space	Field separator.	Y
	Price	"MKT" denotes a market order while a price denotes a limit order.	Y
	space	Field separator.	Y
	Currency	The system will default to USD.	N
	space	Field separator.	Y

Line	Field	Description	Req'd
	Price Qualifier	Price qualifier. Valid entries are OB, OPG, CLO, STP.	N
	space	Field separator.	Y
	Stop Price	Price at which this order becomes activated. Only allowed after STP Price qualifier.	N
	<CR/LF>	Line delimiter.	Y
7	Time in Force	DAY, GTC, GTMMDD. If a value is not provided, the system will default to DAY.	N
	space	Field separator.	Y
	Order Qualifier	Valid entries are AON, FOK, IOC, DNR, DNI, NH.	N
	space	Field separator.	Y
	Bunched	Bunched indicator, .B	N
	<CR/LF>	Line delimiter.	Y
8	<CR/LF>	Line delimiter. A blank line must separate Line 8 from Line 10.	Y
9	MMID.GUID	Market Maker identifier. Identifies attached id as a Correspondent.	Y
	<CR/LF>	Line delimiter. A blank line must separate Line 8 from Line 10.	Y
10	<CR/LF>	Trailer.	N

4.5 Application and Market Maker Reject Text

Both market makers and ACES will generate reject messages for various reasons. These include invalid message formats such as price and date, a market maker not being active in a symbol, or an order being sent outside of market hours.

This section provides examples of both application and market maker rejects to help firms differentiate between the two. Both will start with the constant “Rej –" followed by the rejection reason. Please note that application rejects will contain a leading space before the constant “Rej - ” while market maker rejects will not lead with a space.

Application Rejects	Market Maker Rejects
INVALID FORMAT	NOT A MARKET MAKER
NOT WITHIN ALLOWABLE HOURS	OPEN ORDER CANCELLED
CANT FIND	DUPE BRANCH & SEQ NO
MMID NOT AUTHORIZED	COMPANY DISALLOW ACES
CONTRA FIRM NOT IN CUSTOMER FILE	REJ - INVALID EXPIRY DATE AND TIME: #
NOT AUTHORIZED	ORD CXLD BY MM
FUNCTION NOT ALLOWED	ORDER ALREADY CXLD
INVALID BUY/SELL CODE	
INVALID CUSTOMER	
INVALID FORMAT	
INVALID GIVEUP	
INVALID PRICE	
INVALID VOLUME	
INVALID MM FIRM	

4.6 Recaps

Market Makers will have the ability to request a recap of their open orders to reconcile against their in-house systems. To request recaps, the subscriber must set an indicator in the ACES Firm Profile using the ACES Workstation. Valid indicators are:

N = Do not send recaps at end of day
Y = Send recaps at end of day, then reset indicator to N
D = Send recaps daily at end of day.

The Y indicator would be used for those firms that would like to receive recaps periodically, such as weekly or monthly.

5 NASDAQ Market Center Trading Messages

This section describes the format of the message text used to interface through the switch to the NASDAQ market center application.

NASDAQ market center is a fully integrated order display and execution system that aggregates quotes and orders, thereby providing access to a greater number of possible trades as well as greater depth and transparency of the market. NASDAQ market center responds to today's market factors of fragmentation, decimalization, and best execution obligations by creating a stronger natural center of liquidity, multiple execution options for market participants, and pre-trade anonymity.

Using NASDAQ market center, you can enter multiple quotes and orders at multiple prices. The system will display the total amount of trading interest in NASDAQ at the best prices, as well as four price levels away, for a total of five price levels on the bid and offer sides of the market. This increased transparency provides more information with which investors and market participants can make trading decisions.

All messages sent to NASDAQ market center via CTCI will conform to modified Common Message Switch (CMS) formats. Only one NASDAQ market center message may be placed in a single CTCI message. A firm may enter an order, cancel an open order, or cancel and replace an order.

5.1 Input Message Formats

Time in Force Timetables

The following tables provide entry, execution, delivery, and expiration times for IOC, DAY, GTC, IOX, X, and GTX orders for both NMS and Exchange-listed securities.

NMS Securities

	IOC	DAY	GTC	IOX	X	GTX
Entry	7:30-4:00	7:30-4:00	7:30-4:00	7:30-6:30	7:30-6:30	7:30-6:30
Execution	9:30-4:00	9:30-4:00	9:30-4:00	8:00-4:00	8:00-4:00	8:00-4:00
Delivery	8:00	8:00	8:00	8:00	8:00	8:00
Expiration		4:00 same day of entry	4:00 one year from entry		4:00 same day of entry	4:00 one year from entry

Exchange-listed Securities:

	IOC	DAY	GTC	IOX	X	GTX
Entry	7:30-4:00	7:30-4:00	7:30-4:00	7:30-6:30	7:30-6:30	7:30-6:30
Execution	9:30-4:00	9:30-4:00	9:30-4:00	9:30-6:30	9:30-6:30	9:30-6:30
Delivery	9:30	9:30	9:30	9:30	9:30	9:30
Expiration		4:00 same day of entry	6:30 one year from entry		6:30 same day of entry	6:30 one year from entry

5.1.1 Order Entry

The standard message header (see section 2.1.1) is followed by:

Required Lines[2]:

Line 2: ['POSS DUPE' *sp*] **Side *sp* '.SM' *<CR/LF>***
Line 3: **Quantity *sp* Secid *sp* Price** [*sp* Reserve [*sp* Refresh]]***<CR/LF>***
Line 3a: [TIF] [*sp* Capacity] [*sp* 'DNI'] [*sp* 'DNR'] [*sp* 'PRI' *sp* priority] [*sp* 'ANON'] [*sp* 'AIQ' *sp* value] [*sp* 'PI' *sp* Price Improvement] [*sp* 'TYP' *sp* Order Type] ***<CR/LF>***

Optional Lines:

[Line 4:] [['.UID' *sp* User Order ID] <***CR/LF***>]
[Line 4a:] [['BCH'] [*sp* '.RCV' *sp* order rcv date] [*sp* 'OVR'] <***CR/LF***>]
[Line 4b:] [['GU' *sp* giveup id] [*sp* 'CLR' *sp* clearing number] <***CR/LF***>]
[Line 4c:] [':'[Preferenced MMID] <***CR/LF***>]
[Line 4d:] [['PEG' *sp* Peg Type] [*sp* 'CAP' *sp* Cap Price] [*sp* 'OFF' *sp* Offset Value] [*sp* 'DIS'] [*sp* 'DIF' *sp* Discretionary Offset] <***CR/LF***>]

Optional line for exchange-listed securities:

[Line 4e:] [['COM' *sp* Complaint Response] [*sp* 'BLK' *sp* Block Indicator] <***CR/LF***>]

Message Format

Line	Field	Description	Req'd
0	Entry Originator	1-6 character field - filled in by the Switch if not provided by the Order entry firm. For firms acting as a Service bureau. Must hold the 4-character MMID of the firm represented by the transaction.	Y for firms acting as a Service Bureau
	<***CR/LF***>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office.	Y
	Branch Office Sequence #	1-4 character numeric sequence number field.	Y
	<***CR/LF***>	Line terminator.	Y
1a	Category	Field identifying the message category. For NASDAQ market center messages, this always will be "ORDER".	Y

[2] Fields are separated by a space character, ***sp***
All lines are terminated by a CR/LF pair, ***<CR/LF>***
Fields in bold are required, **Category**
Fields in quotes are keywords, **'.SM'**
Fields within square brackets are optional, [*sp* Reserve]
Multiple fields within brackets must all be present if any are, [*sp* 'PRI' *sp* priority]

Line	Field	Description	Req'd
	Destination	Always contains "b" for NASDAQ market center messages.	Y
	Preferenced MMID	Can be present only if no Preferenced MMID in line 4c. Preferenced MMID indicating the market maker the order entry firm wishes to execute against. In the event that an MPID is present in both 1a and 4c, the system will ignore 1a. "SIZE" cannot be used as a market maker and cannot, therefore, be preferenced in an order. "SIZE" is simply a display-only MMID that is used to display orders from market makers that have been indicated as unattributable. It is not a real MMID and has no orders of its own, making it an invalid destination for preferencing. Allowed values are: 1-char exchange value 4-char MPID null = omitted Exchange values are: A or AMEX = American Stock Exchange B or BOSX = Boston Stock Exchange C or CINN = Cincinnati Stock Exchange M or MWSE = Chicago Stock Exchange N or NYSE = New York Stock Exchange P or PACX = ARCA/EX Pacific Stock Exchange W or CBOE = Chicago Board Options Exchange (CBOE) X or PHLX = Philadelphia Stock Exchange ATTN = Attain INET = Instinet For NMS securities, if you would like to route your order to the NASDAQ market center only, then enter "NADQ". For exchange-listed securities, if you would like to route your order to the NASDAQ market center only, then enter "SIM." Without indicating a preferenced destination, the order will be subject to routing to external venues.	N
	<***CR/LF***>	Line terminator	Y
	Blank Line		Y
	<***CR/LF***>	To terminate the Message Header	Y
2	'POSS DUPE'	9-character field that indicates that the message may be a duplicate.	N

Line	Field	Description	Req'd
	Side	Alpha field indicating whether the order is a buy, sell, or short sale. Allowed values: B = buy BUY = buy S = sell SL = sell SSHRT = short sale SSHRT EXEMPT = short sale exempt	Y
	'.SM'	Field used to indicate that the message is in NASDAQ market center format and that the firm is prepared to receive Response Messages in NASDAQ market center format.	Y
	<***CR/LF***>	Line terminator.	Y
3	Quantity	1-6 character numeric field, in the range of 1-999999, representing the number of shares in the order. Exchange-listed securities can be in round lots and mixed lots only.	Y
	SECID	1-14 character security identifier. This symbol must represent a CQS security and must be in CMS format for exchange-listed securities. For example: OXY PRB or ROY PR.	Y
	Price	Field which must contain either: "MKT" to denote a market order, a 1-10 character decimal price, or "NBBO" if the order is pegged. Pegged orders are not allowed for exchange-listed securities.	Y
	Reserve	1-6 character field indicating the quantity of the Reserve Size. Must be in shares in either round lot multiples or mixed lots.	N
	Refresh	1-6 character field indicating the quantity to which the order will be replenished from Reserve size. Must be in shares, in a round lot multiple. If Refresh is supplied, Reserve is not an optional field.	N
	<***CR/LF***>	Line terminator.	Y
3a	TIF	Field indicating Time-in-Force. Allowed values for NMS securities: IOC = immediate or cancel, executable from market open to market close (default) DAY = executable from market open to market close, cancelled at market close (default if pegged, discretionary, or summary). GTC = good till cancel, executable from market	N

Line	Field	Description	Req'd
		open to market close, cancelled one year from entry IOX = immediate or cancel, executable from pre-market session to market close X = cancel at market close, executable from pre-market session to market close GTX = good till cancel, executable from pre-market session to market close, cancelled one year from entry OO = executable only during opening cross OC = executable only during closing cross Allowed values for Exchange-listed securities: IOC = immediate or cancel, executable from market open to market close (default) DAY = executable from market open to market close (default if pegged, discretionary, or summary), cancelled at market close GTC = good till cancel, executable from market open to market close, cancelled one year from entry IOX = immediate or cancel, executable from market open to session close X = cancel at session close, executable from market open to session close GTX = good till cancel, executable from market open to session close, cancelled one year from entry	
3a	Capacity	Field indicating on whose behalf the order was entered. Allowed values: A = agency (this is the default) P = principal R = riskless	N
	'DNI'	Do Not Increase flag. 3-character keyword used to indicate that the order quantity and number of shares should not be increased as the result of a stock split.	N
	'DNR'	Do Not Reduce flag. 3-character keyword used to indicate that the order price should not be reduced because of a cash dividend.	N
	'PRI' *sp* priority	3-character keyword followed by a value that indicates which execution algorithm is to be utilized. Allowed values for NMS securities: T = price/time U = auto-ex	N

Line	Field	Description	Req'd
		A = super-aggressive H = thru orders I = Imbalance Only for open and close (only allowed TIFs are "OC" and "OO") Allowed values for exchange-listed securities: T = price/time S = Sweep The "S" algorithm allows you to trade through the NBBO when executing exchange-listed security orders. Access fee and price improvement are not allowed for exchange-listed securities, so the modified price/time is not applicable.	
	'ANON' or 'PNON'	4-character keyword indicating that the order is non-attributable. If this value is not given, then the order is attributable. Allowed values: PNON = pre-trade non-attributable ANON = pre-trade and post-trade non-attributable	N
	'AIQ' *sp* value	3-character keyword followed by a value used to specify whether internalization is allowed on this order. Allowed values: I = allow this order to match orders with same MPID Y = never allow internalization, orders with the same MPID will not match with this order (default if "AIQ" literal is entered without a value)	N
	'PI' *sp* Price Improvement	2-character keyword followed by a value to indicate whether Price Improvement is in effect. Price improvement is not allowed for exchange-listed securities. Allowed values: N = Order is fee liable with no price improvement. Y = Order is fee liable with price improvement offered that is greater than the fee. NOTE: This value will be defaulted to N. F = Order is not fee liable.	N
	'TYP' *sp* Order Type	3-character keyword followed by a value to indicate the type of order. If this field is not present in the message, the default type is O = Order. Allowed values: O = Order U = Summary Order	N
	<***CR/LF***>	Line terminator. This line terminator is required if any of the following optional lines are present, even if none of the optional fields found on Line 3a	Y

Line	Field	Description	Req'd
		are supplied.	
4	'.UID' *sp* User Order ID	4-character keyword followed by a 1-20 character field that holds an order ID used by the entering firm for internal processing. Valid characters are A-Z and 0-9. Embedded spaces are invalid.	N
	<***CR/LF***>	Line terminator if Optional Line 4 is present.	Y
4a	'.B' or 'BCH'	Keyword used to indicate bunched orders.	N
	'.RCV' *sp* order rcv date	4-character keyword followed by an 8-character user-specified date in MMDDYYYY format.	N
	'OVR'	Keyword used to indicate that you are overriding Price and Size warnings for the order. NASDAQ performs two levels of price validation. An initial validation will be performed that will result in a reject if the price exceeds an egregious level, even if this override parameter is set. A second level of validation is then performed. If the price fails this second level of price validation and this override parameter is included with the order, normal order processing continues. If the override parameter is not included, you will receive a reject with a warning.	N
	<***CR/LF***>	Line terminator if Optional Line 4a is present.	Y
4b	'GU' *sp* giveup id	2-character keyword followed by a space and the 4-character identifier of another firm (the give up firm) the order was entered on behalf of.	N
	'CLR' *sp* clearing number	3-character keyword followed by a 4 character numeric clearing number.	N
	<***CR/LF***>	Line terminator if Optional Line 4b is present.	Y
4c	':'MMID	Can be present only if no Preferenced MMID in line 1a. In the event that an MPID is present in both 1a and 4c, the system will ignore 1a. Preferenced MMID indicating the market maker the order entry firm wishes to execute against. In the event that an MPID is present in both 1a and 4c, the system will ignore 1a. "SIZE" cannot be used as a market maker and cannot, therefore, be preferenced in an order. "SIZE" is simply a display-only MMID that is used to display orders from market makers that have been indicated as unattributable. It is not a real MMID and has no orders of its own, making it an invalid destination for preferencing. Allowed values are: 1-char exchange value 4-char MPID	N

Line	Field	Description	Req'd
		null = omitted Exchange values are: A or AMEX = American Stock Exchange B or BOSX = Boston Stock Exchange C or CINN = Cincinnati Stock Exchange M or MWSE = Chicago Stock Exchange N or NYSE = New York Stock Exchange P or PACX = ARCA/EX Pacific Stock Exchange W or CBOE = Chicago Board Options Exchange (CBOE) X or PHLX = Philadelphia Stock Exchange ATTN = Attain INET = Instinet For NMS securities, if you would like to route your order to the NASDAQ market center only, then enter "NADQ". For exchange-listed securities, if you would like to route your order to the NASDAQ market center only, then enter "SIM." Without indicating a preferenced destination, the order will be subject to routing to external venues.	
	<***CR/LF***>	Line terminator if Optional Line 4c is present.	Y
4d	'PEG' *sp* Peg Type	3-character keyword followed by a value indicating the order's peg type. If this field is not present in the message, the default is not pegged. Pegged orders are not allowed for exchange-listed securities. Allowed values: G = regular pegged to NASDAQ Inside R = reverse pegged to NASDAQ Inside H = regular pegged to NBBO Q = reverse pegged to NBBO N = Not pegged	N
	'CAP' *sp* Cap Price	3-character keyword followed by a price. Cap price must contain a 1-10 character decimal price. If the field is not present in the message, the Cap price will default to 0. Pegged orders are not allowed for exchange-listed securities.	N
	'OFF' *sp* Offset Value	3-character keyword followed by a 2-digit value (00-99) that indicates the Peg Offset value. This field is applicable to Pegged orders and indicates the numerical offset that is applied to the current inside bid/offer to derive the current display price for the order. If the "PEG" value is G, this field should be set to a minimum of 00. If the "PEG" value is R, this field should be set to a minimum of 01. Pegged orders are not allowed for exchange-	N

Line	Field	Description	Req'd
		listed securities.	
	'DIS'	3-character keyword indicating the order is discretionary. If the field is not present in the message, the order is not discretionary.	N
	'DIF' *sp* Discretionary Offset	3-character keyword followed by a 1-2 character numeric value. If a discretionary order is entered this field must contain a non-zero value. If an order is entered that is not discretionary, this field cannot be entered.	N
	<***CR/LF***>	Line terminator if Optional Line 4d is present.	Y
4e	'COM' *sp* Complaint Response	3-character keyword indicating the Complaint Response field followed by a 5 character field that allows you to preference an order to an exchange in response to a complaint. In this field, you indicate the complaint ID number for the complaint to which the order is responding. You obtain this ID number from Market Watch.	N
	'BLK' *sp* Block Indicator	3-character keyword indicating the Block Indicator field followed by a block indicator value that allows you to submit a block order for exchange-listed securities. This field is applicable only if it is indicated on an ITS commitment. It will be ignored if the order is preferenced to an exchange-listed security participant or exchange-listed security trading only. Allowed values: Y N.	N
	<***CR/LF***>	Line terminator if Optional Line 4e is present.	Y

5.1.2 Order Cancel

SAMPLE MESSAGE

```
ADVS
B1
ORDER b
<CR/LF>
CXL SSHRT EXEMPT .SM
100 UBCD 11.99
<CR/LF>
RE A1/060203 0B3035Q000N1
OE CTCI TESTING  -0100
```

The standard message header (see section 2.1.1) is followed by:

Required Lines:

Line 2: **'CXL'** ***sp*** **Side** ***sp*** '**.SM**' ***<CR/LF>***
Line 3: **Quantity** ***sp*** **Secid** ***sp*** **Price** [*sp* Reserve] ***<CR/LF>***
Line 3a: [TIF] [*sp* Capacity] ***<CR/LF>***
Line 5: **'RE'** ***sp*** **Branch Office** ***sp*** **Branch Office Seq. # '/' date** ***sp*** **Order Reference Id** <***CR/LF***>

Message Format

Line	Field	Description	Req'd
0	Entry Originator	1-6 character field - filled in by the Switch if not provided by the Order entry firm. This is a required field for firms acting as a Service bureau and must hold the 4-character MMID of the firm represented by the transaction.	Y for firms acting as a Service Bureau
	<CR/LF>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office.	Y
	Branch Office Sequence #	1-4 character numeric sequence number field.	Y
	<CR/LF>	Line terminator.	Y
1a	Category	Identifies the message category. For NASDAQ market center messages, this always will be "ORDER".	Y
	Destination	Always contains "b" for NASDAQ market center messages.	Y
	<CR/LF>	Line terminator.	Y
	Blank Line		
	<CR/LF>	Required to terminate the Message Header.	Y
2	'CXL'	3-character keyword indicating that this message is a Cancel Order Message.	Y

Line	Field	Description	Req'd
	Side	Alpha field indicating whether the order was a buy, sell or short sale. Allowed values: B = buy BUY = buy S = sell SL = sell SSHRT = short sale SSHRT EXEMPT = short sale exempt	Y
	'.SM'	Used to indicate that the message is in NASDAQ market center format and that the firm is prepared to receive Response Messages in NASDAQ market center format.	Y
	<CR/LF>	Line terminator.	Y
3	Quantity	1-6 character numeric field, in the range of 1-999999, representing the number of shares in the original order.	Y
	SECID	1-14 character security identifier. This symbol must represent a CQS security and must be in CMS format for exchange-listed securities. For example: OXY PRB or ROY PR.	Y
	Price	Holds the price of the original order. The precision of the price (i.e. the number of decimal positions) should be the same as in the original order.	Y
	Reserve	1-6 character field indicating the quantity of the Reserve Size. Must be in shares in either round lot multiples or mixed lots.	N
	<CR/LF>	Line terminator.	Y
3a	TIF	Indicates Time-in-Force of the original order. Allowed values for NMS securities: IOC = immediate or cancel, executable from market open to market close (default) DAY = executable from market open to market close, cancelled at market close (default if pegged, discretionary, or summary). GTC = good till cancel, executable from market open to market close, cancelled one year from entry IOX = immediate or cancel, executable from pre-market session to market close X = cancel at market close, executable from pre-market session to market close GTX = good till cancel, executable from pre-market session to market close, cancelled one year from entry	N

Line	Field	Description	Req'd
		OO = executable only during opening cross OC = executable only during closing cross Allowed values for Exchange-listed securities: IOC = immediate or cancel, executable from market open to market close (default) DAY = executable from market open to market close (default if pegged, discretionary, or summary), cancelled at market close GTC = good till cancel, executable from market open to market close, cancelled one year from entry IOX = immediate or cancel, executable from market open to session close X = cancel at session close, executable from market open to session close GTX = good till cancel, executable from market open to session close, cancelled one year from entry	
	Capacity	Field indicating on whose behalf the original order was entered. Allowed values: A = agency (this is the default) P = principal R = riskless	N
	<CR/LF>	Line terminator. Required even if TIF and Capacity are not present.	Y
5	'RE'	Required 2-character keyword indicating that this line defines the order to which this Cancel refers.	Y
	Branch Office	1-4 character alpha field used to identify the branch office of the original order.	Y
	Branch Office Sequence #	1-4 character numeric field indicating the sequence number of the original order.	Y
	'/' date	A slash followed by the 6-character entry date of the order to be canceled in MMDDYY format.	Y
	Order Reference ID	12-character Order Reference ID of the order to be canceled. This identifier is returned to the Order Entry Firm via the NASDAQ market center Order Entry Acknowledgement Message.	Y
	<CR/LF>	Required line terminator if optional line 5 is present.	Y if line 5 is present

5.1.3 Order Cancel/Replace (Version One)

SAMPLE MESSAGE

```
<CR/LF>
CA12
ORDER b
<CR/LF>
B .SM
100 UBCD 12
GTC
CXL B
200 UBCD 12
RE A 1/051303 0B3035J000MJ
```

The standard message header (see section 2.1.1) is followed by:

New Order:

Line 2: **['POSS DUPE'] Side *sp* '.SM' *<CR/LF>***
Line 3: **Quantity *sp* Secid *sp* Price** [*sp* Reserve [*sp* Refresh]] ***<CR/LF>***
Line 3a: [TIF] [*sp* Capacity] [*sp* DNI] [*sp* DNR] ***<CR/LF>***

Order being Canceled:

Line X: **'CXL' *sp* Side *<CR/LF>***
Line X1: **Quantity *sp* Secid *sp* Price** [*sp* Reserve] ***<CR/LF>***
Line X2: **'RE' *sp* Branch Office *sp* Branch Office Seq. # '/' date *sp* Order Reference ID** <***CR/LF***>

Message Format

Line	Field	Description	Req'd
0	Entry Originator	1-6 character field. Filled in by the Switch if not provided by the Order entry firm. Must hold the 4-character MMID of the firm represented by the transaction.	Y for firms acting as service bureaus
	<CR/LF>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office	Y
	Branch Office Sequence #	1-4 character numeric sequence number field.	Y
	<CR/LF>	Line terminator.	Y
1a	Category	Identifies the message category. For NASDAQ market center messages, this always will be "ORDER".	Y
	Destination	Always contains "b" for NASDAQ market center messages.	Y
	<CR/LF>	Required line terminator	Y

Line	Field	Description	Req'd
	Blank Line:		
	<CR/LF>	Required to terminate the Message Header.	Y
2	['POSS DUPE']	9-character field that indicates that the message may be a duplicate.	N
	Side	Alpha field indicating whether the order is a buy, sell, or short sale. Allowed values: B = buy BUY = buy S = sell SL = sell SSHRT = short sale SSHRT EXEMPT = short sale exempt	Y
	'.SM'	Indicates that the message is in NASDAQ market center format and that the firm is prepared to receive Response Messages in NASDAQ market center format	Y
	<CR/LF>	Line terminator	Y
3	Quantity	1-6 character numeric field, in the range of 1-999999, representing the number of shares in the order. Can be expressed as a delta (an adjustment to the Quantity of the original order) by including a "+" or "-" in front of the numeric value.	Y
	SECID	1-14 character security identifier.	Y
	Price	Must contain either: "MKT" to denote a market order, a 1-10 character decimal price, or "NBBO" if order is pegged.	Y
	Reserve	1-6 character field indicating the quantity of the Reserve Size. Must be in shares in either round lot multiples or mixed lots. This value can be expressed as a delta (an adjustment to the Reserve of the original order) by including a "+" or "-" in front of the numeric value.	N
	Refresh	1-6 character field indicating the quantity to which the order will be replenished from Reserve size. Must be in shares, in a round lot multiple. If Refresh is supplied, Reserve is not an optional field.	N
	<CR/LF>	Line terminator.	Y

Line	Field	Description	Req'd
3a	TIF	Will be ignored by NASDAQ market center. Optional field indicating Time-in-Force. Allowed values: DAY = expires at market close GTC = good till canceled IOC = Immediate or Cancel (default)	N
	Capacity	Will be ignored by NASDAQ market center. Optional field indicating on whose behalf the order was entered. Allowed values: A = agency (default) P = principal R = riskless	N
	'DNI'	Do Not Increase flag. 3-character keyword used to indicate that the order quantity and number of shares should not be increased as the result of a stock split	N
	'DNR'	Do Not Reduce flag. 3-character keyword used to indicate that the order price should not be reduced because of a cash dividend.	N
	<CR/LF>	Line terminator.	Y
X	'CXL'	3-character keyword identifying this portion of the message as representing the order being canceled.	Y
	Side	Alpha field indicating whether the order is a buy, sell or short sale. Allowed values: B = buy BUY = buy S = sell SL = sell SSHRT = short sale SSHRT EXEMPT = short sale exempt	Y
	<CR/LF>	Line terminator.	Y
X1	Quantity	1-6 character numeric field in the range of 1-999999 representing the current number of shares in the order being updated.	Y
	SECID	1-14 character security identifier.	Y
	Price	Holds the price of the original order.	Y
	Reserve	1-6 character field indicating the quantity of the Reserve Size. Must be in shares in either round lot multiples or mixed lots.	N
	<CR/LF>	Line terminator.	Y
X2	'RE'	2-character keyword indicating that this line defines the order to which this Cancel refers.	Y
	Branch Office	Required one to four character alpha field used to identify the branch office of the original order.	Y

Line	Field	Description	Req'd
	Branch Office Sequence #	Required one to four character numeric field indicating the sequence number of the original order.	Y
	'/' date	A slash followed by the 6-character entry date of the order to be canceled in MMDDYY format.	Y
	Order Reference ID	12-character Order Reference ID of the order to be canceled. This identifier is returned to the Order Entry Firm via the NASDAQ market center Order Entry Acknowledgement Message. This number must be supplied if an order acknowledgement message that includes the order reference number was received.	Y
	<CR/LF>	Line terminator.	Y

5.1.4 Order Cancel/Replace (Version Two)

SAMPLE MESSAGE

```
<SELECT --EE>
<STX> <ESC>1 DALL <LF>
DALL1234<LF>
ORDER b<LF>
<LF>
B .SM<LF>
100 CNET 1.25  <LF>
DAY <LF>
<LF>
<LF>
<LF>
<LF>
PEG G CAP 1.30 <LF>
CXL 08C03D2000N4 <LF>
OE CTCI TESTING  -0100<ETX>
```

The standard message header (see section 2.1.1) is followed by:

Required Lines:

Line 2: ['POSS DUPE' *sp*] **Side *sp* '.SM' <*CR*/*LF*>**
Line 3: **Quantity *sp* Secid *sp* Price** [*sp* Reserve [*sp* Refresh]] **<*CR*/*LF*>**
Line 3a: [TIF] [*sp* Capacity] [*sp* 'DNI'] [*sp* 'DNR'] [*sp* 'PRI' *sp* priority] [*sp* 'ANON'] [*sp* 'AIQ' *sp* value] [*sp* 'PI' *sp* Price Improvement] [*sp* 'TYP' *sp* Order Type] **<*CR*/*LF*>**

Optional Lines:

[Line 4:] [['.UID' *sp* User Order ID] <***CR*/*LF***>]
[Line 4a:] [['BCH'] [*sp* '.RCV' *sp* order rcv date] [*sp* 'OVR'] <***CR*/*LF***>]
[Line 4b:] [['GU' *sp* giveup id] *sp* ['CLR' *sp* clearing number] <***CR*/*LF***>]
[Line 4c:] [':'[Preferenced MMID] <***CR*/*LF***>]
[Line 4d:] ['PEG' *sp* Peg Type] [*sp* 'CAP' *sp* Cap Price] [*sp* 'OFF' *sp* Offset Value] [sp 'DIS'] [*sp* 'DIF' *sp* Discretionary Offset] <***CR*/*LF***>]

Optional line for exchange-listed security trading:

[Line 4e:] [['COM' *sp* Complaint Response] [*sp* 'BLK' *sp* Block Indicator] <***CR*/*LF***>]

Order being Canceled:

Line X: **'CXL' *sp* Order Reference ID <*CR*/*LF*>**

Message Format

Line	Field	Description	Req'd
0	Entry Originator	1-6 character field - filled in by the Switch if not provided by the Order entry firm. For firms acting as a Service bureau and must hold the four character MMID of the firm represented by the transaction.	Y for firms acting as a Service Bureau
	<***CR/LF***>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office.	Y
	Branch Office Sequence #	1-4 character numeric sequence number field.	Y
	<***CR/LF***>	Line terminator.	Y
1a	Category	Field identifying the message category. For NASDAQ market center messages, this always will be "ORDER".	Y
	Destination	Always contains "b" for NASDAQ market center messages.	Y
	Preferenced MMID	Can be present only if no Preferenced MMID in line 4c. Preferenced MMID indicating the market maker the order entry firm wishes to execute against. In the event that an MPID is present in both 1a and 4c, the system will ignore 1a. "SIZE" cannot be used as a market maker and cannot, therefore, be preferenced in an order. "SIZE" is simply a display-only MMID that is used to display orders from market makers that have been indicated as unattributable. It is not a real MMID and has no orders of its own, making it an invalid destination for preferencing. Allowed values are: 1-char exchange value 4-char MPID null = omitted Exchange values are: A or AMEX = American Stock Exchange B or BOSX = Boston Stock Exchange C or CINN = Cincinnati Stock Exchange M or MWSE = Chicago Stock Exchange N or NYSE = New York Stock Exchange P or PACX = ARCA/EX Pacific Stock Exchange W or CBOE = Chicago Board Options Exchange (CBOE) X or PHLX = Philadelphia Stock Exchange For NMS securities, if you would like to route your	N

Line	Field	Description	Req'd
		order to the NASDAQ market center only, then enter "NADQ". For exchange-listed securities, if you would like to route your order to the NASDAQ market center only, then enter "SIM." Without indicating a preferenced destination, the order will be subject to routing to external venues.	
	<***CR/LF***>	Line terminator	Y
	Blank Line		
	<***CR/LF***>	To terminate the Message Header	Y
2	'POSS DUPE'	9-character field that indicates that the message may be a duplicate.	N
	Side	Alpha field indicating whether the order is a buy, sell or short sale. Allowed values: B = buy BUY = buy S = sell SL = sell SSHRT = short sale SSHRT EXEMPT = short sale exempt	Y
	'.SM'	Field used to indicate that the message is in NASDAQ market center format and that the firm is prepared to receive Response Messages in NASDAQ market center format.	Y
	<***CR/LF***>	Line terminator.	Y
3	Quantity	1-6 character numeric field in the range of 1-999999, representing the number of shares in the order. Exchange-listed securities can be only round lots and mixed lots.	Y
	SECID	1-14 character security identifier. For exchange-listed securities, this symbol must represent a CQS security and must be in CMS format. For example: OXY PRB or ROY PR.	Y
	Price	Field which must contain either: "MKT" to denote a market order, a 1-10 character decimal price, or "NBBO" if order is pegged. Pegged orders are not allowed for exchange-listed securities. Please note that changing a limit order to a market order is not allowed.	Y
	Reserve	1-6 character field indicating the quantity of the Reserve Size. Must be in shares in either round lot multiples or mixed lots.	N

Line	Field	Description	Req'd
	Refresh	1-6 character field indicating the quantity to which the order will be replenished from Reserve size. Must be in shares, in a round lot multiple. If Refresh is supplied, Reserve is not an optional field.	N
	<***CR/LF***>	Line terminator.	Y
3a	TIF	Field indicating Time-in-Force. Allowed values for NMS securities: IOC = immediate or cancel, executable from market open to market close (default) DAY = executable from market open to market close, cancelled at market close (default if pegged, discretionary, or summary). GTC = good till cancel, executable from market open to market close, cancelled one year from entry IOX = immediate or cancel, executable from pre-market session to market close X = cancel at market close, executable from pre-market session to market close GTX = good till cancel, executable from pre-market session to market close, cancelled one year from entry OO = executable only during opening cross OC = executable only during closing cross Allowed values for Exchange-listed securities: IOC = immediate or cancel, executable from market open to market close (default) DAY = executable from market open to market close (default if pegged, discretionary, or summary), cancelled at market close GTC = good till cancel, executable from market open to market close, cancelled one year from entry IOX = immediate or cancel, executable from market open to session close X = cancel at session close, executable from market open to session close GTX = good till cancel, executable from market open to session close, cancelled one year from entry	N
	Capacity	Field indicating on whose behalf the order was entered. Allowed values: A = agency (default) P = principal R = riskless	N
	'DNI'	Do Not Increase flag. 3-character keyword used to indicate that the order quantity and number of shares should not be increased as the result of a stock split.	N

Line	Field	Description	Req'd
	'DNR'	Do Not Reduce flag. 3-character keyword used to indicate that the order price should not be reduced because of a cash dividend.	N
	'PRI' *sp* priority	3-character keyword followed by a value that indicates which execution algorithm is to be utilized. Allowed values for NMS securities: T = price/time U = auto-ex A = super-aggressive I = Imbalance Only for opening and close (only allowed TIFs are "OC" or "OO") Allowed values for exchange-listed securities: T = price/time S = Sweep The "S" algorithm allows you to trade through the NBBO when executing your exchange-listed security orders. Access fee and price improvement are not allowed for exchange-listed securities, so the modified price/time is not applicable.	N
	'ANON' or 'PNON'	4-character keyword indicating that the order is non-attributable. If this value is not given, then the order is attributable. Allowed values: PNON = pre-trade non-attributable ANON = pre-trade and post-trade non-attributable	N
	'AIQ' *sp* value	3-character keyword followed by a value used to specify whether internalization is allowed on this order. Allowed values: I = allow this order to match orders with same MPID Y = never allow internalization, orders with the same MPID will not match with this order (default if "AIQ" literal is entered without a value)	N
	'PI' *sp* Price Improvement	2-character keyword followed by a value to indicate whether Price Improvement is in effect. Allowed values: N = Order is fee liable with no price improvement. Y = Order is fee liable with price improvement offered that is greater than the fee. NOTE: This value will be defaulted to N. Order is not fee liable. Price improvement is not allowed for exchange-listed securities.	N

Line	Field	Description	Req'd
	'TYP' *sp* Order Type	3-character keyword followed by a value to indicate the type of order. If this field is not present in the message, the default type is O = Order. Allowed values: O = Order U = Summary Order	N
	<***CR/LF***>	Line terminator. This line terminator is required if any of the following optional lines are present, even if none of the optional fields found on Line 3a are supplied.	Y
4	'.UID' *sp* User Order ID	4-character keyword followed by a 1-20 character field that holds an order ID used by the entering firm for internal processing. Valid characters are A-Z and 0-9. Embedded spaces are invalid.	N
	<***CR/LF***>	Line terminator if Optional Line 4 is present.	Y
4a	'.B' or 'BCH'	Keyword used to indicate bunched orders.	N
	'.RCV' *sp* order rcv date	4-character keyword followed by an 8-character user-specified date in MMDDYYYY format.	N
	'OVR'	Keyword used to indicate that you are overriding Price and Size warnings for the order cancel/replace. NASDAQ performs two levels of price validation. An initial validation will be performed that will result in a reject if the price exceeds an egregious level, even if this override parameter is set. A second level of validation is then performed. If the price fails this second level of price validation and this override parameter is included with the order, normal order processing continues. If the override parameter is not included, you will receive a reject with a warning.	N
	<***CR/LF***>	Line terminator if Optional Line 4a is present.	Y
4b	'GU' *sp* giveup id	2-character keyword followed by a space and the 4-character identifier of another firm (the give up firm) the order was entered on behalf of.	N
	'CLR' *sp* clearing number	3-character keyword followed by a 4 character numeric clearing number.	N
	<***CR/LF***>	Line terminator if Optional Line 4b is present.	Y
4c	':'MMID	Can be present only if no Preferenced MMID in line 1a. In the event that an MPID is present in both 1a and 4c, the system will ignore 1a. Preferenced MMID indicating the market maker the order entry firm wishes to execute against. In the event that an MPID is present in both 1a and 4c, the system will ignore 1a. "SIZE" cannot be used as a market maker and cannot, therefore, be preferenced in an order. "SIZE" is simply a display-only MMID that is used to display orders from market makers	N

Line	Field	Description	Req'd
		that have been indicated as unattributable. It is not a real MMID and has no orders of its own, making it an invalid destination for preferencing. Allowed values are: 1-char exchange value 4-char MPID null = omitted Exchange values are: A or AMEX = American Stock Exchange B or BOSX = Boston Stock Exchange C or CINN = Cincinnati Stock Exchange M or MWSE = Chicago Stock Exchange N or NYSE = New York Stock Exchange P or PACX = ARCA/EX Pacific Stock Exchange W or CBOE = Chicago Board Options Exchange (CBOE) X or PHLX = Philadelphia Stock Exchange For NMS securities, if you would like to route your order to the NASDAQ market center only, then enter "NADQ". For exchange-listed securities, if you would like to route your order to the NASDAQ market center only, then enter "SIM." Without indicating a preferenced destination, the order will be subject to routing to external venues.	
	<***CR/LF***>	Line terminator if Optional Line 4c is present.	Y
4d	'PEG' *sp* Peg Type	3-character keyword followed by a value indicating the order's peg type. If this field is not present in the message, the default is not pegged. Allowed values: G = regular pegged to NASDAQ Inside R = reverse pegged to NASDAQ Inside H = regular pegged to NBBO order Q = reverse pegged to NBBO order N = Not pegged Pegged orders are not allowed for exchange-listed securities.	N
	'CAP' *sp* Cap Price	3-character keyword followed by a price. Cap price must contain a 1-10 character decimal price. If the field is not present in the message, the Cap price will default to 0. Pegged orders are not allowed for exchange-listed securities.	N

Line	Field	Description	Req'd
	'OFF' *sp* Offset Value	3-character keyword followed by a 2-digit (00-99) that indicates the Peg Offset value. This field is applicable to Pegged orders and indicates the numerical offset that is applied to the current inside bid/offer to derive the current display price for the order. If the "PEG" value is G, this field should be set to a minimum of 00. If the "PEG" value is R, this field should be set to a minimum of 01. Pegged orders are not allowed for exchange-listed securities.	N
	'DIS'	3-character keyword indicating the order is discretionary. If the field is not present in the message, the order is not discretionary.	N
	'DIF' *sp* Discretionary Offset	3-character keyword followed by a 1-2 character numeric value. If the field is not present in the message, the Discretionary Offset Value will default to 0.	N
	<***CR/LF***>	Line terminator if Optional Line 4d is present.	Y
4e	'COM' *sp* Complaint Response	3-character keyword indicating the Complaint Response field followed by a 5 character field that allows you to preference an order to an exchange in response to a complaint. In this field, you indicate the complaint ID number for the complaint to which the order is responding. You obtain this ID number from Market Watch.	N
	'BLK' *sp* Block Indicator	3-character keyword indicating the Block Indicator field followed by a block indicator value that allows you to submit a block order for exchange-listed securities. This field is applicable only if it is indicated on an ITS commitment. It will be ignored if the order is preferenced to an exchange-listed security participant or exchange-listed security trading only. Allowed values: Y N.	N
	<***CR/LF***>	Line terminator if Optional Line 4e is present.	Y
X	'CXL'	3-character keyword identifying this portion of the message as representing the order being canceled.	Y
	Order Reference ID	12-character Order Reference ID of the order to be canceled. This identifier is returned to the Order Entry Firm via the Order Entry Acknowledgement Message.	Y
	<***CR/LF***>	Line terminator.	Y

Note: A successful Cancel/Replace (Version Two) transaction will receive an Order Entry Acknowledgement for the new order that is created and a Cancel Order Acknowledgement for the order that is cancelled.

5.1.5 Order Mass Cancel

The standard message header (see section 2.1.1) is followed by:

Required Lines:

Line 2: **'MCXL' Side *sp* '.SM' <*CR*/*LF*>**
Line 3: **Quantity *sp* Secid *sp* Price <*CR*/*LF*>**
Line 3a: [TIF] [*sp* ATRIB *sp* value] [*sp* TYP *sp* value] [*sp* PRI *sp* value] **<*CR*/*LF*>**
Line 4b: ['GU' *sp* giveup ID] [*sp* 'CLR' *sp* clearing number] <***CR*/*LF***>]
Line 4d: [['PEG'] [*sp* DIS] <***CR*/*LF***>]
Line 4e: ['SYS'] *sp* System Application <***CR*/*LF***>

Message Format

Line	Field	Description	Req'd
0	Entry Originator	1-6 character field filled in by the Switch if not provided by the Order entry firm. This is a required field for firms acting as a Service bureau and must hold the 4-character MMID of the firm represented by the transaction.	Y
	<*CR/LF*>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office.	Y
	Branch Office Sequence #	1-4 character numeric sequence number field.	Y
	<*CR/LF*>	Line terminator.	Y
1a	Category	Identifies the message category. This value will be "OTHER".	Y
	Destination	Always contains "b" for NASDAQ market center messages.	Y
	<*CR/LF*>	Line terminator.	Y
	Blank Line:		Y
	<*CR/LF*>	Required to terminate the Message Header.	Y
2	'MCXL'	4-character keyword indicating that this message is a Mass Cancel Order Message.	Y
	Side	Alpha field indicating whether buy orders, sell orders, or both should be cancelled. Allowed values: B = buy S = sell Z = both	Y
	'.SM'	Used to indicate that the message is in NASDAQ market center format and that the firm is prepared to receive Response Messages in NASDAQ market center format.	Y
	<*CR/LF*>	Line terminator.	Y

Line	Field	Description	Req'd
3	Quantity	Quantity should always be set to 0.	Y
	SECID	1-14 character security identifier. For exchange-listed security trading, this symbol must represent a CQS security and must be in CMS format. For example: OXY PRB or ROY PR.	Y
	Price	Price should always be set to 0.	Y
	<CR/LF>	Line terminator.	Y
3a	TIF	Indicates Time-in-Force of orders that should be canceled. This field applies to orders only and will be ignored for "TYP" = S or Q. Allowed values for NMS securities: IOC = immediate or cancel, executable from market open to market close (default) DAY = executable from market open to market close, cancelled at market close (default if pegged, discretionary, or summary). GTC = good till cancel, executable from market open to market close, cancelled one year from entry IOX = immediate or cancel, executable from pre-market session to market close X = cancel at market close, executable from pre-market session to market close GTX = good till cancel, executable from pre-market session to market close, cancelled one year from entry OO = executable only during opening cross OC = executable only during closing cross ALL = All TIFs If no TIF is specified, the default is "ALL". Allowed values for Exchange-listed securities: IOC = immediate or cancel, executable from market open to market close (default) DAY = executable from market open to market close (default if pegged, discretionary, or summary), cancelled at market close GTC = good till cancel, executable from market open to market close, cancelled one year from entry IOX = immediate or cancel, executable from market open to session close X = cancel at session close, executable from market open to session close GTX = good till cancel, executable from market open to session close, cancelled one year from	N

Line	Field	Description	Req'd
		entry	
	'ATRIB' *sp* value	5-character keyword followed by a value that indicates whether attributable, non-attributable or both attributable, non-attributable orders should be cancelled. Allowed values: A = cancel attributable orders only P = cancel pre-trade non-attributable orders only N = cancel pre-trade and post-trade non-attributable orders only B = cancel both attributable and non- attributable orders (default)	N
	'TYP' *sp* value(s)	3-character keyword followed by one or more values used to specify the type of orders/quotes to cancel. Allowed values are: O = cancel orders U = cancel summary orders Q = cancel quotes S = cancel summary quotes Examples: If orders and summary orders are to be cancelled, enter: "TYP OU" If quotes, orders and summary orders are to be cancelled, enter: "TYP QOU" If quotes, summary quotes, orders and summary orders are to be cancelled, enter: "TYP QSOU" If no order type is specified, default is "QSOU" (all types will be canceled).	N
	'PRI' priority	3-character keyword followed by a value that indicates which execution algorithm is to be utilized. Allowed values for NMS securities: T = price/time U = auto-ex A = super-aggressive H = thru orders I = Imbalance Only for open and close (only allowed TIFs are "OC" and "OO") Allowed values for exchange-listed securities: T = price/time S = Sweep The "S" algorithm allows you to trade through the NBBO when executing your exchange-listed security orders. Access fee and price improvement are not allowed for exchange-listed securities, so the modified price/time is not applicable.	N
	<CR/LF>	Line terminator. Line terminator if Optional Line 3a is present	Y

Line	Field	Description	Req'd
4b	'GU' *sp* give up id	2-character keyword followed by a space and the 4-character used to cancel orders by a specific give up firm. This field applies to orders only and will be ignored for "TYP" = S or Q.	N
	'CLR' *sp* clearing number	3-character keyword followed by a 1-4 character numeric clearing number used to cancel orders by a specific clearing number. This field applies to orders only and will be ignored for "TYP" = S or Q.	N
	<CR/LF>	Line terminator if optional Line 4b is present.	Y
4d	'PEG'	3-character keyword indicating if Pegged orders should be cancelled. If "PEG" keyword is present TIF is ignored. This field applies to orders only and will be ignored for "TYP" = S or Q. Examples: If all pegged orders are to be cancelled, enter "TYP OU" on line 3a and "PEG" on line 4d. This will cancel all orders/summary orders that are classified as pegged. If only pegged summary orders are to be cancelled, enter "TYP U" on line 3a and "PEG" on line 4d. Pegged orders are not allowed for exchange-listed securities.	N
	'DIS'	3-character keyword indicating if discretionary orders should be cancelled. If "DIS" keyword is present TIF is ignored. This field applies to orders only and will be ignored for "TYP" = S or Q. Examples: If all discretionary orders are to be cancelled, enter "TYP OU" on line 3a and "DIS" on line 4d. This will cancel all orders/summary orders that are classified as discretionary. If only discretionary summary orders are to be cancelled, enter "TYP U" on line 3a and "DIS" on line 4d.	N
	<CR/LF>	Line terminator.	Y
4e	'SYS'	3-character keyword.	N
	System Application	Allowed values: Q = NASDAQ I = Exchange-listed securities	Y
	<CR/LF>	Line terminator.	Y

5.1.6 Order Reinstate

This is a new Message for NASDAQ market center only. Only purged orders can be reinstated. Only a NASDAQ Supervisor can purge orders. A firm can call a supervisor and, for instance, ask that all XXXX orders be purged. It is more likely that purged orders will result from market control events, such as suspension. Purged orders differ from canceled orders in that purged orders are temporarily left on the book.

SAMPLE MESSAGE

```
 <CR/LF>
 ABCD 1234
 ORDER b
 <CR/LF>
 RIN S .SM
 200 UBCD 10
 <CR/LF>
 RE ADVS5738/050703 0B3035Q000MK
OE CTCI TESTING  -0100
```

The standard message header (see section 2.1.1) is followed by:

Required Lines:

Line 2: **'RIN'** ***sp*** **Side** ***sp*** '**.SM**' ***<CR/LF>***
Line 3: **Quantity** ***sp*** **Secid** ***sp*** **Price** [*sp* Reserve] ***<CR/LF>***
Line 3a: [TIF] [*sp* Capacity] ***<CR/LF>***
Line 5: **'RE'** ***sp*** **Branch Office** ***sp*** **Branch Office Seq. # '/' date** ***sp*** **Order Reference Id** <***CR/LF***>

Message Format

Line	Field	Description	Req'd
0	Entry Originator	1-6 character field filled in by the Switch if not provided by the Order entry firm. Must hold the 4-character MMID of the firm represented by the transaction.	Y for firms acting as service bureaus
	<CR/LF>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office.	Y
	Branch Office Sequence #	1-4 character numeric sequence number field.	Y
	<CR/LF>	Line terminator.	Y
1a	Category	Identifies the message category. For NASDAQ market center messages, this always will be "ORDER".	Y
	Destination	Always contains "b" for NASDAQ market center messages.	Y
	<CR/LF>	Line terminator.	Y
	Blank Line		

Line	Field	Description	Req'd
	<CR/LF>	Required to terminate the Message Header.	Y
2	'RIN'	3-character keyword indicating that this message is an Order Re-Instate Message.	Y
	Side	Alpha field indicating whether the order was a buy, sell or short sale. Allowed values: B = buy BUY = buy S = sell SL = sell SSHRT = short sale SSHRT EXEMPT = short sale exempt	Y
	'.SM'	Used to indicate that the message is in NASDAQ market center format and that the firm is prepared to receive Response Messages in NASDAQ market center format.	Y
	<CR/LF>	Line terminator.	Y
3	Quantity	1-6 character numeric field in the range of 1-999999, representing the number of shares in the original order.	Y
	SECID	1-14 character security identifier. This symbol must represent a CQS security and must be in CMS format for exchange-listed securities. For example: OXY PRB or ROY PR.	Y
	Price	Holds the price of the original order. The precision of the price (i.e. the number of decimal positions) should be the same as in the original order.	Y
	Reserve	1-6 character field indicating the quantity of the Reserve Size. Must be in shares in either round lot multiples or mixed lots.	N
	<CR/LF>	Line terminator.	Y
3a	TIF	Indicates Time-in-Force of the original order.	N
	Capacity	Indicates on whose behalf the original order was entered. Allowed values: A = agency (default) P = principal R = riskless	N
	<CR/LF>	Line terminator. This is required even if TIF and Capacity are not present.	Y
5	'RE'	2-character keyword indicating that this line defines the order to which this Re-Instate refers.	Y
	Branch Office	1-4 character alpha field used to identify the branch office of the original order.	Y
	Branch Office Sequence #	1-4 character numeric field indicating the sequence number of the original order.	Y

Line	Field	Description	Req'd
	'/' date	A slash followed by the 6-character entry date of the order to be Re-Instated in MMDDYY format.	Y
	Order Reference ID	12-character Order Reference ID of the order to be Re-Instated. This identifier is returned to the Order Entry Firm via the NASDAQ market center Order Entry Acknowledgement Message.	Y
	<CR/LF>	Line terminator.	Y

5.1.7 Order Update

The standard message header (see section 2.1.1) is followed by:

New Order:

Line 2: **['POSS DUPE'] Side *sp* '.SM' <CR/LF>**
Line 3: **Quantity *sp* Secid *sp* Price** [*sp* Reserve [*sp* Refresh]] **<CR/LF>**
Line 3a: [DNI] [*sp* DNR] **<CR/LF>**

Optional Line if setting Price/Size warning override:

Line 4a: ['OVR'] **<CR/LF>**

Optional Line if updating Alternate Clearing Number:

Line 4b: ['CLR' *sp* clearing number] **<CR/LF>**

Order being Updated:

Line X: **'UPD' *sp* Order Reference ID <CR/LF>**
Line X1: **Quantity sp Secid sp Price [sp Reserve] <CR/LF>**

Message Format

Line	Field	Description	Req'd
0	Entry Originator	1-6 character field. Filled in by the Switch if not provided by the Order entry firm. Must hold the 4-character MMID of the firm represented by the transaction.	Y for firms acting as a Service bureau.
	<CR/LF>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office.	Y
	Branch Office Sequence #	1-4 character numeric sequence number field.	Y
	<CR/LF>	Line terminator.	Y
1a	Category	Identifies the message category. For NASDAQ market center messages, this always will be "ORDER".	Y
	Destination	Always contains "b" for NASDAQ market center messages.	Y
	<CR/LF>	Line terminator	Y
	Blank Line:		
	<CR/LF>	Required to terminate the Message Header.	Y
2	['POSS DUPE']	9-character field that indicates that the message may be a duplicate.	N

Line	Field	Description	Req'd
	Side	Alpha field indicating whether the order is a buy, sell or short sale. Allowed values: B = buy BUY = buy S = sell SL = sell SSHRT = short sale SSHRT EXEMPT = short sale exempt	Y
	'.SM'	Indicates that the message is in NASDAQ market center format and that the firm is prepared to receive Response Messages in NASDAQ market center format	Y
	<CR/LF>	Line terminator	Y
3	Quantity	1-6 character numeric field, in the range of 1-999999, representing the number of shares in the order. Can be expressed as a delta (an adjustment to the Quantity of the original order) by including a "+" or "-" in front of the numeric value. Exchange-listed securities can be only round lots and mixed lots.	Y
	SECID	1-14 character security identifier. For exchange-listed securities, this symbol must represent a CQS security and must be in CMS format. For example: OXY PRB or ROY PR.	Y
	Price	Must contain either: "MKT" to denote a market order, a 1-10 character decimal price, or "NBBO" if order is pegged.	Y
	Reserve	1-6 character field indicating the quantity of the Reserve Size. Must be in shares in either round lot multiples or mixed lots. This value can be expressed as a delta (an adjustment to the Reserve of the original order) by including a "+" or "-" in front of the numeric value.	N
	Refresh	1-6 character field indicating the quantity to which the order will be replenished from Reserve size. Must be in shares, in a round lot multiple. If Refresh is supplied, Reserve is not an optional field.	N
	<CR/LF>	Line terminator.	Y
3a	'DNI'	Do Not Increase flag. 3-character keyword used to indicate that the order quantity and number of shares should not be increased as the result of a stock split.	N
	'DNR'	Do Not Reduce flag. 3-character keyword used to indicate that the order price should not be reduced because of a cash dividend.	N
	<CR/LF>	Line terminator.	Y

Line	Field	Description	Req'd
4a	'OVR'	Keyword used to indicate that you are overriding Price and Size warnings for the order update. NASDAQ performs two levels of price validation. An initial validation will be performed that will result in a reject if the price exceeds an egregious level, even if this override parameter is set. A second level of validation is then performed. If the price fails this second level of price validation and this override parameter is included with the order, normal order processing continues. If the override parameter is not included, you will receive a reject with a warning.	N
	<***CR/LF***>	Line terminator if Optional Line 4a is present.	Y
4b	'CLR' *sp* clearing number	3-character keyword followed by a 4 character numeric clearing number.	N
	<***CR/LF***>	Line terminator if Optional Line 4b is present.	Y
X	'UPD' *sp* Order Reference ID	3-character keyword identifying that this message represents an order update, followed by the 12-character Order Reference ID of the order to be updated. This identifier is returned to the Order Entry Firm via the Order Entry Acknowledgement Message.	Y
	<***CR/LF***>	Line terminator.	Y
X1	Quantity	1-6 character numeric field, in the range of 1-999999, representing the number of shares in the order.	Y
	SECID	1-14 character security identifier. For exchange-listed securities, this symbol must represent a CQS security and must be in CMS format. For example: OXY PRB or ROY PR.	Y
	Price	Must contain either: "MKT" to denote a market order, a 1-10 character decimal price, or "NBBO" if order is pegged.	Y
	Reserve	1-6 character field indicating the quantity of the Reserve Size. Must be in shares in either round lot multiples or mixed lots.	N
	<***CR/LF***>	Line terminator.	

5.2 Output Message Formats

5.2.1 Order Entry Acknowledgement

The Order Entry Acknowledgement Message is a STATUS message.

SAMPLE MESSAGE

```
ADVS
<CR/LF>
STATUS  C170A
<CR/LF>
EZ 12 .SM
ACCEPTED 20030602 112451 0B3035Q000MF
UID DOMOIN111111
```

Optional MMID:

Line 0: [MMID] ***<CR/LF>***
Line 1: **Branch Office *sp* Branch Office Seq. # *sp* .SM *<CR/LF>***
Line 2: **'ACCEPTED' *sp* Date *sp* Time *sp* Order Reference Number *<CR/LF>***

Optional Lines:

[Line 4a:] [['UID' *sp* User Order ID] ***<CR/LF>***]

Message Format

Line	Field	Description	Req'd
0	MMID	May contain the 4-character MMID of the entering firm or the MMID of the firm a Service Bureau is acting for. If this option is utilized for multi-station lines it will equal the 4-character MMID associated with the station.	N
	<CR/LF>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office.	Y
	Branch Office Sequence #	1-4 character numeric sequence number field.	Y
	.SM	3-character keyword identifying this as a NASDAQ market center message.	Y
	<CR/LF>	Line terminator.	Y
2	ACCEPTED	Keyword indicating that this is an Order Acknowledgement Message.	Y
	Date	8-character date in "YYYYMMDD" format.	Y
	Time	6-character time in "hhmmss" format.	Y

Line	Field	Description	Req'd
	Order Reference Number	12-character reference number assigned to this order. This number should be used in any subsequent Cancel or Cancel/Replace messages sent by the order entry firm.	Y
	<CR/LF>	Line terminator.	Y
4a	UID	3-character keyword identifying the following field as being a User Order ID.	N
	User Order ID	1-20 character field User Order ID if the order entry firm supplied provided one in Line 4 of the order message.	N
	<CR/LF>	Line terminator.	Y if line 4a is present

5.2.2 Order Cancel Acknowledgement

The Cancel Order Acknowledgement Message is an ADMIN message.

SAMPLE MESSAGE

```
ADVS
<CR/LF>
ADMIN C170A
<CR/LF>
EZ 12 .SM
SSHRT EXEMPT 100 UBCD 11.99
UR OUT 100 LVS 100
081035Q000MP
```

Optional MMID:

Line 0: [MMID] ***<CR/LF>***
Line 1: **Branch Office *sp* Branch Office Seq. # *sp* .SM *<CR/LF>***
Line 2: **Side *sp* Quantity *sp* Secid *sp* Price *<CR/LF>***
Line 3: **'UR OUT' *sp* Quantity *sp*** 'LVS' ***sp*** Quantity ***<CR/LF>***
Line 4: **Order Reference Number *<CR/LF>***

Message Format

Line	Field	Description	Req'd
0	MMID	May contain the 4-character MMID of the entering firm or the MMID of the firm a Service Bureau is acting for. If this option is utilized for multi-station lines it will equal the 4-character MMID associated with the station.	N
	<CR/LF>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office.	Y
	Branch Office Sequence #	1-4 character sequence number field.	Y
	.SM	3-character keyword identifying this as a NASDAQ market center message.	Y
	<CR/LF>	Line terminator.	Y
2	Side	Field containing one of the following: B, BUY, S, SL, SSHRT or SSHRT EXEMPT.	Y
	Quantity	Number of shares in the canceled order.	Y
	SECID	Security ID of the security involved in the canceled order.	Y
	Price	Price of the canceled order.	Y
	<CR/LF>	Line terminator.	Y
3	UR OUT	6-character constant acknowledging that the order was canceled.	Y

Line	Field	Description	Req'd
	Quantity	Number of shares canceled.	Y
	LVS	3-character constant indicating that the Leaves Quantity is to follow.	N
	Quantity	Leaves quantity. This is the number of shares that could not be canceled because they were in delivery when the cancel occurred. Once the delivery completes, an execution report and/or another cancel UM will be sent for these shares based on the outcome of the delivery.	N
	<CR/LF>	Line terminator.	Y
4	Order Reference Number	12-character reference number assigned to the canceled order. If a quote or quote summary is canceled, this field will be "QT" for quote and "SQ" for summary quote.	Y
	<CR/LF>	Line terminator.	Y

If a cancel request is received while the order has shares in delivery, a user may receive two cancel UMs for a single cancel request. The first UM will indicate the number of shares that can be canceled immediately. If a portion of those shares can be canceled when the delivery is complete, a second cancel UM will be sent for that amount. If the full shares in delivery are canceled, a reject message will be returned echoing the original order. If no additional shares can be canceled, the user will receive an execution report.

5.2.3 Order Cancel/Replace Acknowledgement (Version One)

The Cancel/Replace Acknowledgement Message is an ADMIN message.

If the Cancel/Replace operation combined a complete order quantity replacement (i.e., not a quantity increment or quantity decrement), plus a Reserve decrement, two Cancel/Replace Acknowledgement Messages will be returned. The first will return information about the order canceled and order created. The second will return information about the Reserve decremented.

SAMPLE MESSAGE

```
ADVS
<CR/LF>
ADMIN C170A
<CR/LF>
CA 12 .SM
SL 900 UBCD 11.99 .RES 0 .REF 0
SL 800 UBCD 11.99
ADVS
0B3035Q000NC
UR OUT
```

Optional MMID:

Line 0: [MMID] ***<CR/LF>***
Line 1: **Branch Office *sp* Branch Office Seq. # *sp* .SM *<CR/LF>***

New Order Information:

Line 2: **Side *sp* Quantity *sp* Secid *sp* Price** [*sp* '.RES' *sp* Reserve] [*sp* '.REF' *sp* Refresh] [*sp* DNI] [*sp* DNR] ***<CR/LF>***

Canceled Order Information:

Line 3: **Side *sp* Quantity *sp* Secid *sp* Price** [*sp* DNI] [*sp* DNR] ***<CR/LF>***

Additional Information:

Line 4: **Order Entry Firm *<CR/LF>***
Line 5: **New Order Reference Number *<CR/LF>***
Line 6: **'UR OUT' or 'ACCEPTED' *<CR/LF>***

Message Format

Line	Field	Description	Req'd
0	MMID	May contain the 4-character MMID of the entering firm or the MMID of the firm a Service Bureau is acting for. If this option is utilized for multi-station lines it will equal the 4-character MMID associated with the station.	N
	<CR/LF>	Line terminator.	Y

Line	Field	Description	Req'd
1	Branch Office	1-4 character alpha field used to identify the firm's branch office. Branch Office will be the new Branch Office.	Y
	Branch Office Sequence #	1-4 character sequence number field. Branch Office Sequence # will be the new Branch Office Sequence #.	Y
	.SM	3-character keyword identifying this as a NASDAQ market center message.	Y
	<CR/LF>	Line terminator.	Y
2	Side	Field containing one of the following: B, BUY, S, SL, SSHRT or SSHRT EXEMPT.	Y
	Quantity	Open Quantity for the new or modified order. Increments: Total number of open shares after the increment. Absolute Cancel Replace: Number of shares in the new order. Decrement: Total number of open shares after the decrement. DNI or DNR only change: Total number of open shares for the order. Absolute changes to Reserve and/or Refresh only: Total number of open shares for the order.	Y
	SECID	Security ID of the new order.	Y
	Price	Price of the new order.	Y
	.RES Reserve	Reserve Quantity of the new or modified order (if provided).	Y
	.REF Refresh	Refresh Quantity of the new or modified order (if provided).	Y
	'DNI'	Do Not Increase flag. 3-character keyword used to indicate that the order quantity and number of shares should not be increased as the result of a stock split.	Y
	'DNR'	Do Not Reduce flag. 3-character keyword used to indicate that the order price should not be reduced because of a cash dividend.	Y
	<CR/LF>	Line terminator.	Y
3	Side	Field containing one of the following: B, BUY, S, SL, SSHRT or SSHRT EXEMPT.	Y

Line	Field	Description	Req'd
	Quantity	Number of shares in the canceled order. Since increments, DNI, DNR only changes and Absolute change to Refresh only, do not reduce shares, Quantity will be 0 for these transactions. For all other transactions, this is the number of shares canceled in the order (Reserve + Open QTY canceled).	Y
	SECID	Security ID of the canceled order.	Y
	Price	Price of the canceled order.	Y
	'DNI'	Optional Do Not Increase flag. 3-character keyword used to indicate that the order quantity and number of shares should not be increased as the result of a stock split.	Y
	'DNR'	Optional Do Not Reduce flag. 3-character keyword used to indicate that the order price should not be reduced because of a cash dividend.	Y
	<CR/LF>	Line terminator.	Y
4	Order Entry Firm	4-character ID of the firm that entered the order.	Y
	<CR/LF>	Line terminator.	Y
5	New Order Reference Number	12-character reference number assigned to the new or modified order. For an increment transaction, DNI, DNR changes and absolute changes to Refresh only and/or Reserve only, this will be their order reference number of the modified order.	Y
	<CR/LF>	Line terminator.	Y
6	UR OUT or ACCEPTED	6-character constant acknowledging that the old order has been completely canceled. 8-character constant acknowledging that the transaction has been accepted.	Y
	<CR/LF>	Line terminator.	Y

If an absolute cancel replace or a decrement is entered and the order has share in delivery, then the user will receive a cancel/replace acknowledgement indicating the number of shares that can be immediately canceled as well as the new order information (if applicable). If more shares can be canceled once the delivery is complete, a cancel UM will be sent with that amount. If no additional shares can be canceled, the user will receive an execution report.

5.2.4 Order Cancel/Replace Acknowledgement (Version Two)

You will receive an order acknowledgement (section 5.2.1) followed by a cancel acknowledgement (section 5.2.2) in response to your incoming cancel/replace (version two) message, as indicated in the sample below.

SAMPLE MESSAGE

```
NFSCK SOER0A 0006 S
AAAA 11 .SM
ACCEPTED 20041007 160105 0J904BN000MC
UID HITHERE
160105071004 NFSCK/0006
--------------------------------------------------------------------------------
-
NFSCK SOER0A 0007 A
AA 11 .SM
BUY 100000 AMZN 0.01
UR OUT 100700 LVS 0
0J904BN000MB
160105071004 NFSCK/0007
```

5.2.5 Order Mass Cancel Acknowledgement

SAMPLE MESSAGE

```
ADVS
<CR/LF>
ADMIN C170A
<CR/LF>
EZ 12 .SM
SSHRT EXEMPT 100 UBCD 11.99
UR OUT 100 LVS 100
081035Q000MP
```

Optional MMID:

Line 0: [MMID]***<CR/LF>***
Line 1: **Branch Office *sp* Branch Office Seq. # *sp* .SM *<CR/LF>***
Line 2: **Side *sp* Quantity *sp* Secid *sp* Price *<CR/LF>***
Line 3: **'UR OUT' *sp* Quantity *sp*** 'LVS' ***sp*** Quantity ***<CR/LF>***
Line 4: **Order Reference Number *<CR/LF>***

Message Format

Line	Field	Description	Req'd
0	MMID	May contain the 4-character MMID of the entering firm or the MMID of the firm a Service Bureau is acting for. If this option is utilized for multi-station lines it will equal the 4-character MMID associated with the station.	N
	<CR/LF>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office.	Y
	Branch Office Sequence #	1-4 character numeric sequence number field.	Y
	.SM	3-character keyword identifying this as a NASDAQ market center message.	Y
	<CR/LF>	Line terminator.	Y
2	Side	Field containing one of the following: B, BUY, S, SL, SSHRT or SSHRT EXEMPT.	Y
	Quantity	Number of shares in the canceled order.	Y
	SECID	Security ID of the security involved in the canceled order.	Y
	Price	Price of the canceled order.	Y
	<CR/LF>	Line terminator.	Y
3	UR OUT	6-character constant acknowledging that the order was canceled.	Y
	Quantity	Number of shares canceled.	Y

Line	Field	Description	Req'd
	LVS	3-character constant indicating that the Leaves Quantity is to follow.	N
	Quantity	Leaves quantity. This is the number of shares that could not be canceled because they were in delivery when the cancel occurred. Once the delivery completes, an execution report and/or another cancel UM will be sent for these shares based on the outcome of the delivery.	N
	<CR/LF>	Line terminator.	Y
4	Order Reference Number	12-character reference number assigned to the canceled order. If a quote or quote summary is canceled, this field will be "QT" for quote and "SQ" for summary quote.	Y
	<CR/LF>	Line terminator.	Y

5.2.6 Order Reinstate Acknowledgement

The Order Reinstate Message is a STATUS message. The Reinstatement Acknowledge Message has the same format as the Order Entry Acknowledgement Message, except that the Keyword "ACCEPTED" on Line 2 of the message is replaced with the keyword "REINSTATED".

Optional MMID:

Line 0: [MMID] ***<CR/LF>***
Line 1: **Branch Office *sp* Branch Office Seq. # *sp* .SM *<CR/LF>***
Line 2: **'REINSTATED' *sp* Date *sp* Time *sp* Order Reference Number *<CR/LF>***

Optional Lines:

[Line 4a:] [['UID' *sp* User Order ID] ***<CR/LF>***]

Message Format

Line	Field	Description	Req'd
0	MMID	May contain the 4-character MMID of the entering firm or the MMID of the firm a Service Bureau is acting for. If this option is utilized for multi-station lines it will equal the 4-character MMID associated with the station.	N
	<CR/LF>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office.	Y
	Branch Office Sequence #	1-4 character numeric sequence number field.	Y
	.SM	3-character keyword identifying this as a NASDAQ market center message.	Y
	<CR/LF>	Line terminator.	Y
2	REINSTATED	Keyword indicating that this is an Order Reinstatement Message.	Y
	Date	8-character date in YYYYMMDD format.	Y
	Time	6-character time in hhmmss format.	Y
	Order Reference Number	12-character reference number assigned to this order. This number should be used in any subsequent Cancel or Cancel/Replace messages sent by the order entry firm.	Y
	<CR/LF>	Line terminator.	Y
4a	UID	3-character keyword identifying the following field as being a User Order ID.	N

Line	Field	Description	Req'd
	User Order ID	1-20 character field User Order ID if the order entry firm supplied provided one in Line 4 of the order message.	N
	<CR/LF>	Line terminator.	Y if Line 4a is present

5.2.7 Order Update Acknowledgement

The Order Update Acknowledgement Message is an ADMIN message.

Optional MMID:

Line 0: [MMID] ***<CR/LF>***
Line 1: **Branch Office *sp* Branch Office Seq. # *sp* .SM *<CR/LF>***

Updated Order Information:

Line 2: **Side *sp* Quantity *sp* Secid *sp* Price** [*sp* '.RES' *sp* Reserve] [*sp* '.REF' *sp* Refresh] [*sp* DNI] [*sp* DNR] [*sp* 'CLR' *sp* Clearing Number] ***<CR/LF>***

Order Information Before Update:

Line 3: **Side *sp* Quantity *sp* Secid *sp* Price** [*sp* DNI] [*sp* DNR] [*sp* 'CLR' *sp* Clearing Number] ***<CR/LF>***

Additional Information:

Line 4: **Order Entry Firm *<CR/LF>***
Line 5: **Order Reference Number *<CR/LF>***
Line 6: **'UR OUT' or 'ACCEPTED' *<CR/LF>***

Message Format

Line	Field	Description	Req'd
0	MMID	May contain the 4-character MMID of the entering firm or the MMID of the firm a Service Bureau is acting for. If this option is utilized for multi-station lines it will equal the 4-character MMID associated with the station.	N
	<CR/LF>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the firm's branch office. Branch Office will be the new Branch Office.	Y
	Branch Office Sequence #	1-4 character sequence number field. Branch Office Sequence # will be the new Branch Office Sequence #.	Y
	.SM	3-character keyword identifying this as a NASDAQ market center message.	Y
	<CR/LF>	Line terminator.	Y
2	Side	Field containing one of the following: B, BUY, S, SL, SSHRT or SSHRT EXEMPT.	Y

Line	Field	Description	Req'd
	Quantity	Open Quantity for the modified order. Increments: Total number of open shares after the increment. Decrement: Total number of open shares after the decrement. DNI or DNR only change: Total number of open shares for the order. Absolute changes to Reserve and/or Refresh only: Total number of open shares for the order.	Y
	SECID	Security ID of the modified order.	Y
	Price	Price of the modified order.	Y
	.RES Reserve	Reserve Quantity of the modified order (if provided).	N
	.REF Refresh	Refresh Quantity of the modified order (if provided).	N
	'DNI'	Optional Do Not Increase flag. 3-character keyword used to indicate that the order quantity and number of shares should not be increased as the result of a stock split.	N
	'DNR'	Optional Do Not Reduce flag. 3-character keyword used to indicate that the order price should not be reduced because of a cash dividend.	N
	'CLR' *sp* clearing number	3-character keyword followed by a 1-4 character numeric clearing number.	N
	<CR/LF>	Line terminator.	Y
3	Side	Field containing one of the following: B, BUY, S, SL, SSHRT or SSHRT EXEMPT.	Y
	Quantity	Number of shares cancelled. Since increments, DNI, DNR only changes and Absolute change to Refresh only, do not reduce shares, Quantity will be 0 for these transactions. For all other transactions, this is the number of shares canceled in the order (Reserve + Open QTY canceled).	Y
	SECID	Security ID of the modified order.	Y
	Price	Price of the modified order.	Y
	'DNI'	Optional Do Not Increase flag. 3-character keyword used to indicate that the order quantity and number of shares should not be increased as the result of a stock split.	N
	'DNR'	Optional Do Not Reduce flag. 3-character keyword used to indicate that the order price should not be reduced because of a cash dividend.	N
	'CLR' *sp* clearing number	3-character keyword followed by a 1-4 character numeric clearing number.	N

Line	Field	Description	Req'd
	<CR/LF>	Line terminator.	Y
4	Order Entry Firm	4-character ID of the firm that entered the order.	Y
	<CR/LF>	Line terminator.	Y
5	Order Reference Number	12-character reference number assigned to the modified order.	Y
	<CR/LF>	Line terminator.	Y
6	UR OUT or ACCEPTED	6-character constant acknowledging that the order has been completely canceled. 8-character constant acknowledging that the transaction has been accepted.	Y
	<CR/LF>	Line terminator.	Y

If a decrement is entered and the order has shares in delivery, then the user will receive an Order Update acknowledgement indicating the number of shares that can be immediately canceled. If more shares can be canceled once the delivery is complete, a cancel UM will be sent with that amount. If no additional shares can be canceled, the user will receive an execution report.

5.2.8 Execution Reports

An order message that successfully passes the validation by the switch is forwarded to either the NASDAQ market center application for additional validation processing.

If an error is detected or the order cannot be automatically executed, the order entry firm will receive a reject message explaining why the order could not be executed. If the order is executed, the order entry firm shall receive an execution report notifying him of the market maker who executed the order, the number of shares executed and the execution price.

NASDAQ Operations may cancel (kill) a NASDAQ market center execution if both parties to the trade agree to the cancellation. Order Entry and Market Maker firms receiving execution reports via CTCI will receive execution kill reports via CTCI.

All execution reports, cancellation messages and reject messages will be forwarded to the CTCI order entry firm via the switch and will be contained in a switch output message envelope (described in Section 4.6 *Application Reject messages*). Execution Reports and Execution Kill Reports are REPORT messages.

A firm may elect to receive NASDAQ market center market maker execution reports via a CTCI message. Market makers electing to receive execution reports via CTCI will also receive cancellation messages via CTCI.

5.2.8.1 Order Entry Execution Report

Optional MMID:

Line 0: [MMID] ***<CR/LF>***

Body Text:

Line 1: Branch Office ***sp*** Branch Office Seq. # ***sp*** **.SM *<CR/LF>***
Line 2: **Execution Category *<CR/LF>***
Line 3: **Execution Quantity *sp* Secid *sp* Execution Price *<CR/LF>***
Line 4: **Original Price** [*sp* '.B'] ***<CR/LF>***
Line 4a: **Remaining Display Quantity** [*sp* Remaining Reserve Quantity]***<CR/LF>***

Optional Line if Price Improvement:

[Line 4b:] ['PI'] ***<CR/LF>***
Blank Line: ***<CR/LF>***
Line 5: **Executing Broker Clearing # *sp* MM Executed Against Size of Trade *sp* Execution Time** [*sp* '.'OEID] ***<CR/LF>***

Optional Line if Giveup on Opposite Side:

[Line 6:] [.MMID] ***<CR/LF>***
Line 7: **Order Reference Number** [*sp* **Execution Reference Number**] *sp* **Liquidity Indicator *<CR/LF>***

Optional Line if User Order ID:

[Line 8:] [User Order ID **<***CR/LF***>**]

Optional Line for exchange-listed securities:

[Line 9:] [Trade Through *sp* Commitment Identifier **<***CR/LF***>**]

Message Format

Line	Field	Description	Req'd
0	MMID	May contain the 4-character MMID of the entering firm or the MMID of the firm a Service Bureau is acting for. If this option is utilized for multi-station lines it will equal the 4-character MMID associated with the station.	N
	<CR/LF>	Line terminator.	Y
1	Branch Office	1-4 character alpha field used to identify the receiving firm's branch office.	N
	Branch Office Sequence #	1-4 character numeric sequence number.	N
	.SM	3-character keyword identifying this as a NASDAQ market center message.	Y
	<CR/LF>	Line terminator.	Y
2	Execution Category	This field identifies the type of execution. ALlowed values: BOT SLD SLD SHRT SLD SHRT EXEMPT	Y
	<CR/LF>	Line terminator.	Y
3	Quantity	1-6 character numeric field representing the number of shares.	Y
	SECID	1-14 character security identifier.	Y
	Execution Price	Execution Price in decimal format.	Y
	<CR/LF>	Line terminator.	Y
4	Original Price	If the original order contained "MKT" as the price, line 5 will contain "ON MKT". If the original order contained a price, line 5 will contain "ON (price) LMT" where (price) is the price entered in the original order. Pegged orders will also contain "ON (price) LMT."	Y
	.B	If the order was entered as a bunched order, the characters ".B" will follow the Original Price.	N
	<CR/LF>	Line terminator.	Y

Line	Field	Description	Req'd
4a	Remaining Display Quantity	Valid fields are "FILLS" or "LVS ######", where ###### represents shares remaining as a result of a partial execution. LVS quantity is the unexecuted display shares.	Y
	Remaining Reserve Quantity	A field containing the number shares remaining in Reserve as a result of a partial execution. This field is optional if Reserve = 0.	N
	<CR/LF>	Line terminator.	Y
4b	PI	2-character keyword used to indicate Price Improvement. Price improvement is not allowed for exchange-listed securities.	N
	<CR/LF>	Line terminator. If line 4b is present, then this field will be present also. If there is no price improvement, then this field will not be present.	Y
Blank	<CR/LF>		Y
5	Executing Broker Clearing #	4-character clearing number of the firm who clears for the order entry firm. If a give up firm was entered in the original order, this field shall be equal to the clearing number of the firm who clears for the give up firm. If a give up firm was not entered, the clearing number shall be equal to the firm who clears for the firm who entered the original order.	Y
	MM Executed Against	4-character MMID of the Market Maker or of the exchange ID who executed the trade. If the trade is marked as anonymous, the MMID will be reported as "SIZE".	Y
	Size of Trade	1-6 character field containing the actual number of shares of the execution.	Y
	Execution Time	Execution Time in HH:MM:SS format.	Y
	'.'OEID	4-character alpha identifier of the firm who entered the original order. This field will only appear if a give-up identifier was entered in the original order. If no give up firm was entered, this field shall be blank.	N
	<CR/LF>	Line terminator.	Y
6	'.'MMID	4-character alpha identifier of the give up firm on the opposite side. This line will appear only if a give-up identifier was entered on the matching order. If the trade is marked as anonymous, the give-up MMID will be suppressed. If a give up firm was not entered, this line will not appear in the message.	N
	<CR/LF>	Line terminator.	Y if Line 6 is present

Line	Field	Description	Req'd
7	Order Reference Number	12-character reference number assigned to this order. If the execution is for an order, this field will contain the 12-character order reference number. If the execution is for a quote or summary quote, this field will contain "QT" or "SQ," respectively."	Y
	Execution Ref. Number	6-character reference number assigned to this execution.	Y
	Liquidity Indicator	2-character identifier. Allowed values: LA = liquidity accessor LP = liquidity provider CA = closing cross liquidity accessor CP = closing cross liquidity provider OA = opening cross liquidity accessor OP = opening cross liquidity provider RA = routed accessor	Y
	<CR/LF>	Line terminator.	Y
8	User Order ID	Order ID supplied by the entering firm.	N
	<CR/LF>	Line terminator.	Y if line 8 is present
9	Trade Through	Identifies when an execution of a exchange-listed security is traded through another market center. Allowed values: Y N	N
	Commitment Identifier	5-character field for exchange-listed securities. This field is populated when an execution is effected with an ITS participant.	N
	<CR/LF>	Line terminator.	Y if line 9 is present

5.2.8.2 Order Entry Execution Kill Report

The Order Entry Execution Kill Report has the same format as the Order Entry Execution Report, with the addition of the keyword 'CXL' on Line 3 of the message.

Optional MMID:

Line 0: [MMID] ***<CR/LF>***

Body Text:

Line 1: Branch Office ***sp*** Branch Office Seq. # ***sp*** **.SM *<CR/LF>***
Line 2: **'CXL' *sp* Execution Category *<CR/LF>***
Line 3: **Execution Quantity *sp* Secid *sp* Execution Price *<CR/LF>***
Line 4: **Original Price** [*sp* '.B'] ***<CR/LF>***
Line 4a: **Remaining Display Quantity** [*sp* Remaining Reserve Quantity]***<CR/LF>***

Optional Line if Price Improvement:

[Line 4b:] [PI] ***<CR/LF>***
Blank Line: ***<CR/LF>***
Line 5: **Executing Broker Clearing # *sp* MM Executed Against Size of Trade *sp* Execution Time** [*sp* '.'OEID] ***<CR/LF>***

Optional Line if Giveup on Opposite Side:

[Line 6:] [.MMID] ***<CR/LF>***
Line 7: **Order Reference Number** [*sp* **Execution Reference Number**] *sp* **Liquidity Identifier*<CR/LF>***

Optional Line if User Order ID:

[Line 8:] [User Order ID] ***<CR/LF>***]

See the Field definitions in Section 5.2.8.1.

5.2.8.3 Market Maker Execution Report

Optional MMID:

Line 1: [MMID] ***<CR/LF>***

Body Text:

Line 2: Branch Office ***sp*** Branch Office Seq. # ***sp*** **.SM *<CR/LF>***
Line 2a: **'REPORT' *sp* MMID *<CR/LF>***
Line 3: **Execution Category *<CR/LF>***
Line 4: **Execution Quantity *sp* Secid *sp* Execution Price** [*sp* '.B'] ***<CR/LF>***
Line 4a: **'.'NNNNNN** [*sp* Remaining Reserve Quantity]***<CR/LF>***

Optional Line if Preferenced Order or Price Improvement

Line 4b: ':' P [*sp* PI]
Blank Line: ***<CR/LF>***
Line 5: **MM Clearing # *sp* OE Executing Broker Size of Trade *sp* Execution Time** [*sp* '.'OEID] ***<CR/LF>***
[Line 6:] **Order Reference Number [*sp* Execution Reference Number] *sp* Liquidity Identifier *<CR/LF>***

Optional Line for exchange-listed security trading:

[Line 7:] [Commitment Identifier ***<****CR/LF****>***]

Message Format

Line	Field	Description	Req'd
1	MMID	May contain the 4-character MMID of the entering firm or the MMID of the firm a Service Bureau is acting for. If this option is utilized for multi-station lines it will equal the 4-character MMID associated with the station.	N
	<CR/LF>	Line terminator.	Y
2	Branch Office	1-4 character alpha field used to identify the receiving firm's branch office. For quotes, this field will be blank.	N
	Branch Office Sequence #	1-4 character numeric sequence number. For quotes, this field will be blank.	N
	.SM	3-character keyword identifying this as a NASDAQ market center message.	Y
	<CR/LF>	Line terminator.	Y
2a	REPORT	Constant to identify the message as an execution report.	Y
	MMID	Market Maker identifier.	Y
	<CR/LF>	Line terminator.	Y

Line	Field	Description	Req'd
3	Execution Category	This field identifies the type of execution. Allowed values: BOT SLD SLD SHRT SLD SHRT EXEMPT	Y
	<CR/LF>	Line terminator.	Y
4	Quantity	1-6 character numeric field representing the number of shares.	Y
	SECID	1-14 character security identifier.	Y
	Execution Price	Execution Price in decimal format.	Y
	.B	If the original order was entered as a bunched order, a ".B" will follow the execution price.	N
	<CR/LF>	Line terminator.	Y
4a	'.'NNNNNN	Actual leaves size as a result of the execution. LVS quantity is the unexecuted display shares.	Y
	Remaining Reserve Quantity	Optional field containing the number shares remaining in Reserve as a result of a partial execution. This field will not be present if Reserve = 0.	N
	<CR/LF>	Line terminator.	Y
4b	:P	Line if order was preferenced. Colon followed by "P" signifying the order was preferenced to the market maker.	N
	PI	2-character keyword used to indicate Price Improvement.	N
	<CR/LF>	Line terminator.	Y
blank	<CR/LF>		Y
5	MM Clearing #	4-character clearing number of the firm who clears for the market maker.	Y
	OE Executing Broker	4-character ID of the OE executing broker. If a give up firm was entered in the original order, this field will be equal to the 4 alpha character identifier of the give up firm. If a give up was not entered in the original order, this field will be equal to the 4 alpha character identifier of the firm who entered the order. If the trade is marked as anonymous, the OE executing Broker will be reported as "SIZE".	Y
	Size of Trade	1-6 character field containing the actual number of shares of the execution.	Y
	Execution Time	Execution Time in HH:MM:SS format.	Y

Line	Field	Description	Req'd
	'.'OEID	4-character alpha identifier of the firm or the ID of the exchange who entered the original order. This field will only appear if a give-up identifier was entered in the original order. If the trade is marked as anonymous, the MMID will be suppressed. If no give up firm was entered, this field will be blank.	N
	<CR/LF>	Line terminator.	Y
6	Order Reference Number	12-character reference number assigned to this order. If the execution is for an order, this field will contain the 12-character order reference number. If the execution is for a quote or summary quote, this field will contain "QT" or "SQ", respectively.	Y
	Execution Reference Number	Six character reference number assigned to this order.	Y
	Liquidity Identifier	2-character identifier. Allowed values are: LA = liquidity accessor LP = liquidity provider CA = closing cross liquidity accessor CP = closing cross liquidity provider OA = opening cross liquidity accessor OP = opening cross liquidity provider RA = routed accessor	Y
	<CR/LF>	Line terminator.	Y
7	Commitment Identifier	5-character field for exchange-listed security trading. This field is populated when an execution is effected with an ITS participant.	N
	<CR/LF>	Line terminator.	Y if line 7 is present

In NASDAQ market center, quotes can execute against quotes. Quotes do not have branch sequence numbers. If Market Maker 1 has a quote on the book and Market Maker 2 enters a quote that executes against MM1's quote, then both firms will receive execution reports without branch sequence numbers because the opposite side is a quote. This will only occur with the market maker version of the execution reports.

5.2.8.4 Market Maker Execution Kill Report

The Market Maker Execution Kill Report has the same format as the Market Maker Execution Report, with the addition of the keyword "CXL" on Line 3 of the message.

Optional MMID:

Line 1: [MMID] ***<CR/LF>***

Body Text:

Line 2: Branch Office ***sp*** Branch Office Seq. # ***sp*** **.SM *<CR/LF>***
Line 2a: **'REPORT' *sp* MMID *<CR/LF>***
Line 3: **'CXL' *sp* Execution Category *<CR/LF>***
Line 4: **Execution Quantity *sp* Secid *sp* Execution Price** [*sp* '.B'] ***<CR/LF>***
Line 4a: **'.'NNNNNN** [*sp* Remaining Reserve Quantity] ***<CR/LF>***

Optional Line if Preferenced order or Price Improvement

Line 4b: ':' P [*sp* PI] ***<CR/LF>***
Blank Line: ***<CR/LF>***
Line 5: **MM Clearing # *sp* OE Executing Broker Size of Trade *sp* Execution Time** [*sp* '.'OEID] ***<CR/LF>***
[Line 6:] **Order Reference Number [*sp* Execution Reference Number] *sp* Liquidity Indicator *<CR/LF>***

See the Field definitions in Section 5.2.8.3.

5.2.9 Exposure Warning Messages

These messages are STATUS messages. The "Position Exhausted" warning message will be sent as a quasi Status message. The message type code in the header will be the same as a regular Status message but the constant "STATUS" on Line 2 will be replaced with:

SAMPLE MESSAGES

```
ADVS
<CR/LF>
STATUS C170A
<CR/LF>
xMSOS: ADVS UBCD -QUOTE UPDATE 0 12.01 <BEL> **** 13:05
```

Line 2: xMSOS: MMID SECID-POSITION EXHAUSTED **** HH:MM

System generated quote updates will receive the following message:

Line 2: xMSOS: MMID SECID -QUOTE UPDATE BIDPRICE ASKPRICE **** HH:MM

5.2.10 NASDAQ Market Center Reject Messages

Reject Messages are STATUS messages.

Message Text	Message Explanation
REJ – ATTRIBUTABLE ORDER NOT ALLOWED	Request is rejected because attributable orders are not accepted.
REJ - CANNOT CANCEL QUOTE	Quote cannot be canceled.
REJ - CANNOT CANCEL/REPLACE QUOTE	Quote cannot be cancel/replaced.
REJ – ECN DOES NOT CHANGE SEPARATE ACCESS FEE	Request is rejected because price improvement is selected and firm does not charge an access fee.
REJ – ERRORS	Request is rejected because an error or errors were detected.
REJ – FIRM NOT AUTHORIZED TO USE GIVE-UPS	Entering firm is not authorized to enter a giveup.
REJ – INSUFFICIENT QUANTITY	Request is rejected because quantity is 0 or less.
REJ – INTERNAL ERROR	An error occurred internal to the application.
REJ – INVALID CAPACITY	Request is rejected because capacity is invalid.
REJ - INVALID CLEARING NUMBER	Request is rejected because clearing number format is invalid.
REJ - INVALID CLEARING RELATIONSHIP	Request is rejected because cannot find alternate clearing relationship.
REJ - INVALID DATE	Request is rejected because Order Received Date format is invalid or Order Received Date format is in the future.
REJ - INVALID FORMAT	Message does not follow NASDAQ CTCI communications format.
REJ – INVALID GIVEUP ID	Request is rejected because giveup ID is invalid.
REJ – INVALID I1I2	Request is rejected because I1I2 is invalid.
REJ - INVALID REFERENCE NUMBER	Request is rejected because Reference Number is invalid.
REJ – INVALID RESERVE/REFRESH SIZE	Request is rejected because reserve size, refresh size or both is invalid.
REJ - INVALID SECURITY TYPE	Request is rejected because security type is invalid.
REJ - INVALID SHORT SALE CODE	Request is rejected because short sale code is invalid.

Message Text	Message Explanation
REJ – INVALID SIDE	Request is rejected because side code is invalid.
REJ – INVALID SIZE	Request is rejected because size is invalid.
REJ – INVALID TIF	Request is rejected because time-in-force is invalid.
REJ – MAX MMP EXCEEDED	Request is rejected because the maximum number of MMPs has been reached in this issue.
REJ – NO CHANGE TO DATA	Request is rejected because no change is detected in transaction.
REJ – NON-ATTRIBUTABLE ORDERS NOT ALLOWED	Request is rejected because nonattributable orders are not accepted.
REJ – NOT WITHIN ALLOWABLE TIME	Request is rejected because it is not within allowable time.
REJ – ORDER NOT CREATED	Cancel Replace Request is rejected and new order has not been created.
REJ – ORDER REJECTED DUE TO ANTI-INTERNALIZATION	Request is rejected due to anti-internalization.
REJ – SYSTEM SUSPENDED	Request is rejected because system is suspended.
REJ - ACTION REJECTED	Request is rejected.
REJ - AIQ NOT ALLOWED FOR PREFD ORDER	Anti Internalization Qualifier is not valid for a preferenced order.
REJ - ALT CLR NOT ALLOWED FOR GIVEUP	Alternate clearing number is not allowed for an order with a give up.
REJ - ATTRIBUTABLE INDICATOR REQUIRED	Attributable order ID is required on this order.
REJ - CAN'T REINSTATE - ORDER NOT PURGED	Cannot reinstate. Only purged orders may be reinstated.
REJ - CAN'T REINSTATE IOC AFTER MARKET OPEN	Cancel request is rejected because a system-generated order cannot be cancelled.
REJ - CAN'T REINSTATE ODD LOT WHILE IN EW	Odd lot order is rejected because it is not marketable.
REJ - CANNOT REINSTATE A QUOTE	Cannot reinstate. Quotes cannot be reinstated.
REJ - CAN'T FIND ORDER TO CANCEL	Order to cancel cannot be found.
REJ - CLOSED QUOTE	The quote in the security is currently closed.
REJ - DUPLICATE ENTRY	The first character of the Side field is B or S.

Message Text	Message Explanation
REJ - EXCEEDS TIER MAXIMUM*	Entered quantity is greater than maximum quantity allowed for this security.
REJ - EXCESSIVE OPEN ORDER QUANTITY	Cannot increment order because open size would exceed the Maximum Order Size.
REJ - FIRM NOT AUTHORIZED TO USE GIVEUPS	The firm is not authorized to use Give Up functionality.
REJ - GU FIRM NOT ACTIVE	The give-up firm is not in the GU table for the entering firm at execution time.
REJ - GU FIRM NOT AUTH	The give-up firm is not in the GU Table as authorized for the entering firm.
REJ - INVALID ACTION	An attempt to change the price is not within the Corporate Action time frame or An internal transaction code error has occurred.
REJ - INVALID AIQ INDICATOR	The Anti Internalization Qualifier on the order is not valid.
REJ - INVALID BRANCH ID	The branch office identifier is not 1-4 alpha characters.
REJ - INVALID BRANCH SEQ #	The branch office sequence number is not 1-4 numeric characters.
REJ - INVALID BUNCHED ID	Bunched indicator on the order is not valid.
REJ - INVALID CANCEL	Invalid format in the cancel portion of a Cancel or Cancel/Replace message.
REJ - INVALID DELTA UPDATE, NO RESERVE SIZE	Order rejected because delta update is not entered in a Round Lot multiple or not within Minimum/Maximum Reserve Amount
REJ - INVALID DNI/DNR	Invalid DNI or DNR indicator.
REJ - INVALID GIVEUP STATUS	The give-up firm is not in the GU table for the entering firm or not in an active state.
REJ - INVALID GU	An entry is made in the GU GUID field on Line 4B, and the entry is greater than four alpha characters or An entry is made in the GU GUID field on Line 4B, and the entry is alphanumeric.
REJ - INVALID IOC	The IOC flag on the order is not valid.
REJ - INVALID MMID*	The preferenced MMID is not in the SOES authorization table.

Message Text	Message Explanation
REJ - INVALID NON-ATTRIBUTABLE	The attributable indicator on the order is not valid.
REJ - INVALID ORD CATEGORY	Side field is not equal to "BUY", "B", "SL", "S", "SSHRT" or "SSHRT EXEMPT".
REJ - INVALID ORDER DESTINATION	Preferenced MPID is not in the MPID table.
REJ - INVALID OVERRIDE	Override indicator on order is invalid.
REJ - INVALID PRICE	The price field is not numeric or is not equal to "MKT" or The whole price is greater than 999999 or The price field, if not "MKT", is equal to zero.
REJ - INVALID PRICE FOR PREFERENCED ORDER	Request is rejected because preferenced MPID's display quote at the inside.
REJ - INVALID PRICE IMPROVEMENT	Order is rejected because price improvement indicator is invalid.
REJ - INVALID PRIORITY CODE	Order is rejected because priority code is invalid. Priority code must be T (price/time), E (modified price/time for ECNs) or Z (price/size/time).
REJ - INVALID QUANTITY	The quantity field is other than numeric in the range of 1-999999.
REJ - INVALID REFRESH SIZE	Refresh size field is invalid because it is greater than Reserve size, is not a round lot multiple, is not within Min/Max range, or Reserve is zero.
REJ - INVALID RESERVE SIZE	The reserve size is other than numeric, in the range of 1-999999, not within minimum and maximum reserve size parameters, or price is MKT.
REJ - INVALID SECID	The security symbol is other than 1-5 alpha characters.
REJ - INVALID SOES SEC	The security is not in the SuperSoes/SOES database.
REJ - INVALID TIME-IN-FORCE	Time-in-force field is invalid.
REJ - INVALID UPDATE, NO OPEN QTY	Request is rejected because order has no open quantity.
REJ - INVALID USER ID	Request is rejected because User Id is not valid.
REJ - ISSUE NOT UTP ELIGIBLE	Order is rejected because the issues are not eligible for UTP participation.
REJ - ISSUE NOT UTP ELIGIBLE	Order is rejected because the issue is not eligible for UTP orders.

Message Text	Message Explanation
REJ - ISSUE SET TO DELETE	Order is rejected because the issue is deleted.
REJ - LMT AWAY FROM MKT	Order returned due to Limit Price being 50% or greater away from the Inside.
REJ - MARKET CLOSED	The general close message on Level 1 has been received by SuperSoes/SOES. DAY, FOK, or MKT orders cannot be entered after market close.
REJ - MMID NOT AUTHORIZED FOR FUNCTION	Firm is not authorized for this action.
REJ - NO DISPLAY QUOTE FOR DESTINATION MPID	Request is rejected because preferenced MPID does not have an active quote.
REJ - NO GIVEUP/MMID LINK FOUND*	Entering firm has no established link with the giveup firm in the SuperSoes/SOES database.
REJ - NO QUOTE	The Inside Quotation is "no quote".
REJ - ODDLOT INVALID FOR PREFERENCE ORDER	Odd lot orders cannot be preferenced.
REJ - OE FIRM NOT AUTHORIZED*	At the time of entry, the OE Authorization status for the entering firm is not active.
REJ - OE NOT AUTHORIZED	Order is rejected because the firm is not authorized for order entry.
REJ - OE NOT AUTHORIZED FOR GIVEUP	Entering firm is not authorized to enter a giveup.
REJ - ONLY IOC SELL ORDERS ALLOWED IN QT MD	Order rejected because position is in quote mode that does not allow sell orders.
REJ - ORDER EXCEEDS TIER THRESHOLD SIZE	Order exceeds tier threshold size.
REJ - ORDER EX-DIVIDEND NOT REINSTATED	The order was returned because the security went ex-dividend and the ordering firm did not reinstate the order.
REJ - ORDER NO LONGER OPEN	Order you are trying to cancel is no longer open and therefore cannot be canceled.
REJ - ORDER NOT ACCEPTED, NO ATTRIBUTABLE ORDERS	Non attributable order is rejected because there are no attributable orders on the book for this issue/side.
REJ - ORDER NOT EXECUTABLE	Order is rejected because it is not executable.
REJ - ORDER NOT EXECUTED	Request is rejected because order has already been executed.
REJ - ORDER NOT FOUND	Request is rejected because order cannot be found.
REJ - ORDER TIMED OUT	Time in Force expired.

Message Text	Message Explanation
REJ - PREF MMID DUPLICATE	The preferenced MMID was entered twice; once on line 1A and once on line 4C.
REJ - PREFERENCED ORDERS MUST BE IOC	Invalid TIF for a preferenced order. Preferenced orders must be IOC.
REJ - PRICE EXCEEDS ALLOWABLE DEVIATION FROM INSIDE	Order price exceeds the allowable deviation from the inside price.
REJ - PRINCIPAL NOT ALLOWED	Request is rejected because principal orders are not allowed from this firm.
REJ - QUOTE NOT FOUND	Request is rejected because quote cannot be found.
REJ - REFRESH SIZE NOT ALLOWED	Order is rejected because either the MP type is not eligible for reserve processing.
REJ - REJECT DUE TO ISSUE STATUS	Order rejected because issue is in registration or deleted.
REJ - RESERVE ENTRY NOT ALLOWED	Order rejected because either MP type is not eligible for reserve processing, or field not entered in a Round Lot multiple or not with in. Minimum/Maximum Reserve Amount.
REJ - SECURITY IN QUOTE HALT	Request is rejected because issue is in a quote halt.
REJ - SECURITY IN TRADE HALT	Request is rejected because issue is in a trade halt.
REJ - SIZE OVER LIMIT	Request is rejected because order size, reserve or refresh size must be equal to or less than maximum limit.
REJ - SIZE SMALLER THAN DEFAULT	Request is rejected because size must be equal to or greater than default size.
REJ - SOES INP SUSP	The entry of orders into SuperSoes/SOES has been suspended.
REJ - SYND/PBID/PRES BID	The quote in this security is one sided.
REJ - SYSTEM UNAVAILABLE	The SuperSoes/SOES system is not currently receiving input.
REJ - TOO LATE TO CANCEL	Cancel request is rejected because it is too late to cancel the order due to execution, prior cancellation etc.
REJ - USER ORDER ID REQUIRED	User Order ID is required on the order.
REJ - VIOLATION SHORT SALE RULE	Order is rejected because it violates the short sale rule.
REJ –ORDERS NOT ACCEPTED, QUTOES ONLY	Request is rejected because orders are not accepted.

Message Text	Message Explanation
REJ -SHORT SALE NOT ALLOWED	Order is rejected because it violates the short sale rule.

Rejects marked with an asterisk (*) may be rejected at order entry time or after they have been accepted and placed on the Open order File.

6 Risk Management Input Messages

In addition to Trade Reporting and Trade Comparison/Clearing functions, NASDAQ also provides a Risk Management function to clearing firms. Risk Management enables clearing firms to monitor their correspondent (execution brokers) firms' buy and sell trading activities, set and reset buy/sell thresholds for individual correspondent, allow or inhibit Blockbuster and Sizable trades, suspend or restore or delete clearing relationships, reset Super Cap Marker for their correspondents, receive pre-alert, alert, and other Risk Management related broadcast messages, access a real time data base of correspondent trading information. Clearing firms can choose between the standard risk management functions or the enhanced functionality that allows a clearing firm to define limits based on the security market class (i.e. NNM, SC, OTCBB, CQS) and define blockbuster and sizable amounts. Clearing firms can elect to receive all their correspondents' trade messages. These Risk Management capabilities are provided through the CTCI as well as NASDAQ Workstation II.

In 2003, NASDAQ introduced enhancements to the Risk Management function. The enhancements allow the clearing firm to customize the settings the risk management limits based on each individual correspondent. NASDAQ has created two additional CTCI messages to support the Enhanced Risk Management Functions, Function J and TCAJ, which are similar to Function K and TCAK.

6.1.1 Risk Management Information

The following Risk Management information and capabilities are provided to clearing firms on-line by the trade reporting service. All CTCI UM messages are described in section **Error! Reference source not found.**, and their respective exhibits are referenced here.

(1) Buy/Sell Thresholds/SuperCaps
Clearing firms can assign Buy/Sell Thresholds/SuperCaps (limits) in dollar amount for each of their execution brokers or correspondents. Based on these clearing firms' assigned thresholds, NASDAQ will issue or disseminate various pre-alert and alert messages to the clearing firms and the trading community. Therefore, a clearing firm can manage its risks and liabilities through the assignment of these thresholds. A clearing firm can exempt an execution broker from the Risk Management process by assigning all 9's (unlimited credits) to these thresholds. Operations assigns all 9's to these thresholds for all self-clearing execution brokers.

(2) Buy/Sell Trade Amount
NASDAQ continuously calculates, accumulates, and compares the Buy/Sell Trade Amount against the clearing firm assigned Buy/Sell Thresholds for the respective execution broker as trades are entered into ACT.

(3) Buy/Sell Compared Amount
NASDAQ continuously calculates and accumulates the Buy/Sell Compared Amount for the respective execution broker as trades are locked-in (compared) in Trade Reporting. They are used to determine the Buy/Sell Super Cap Limits and the setting and broadcasting of the Super Cap Marker.

(4) Buy/Sell SuperCap Limits
The SuperCap limits have been combined with the trading thresholds. Please refer to bullet 1 for more information.

(5) SuperCap Marker

For a correspondent, when either it's Buy/Sell Compared Amount is exceeded its corresponding Buy/Sell Super Cap Limit, a Super Cap Marker pertaining to the correspondent will be broadcast to the entire trading community and the Marker ("*" next to its MMID) will be displayed on every security that the correspondent makes a market. In the system, this Marker will have a value of "C" during the current trade date. The clearing firm can reset this Marker by increase the specified correspondent's Buy/Sell SuperCap Limits using the CTCI "K" Function (section 6.1.2), Function J (section 6.1.4) or using the NWII Risk Management Scan. If the clearing firm does not reset the Marker during the current trading date, the Marker will carry into the next trading date with the value of "P". The clearing firm may delete the previous date Marker by update the field to "*". The Marker resetting event will be broadcasted to trading community by the same media as above.

(6) Risk Management State

A clearing firm may delete (by using the CTCI "K" or “J” Functions or the NWII Risk Management Scan Function by updating RMS Field to "D") a clearing relationship with anyone of its correspondents and cease its liability to clear that correspondent's trades. This deletion event will be broadcasted to the trading community through the TCPI message by setting the respective correspondent's RMI to "D" and a "MMID Clearing Delete" Workstation message (where MMID is the correspondent ID).

(7) Blockbuster Trade

A Blockbuster Trade (BBT) message (TCBT, section 6.2.3) will be sent to the specified executing correspondents and their clearing firms when a correspondent trade meets the BBT conditions. NASDAQ will hold (i.e., assign a "H" Status) the BBT from normal trade comparison processing for a pre-determined time period (currently set at 15 minutes) pending clearing firms' actions. Clearing firms may inhibit or allow (section 6.1.3) the BBT during this time period. When this time period is expired and the clearing firms have not taken actions, the BBT will be accepted as normal trade (i.e., assign an "U" or "O" Status and process accordingly). If the firm is using the enhanced functionality NASDAQ will use the default Blockbuster action (allow or inhibit) defined by the clearing firm after the 15 minute held period is over and the user has not taken action on the trade.

(8) Sizable Trade

A Sizable Trade message (TCST, section 6.2.4) will be sent to the specified executing correspondents and their clearing firms when a correspondent trade meets the Sizable Trade conditions. NASDAQ will hold (i.e., assign a "H" Status) the Sizable Trade from normal trade comparison processing for a pre-determined time period (currently set at 15 minutes) pending clearing firms' actions. Clearing firms may inhibit or allow (section 6.1.3) the Sizable Trade during this time period. When this time period is expired and the clearing firms have not taken actions, the Sizable Trade will be killed by NASDAQ (i.e., assign a "K" Status).

9) Net Amount Traded Pre-Alert Message

If a correspondent's Buy/Sell Net Amount Traded (NAT) is reaching 70% of the clearing firm assigned Buy/Sell SuperCap, a NAT Pre-Alert message (TTNP, section 6.2.5) will be sent to the specified executing correspondents and their clearing firms. This message will contain the trade that reached the Pre-Alert SuperCap Limit.

(10) Net Amount Traded Alert Message
If a correspondent's Buy/Sell Net Amount Traded (NAT) is reaching 100% of the clearing firm assigned Buy/Sell SuperCap, a NAT Alert message (TTNT, section 6.2.5) will be sent to the specified executing correspondents and their clearing firms. This message will contain the trade that reached the Alert SuperCap Limit.

(11) Net Amount Compared Pre-Alert Fallback Message
When a correspondent's Net Amount Compared (NAT) falls back to lower than the 70% of the clearing firm assigned Buy/Sell SuperCap due to trade cancellations or corrections, a NAT Pre-Alert Fallback message (TTFP, section 6.2.6) will be sent to the specified executing correspondents and their clearing firms. This message will contain the trade that caused the fallback of the Pre-Alert SuperCap Limit.

(12) Net Amount Traded Alert Fallback Message
When a correspondent's Buy/Sell Net Amount Compared (NAT) falls back to lower than 100% of the clearing firm assigned Buy/Sell SuperCap due to trade cancellations or corrections, a NAT Alert Fallback message (TTFB, section 6.2.6) will be sent to the specified executing correspondents and their clearing firms. This message will contain the trade that reached the Pre-Alert SuperCap Limit.

(13) Participant Indicators Message
In addition to the opening broadcast, a Participant Indicator message pertaining to a specific participant will be broadcast to the trading community if such participant's Super Cap Marker, Risk Management or clearing relationship state is changed during the trading date.

14) Correspondent Trade Messages Available To Clearing Firm
The following correspondent trade messages are available to clearing firms. To receive these correspondent trade messages, with the exception of TCBT and TCST that a clearing firm always receives, a clearing firm has to indicate its election to NASDAQ Operations to set up the Firm Profile record for such election. With these correspondent trade messages, it is possible for a clearing firm to build an image trade file for all its correspondents to meet its internal business requirements. In conjunction with the above Risk Management messages, a clearing firm also able to design a Risk Management System to meet its own Risk Management requirements.

Message Type (Exec. Broker)	Message Title	Message Type (Clr. Broker)
TTEN	Trade Entry	CTEN
TTAL	Alleged Trade	CTAL
TTUD	Trade Update	CTUD
TCLK	Locked-In Trade	CCLK
TCBK	Break Trade Notice	CCBK
TCER	Error Trade Notice	CCER
TCAN	Cancel Trade Notice	CCAN
TTNW	No/Was Trade Notice	CCNW
TCDE	Decline Trade	CCDE

Message Type (Exec. Broker)	Message Title	Message Type (Clr. Broker)
TCBT	Blockbuster Trade	CCBT, TCBT
TCST	Sizable Trade	CCST, TCST

The data content of the clearing firm messages is identical to that of the Executing Broker, except Memo and Reference Number fields will be spaced filled in the clearing firm messages. However, if the trade's origin is an external system, the mnemonic of that system will appear in the Reference Number field.

6.1.2 Risk Management Query and Update (Function K)

A clearing firm may enter this K Function message to query its correspondents' Risk Management information or update a correspondent's Buy/Sell Thresholds, reset the Super Cap Marker or change the RM State. A correspondent execution broker may use this message to query (only) its own risk management information. An acceptance of this message will result in a Risk Management Query/Update Response message (TCAK, refer to section 6.2.1) forwarded to the entering subscriber's CTCI.

The header Destination Code on Line 1A for this message must be ACTR.

Message Format

Field Names	Position	Format	Description
Function Code	1-1	X(1)	Function Code = K
Action Code	2-2	X(1)	Q = Query U = Update (for clearing firms only)
Clearing Broker	3-6	X(4)	Clearing firm ID.
Executing Broker	7-10	X(4)	Executing broker ID.
Buy-side Threshold	11-20	9(10)	For U = enter the clearing firm's assigned Buy Threshold in dollar value for the specified EXID. The entry is right-justified in the range of 0-9999999999 (unlimited). For Q = blank
Sell-side Threshold	21-30	9(10)	For U = enter the clearing firm's assigned Sell Threshold in dollar value for the specified EXID. The entry is right-justified in the range of 0-9999999999 (unlimited). For Q = blank
Super-Cap Marker	31-31	X(1)	For Q = blank For U = * for reset, or blank, "P" carried over from previous day.
Risk Management State	32-32	X(1)	For Q: blank For U: D = Delete A = Authorize/Activate clearing relation with EXID, correspondent firm cannot enter As-of T+2 to T+N trades (except self-clearing) Y = Authorize/Activate clearing relation with EXID, correspondent firm can enter As-of T+2 to T+N trades (except self-clearing) blank-no change

The CLID and EXID (CLID = EXID = self clearing) are required for query and update. For self-clearing execution brokers, there is no need to use this function because NASDAQ does not perform RM for them. For query, all other fields may leave blank filled.

The same day Marker (= "C") will be reset automatically if the respective Buy/Sell Thresholds are updated so that the related Super Cap Limits are no longer exceeded by the amount of compared trades on each side. If a marker is not caused to be reset on the day it was set, it carries over to the following business day, and it must then be reset by a clearing firm entry of " * " in the Super Cap Marker field. For an entry to be effective in resetting a marker that was carried over from a prior day, the reset must be entered at a time that the amount of compared trades is less than the respective Buy/Sell Super Cap Limits.

6.1.3 Clearing Firm Inhibit/Allow Blockbuster and Sizable Trade (Function I)

A clearing firm may inhibit or allow a Held Blockbuster (BBT) or Sizable trade via its CTCI facility by entering an I (inhibit) function message to the system within the Held Trade time period (currently set for 15 minutes). If the I function update action resulted in a change of the held trade status, an appropriate TCBT, CCBT, TCST, or CCST will be forwarded to the concerned execution brokers and clearing firms. This message will work the same way as the Workstation AI Function.

The header Destination Code on Line 1A for this message must be ACTB.

Message Format

Field Name	Position	Format	Description
Function Code	1-1	X(1)	Function Code = I
Reference Number	2-7	9(6)	Optional entry of clearing firm's reference number.
Control Number	8-17	X(10)	The system assigned control number of the BBT or Sizable trade.
Action Code	18-18	X(1)	Valid values: I = Inhibit A = Allow

6.1.4 Enhanced Risk Management Query and Update (Function J)

A clearing firm may enter this message to query a correspondent's Risk Management information or update the correspondent's Buy/Sell SuperCap, Blockbuster and Sizeable Amounts for the individual Mkt (Security Type) or ALL. The message is also used to reset the Super-Cap Marker or change the RM State. An execution broker may also use this message to query (only) its own Risk Management information. An acceptance of this message will result in a TTAJ Risk Management Query/Update Response message (TTAJ, section 6.2.2) to the entering subscriber's CTCI. Note: if multiple Markets have to be changed, a separate Function J Message is required for each market.

The header Destination Code on Line 1A for this message must be ACTR.

The CLID and EXID (CLID = EXID = self clearing) are required for query and update. For self-clearing execution brokers, there is no need to use this function because NASDAQ does not perform RM for them. For query, all other fields may leave blank filled.

The same day Marker (="C") will be reset automatically if the respective Buy/Sell Thresholds are updated so that the related Super Cap Limits are no longer exceeded by the amount of compared trades on each side. If a marker is not caused to be reset on the day it was set, it carries over to the following business day, and it must then be reset by a clearing firm entry of " * " in the Super Cap Marker field. For an entry to be effective in resetting a marker that was carried over from a prior day, the reset must be entered at a time that the amount of compared trades is less than the respective Buy/Sell Super Cap Limits.

Message Format

Field Names	Position	Format	Description
Function Code	1-1	X(1)	Function Code = J
Action Code	2-2	X(1)	Q = Query U = Update (for clearing firms only, not available to correspondent's query)
Clearing Broker	3-6	X(4)	Clearing firm ID.
Executing Broker	7-10	X(4)	Correspondent executing broker ID.
Market Type	11-11	X(1)	A clearing firm may set limits for the following market types: A = All N = NNM S = SmallCap O = OTCBB C = CQS All is an overall limit for a correspondent. Covers all clearing eligible securities. Required for each correspondent.
Super Cap Marker	12-12	X(1)	For update, enter the only allowable " * " to reset Marker = "P" carried over from previous day.

Field Names	Position	Format	Description
Risk Management State	32-32	X(1)	Blank = Query D = Delete clearing relation with EXID; A = Authorize/Activate clearing relation with EXID, correspondent firm cannot enter As-of T+2 to T+N trades (except self-clearing); Y = Authorize/Activate clearing relation with EXID, correspondent firm can enter As-of T+2 to T+N trades (except self-clearing)
Buy SuperCap			The clearing firm's assigned Buy Supercap/Threshold in dollar value for the specified EXID. The entry is right-justified in the range of 0-999999999999 (unlimited). blank = query
Sell SuperCap			The clearing firm's assigned Sell SuperCap/threshold in dollar value for the specified EXID. The entry is right-justified in the range of 0-999999999999 (unlimited). blank = query
Blockbuster Amount			Clearing firms may set a single trade dollar amount threshold for each of the market types. 0 – 999999999999 for this market type blank = query
Blockbuster Default Action			A clearing firm may define the default action to be taken on a held transaction after the 15-minute review period has ended without the clearing firm taking action on the trade. A = Allow trade I = Inhibit Trade
Sizable Amount			Clearing firms may set a single trade dollar amount threshold for each of the market types when the market has reached its SuperCap limit. 0 – 999999999999 for this market type blank = query
Sizable Default Action			A clearing firm may define the default action to be taken on a held transaction after the 15-minute review period has ended without the clearing firm taking action on the trade. A = Allow trade I = Inhibit Trade
Summarization Indicator		X(1)	Valid values: P = price point A = average price blank = none

Field Names	Position	Format	Description
Make Default			A clearing firm may use Function J to update limits for intraday use or for permanent limit update. N = the entered limits are for intraday use only and will not be carried to the next business day Y = the entered limits will be used as the default and will be carried to the next business day

6.2 Risk Management Output Messages

6.2.1 Risk Management Query Update Response (TCAK)

This message is transmitted to the executing broker and the corresponding clearing firm. The message includes the current or updated levels of the buy and sell side thresholds, amounts traded, Super-caps and compared amounts. Included as well, are the current status of the marker, the state of the clearing arrangement, and the date and time of the read-out.

Line 1: Other MMID cr lf
Line 2: TCAK cr lf
Line 3: (Action) (Clrg ID) (EXID) BT BAT BSC BCA ST SAT SSC SCA
(Marker)(State)(Date)(Time)

Message Format

Field Name	Position	Format	Description
Action Code	1-1	X(1)	Valid values: Action Codes: Q = Query U = Update
Clearing ID	2-5	X(4)	Clearing firm MMID
Executing MMID	6-9	X(4)	Correspondents MMID
Buy Threshold	10-19	9(10)	Buy side Threshold level entered by clearing firm
Buy Amount Traded	20-29	9(10)	Current dollar amount of reported Buy side trades of EXID
Buy Super-Cap	30-39	9(10)	
Buy Compared Amt	40-49	9(10)	Current dollar amount of compared Buy side trades of EXID
Sell Threshold	50-59	910)	Sell side Threshold level entered by clearing firm
Sell Amount Traded	60-69	9(10)	Current dollar amount of reported Sell side trades of EXID
Sell Super-Cap	70-79	9(10)	
Sell Compared Amt	80-89	9(10)	Current dollar amount of compared Sell side trades of EXID
Super-Cap Marker	90-90	X(1)	Current Status of Marker. Valid values: C = Marker set current day P = Marker set prior day, blank = no Marker set
State of Clearing	91-91	X(1)	State of Clearing arrangement. Valid values: A = Active no SuperCap Marker M = Active with SuperCap Marker D = Deleted

Field Name	Position	Format	Description
Date	92-97	9(6)	MMDDYY - current date
Time	98-103	9(6)	HHMMSS - current time of the record data

6.2.2 Enhanced Risk Management Query Update Response (TTAJ)

This message is transmitted to the executing broker and the corresponding clearing firm. For each accepted Risk Management query/update entry via the J Function, NASDAQ will respond with the current updated RM information for the specified EXID and forward to the requesting subscriber. One message will be sent for each security market type changed. The message will be generated when any of the modifiable fields below are changed.

Line 1: Other MMID cr lf
Line 2: TTAJ cr lf

Message Format

Field Name	Position	Format	Description
Action Code	1-1	X(1)	Valid values: Q = Query U = Update
Clearing ID	2-5	X(4)	Clearing firm MMID
Executing MMID	6-9	X(4)	Executing Firm's MPID
Risk Management State	91-91	X(1)	State of Clearing arrangement. Valid values: A= Active (No Super-Cap Marker) M= Active (With Super-Cap Marker) D = Deleted A = Authorize/Activate clearing relation with EXID, correspondent firm cannot enter As-of T+2 to T+N trades (except self-clearing) Y = Authorize/Activate clearing relation with EXID, correspondent firm can enter As-of T+2 to T+N trades (except self-clearing) blank-no change
Market Type	11-11	X(1)	A clearing firm may set limits for the following market types: A = All. This is an overall limit for a correspondent. Covers all clearing eligible securities. Required for each correspondent. N = Limit for NNM securities R = Limit for Small Cap securities P = OTCBB C = CQS S = SmallCap O = OTCBB
Buy Amount Traded	20-29	9(10)	Buy net amount traded by EXID
Buy Super-Cap	30-39	9(10)	Buy Super-Cap set by clearing firm

Field Name	Position	Format	Description
Buy Compared Amt	40-49	9(10)	Current dollar amount of compared Buy side trades of EXID
Sell Amount Traded	60-69	9(10)	Sell net amount traded by EXID
Sell Super-Cap	70-79	9(10)	
Sell Compared Amt	80-89	9(10)	Current dollar amount of compared Sell side trades of EXID.
Super-Cap Marker	90-90	X(1)	Current Status of Marker. Valid values: C = Marker set current day P = Marker set prior day, blank = no Marker set
Blockbuster Amount			0 – 999999999999 for this market type Clearing firms may set a single trade dollar amount threshold for each of the market types.
Blockbuster Default Action			A clearing firm may define the default action to be taken on a held transaction after the 15-minute review period has ended without the clearing firm taking action on the trade. Valid values: A = Allow. The trade is eligible for further trade reporting processing I = inhibit
Sizable Amount			0 – 999999999999 for this market type Clearing firms may set a single trade dollar amount threshold for each of the market types when the market has reached its SuperCap limit.
Sizable Default Action			A clearing firm may define the default action to be taken on a held transaction after the 15-minute review period has ended without the clearing firm taking action on the trade. Valid values: A = Allow. The trade is eligible for further trade reporting processing I = inhibit
Summarization Indicator		X(1)	Valid values: P = price point A = average price blank = none
Date			MMDDYY current date
Time			Time: HHMMSS

6.2.3 Blockbuster Trade Notification (TCBT)

A Blockbuster-Trade (BBT) is a correspondent trade with a Contract Amount equal to or greater than the Blockbuster Trade Dollar Volume set by NASD (currently set at one million dollars) or the blockbuster amount set by the clearing firms using NASDAQ's Enhanced Risk Management.

The following types of trades are not subject to blockbuster validation:

- Trades submitted with the .B or .SB modifier
- Trades submitted to NASDAQ by one of NASDAQ's execution systems
- QSR entries
- Trade Report Only transactions (no clearing)

Clearing firms will be notified of Blockbuster trades and the trades will not be eligible for matching until the clearing firm ALLOWS the trade or the 15-minute HELD period is over. If the correspondent's risk management capmark is on the trade will not be subjected to Blockbuster validation but will be subjected to SIZABLE validation.

Line 1: OTHER MMID cr lf
Line 2: TCBT cr lf
Line 3: (Ctrl Number)(Status)(ITI)(Time) cr lf

Message Format

Field Name	Position	Format	Description
Reference Number	1-6	9(6)	User assigned reference number
Control Number	7-16	X(10)	ACT System assigned number associated with the trade reporting record
Trade Status	17-17	X(1)	Valid values: H = Held (ACT automatically set "H" for 15 minutes pending clearing broker action) I = Inhibited (if clearing broker inhibited the BBT) U = Unanswered MM Entry (ACT set the MM entry to "U" after "H" period expired or if allowed by clearing firm) O = OE Entry trade (NASDAQ set the OE entry to "O" after "H" period expired or allowed by clearing firm) K = Killed
Inhibit Trade Indicator	18-18	X(1)	Valid values: B = Buy side Clearing firm inhibited the trade S = Sell side Clearing firm inhibited the trade blank = Neither clearing firm has inhibited the trade A = One or both Clearing firms have "allowed" the trade, as required.

Field Name	Position	Format	Description
Start Time	19-24	9(6)	HHMMSS Entry time of the BBT
Action Time	25-30	9(6)	HHMMSS Time of receipt of Action input or expiration of review period

6.2.4 Sizable Trade Notification (TCST)

A Sizable Trade is a correspondent trade with a Contract Amount equal to or greater than the Sizable Trade Dollar Volume set by NASD (currently set at two hundred thousand dollars) or by the sizable set by clearing firms using the NASDAQ's Enhanced Risk Management, and at least one of the executing broker has the Risk Management Capmark set.

Trades submitted to NASDAQ by one of NASDAQ's execution systems, QSR or Trade Report Only reports are not subject to Sizable validation. Clearing firms will be notified of Sizable trades and the trades will not be eligible for matching until the clearing firm ALLOWS the trade or the 15 minute HELD period is over. If the clearing firm does not ALLOW the trade within 15 minutes, NASDAQ will INHIBIT the transaction and it will not be eligible for NASDAQ's matching process. Clearing firms using NASDAQ's Enhanced Risk Management may set the default action to ALLOW for trades if no response has been received after the 15 minute HELD period.

Line 1: OTHER MMID cr lf
Line 2: TCST cr lf
Line 3: (Ref Number)(Ctrl Number)(Status)(I/A TI)(Time)(Action Time) cr lf

Message Format

Field Name	Position	Format	Description
Reference Number	1-1	9(6)	User assigned reference number
Control Number	2-11	X(10)	ACT System assigned number associated with the trade reporting record
Trade Status	12-12	X(1)	Valid values: H = Held (ACT automatically set "H" for 15 minutes pending clearing broker action) I = Inhibited (if clearing broker inhibited the Sizable transaction) K = Killed (ACT set the entry to "K" after "H" period expired) U = Unanswered MM entry O = OE Entry
Inhibit Trade Indicator	13-13	X(1)	Valid values: B = Buy side Clearing firm inhibited the trade S = Sell side Clearing firm inhibited the trade blank = Neither clearing firm has inhibited the trade A = One or both Clearing firms have "allowed" the trade, as required
Start Time	14-19	9(6)	HHMMSS Entry time of the Sizable Trade
Action Time	20-25	9(6)	HHMMSS-Time of receipt of Action input or review period expiration time

6.2.5 Net Trade Threshold Notification (TTNT/TTNP)

Denotes that the dollar value of this trade has contributed to the cumulative Net Amount Traded (NAT) such that the resulting NAT exceeds one or both of the trading party's (i.e. the executing broker as MM, OE, MMGU, or OEGU) Net Trade Threshold (NTT). This threshold alert message shall be forwarded to each party of the trade whose NTT is exceeded and to its clearing firm if any.

Line 1: OTHER MMID cr lf
Line 2: TTNT cr lf
Line 3: (NTL Control Number) (Trade Text) cr lf
Line 3A: (NTL Control Number) (Trade Text plus 14 character TMTR symbol) cr lf

The trade text field contains an echo of the MM original Session or As-Of Session and shall be formatted as a MM Trade Entry Message (section **Error! Reference source not found.**).

Note 1: If the trade was in a CQS security, the 5-character CQS symbol will appear in the "Trade Text"; the 14-character TMTR symbol will be appended at the end of the message.

Note 2: If a firm's NAT is caused to exceed its NTT as the result of an update to its NTT, ""EXID" NTT UPDATED" will appear instead of the above fields, i.e. NTL Indicator, Control Number and Trade Text; where EXID is the MMID of the firm whose NTT was updated. (Will not be included in the initial phase implementation.)

Note 3: A Pre-Alert Trade Threshold message for correspondents and their clearing firms (TTNP) which is identical to TTNT, will be transmitted if the dollar value of trades exceeds the trade threshold percent established by the NASD.

Message Format

Field Name	Position	Format	Description
NTL Indicator	1-1	X(1)	Contains "M" when the dollar amount of this trade contributes to the MM's Net Amount Traded (NAT) so as to exceed the MM's Net Trade Limit (NTL), or "O" when the dollar amount of this trade contributes to the OE's NAT so as to exceed the OE's NTL. M = exceeds MM Trade Limit O = exceeds OE Trade Limit
Control Number	2-11	X(10)	Control number that the system had assigned to the transaction when it was originally received from the subscriber. The control number is required to uniquely identify the trade reporting record in the trade reporting File Control Number associated with the trade reporting record
As-of	12-12	X(1)	Valid values: Y = As-of (T+1 to T+n) space = Original (T Day entry)

Field Name	Position	Format	Description
Security Class	13-13	X(1)	Valid U.S. market values: N = National Market P = Non-NASDAQ OTC R = SmallCap
B/S/X	14-14	X(1)	Valid values: B = Bought S = Sold X = Crossed Z = Dealer Sold Short E = Dealer Sold Short Exempt C = Selling Customer Sold Short K = Selling Customer sold Short Exempt P = QSR or AGU Contra side sold short A = QSR or AGU Contra sold short exempt
Reference Number	15-20	X(6)	User assigned reference number
Volume	21-28	9(8)	Number of shares
Symbol	29-33	X(5)	NASDAQ SECID
Price:			This field includes dollar, numerator, and trade digit.
Dollar	34-37	9(4)	N/A
Numerator	38-40	9(3)	N/A
Trade Digit	41-41	X(1)	A = Decimal Unit Price B = Contract Amount
Trade Modifier	42-44	X(3)	Valid values: SLD = Late B = Bunched SB = Late Bunched SNN = Seller's Option C = Cash ND = Next Day T = .T PRP = Prior Reference Price space = Regular W = Average Price TS = T appended by system SLS = SLD appended by system If submitting a Clearing only transaction for matching of ex-clearing transactions (i.e. C, ND or Snn) the field will be redefined to: Trade modifier: X(1), space-filled Days: 9(2), 00 for Cash, 01 for ND, 02, 04-60 for Snn, space for normal 3 day settlement

Field Name	Position	Format	Description
Price Override	45-45	X(1)	Valid values: O = Override space = No override
OEID	46-49	X(4)	MMID of the OE side
OEGU	50-53	X(4)	MMID of give up on the OE side
OE Clear Number	54-57	9(4)	space = Major clear Number
MMID	58-61	X(4)	Required MMID of the MM side
MMGU	62-65	X(4)	MMID of give up on the MM side
MM Clear Number	66-69	9(4)	space = Major clear Number
MM PA Indicator	70-70	X(1)	Valid values: P or space = Principal A = agent R = Riskless Principal
Trade Report Flag	71-71	X(1)	space = Report by rules N = No Report On StepOut transactions, if the Trade Report Flag is set to space NASDAQ will make adjustments to the Section 31 fee for the transaction, if the Trade Report Flag is set to "N" no Section 31 fee adjustment will take place, and the Clearing Flag must be set to space or G.
Clearing Flag	72-72	X(1)	Valid values: space = clear G = Automatic Give-up Lock-in N = no clear Q = QSR no clear Z = QSR clear L = Ext. Sys. Locked-in (The "L" value is output for NASDAQ ESI executions) On StepOut transactions, if the Trade Report Flag is set to space NASDAQ will make adjustments to the Section 31 fee for the transaction, if the Trade Report Flag is set to "N" no Section 31 fee adjustment will take place, and the Clearing Flag must be set to space or G.
Special Trade Indicator	73-73	X(1)	Valid values: Y = Special trade S = Step-out trade X = Special and Step-out trade space = Not Special Trade (none of the above) On StepOut transactions, if the Trade Report

Field Name	Position	Format	Description
			Flag is set to space NASDAQ will make adjustments to the Section 31 fee for the transaction, if the Trade Report Flag is set to "N" no Section 31 fee adjustment will take place, and the Clearing Flag must be set to space or G.
Execution Time	74-79	9(6)	Required Military HHMMSS E.T.
Memo	80-89	X(10)	User Memo
Decimal Price	90-101	9(12)	Unit Price = 999999V999999 for Trade Digit "A" Contract Price = 0999999999V99 for Trade Digit "B"
Contra Branch Sequence	102-109	X(8)	Required by OATS for MM QSR or AGU trade only.
Trade Date	110-117	9(8)	Must be entered for T+2 or older, mmddyyyy format.
Reversal Indicator	118-118	X(1)	Valid values: space = not a Reversal R = Reversal
OE P/A Indicator	119	X(1)	
Filler	120-125	X(6)	space-filled (reserve for future use)
Clearing Price	126-137	X(12)	Price inclusive of commissions. This field will be included only for firms who select this option in their firm profiles.
TMTR Symbol		X(14)	The TMTR Symbol if CQS security. This field is included in the message if the Security Class is either C or Z. If not, the field is not sent.

6.2.6 Net Trade Threshold Fallback Notification (TTFB/TTFP)

Denotes that the dollar value of this trade has contributed to the cumulative NAT such that the resulting NAT has fallen back below one or both of the party's NTT. This threshold fallback message shall be forwarded to the party(s) of the trade whose NAT was now within its NTT limit and to its clearing firm, if the firm is not self-clearing.

This message is identical to the TTNT message except the NTL Indicator will refer to the party whose NAT has Fallen Back below the NTT.

If a firm's NAT is caused to be less than its NTT as the result of an update to its NTT, "EXID NTT UPDATED" will appear instead of the above fields, i.e. NTL Indicator, Control Number and Trade Text; where EXID is the MMID of the firm whose NTT was updated.

A Pre-Alert Fall-back message for correspondents and their clearing firms (TTFP) that is identical to TTFB will be transmitted if the dollar value of trades exceeding the trade threshold percent established by the NASD decreases (due to a trade correction or threshold adjustment).

In the event that one trade exceeds the threshold percentage both the TTNP and the TTFB message will be transmitted.

Line 1: OTHER MMID cr lf
Line 2: TTFB cr lf
Line 3: (NTL Control Number) (Trade Text) cr lf
Line 3A: (NTL Control Number) (Trade Text, plus 14 character TMTR symbol) cr lf

Message Format

Field Name	Position	Format	Description
NTL Indicator	1-1	X(1)	Valid values: M = exceeds MM Trade Limit O = exceeds OE Trade Limit
Control Number	2-11	X(10)	Control Number associated with the trade reporting record
As-of	12-12	X(1)	Valid values: Y = As-of (T+1 to T+n) space = Original (T Day entry)
Security Class	13-13	X(1)	U. S. Market: Valid values: N = National Market P = Non-NASDAQ OTC R = SmallCap
B/S/X	14-14	X(1)	Valid values: B = Bought S = Sold X = Crossed Z = Dealer Sold Short

Field Name	Position	Format	Description
			E = Dealer Sold Short Exempt C = Selling Customer Sold Short K = Selling Customer Sold Short Exempt P = QSR or AGU Contra Side Sold short A = QSR or AGU Contra Sold Short exempt
Reference Number	15-20	X(6)	User assigned reference number
Volume	21-28	9(8)	Number of shares
Symbol	29-33	X(5)	NASDAQ SECID
Price:			This field includes dollar, numerator, and trade digit.
Dollar	34-37	9(4)	Dollar portion of the price
Numerator	38-40	9(3)	Numerator portion of the price
Trade Digit	41-41	X(1)	1 – 9 A = Decimal Unit Price B = Contract Amount
Trade Modifier	42-44	X(3)	Valid values: SLD = Late B = Bunched SB = Late Bunched SNN = Seller's Option C = Cash ND = Next Day T = .T PRP = Prior Reference Price space = Regular W = Average Price TS = T appended by system SLS = SLD appended by system If submitting a Clearing only transaction for matching of ex-clearing transactions (i.e. C, ND or Snn) the field will be redefined to: Trade modifier: X(1), space-filled Days: 9(2), 00 for Cash, 01 for ND, 02, 04-60 for Snn, space for normal 3-day settlement
Price Override	45-45	X(1)	Valid values: O = Override space = No override
OEID	46-49	X(4)	MMID of the OE side
OEGU	50-53	X(4)	MMID of give up on the OE side
OE Clear Number	54-57	9(4)	space = Major clear Number
MMID	58-61	X(4)	Required MMID of the MM side
MMGU	62-65	X(4)	MMID of give up on the MM side

Field Name	Position	Format	Description
MM Clear Number	66-69	9(4)	space = Major clear Number
MM PA Indicator	70-70	X(1)	Valid values: P or space = Principal A = agent R = Riskless Principal
Trade Report Flag	71-71	X(1)	Valid values: space = Report by rules N = No Report On StepOut transactions, if the Trade Report Flag is set to space NASDAQ will make adjustments to the Section 31 fee for the transaction, if the Trade Report Flag is set to "N" no Section 31 fee adjustment will take place, and the Clearing Flag must be set to space or G.
Clearing Flag	72-72	X(1)	Valid values: space = clear G = Automatic Give-up Lock-in N = no clear Q = QSR no clear Z = QSR clear L = Ext. Sys. Locked-in (The "L" value is output through TTEN/TTAL messages only for NASDAQ ESI executions.) On StepOut transactions, if the Trade Report Flag is set to space NASDAQ will make adjustments to the Section 31 fee for the transaction, if the Trade Report Flag is set to "N" no Section 31 fee adjustment will take place, and the Clearing Flag must be set to space or G.
Special Trade Indicator	73-73	X(1)	Valid values: Y = Special trade S = Step-out trade X = Special and Step-out trade space = Not Special Trade (none of the above) On StepOut transactions, if the Trade Report Flag is set to space NASDAQ will make adjustments to the Section 31 fee for the transaction, if the Trade Report Flag is set to "N" no Section 31 fee adjustment will take place, and the Clearing Flag must be set to space or G.
Execution Time	74-79	9(6)	Required HHMMSS
Memo	80-89	X(10)	User Memo

Field Name	Position	Format	Description
Decimal Price	90-101	9(12)	Unit Price = 999999V999999 for Trade Digit "A" Contract Price = 0999999999V99 for Trade Digit "B"
Contra Branch Sequence	102-109	X(8)	Required by OATS for MM QSR or AGU trade only.
Trade Date	110-117	9(8)	Must be entered for T+2 or older, mmddyyyy format.
Reversal Indicator	118-118	X(1)	Valid values: space = not a Reversal R = Reversal
OE P/A Indicator	119	X(1)	
Filler	120-125	X(6)	Space Filled (reserve for future use)
Clearing Price	126-137	X(12)	Price inclusive of commissions. This field will be included only for firms who select this option in their firm profiles.
TMTR Symbol		X(14)	The TMTR Symbol if CQS security. The TMTR Symbol field is included in the message if the Security Class is either C or Z. If not, the field is not sent.

6.3 Reject Message Format

If the application cannot process a message received from the subscriber, it will generate a Status Message for the originator that indicates why the message was rejected. The Status Message will be received by the originator as the text portion of a Standard Switch Output Message.

Line 1: MMID <*CR/LF*>
Line 2: 'STATUS' <*CR/LF*>
Line 3: 'REJ' - Reject Reason <*CR/LF*>
Line 4: BRID SQNO HH:MM:SS <*CR/LF*>
Line 5: Text of original input message <*CR/LF*>

Line	Field	Description	Req'd
1	Originator MMID	This is an optional line that may contain the 4-character MMID of the entering firm, or the MMID of the firm the Service Bureau is acting for. If this option is utilized for multi-station lines, it will equal the 4-character MMID associated with the station (select/poll address).	N
	CR LF	Required line delimiter.	Y
2	Category	This field identifies the message category and will contain "STATUS".	Y
	CR LF	Required line delimiter.	Y
3	'REJ'	This line contains ("REJ - Reason for Rejection"). See following table.	Y
	CR LF	Required line delimiter.	Y
4	Branch Office	1-8 character alphanumeric (A-Z, a-z, 0-9, embedded spaces, left justified, pad with trailing spaces)	Y
	CR LF	Required line delimiter.	Y
5		This line contains an echo of the original input message being rejected.	Y
	CR LF	Required line delimiter.	Y

Trade Reporting Reject Messages

Message	Description
ACT ENTRY SUSPENDED	NASDAQ has suspended trade reporting entry
ALL BLOCKBUSTER LESS THAN DEFAULT MKT BLOCKBUSTER	Enhanced risk mgmt message. The ALL category blockbuster amount cannot be less than the amount setup by NASDAQ.
ALL BLOCKBUSTER LESS THAN MKT BLOCKBUSTER	Enhanced risk mgmt message. The ALL category blockbuster amount cannot be less than any of the individual markets.
ALL SIZEABLE LESS THAN DEFAULT MKT SIZEABLE	Enhanced risk mgmt message. The ALL category sizable amount cannot be less than the amount setup by NASDAQ.
ALL SIZEABLE LESS THAN MKT SIZEABLE	Enhanced risk mgmt message. The ALL category sizable amount cannot be less than any of the individual markets.
ALL SUPERCAP LESS THAN DEFAULT MKT SUPERCAP	Enhanced risk mgmt message. The ALL category supercap amount cannot be less than the amount setup by NASDAQ.
ALL SUPERCAP LESS THAN MKT SUPERCAP	Enhanced risk mgmt message. The ALL category supercap amount cannot be less than any of the individual markets.
BLOCKBUSTER BELOW MINIMUM AMOUNT	Enhanced risk mgmt message. The ALL category blockbuster amount cannot be less than the amount setup by NASDAQ.
CANNOT CHANGE TO NON-MEDIA TRADE	A tape only transaction may not be changed to no tape no clearing.
CHANGE NOT ALLOWED - TRADE ALREADY SENT TO CLEARING	Transaction was already submitted as a locked in transaction to the DTCC for clearing.
CONTRA FIRM NOT AUTHORIZED	Contra firm entered is not active in ACT.
IMPROPER FORM T TRADE	The original MM trade has a ".T" trade modifier and it is not an NASDAQ National Market security or it is not entered within the Form T time (applicable to TRADE REPORTING 1 MM original trade entry).
INVALID AS-OF	The As-Of field entry is other than "Y".
INVALID B/S	The B/S field entry does not contain "B", "S", "X", Z, E, C, K, P A. OE may also receive it if submitting transaction with C, K, P or A.
INVALID BRANCH SEQ #	The branch sequence number field entry is not 1 to 4 alpha (from A-Z) characters, followed by a space and 1 to 4 digit numeric character (from 0-9) or Contra branch sequence number entered on a non-QSR or AGU transaction.
INVALID CLEARANCE ENTRY	The clearing field is entered and the entry is other than "N", "M" or "L"

Message	Description
INVALID CLEARING NUMBER	The MM CLEAR Number field or the OE CLEAR Number field is entered and either entry is other than four numeric characters, or the clearing number does not point to a clearing broker relating to the respective MM or OE in the Risk Management File.
INVALID CONTRA P/A	Contra P/A allowed only on locked in trades - QSR or AGU.
INVALID MM GIVE-UP	The MM GIVE-UP entry does not have a give-up relationship with the MM.
INVALID OE GIVE-UP	The OE GIVE-UP entered does not have a give-up relationship with the OE.
INVALID P/A	The PA field entry is other than "P", "A" or blank.
INVALID PRICE	1. The price field entry has non-numeric or non-decimal characters, or a zero price, or 2. The whole price is greater than 9999, or 3. The period is the first or last character of the price, or 4. The fraction or decimal portion of the price is other than numeric.
INVALID PRICE OVERRIDE	The price override entered by the subscriber is other than ".O".
INVALID QSR ENTRY	A relationship between a QSR trade entry firm and the contra side has not been established
INVALID SECURITY ID	The entered SECID is not in the trade reporting Security File, or the ACT AUTHORIZATION INDICATOR for the security is not set to "A".
INVALID TIME	The TIME entry is not in HH:MM:SS time format
INVALID TRADE MODIFIER	The entry is an original MM trade and the modifier other than ".SLD", ".B", ".SNN" (where "NN" is between 02, 04 and 60), ".C", ".ND" , ".T" , PRP, or ".SB" (applicable to TRADE REPORTING 1 MM entry).
INVALID TRADE REPORT OVERRIDE	The RPT field entry is other than "N", or if "N" is entered and the trade is not original MM trade, or if "N" is entered and a ".SNN", ".C", or ".ND" trade modifier is also entered.
INVALID TRADING DIGIT	Only A (decimal price) or B (contract amount) allowed.
INVALID VOLUME	The volume field is not in the range of 1 to 99,999,999.
MM NOT ACT AUTHORIZED	The I_1I_2 of the entering device points to the entering MM that is not trade reporting authorized in the trade reporting Authorization Table.
MMID REQUIRED	An MMID has not been entered.

Message	Description
NO CONTROL NUMBER	The control number parameter is required and must be 10 alphanumeric characters.
NO MODIFIER FOR AS-OF	The trade is an As-Of trade (i.e., "Y" is entered in the As-Of field) and a trade modifier was entered.
NO NO/WAS FOR AS-OF TRADES	The control number must point to a TRADE REPORTING 1 trade entry.
NO SECID CHANGE IN NO/WAS	A NO/WAS correction entry cannot be entered to change a SECID.
NOT AN OPEN TRADE	The control number must point to a market maker trade entry with status of U (Unanswered) or T (Trade report only) which is not the Was portion of a previous No/Was entry.
NOT CROSS TRADE	The entry in the B/S field is "X" and the OEID is not blank or equal to MMID.
NOT WITHIN ALLOWABLE TIME	1. The trade is entered before trade reporting ENTRY START time, or 2. The original MM trade is for an NASDAQ National Market issue and is not marked as a Form T trade when it is entered after NASDAQ National Market ENTRY END time (i.e., 4:10), or 3. The trade is for a NASDAQ SmallCap security and is entered after REGULAR ENTRY END time.
OE NOT ACT AUTHORIZED	The MMID entered in the OEID field is not authorized in the trade reporting Authorization Table.
OEID REQUIRED	The OEID was not entered for a trade that is subject to matching and clearing.
ONLY MM MAY CORRECT THIS TRADE	The function must be submitted by the firm designated as the MM side responsible party on a MM trade entry.
PRICE OUT OF OVERRIDE RANGE	A trade with the ".O" price override is beyond the bounds of the override range.
PRICE OUT OF RANGE	The PRICE fails the price range check.
TIME FIELD REQUIRED	A TIME entry has not been entered for an NASDAQ National Market trade marked ".SLD", ".SB" or ".T"; or a TIME entry has not been entered for an As-Of entry
TRADE DETAIL MUST BE UPDATED	At least one field on the trade line, excluding override, must be updated.

Other Trade Reporting Reject Messages

Message
ACCEPT
ACCEPT - CONTRA NOT READY
ACCEPT - NOT CLEARING ELIGIBLE
BLOCKBUSTER EXCEEDS DEFAULT MKT SUPERCAP Blank – may be used
BLOCKBUSTER EXCEEDS MKT SUPERCAP
BLOCKBUSTER LESS THAN SIZEABLE AMT
BRANCH SEQ# REQUIRED
ENTRY REQUIRED
EXCEEDS MAXIMUM CONTRACT AMOUNT
EXECUTION TIME GREATER THAN TRADE REPORT TIME
EXECUTION TIME REQUIRED
FIRM NOT AUTHORIZED
FIRM REQUIRED
INTERNAL ERROR
INVALID ACT ENTRY
INVALID AMOUNT
INVALID B/A INDICATOR
INVALID BLOCKBUSTER ACTION
INVALID BLOCKBUSTER AMOUNT
INVALID CAP MARK
INVALID CLEARING ACCT #
INVALID CONTRA BRANCH SEQUENCE
INVALID CONTRA PARTY
INVALID CONTROL NUMBER
INVALID DATE
INVALID ENTRY
INVALID FIRM
INVALID FORMAT
INVALID FUNCTION CODE
INVALID GIVEUP CODE
INVALID MAKE DEF VALUE
INVALID MARKET ID
INVALID MARKET TYPE
INVALID MEMO FIELD
INVALID OEID
INVALID PRICE/CONTRACT INDICATOR

Message
INVALID REFERENCE NUMBER
INVALID RISK MANAGEMENT
INVALID SECURITY CLASS
INVALID SELECTION
INVALID SHORT SALE INDICATOR
INVALID SIZEABLE ACTION
INVALID SIZEABLE AMOUNT
INVALID SPECIAL TRADE IND
INVALID STATUS ENTRY
INVALID SUPERCAP AMOUNT
INVALID SYSTEM DESIGNATION
INVALID TIME COMBINATION
INVALID TRADE REPORT FLAG
INVALID TRADE TYPE
INVALID TYPE
INVALID UPDATE
ISSUE NOT ACT AUTHORIZED
LAST SALE OK - CLEARING REJECT
LAST SALE OK - NOT CLEARING ELIGIBLE
LAST SALE OK -NO CLEARING
MEMO FIELD CANNOT BE CHANGED
MKT BLOCKBUSTER EXCEEDS ALL BLOCKBUSTER
MKT BLOCKBUSTER EXCEEDS DEFAULT ALL BLOCKBUSTER
MKT SIZEABLE EXCEEDS ALL SIZEABLE
MKT SIZEABLE EXCEEDS DEFAULT ALL SIZEABLE
MMCLR NOT ACT AUTHORIZED
MMGU NOT ACT AUTHORIZED
MOD SLD REQUIRED
MOD T NOT ALLOWED
MOD T REQUIRED
NO CLEARING RELATION WITH THIS EXECUTION BROKER
NO ENTRY DATA WAS UPDATED
NO MORE DATA FOR SELECTION CRITERIA
NO MORE RECORDS
NO MORE RECORDS FOR CLEARING FIRM
NO NEW DATA ENTERED
NO NO/WAS FOR MOD T TRADES

Message
NO NO/WAS FOR NON-MEDIA TRADES
NO OTHER UPDATE WHEN STATE IS D
NO RECORDS FOUND
NO STATISTICS AVAILABLE
NO UPDATES AFTER LAST SALE END TIME
NOT A REPORTABLE OPEN TRADE
NOT AUTHORIZED
OECLR NOT ACT AUTHORIZED
OEGU NOT ACT AUTHORIZED
POTENTIAL VOL ERR
POTENTIAL VOLUME ERROR
REVERSAL NOT ALLOWED
SIZEABLE BELOW MINIMUM AMOUNT
SIZEABLE EXCEEDS DEFAULT MKT BLOCKBUSTER AMT
SIZEABLE EXCEEDS MKT BLOCKBUSTER AMT
SUPER CAP STILL EXCEEDED
SUPERCAP EXCEEDS ALL VALUE
SUPERCAP EXCEEDS DEFAULT ALL VALUE
SUPERCAP LESS THAN BLOCKBUSTER
SUPERCAP LESS THAN DEFAULT BLOCKBUSTER
TERMINAL NOT AUTHORIZED
TRADE ALREADY CANCELLED, ERRORED, OR CORRECTED
TRADE ALREADY LOCKED-IN
TRADE STATUS INVALID FOR ACTION
TRDE HELD
UPDATE OF FIELD REQUIRED

6.4 End of Day Recaps

6.4.1 End of Day Participant Recap (TCRC)

Line 1: OTHER MMID cr lf
Line 2: TCRC cr lf
Line 3: (Number of Trades) Session (REF Number) (Control Number) Status (SOT) More cr lf

Session, Reference Number, Control Number, and Status will be repeated for each trade within a TCRC Message. Each TCRC Message will be a fixed length message, containing a maximum of five trades. The NUM Field will be in the range of 01-05. There will be as many TCRC Messages as necessary to accommodate and transmit all trades pertaining to a subscriber as MM and as OE. SOT and MORE fields will appear at the end of the message.

Message Format

Field Name	Position	Format	Description
NUM	1-2	9(2)	Indicates the number of trades contained in this message.
Session	3	9(1)	Blank = TRADE REPORTING 1 2 = TRADE REPORTING 2
Reference Number	4-9	X(6)	Contains the Reference Number, if any, that was last provided by the party to which this message is directed in connection with this entry's Control Number. The field will be space-filled if the Control Number refers to an entry by a contra party.
Control Number	10-19	X(10)	Control number that the system had assigned to the trade reporting transaction when it was originally received from the subscriber. The control number is required to uniquely identify the trade reporting record in the trade reporting file.
Status	20	X(1)	The status that the trade had at the time of its transmission to the subscriber. For further information on trade reporting Status Codes see 6.6. Valid values: A = Accepted (locked-in trade) B = Broken C = Canceled D = Declined E = Errored G = Trades forwarded as One-sided to DTCC I = A BBT or Sizeable trade that has been inhibited from being locked-in by a clearing firm K = Killed by NASDAQ at the end of inhibit period if it is a Sizable trade

Field Name	Position	Format	Description
			L = Automatic Locked-in trade (next business date after entry date) M = M1 Matched (locked-in trade) N = No/Was O = OE Entered trade R = Locked-in trades from other NASDAQ systems or QSR trades T = Trades entered for Ticker only U = Unanswered (MM entry) X = Trades purged from trade reporting file trade reporting at the end of inhibit period if it is a sizable trade
Sum of Trades	21-26	9(6)	Sum Of Trades: This six-digit field will contain the total number of trades in the recap until and including the last trade in this message.
MORE	27-27	X(1)	Contains a "+" when more messages are to be transmitted in the recap; a blank in this field will denote the end of recap. Trades will be presented in the following order: T+2..N, T+1, and T date. Note that this field will NOT be space filled for the last T+2 record.+ = more, blank = end of recap

6.4.2 Short Form Clearing Firm Recap (TCSR)

Line 1: OTHER MMID cr lf
Line 2: TCSR cr lf
Line 3: (NUM) Session (Origin) (Control Number) Status (Sum of Trades) More cr lf

Session, Origin, Control Number, and Status will be repeated for each trade within a TCSR Message. Each TCSR Message will be a fixed length message, containing a maximum of five trades. The NUM Field will be in the range of 01-05. There will be as many TCSR Messages as necessary to accommodate and transmit all trades pertaining to a subscriber as MM and as OE. SOT and MORE fields will appear at the end of the message.

Message Format

Field Name	Position	Format	Description
NUM	1-2	9(2)	Indicates the number of trades contained in this message.
Session	3-3	9(1)	Blank = TRADE REPORTING 1 2 = TRADE REPORTING 2
Origin	4-9	X(6)	External system identifier, if applicable, else blank.
Control Number	10-19	X(10)	Control Number associated with the trade reporting record originally received from the subscriber. The control number is required to uniquely identify the trade reporting record in the trade reporting file.
Status	20-20	X(1)	Status of original trade Contains the trade reporting Status that the trade had at the time of its transmission to the subscriber. For further information on trade reporting Status Codes see section 6.6. Valid values: U = Unanswered (MM entry) M = M1 Matched (locked-in trade) A = Accepted (locked-in trade) L = Automatic Locked-in trade (end of T+1) E = Errored N = No/Was C = Canceled B = Broken D = Declined O = OE Entered trade G = Trades forwarded as One-sided to DTCC R = Locked-in trades from other

Field Name	Position	Format	Description
			NASDAQ systems or QSR trades T = Trades entered for Ticker only X = Trades purged from trade reporting file I = Inhibited from being locked-in by a clearing firm H = Held pending expiration of inhibit period K = Killed by the clearing broker if it is a BBT or killed by trade reporting at the end of inhibit period if it is a sizable trade
Sum of Trades	21-26	9(6)	Contains the total number of trades in the recap until and including the last trade in this message.
MORE	27-27	X(1)	Contains a "+" when more messages are to be transmitted in the recap; a blank in this field will denote the end of recap. Trades will be presented in the following order: T+2..N, T+1, and T date. Note that this field will not be space filled for the last T+2 record. + = more blank = end of recap

6.4.3 Clearing Firm Recap of Trades (TTFR)

Denotes an End of Day recap sent to Clearing Firms. This recap will contain the trade information and EOD status for each trade of each of the Clearing Firm's correspondents.

Line 1: MMID cr lf (Clearing Firms ID)
Line 2: TTFR (Echo Browse request parameters) cr lf
Line 3: (S) (SEC CLS) (As/Of)(SPEC) Trade Text M cr lf

The Trade Text includes all the trade detail including: Execution Broker (Correspondent of the clearing agent), B/S Indicator, trade reporting Control Number, Volume, SECID, Fractional Price, Contra Party (executing broker), Contra Clearing Number, Branch-Sequence number, Execution Time, Decimal Price, Contra Branch Sequence, Trade Date, Reversal Indicator, Filler.

In the case a trade was a CQS security (i.e. STAT field = F and/or SEC CLS Field = C), the message will also contain the 14 character TMTR symbol, as well as the Status, Control Number and Volume of the Split trade, if any. In the case when STAT = F and/or SEC CLS = C, if any of these fields are not applicable, they will be space filled.

Message Format

Field Name	Position	Format	Description
Status	1-1	X(1)	The end-of-day status of the trade. Valid values: A = Accepted (locked-in trade) B = Broken C = Canceled D = Declined E = Errored G = Trades forwarded as One-sided to DTCC I = A BBT or Sizeable trade that has been inhibited from being locked-in by a clearing firm K = Killed by NASDAQ at the end of inhibit period if it is a Sizable trade L = Automatic Locked-in trade (next business date after entry date) M = M1 Matched (locked-in trade) N = No/Was O = OE Entered trade R = Locked-in trades from other NASDAQ systems or QSR trades T = Trades entered for Ticker only U = Unanswered (MM entry) X = Trades purged from trade reporting file

Field Name	Position	Format	Description
Security Class	2-2	X(1)	N = National Market R = SmallCap NASDAQ C = CQS P = OTC T = TARS/DTCC Reconciliation Symbol
As-Of Flag	3-3	X(1)	blank = T day Y = As-of Trade (T = T+2 to T+n) R = Reversal
Special Trade Indictor	4-4	X(1)	Non-CNS settlement trade Y = special (non-CNS settlement) S = step-out trade X = special and step-out (non-CNS settlement) F = fee transfer for a trade that occurred on NASDAQ O = fee transfer for a trade that occurred off NASDAQ"b" = none of the above When this field value is S or X, then: If the Trade Report Flag is set to space, NASDAQ will make adjustments to the Section 31 fee for the transaction. If the Trade Report Flag is set to "N" no Section 31 fee adjustment will take place. The Clearing Flag must be set to space or G.
Executing Broker MMID	5-8	X(4)	MMID of execution broker
Buy/Sell Code	9-9	X(1)	Buy/Sell pertaining to Executing Broker MMID
Control Number	10-19	X(10)	ACT-assigned transaction number
Volume	20-27	9(8)	Number of shares
Symbol	28-32	X(5)	NASDAQ SECID
Price:			This field includes dollar, numerator, and trade digit. For Trading Digit = A or B, the Trade Decimal Price Field is included in the message, the dollar and numerator fields are blank-filled.
Dollar	33-36	9(4)	
Numerator	37-39	9(3)	
Trade Digit	40-40	X(1)	A = Decimal Unit Price B = Contract Amount For Trading Digit = A or B, the Trade Decimal Price Field is included in the message, the dollar and numerator fields in the price field are blank-filled.

Field Name	Position	Format	Description
Contra MMID	41-44	X(4)	MMID of the Contra Execution Broker
Contra Clear Number	45-48	9(4)	Clear Number of Contra
Branch Sequence	49-56	X(8)	The Branch Sequence Number will be formatted as in the trade entry: 1 -8 Alphanumeric (0 - 9, A - Z, a - z, and space).
Execution Time	57-62	X(6)	Execution Time
Contra Branch Sequence	63-70	X(8)	Required by OATS for MM QSR or AGU trade only.
Trade Date	71-78	9(8)	Must be entered for T+2 or older, mmddyyyy format.
Reversal Indicator	79-79	X(1)	∅ = not a Reversal R = Reversal
Filler	80-86	X(7)	Space-filled (reserve for future use)
TMTR Symbol		X(14)	TMTR Symbol if CQS issue. This field is included in the message only if the Security Class is C or Z.
Split Trade Status		X(1)	S = Split Trade This and the following two fields are sent when the trade is a split trade.
Split Trade control Number		X(10)	Control Number associated with Split Trade
Split Trade Volume		9(8)	Volume of Split Trade
Trade Decimal Price		9(12)	Unit Price = 999999V999999 for Trade Digit "A" Contract Price = 0999999999V99 for Trade Digit "B" For Trading Digit = A or B, the Trade Decimal Price Field is included in the message, the dollar and numerator fields in the price field are blank-filled.
More	Last	X(1)	A "+" character will appear when more messages in the recap are forthcoming. If it is the end of the recap this field will be space filled. Trades will be presented in the following order: T+2..N, T+1, and T date. Note that this field will not be space-filled for the last T+2 record. + = more blank = end of recap

6.5 Short Sale Reporting

Firms are obligated to include an indication of a short sale transaction as part of their trade entry. In those cases where a participant represents the short sale side but does not make a trade report entry, such an indication may be made via a Browse Accept or Browse Update entry.

Firms affecting a short sale transaction are able to indicate it as part of an MM Function V, an OE Function W, or a No/Was Function X message.

The CTCI accept entry message will not be available for the OE side to indicate a short sale by the OE firm. The OE may use the Trade Scan in the NWII, Weblink, or Trade Reporting Workstation to ACCEPT SHORT or ACCEPT EXEMPT.

The short sale and short sale exempt information is encoded in the B/S/X field of the V, W, and X input functions and the TTEN, TTAL, and TTNW output response messages. The existing side codes for buy, sell, and cross continue to apply to all entries for trades that do not involve short sales. To report a short sale transaction using CTCI, subscribers should use one of the following appropriate side codes:

Z = Sold Short
E = Sold Short Exempt
C = Cross Short (Reporting MM Bought or Crossed, Customer Sold Short)
K = Cross Short Exempt (Reporting MM Bought or Crossed, Customer Sold Short Exempt)
P = Reporting MM Bought - OE Sold Short (QSR or AGU trade only)
A = Reporting MM Bought - OE Sold Short Exempt (QSR or AGU trade only)

These codes are not applicable when reporting via NWII, Weblink, or Trade Reporting Workstation.

Since a short sale is proprietary information, it will be returned to the submitting firm only, unless the report is QSR locked in entry. QSR reporting the QSR firm (acting as MM & Buyer) will receive a TTEN and the contra OE short seller will receive a TTAL that contains the short sale side code.

For a NASDAQ market center trade, the "P" or "A" side code is automatically entered into NASDAQ when the Order Entry side is being executed as a short seller. It will, therefore, be included as the side code in a TTAL (alleged trade) message to the OE/contra side, while the standard buy side code is included in the TTEN acknowledgment message to the MM side. The following table summarizes the input and output Short Sales Side Codes information that is required for CTCI trade reports.

CTCI Short Sales I/O Side Codes

Entering Firm Perspective	Input			Output			
	"V"	"W"	"X"	TTEN	TTAL	TTNW MM	TTNW OE
MM Sold Short	Z	n/a	Z	Z	S	Z	S
MM Sold Short Exempt	E	n/a	E	E	S	E	S
OE Sold Short	n/a	Z	n/a	Z	S	n/a	n/a
OE Sold Short Exempt	n/a	E	n/a	E	S	n/a	n/a
MM Buy/Cross – Customer Sold Short	C	n/a	C	C	n/a	C	n/a
MM Buy/Cross – Customer Sold Short Exempt	K	n/a	K	K	n/a	K	n/a
MM Buy - OE Sold Short	n/a	n/a	n/a	B	P	n/a	n/a
MM Buy – OE Sold Short Exempt	n/a	n/a	n/a	B	P	n/a	n/a
MM Buy - OE Sold Short (QSR, AGU)	P	n/a	P	P	P	P	P
MM Buy - OE Sold Short Exempt (QSR, AGU)	A	n/a	A	A	A	A	A

6.6 Trade Status Tables

The Control Number, used to identify the trade throughout the trade reporting processing cycles, and Trade Status, used to identify the processing state of the trade, are two important elements in trade reporting.

The two tables on the following pages explain and summarize the processing logic that NASDAQ applies to a trade in the TRADE REPORTING 1 and TRADE REPORTING 2 cycles and the resolutions of the trade at the end of that cycle.

These two tables are read in the following ways:

- On the top of the column is the starting Status of a trade.
- On the left of the row is the process applied to the trade and its resulting Status (equal to process name).
- The intersection between a column and a row is the one that (identified by one character, refer to Note 1 in the table) initiates or triggers the process.
- On the right-most two columns are the clearing or "Go To TRADE REPORTING 2" (applicable to TRADE REPORTING 1 Trade Status Table) resolutions of the trade if it stays on its resulting Status.

TRADE REPORTING 1 STARTING STATUS

	ACTION	UNAN (U)	OE ENT (O)	M1 MATCH (M)	ACCEPT (A)	DECLINE (D)	+DECLINE (D)	BROKEN (B)	ERROR (E)	CANCEL	NO/WAS (N)	GONE (G)	EXT LOCK (R)	TRADE REPORT (T)	CLEARING HELD (H)	FIRM ENTERED INHIBIT (I)	FIRM ENTERED KILLED (K)	CLEARING	GO TO TR 2
R	UNAN													M	A(7),C			N	Y(6)
E	OE ENTRY														A(7),C			N	Y
S	M1 MATCH	A	A															L	N
L	ACCEPT	O				O												L	N
T	DECLINE	O																N	N
	+DECLINE		M															N	N
	BROKEN			M/O	M/O								E					N	N
S	ERROR	M				M								M				N	N
T	CANCEL	M	O			M							E	M				N	N
A	NO	M(2)												M(2)				N	N
T	GONE	A	A															O	N
U	EXT LOCK																	L	N
S	TRADE RPT																	N	N
	HELD																	N	N
	INHIBIT														C			N	N
	KILLED														A(8),C			N	N

NOTE 1: Except for the TRADE REPORTING 2 and clearing column, the table shows the permissible changes from Starting Status (across the top) to Result Status (along the left) where: "O" = OE Action, "M" = MM action, "M/O" = MM and OE action, "A" = trade reporting system action, "E" = external system action and "C" = clearing firm action.

NOTE 2: A MM original trade in "U", "R", and "T" statuses can be changed into a "N/U" "N/R", or "N/T" pair of No/Was trades by the MM via the trade reporting Correction by entering a "No/Was " transaction, but cannot be further changed.

NOTE 3: "D" = OE declined MM entered trade, and "D+" = MM declined OE entered trade. Both kinds of declined trades have trades have the "D" status in the trade reporting file. The "+" is for description purpose only.

NOTE 4: Clearing (submission to DTCC at the end of trade reporting I): L = locked-in, N = no submission, O = one-sided submission to clearing. These clearing statuses do not apply to trades that have trade modifier "C", "ND" or "SNN", or overridden by the Clearing Flag (i.e. CLR set to "N" or "M"), these trades will not be forwarded to clearing regardless of their trade statuses. Locked-in trades will be forwarded to DTCC at the end of trade reporting I (i.e. T-day)

NOTE 5: Only "U" and "O" trades (i.e. open trades) will be forwarded to trade reporting II for further trade reconciliation processing as shown by the "GO TO trade reporting II" column Except for locked-in and open trades, all other trades (i.e. declined, OE declined, broken, error, cancel, No) are purged from the trade reconciliation cycle at the end of trade reporting I.

NOTE 6: An unanswered trade or one with "C", "ND", or "SNN" trade modifier will not be forwarded to trade reporting II. These trades and "T" trades will be processed for trade reporting only.

NOTE 7: A Blockbuster Trade will become an Unanswered or OE Entered trade after a 15-minute period.

NOTE 8: A Sizeable Trade will be killed after the 15-minute period.

TRADE REPORTING 2 STARTING STATUS

PROCESS	UNAN (U)	OE ENT (O)	M1 MATCH (M)	ACCEPT (A)	DECLINE (D)	+DECLINE (D)	BROKEN (B)	ERROR (E)	CANCEL	AUTO LOCK (L)	GONE (G)	EXT LOCK (R)	SPLIT LOCK (S)	TRADE REPORT (T)	PURGE (X)	CLEARING HELD (H)	FIRM INHIBIT (I)	ENTERED KILLED (K)	CLEARING
R UNAN														M		A(7),C			L
E OE ENT																A(7),C			L
S M1 MATCH	A	A																	L (O), N (A)
L ACCEPT	O				O														L
T DECLINE	O																		N
+DECLINE		M																	N
BROKEN			M/O	M/O								E							N
S ERROR	M				M									M					N
T CANCEL	M	O			M							E		M					N
A AUTO LOCK	A	A																	L
T GONE	A	A																	O
U EXT LOCK																			L
S TRADE RPT																			N
SPLIT	A	A																	L (O), N
PURGE	A(6)	A(6)																	N
HELD																			N
INHIBIT																C			N
KILLED																A(8),C			N

NOTE 1: The table shows the permissible changes from Starting Status (across the top) to Result Status (along the left) where: "O" = OE Action, "M" = MM action, "M/O" = MM and OE action, "A" = trade reporting system action, "E" = external system action and "C" = clearing firm action.

NOTE 2: At the beginning of trade reporting II, the trade reporting II file will contain only original open trades from trade reporting I. During the course of trade reconciliation in trade reporting II, As-Of trades will be entered.

NOTE 3: ACT "No/Was" transactions, are not allowed in trade reporting II.

NOTE 4: Clearing (submission to DTCC at the end of trade reporting II): L (O) = Automatic locked-in original open trade, N (A) = submission to clearing for As-Of open trades. L = Locked in (by transaction). N = no submission to clearing. Locked-in trades will be forwarded to DTCC at the end of trade reporting II (i.e. T+1 day)

NOTE 5: A Blockbuster Trade will become an Unanswered or OE Entered trade after a 15-minute period.

NOTE 6: A Sizeable Trade will be killed after the 15-minute period

Appendix A: TCP/IP Connection

This appendix describes how a subscriber can submit and receive messages to and from The NASDAQ Stock Market's Computer-to-Computer Interface (CTCI) using the TCP/IP protocol.

The information contained in this appendix is presented in a step-by-step sequence that describes what must be done to setup and to configure a TCP/IP connection with NASDAQ, how to establish a TCP/IP connection, what control messages and associated protocol must be supported for CTCI TCP/IP session management, and ultimately how to send and receive CTCI messages over a TCP/IP connection.

The document is organized as follows:

- The business of contacting NASDAQ and configuring how the subscriber will access NASDAQ through TCP/IP is discussed first under Setup and Testing.

- The basics of establishing a TCP/IP connection with NASDAQ are discussed in Establishing a TCP/IP Connection.

- The format of the CTCI TCP/IP Message is presented next in the CTCI TCP/IP Message Format. This format is used for sending and receiving the CTCI message itself and also for sending and receiving control messages necessary for session management.

- A discussion of session management follows in CTCI TCP/IP Session Management, followed by detailed descriptions and examples of each control message in Control Messages.

- Finally, the method and format for sending and receiving CTCI messages is described in Sending a CTCI Message, Receiving a CTCI Message, and CTCI Message Sequence Verification.

- Appendix A contains the Glossary. While it is sometimes redundant, it should read also, as it does contain some information that does not appear anywhere else in the document.

The subscriber should read this appendix in its entirety to ensure that the rules of the protocol and what the subscriber is required to do to use it are clearly understood prior to contacting NASDAQ for Setup.

Setup

Before attempting to establish a connection over TCP/IP, the subscriber must first contact NASDAQ to configure the connection. If necessary, more than one TCP/IP connection can be configured for the same subscriber. For each connection, NASDAQ will provide the subscriber with two pairs of IP Addresses and a Well Known Port to connect to. The same port is used for all four addresses. At the same time, the subscriber must provide NASDAQ with the IP Address that they will be connecting from when they establish the connection.

Please note that the four IP Addresses consist of a Primary address and an Alternate address for use in connecting to NASDAQ and a backup address pair for use in

connecting to the NASDAQ Disaster Recovery (D.R.) site. Please see the section Retrying failed connection attempts for more details.

For each TCP/IP connection, a client profile must be established. This process involves assigning an agreed upon ten-character logon identifier and assigning meaning to the "logical channels" that the subscriber will use to exchange CTCI messages with NASDAQ. *Note: A method of encryption will be introduced in a future release.*

The logon identifier will be associated with the client's IP Address and the IP Addresses and Well Known Port the client should be connecting to. This information will be verified when the client establishes the connection and sends a Logon control message to NASDAQ.

Over one TCP/IP connection, a subscriber can submit and receive CTCI messages on behalf of up to 63 different users and/or device locations. Messages for each user or device location are kept separated from each other by assigning them each to their own logical channel. Together with NASDAQ, the subscriber assigns a logical channel number from 1 to 63 to each of the users or device locations that the subscriber will be submitting and receiving CTCI messages on behalf of.

Use of a logical channel is up to the subscriber. A logical channel may be used for sending-only, receiving-only or both. This is solely under control of the subscriber.

Please note that a subscriber may establish multiple TCP sessions with NASDAQ over a single line if they choose to use Network Address Translation (NAT). NASDAQ will assign a unique Well Known Port for each session.

Testing

The Customer Subscriber Test System will be available, but the subscriber will have to connect to a different IP Address and Well Known Port from production. The subscriber should contact NASDAQ to obtain an IP Address and Well Known Port to connect to for testing. This means the subscriber must maintain the ability to dynamically connect to different sockets.

Establishing a TCP/IP Connection

The client (the subscriber) establishes a TCP/IP connection with the server (NASDAQ) by connecting to an IP Address and Well Known Port provided by NASDAQ, from the IP Address that the subscriber told NASDAQ they would be connecting from.

Note: The NASDAQ server follows the *Berkley Model* for establishing a socket connection.

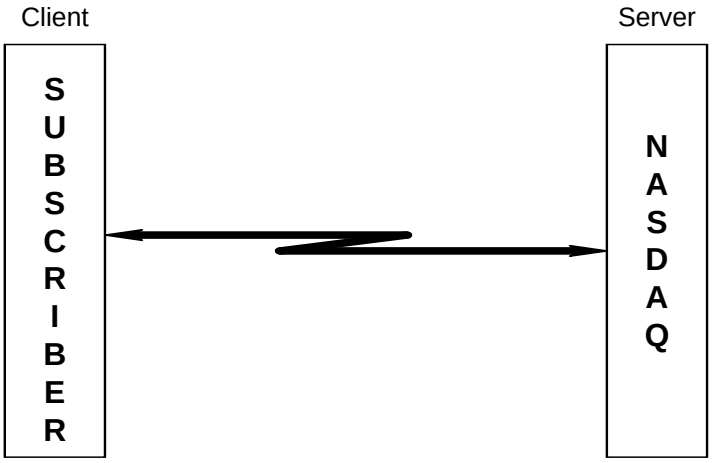

Figure Appendix A- 1 Client-Server TCP/IP Connection

Retrying failed connection attempts

The initial attempt to establish a TCP/IP connection should be to the NASDAQ Primary Address. If this attempt fails, the subscriber should delay briefly (3 seconds is recommended) and then try the NASDAQ Alternate Address. Subsequent attempts should alternate between the Primary and Alternate addresses until at least 30 seconds have elapsed. At that point the subscriber should make one attempt using the Disaster Recovery Primary Address, followed by one attempt to the Disaster Recovery Alternate Address. If a session still cannot be established, the entire cycle should begin again, starting with the NASDAQ Primary Address.

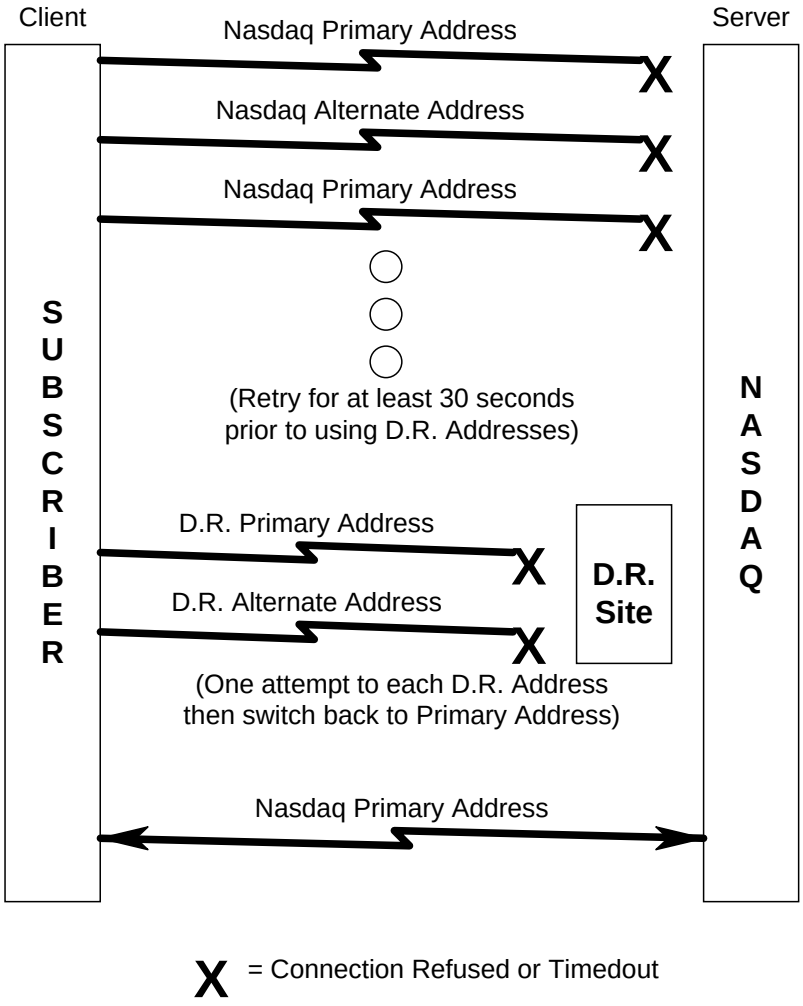

Figure Appendix A- 2 Connection Attempts

CTCI TCP/IP Message Format

The CTCI TCP/IP Message is used for sending and receiving CTCI messages, as well as session management control messages. The CTCI TCP/IP Message consists of a message “envelope” and the CTCI or control message data.

When the CTCI TCP/IP Message contains CTCI message data it is referred to as a CTCI message, and when it contains a control message it is referred to by the name of the control message (Logon, Heartbeat Query, etc.). The format of the CTCI TCP/IP Message is as follows:

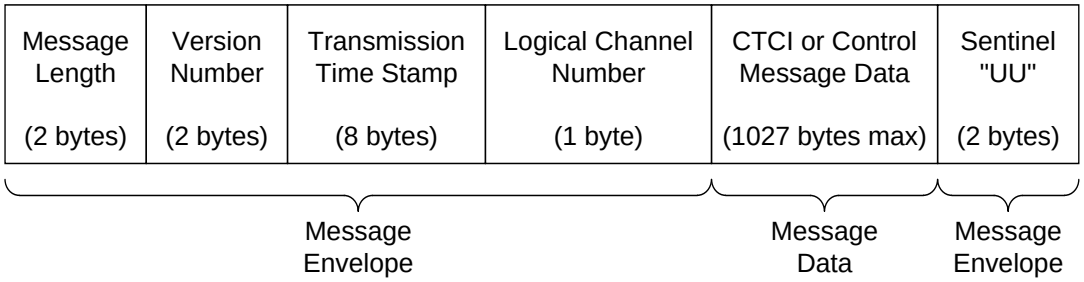

Figure Appendix A- 3 CTCI TCP/IP Message Format

The *Message Length* is a binary field that contains the total length (bytes) of the CTCI TCP/IP Message including the Message Length field at the beginning and the Sentinel field at the end. It is an unsigned integer in network byte order (NBO). Network byte order (NBO), also known as "big endian," is one standard form for transmitting binary values (including integers) in a network message. Since it is used in all TCP/IP headers uniformly, without regard to originating or receiving platform, it is also adopted for use in the CTCI TCP/IP message protocol. Technically, the most arithmetically significant bit of each byte is transmitted first, followed in order of descending significance by the remaining bits; the most significant byte of each multi-byte binary field is transmitted first, followed in order of descending significance by the remaining bytes. If a 32-bit number is to be transmitted, and the bits are numbered 0-31 in order, left to right, where the 0^{th} bit represents 2^{31}, and the 31^{st} bit represents the least significant binary digit, i.e., 0 or 1.

Currently, the largest message that can be sent is 1042 bytes. The Message Length field is the “sentinel boundary” of the message. Data flow must begin on a sentinel boundary whenever a connection is established.

The *Version Number* contains a two-character ASCII string. The first character contains the integer portion of the version number and the second character contains the decimal portion of the version number. This is version 1.0 of the interface, so the value in the first byte will be one and the value in the second byte will be zero.

The *Transmission Time Stamp* is an ASCII numeric field containing the time the CTCI TCP/IP Message was transmitted in HHMMSSCC (see Glossary) format.

The *Logical Channel Number* is a binary field that contains a value from zero through 63. If the logical channel number is zero, the CTCI TCP/IP Message is a control message. If the logical channel number is one through 63, the message is a CTCI message, and the logical channel number indicates which user or device location that the CTCI message belongs to.

CTCI or Control Message Data contains the CTCI or control message data. When the logical channel number is one through 63 it contains CTCI message data. When the

logical channel number is zero, CTCI or Control Message Data contains the fields of one of the control messages described in the following pages.

The *Sentinel* is an ASCII field that always contains a constant of “UU”.

CTCI TCP/IP Session Management

The control messages – Logon, Logon Response, Heartbeat Query, Heartbeat Response, Flow Control, Logical Channel State Query, and Logical Channel State Response – are used for session management and will be sent over logical channel zero exclusively. The format, content, and further details about how each control message should be used is described in the pages that follow the session management discussion.

Once a socket connection is established, the very first thing the client must do is send a Logon control message to the server. The Logon Identifier field tells the server who the client is, the Logical Channel State fields tell the server on which logical channels the client is ready to receive CTCI messages. If the Logon fails, NASDAQ will break the connection. If the Logon is successful the server will send a Logon Response control message back to the client.

On the Logon Response control message the Logical Channel State fields tell the client on which logical channels the server is ready to receive CTCI messages. The client must not send CTCI messages to the server over any logical channel that is in not in a “ready to receive” state. If a logical channel is not in a “ready to receive” state, and the client sends CTCI messages over it to the server, the messages will be discarded.

Note: It is not necessary to verify that logical channel zero is ready to receive. This logical channel must always be in a “ready to receive” state, as there must always be a dedicated path open for control message exchange.

The client can now send CTCI messages over any logical channel that the server has indicated is ready to receive. If the client has no CTCI or control messages to be sent over any logical channel on a connection, or there are no logical channels (1-63) that server is ready to receive them on, the client must send a Heartbeat Query control message on logical channel zero every 10 seconds.

For logical channels that the server has indicated are not ready to receive, the client must wait until the server changes the logical channel state to ready to receive. The server will do this by sending the client a Flow Control message on logical channel zero.

In the event that the volume of CTCI message traffic over a logical channel becomes too much for a message receiver (client or server) to buffer and process, the message receiver can instruct the sender to suspend transmission on the logical channel by sending a Flow Control control message that places the logical channel in a “not ready to receive” state. When the receiver is ready to resume receiving messages on the logical channel again, the receiver sends a Flow Control control message that returns the logical channel to a “ready to receive” state.

At any time during the session, the client (or server) may request the state of a logical channel by sending a Logical Channel State Query Request to the server (or

client). The server (or client) must respond with a Logical Channel State Query Response that informs the receiver whether the logical channel is in a “ready to receive”, “not ready to receive” or “not configured” state.

The last two bytes of *every* CTCI TCP/IP Message received should always be checked for the sentinel character string of “UU”. If the last two bytes are not equal to the sentinel, the TCP/IP connection is considered no longer reliable and should be terminated.

Control Messages

Logon and Logon Response

Once a socket connection is established, the client must first send a Logon control message to the server.

If the server does not recognize the Logon Identifier as being associated with the IP Address the client has connected from or does not recognize the Logon Identifier as being associated the IP Address and Well Known Port the client is connected to, it will terminate the connection. If the Logon is successful a Logon Response control message will be returned.

Here is an example of a *Logon* control message sent on logical channel zero at 9:30 a.m.:

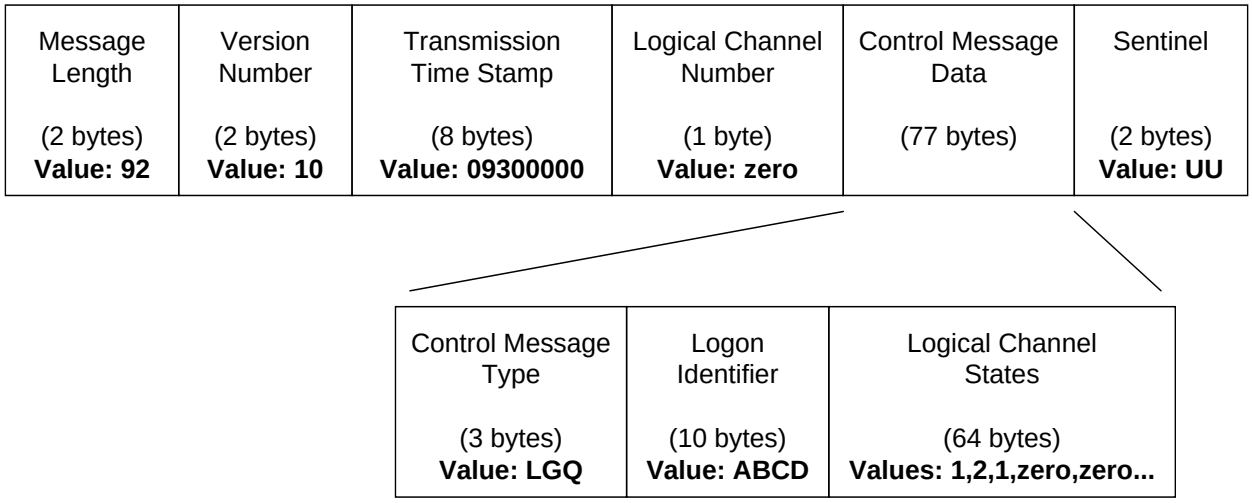

Figure Appendix A- 4 Logon control message, channel zero, 9:30 a.m.

In this example, the *Logical Channel Number* contains a value of zero, indicating the message is a control message.

The *Control Message Type* is an ASCII field that appears in every control message that indicates which control message is being sent. In this case “LGQ” represents Logon.

The *Logon Identifier* field is an ASCII field that must contain the logon identifier assigned during setup for use with the IP Address and Well Known Port. The value ABCD is shown just as an example.

In the *Logical Channel States* field, each byte contains a binary value that represents the state of a logical channel. The first byte contains the state of logical channel zero, the second the state of logical channel one, the third the state of logical channel three, up to the 64th byte that contains the state of logical channel 63. If the logical channel is ready to receive the value will be one. If it is not ready to receive the value will be 2. If the logical channel was not configured during Setup, the value will be zero.

In this example the value of the state of logical channel zero and two is one. The value of the state of logical channel one is two. The value of the state of logical channels three through 63 is zero. This means the client is ready to receive control messages on logical channel zero (always the case), not ready to receive CTCI messages on logical channel one, ready to receive CTCI messages on logical channel two, and the remaining logical channels are not configured.

Here is an example of a *Logon Response* control message sent on logical channel zero at 2/100 of a second past 9:30 a.m.:

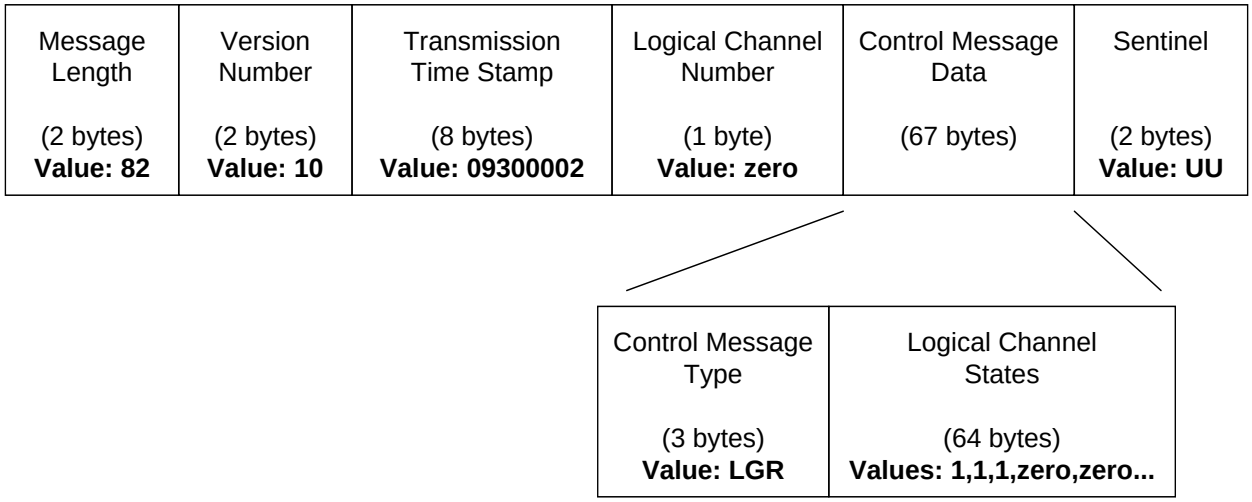

Figure Appendix A- 5 Logon Response control message

In this example, the *Logical Channel Number* contains a value of zero, indicating the message is a control message.

The *Control Message Type* is an ASCII field that appears in every control message that indicates which control message is being sent. In this case “LGR” represents Logon Response.

In the *Logical Channel States* field, each byte contains a binary value that represents the state of a logical channel. The first byte contains the state of logical channel zero, the second the state of logical channel one, the third the state of logical channel three, up to the 64th byte that contains the state of logical channel 63. If the

logical channel is ready to receive the value will be one. If it is not ready to receive the value will be 2. If the logical channel was not configured during Setup, the value will be zero.

In this example the value of the state of logical channel zero is one. The value of the state of logical channel one and two is one. The value of the state of logical channels three through 63 is zero. This means the server is ready to receive control messages on logical channel zero (always the case) and CTCI messages on logical channels one and two. The remaining logical channels are not configured.

Heartbeat Query and Response

The integrity of the data transfer connection must be constantly checked with the periodic exchange of client-issued Heartbeat Query and server-issued Heartbeat Response control messages.

If there are no other messages to be sent the client must send a Heartbeat Query every 10 seconds. The server does not require heartbeat queries during the 10-second interval if any properly formatted message has been received within the last 10 seconds, but will terminate the connection if no message is received for the duration of two, 10-second intervals.

Here is an example of a *Heartbeat Query* control message sent on logical channel zero at 2 seconds past 9:30 a.m.:

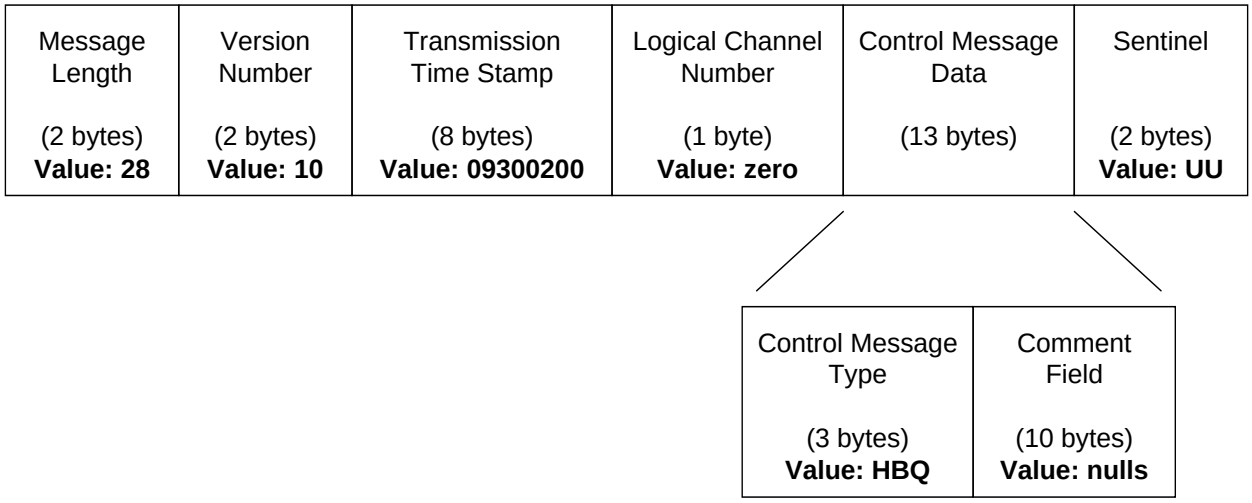

Figure Appendix A- 6 Heartbeat Query control message

In this example, the *Logical Channel Number* contains a value of zero, indicating the message is a control message.

The *Control Message Type* is an ASCII field that appears in every control message that indicates which control message is being sent. In this case “HBQ” represents Heartbeat Query.

The *Comment* field is an ASCII field that the client can use. Any data in it will be echoed back in the Comment field of the Heartbeat Response. The complete ASCII character set can be used. If the field is not used, it should be filled with ASCII nulls (binary zeros). In this example, there is no data in the Comment field, so it is filled with nulls.

Here is an example of a *Heartbeat Response* control message sent on logical channel zero at 2 and 2/100 seconds past 9:36 a.m.:

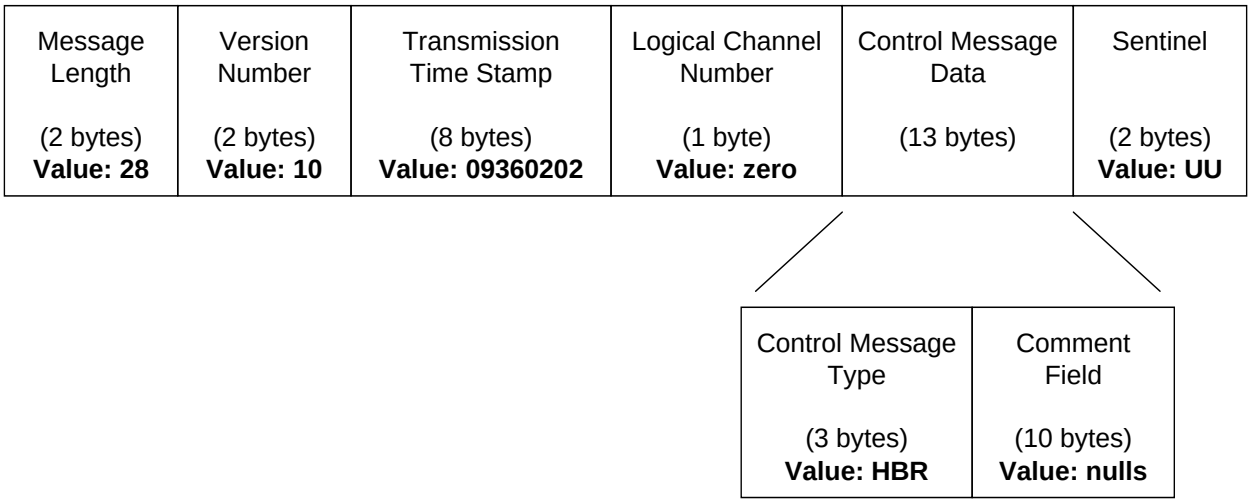

Figure Appendix A- 7 Heartbeat Response control message

In this example, the *Logical Channel Number* contains a value of zero, indicating the message is a control message.

The *Control Message Type* is an ASCII field that appears in every control message that indicates which control message is being sent. In this case "HBR" represents Heartbeat Response.

The *Comment* field is an ASCII field that contains the data sent by the client in the Comment field of the Heartbeat Query. In this example the field contains nulls, echoing this area of the input message.

Flow Control

In the event that the volume of CTCI message traffic over a logical channel becomes too much for a message receiver (client or server) to buffer and process, the message receiver can instruct the sender to suspend transmission on the logical channel by sending a Flow Control message that places the logical channel in a "not ready to receive" state. When the receiver is ready to resume receiving messages on the logical channel again, the receiver sends a Flow Control message that returns the logical channel to a "ready to receive" state.

Note: Flow control of logical channel zero is not allowed, as there must always be a dedicated path open for control message exchange. Client processing of flow control messages from the NASDAQ server is mandatory. It is not mandatory, but strongly

advised, that the client be designed with a mechanism to initiate flow control commands. Under no circumstance should the client ever stop reading the connection with a NASDAQ server while at the same time continuing to transmit data to the NASDAQ server.

Here is an example of a *Flow Control* message sent on logical channel zero at 1:30 p.m. that places logical channel one in a "not ready to receive" state:

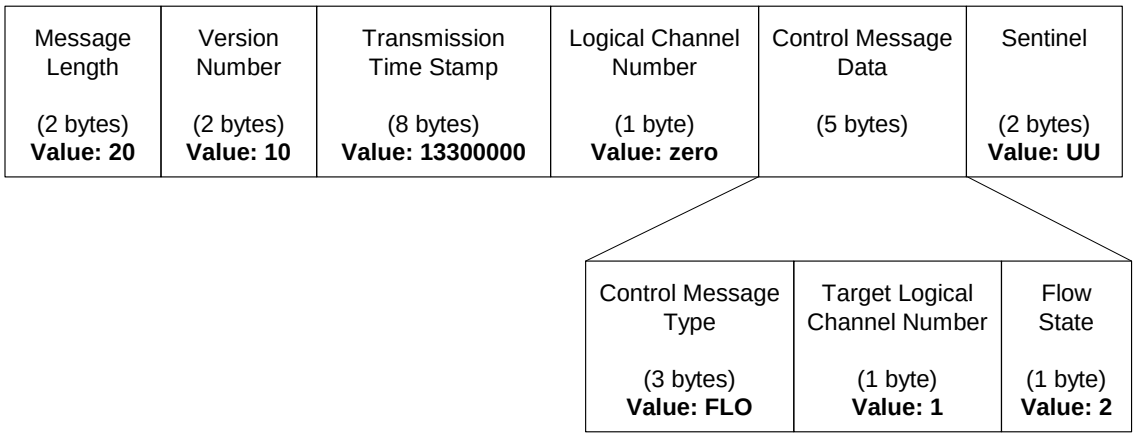

Figure Appendix A- 8 Flow Control message

In this example, the *Logical Channel Number* contains a value of zero, indicating the message is a control message.

The *Control Message Type* is an ASCII field that appears in every control message that indicates which control message is being sent. In this case "FLO" represents Flow Control.

The *Target Logical Channel Number* is a binary field that contains a value from one through 63 and indicates which logical channel should be affected. In this example, logical channel one is being affected.

The *Flow State* field is a binary field that changes the state of a logical channel to ready to receive or not ready to receive CTCI messages. A value of one changes the state to ready to receive. A value of two changes the state to not ready to receive. In this case the value is two, changing the state of the logical channel to "not ready to receive" CTCI messages.

Logical Channel State Query and Response

The client or server can request the state of a particular logical channel by sending a Logical Channel State Query control message over logical channel zero. A Logical Channel State Response must be sent back by the query recipient.

Here is an example of a *Logical Channel State Query* control message requesting the state of logical channel one, sent on logical channel zero at 23 and 85/100 seconds past 1:45 p.m.:

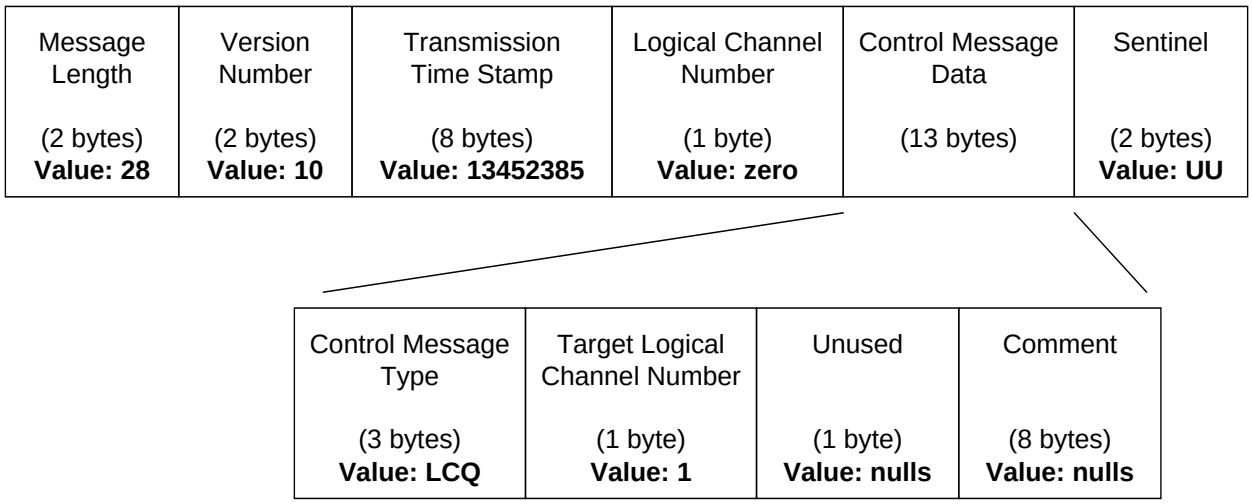

Figure Appendix A- 9 Logical Channel State Query control message

In this example, the *Logical Channel Number* contains a value of zero, indicating the message is a control message.

The *Control Message Type* is an ASCII field that appears in every control message that indicates which control message is being sent. In this case “LCQ” represents Logical Channel State Query.

The *Target Logical Channel Number* is a binary field that contains a value from one through 63 and indicates for which logical channel the state is being requested. In this example the state of logical channel one is being requested.

The *Unused* field is an ASCII field that should always be filled with ASCII nulls (binary zeros).

The *Comment* field is an ASCII field that the message initiator can use. Any data present must be echoed back in the Comment field of the Logical Channel State Response. The complete ASCII character set can be used. If the field is not used, it should be filled with ASCII nulls (binary zeros).

Here is an example of a *Logical Channel State Response* control message returning the state of logical channel one, sent on logical channel zero at 24 seconds past 1:45 p.m.:

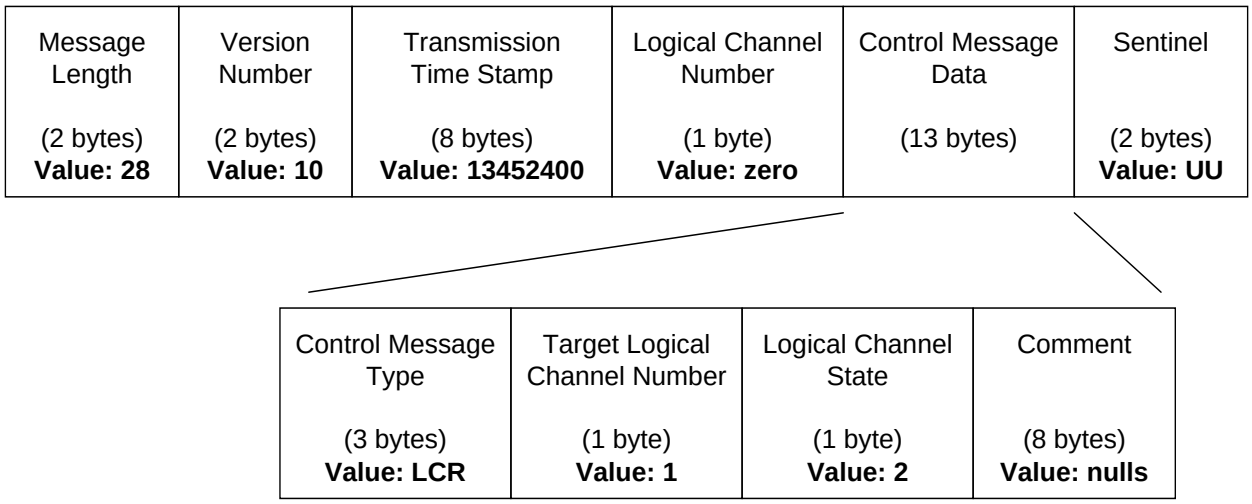

Figure Appendix A- 10 Logical Channel State Response control message

In this example, the *Logical Channel Number* contains a value of zero, indicating the message is a control message.

The *Control Message Type* is an ASCII field that appears in every control message that indicates which control message is being sent. In this case "LCR" represents Logical Channel State Response.

The *Target Logical Channel Number* is a binary field that contains a value from one through 63 and indicates for which logical channel the state is being reported. In this example, the state of logical channel one is being reported.

The *Logical Channel State* is a binary field that contains a value that represents the state of the logical channel. If the logical channel is ready to receive, the value will be one. If it is not ready to receive, the value will be 2. If the logical channel was not configured during Setup, the value will be zero. In this example the value is two, indicating logical channel is "not ready to receive" CTCI messages.

The *Comment* field is an ASCII field that must always contain the data sent in the Comment field of the Logical Channel State Query. In this example the field contains nulls because that's what was sent in the query.

Sending a CTCI Message

The client should format a CTCI message as usual (refer to *Subscriber Requirements for Computer to Computer Interface Utilizing the NASDMS Switch*), but to deliver it over a TCP/IP connection it must be imbedded in a CTCI TCP/IP Message "envelope."

Here is an example of a CTCI message 100 bytes long sent on logical channel 31 at 9:31 a.m.:

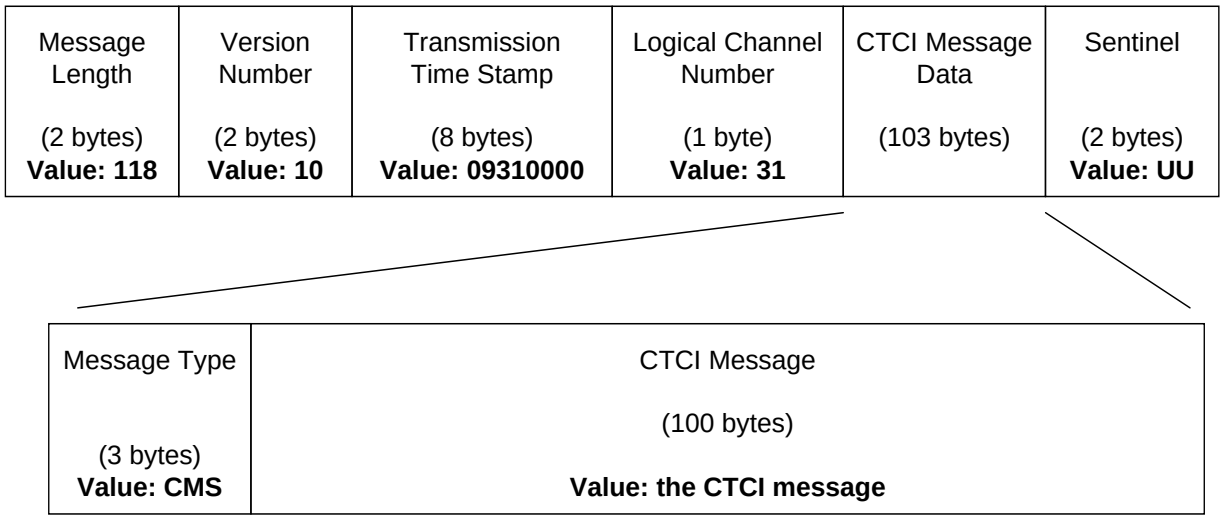

Figure Appendix A- 11 CTCI message

In this example, the *Logical Channel Number* contains a value of 31, in the range of one through 63, indicating that the message is a CTCI message.

The *Message Type* field is an ASCII field that should always have the value “CMS”..

CTCI Message is the actual CTCI message itself, beginning with line zero, line two, etc., as described in *Subscriber Requirements for Computer to Computer Interface Utilizing the NASDMS Switch*. Do not include any control characters other than those specific the composition of the CTCI message (i.e. carriage return and line feed).

Receiving a CTCI Message

NASDAQ will send CTCI messages to subscribers using the same format as described above in Sending a CTCI Message. The *CTCI Message* field will include any user-specified header line(s) followed by line zero, line two, etc., through any user-specified trailer line(s).

CTCI Message Sequence Verification

It is the responsibility of the client to detect and recover lost data by implementing CTCI message sequence number checking and message retrieval processing. It is also the responsibility of the client to respond to gap fill requests from the server for lost or discarded client to server messages. Refer to *Subscriber Requirements for Computer to Computer Interface Utilizing the NASDMS Switch* for a detailed description of these procedures. Message sequence numbers continue to be the last part of the *CTCI Message* in *CTCI Message Data*.

Glossary

Client: The Subscriber side of the TCP/IP connection.

Connection: Transmission path (including all equipment) between a sender and receiver, ready and able to exchange data.

CTCI: Computer to Computer Interface; the protocol, message standards and underlying physical structure which allows subscribers to send and receive NASDAQ transactions from/to a subscriber host computer.

Flow Control: Mechanism by which the recipient of incoming data notifies the sender to stop or start transmitting data over a specified logical channel.

Flow State: The flow state changes the state of a logical channel to ready to receive or not ready to receive CTCI messages. A value of one changes the state to ready to receive (RR - Receiver Ready to receive). A value of two changes the state to not ready to receive (RNR - Receiver Not Ready).

HHMMSSCC: Method of formatting the time day in hours, minutes, seconds and hundredths of seconds. HH = Hours in military time (00-23), MM = Minutes (00-59), SS = Seconds (00-59) CC = hundredths of seconds (00-99). For example: 9AM is 09000000, 1:35PM is 13350000, 35 and 98/100 seconds past midnight is 00003598.

IP Address: The IP Address together with the Well Known Port, is used to establish a connection to NASDAQ in order to send and receive CTCI TCP/IP Messages. Will be assigned by NASDAQ.

Logical Channel: Over one TCP/IP connection, a subscriber can submit and receive CTCI messages on behalf of 63 different users or device locations. Each logical channel represents one user or device location. Logical channel zero is reserved for session management control messages.

Logical Channel Number: Number from zero through 63 assigned to a logical channel to uniquely identify it.

Logical Channel State: A logical channel can be in one of three states:

Ready to receive CTCI messages (RR - Receiver Ready to receive).
Not ready to receive CTCI messages (RNR - Receiver Not Ready).
Not assigned a user or device location during Setup (NC - Not Configured).

Nulls: The value of the lowest occurrence in the ASCII character set (Binary zero).

Session: Synonymous with Connection.

Sentinel: A character string constant used to verify that a complete CTCI TCP/IP Message has been received. The last two characters of every CTCI TCP/IP Message must be “UU”.

Sentinel Boundary: Term used to indicate that the next data to be sent (or received) on a connection must begin with the Message Length field of a CTCI TCP/IP

Message. Data flow must begin on a sentinel boundary whenever a connection is established.

Server: The NASDAQ side of the TCP/IP connection.

TCP/IP: Transmission Control Process/Internet Protocol, a method that allows communications to take place between heterogeneous systems in a multinetwork environment (Internet).

Well Known Port: A signed 16 bit binary value combined with an IP Address to form a socket (connection) name. Will be assigned by NASDAQ.

7 Appendix B: IBM WebSphere MQ

The *CTCI WebSphere MQ V1.1 Subscriber Intercommunication Specification* describes how you can submit and receive CTCI messages using the NASDMS (Switch) through IBM WebSphere MQ Middleware using WebSphere MQ API calls over TCP/IP protocol. The document also describes the required CTCI-MQ intercommunication specifications. The CTCI-MQ Interface uses the WebSphere MQ Distributed Queuing technique.

To access the document, select this link:

http://www.nasdaqtrader.com/trader/tradingservices/specsinstallguides/CTCIMQSpecs.pdf