Tradestream Global™

Mini Server Protocol

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End User License Agreement

See Appendix E.

Customer Support

As a technology provider, Tradestream Global AG has a Technical Services desk available to you during the business hours of 09:00 – 17:00 EST, Monday through Friday by calling 1-469-334-0484 or via email at help@tradestreamglobal.com

Purpose of This Document

This document has been prepared to help provide an explanation of the local server protocol. It is intended to be used by developers who wish to interface their front-end application or automated trading system easily to our server side functions without requiring server facilities of their own.

It is designed to function with the local server application from Tradestream Global AG.

Minimum System Requirements

Listed below are minimum system requirements and recommendations for top performance. If you are an active trader or professional trader, the recommendations for optimal performance will be the requirements to follow. It is also recommended that in order to take full advantage of the advanced features of Tradestream systems you run Tradestream on multi-monitor systems. Tradestream supports up to 8 monitors on 1 PC.

The speed and reliability of your Internet service provider is crucial to optimum performance as well. Using proprietary large-scale Internet service providers that depend primarily on proxy servers may cause quotes to be inconsistent, the loss of data, and delay of information regarding your trades. This is why it is important to have an ISP with the most direct connection possible to the Tradestream Global network and the capacity to handle Internet traffic during peak hours of trading.

Tradestream Global recommends connection be consistent ADSL, Cable or T1 but individual users can connect with as little as 36kbs modem connections.

Minimum Requirements, with a single monitor are:

- Intel Pentium II processor 400 MHz
- 128 MB RAM
- 1 GB hard drive with at least 150 MB of free space
- 4 MB video graphics adapter that supports at least a 256 color palette and 1024 X 768 resolution
- 56K dial up modem (speed <250ms)
- Windows Operating System (Y2K compliant)

Recommended Requirements, with multiple monitors are:

- Best available CPU
- 256 MB RAM or more
- 18 GB hard drive with 1GB of free space
- 16 MB video graphics adapter that supports at least a 256 color palette and 1024 X 1024 resolution
- Broadband (T1, DSL, ISDN or cable modem)
- Windows 2000 or XP

Be aware of security software, virus software, or firewalls that scan all incoming data as it enters your computer since these applications will potentially affect the speed and accuracy of the data you receive.

Configuring TradeStream Global to Work Behind a Firewall

TradeStream Global can easily be configured to run behind a firewall but does require the cooperation of the network administrator and certain open ports on the firewall itself. The system requires port 58886 for chart data, 59869 for order routing, 9898 for quotes and port 39898 for load balancing messages. The auto update function requires port 21. It requires these ports to send and receive data to destination IPs in the range 66.101.0.208.X.

How to check if your ports are open?

Windows uses the Telnet Protocol, part of the TCP/IP suite of protocols, to connect to a remote computer over a network. For our purposes, a telnet test is nothing more than a test to determine if you are able to establish a connection to the TradeStream Global client data servers.

Telnet in Windows

Click on the **Start** button
Click on **Run**
Type **command** press **Enter**
Type **telnet 66.101.0.196 port 58886 or 66.101.0.196 port 59869 or 66.101.0.196 port 9898 or 66.101.0.208 port 21 or telnet 66.101.0.216 port 39898**

A successful telnet session will show the host name in the title bar when using Windows 95, 98, or NT. In Windows 2000, a successful telnet session will show a very brief connection and then a flashing cursor with no prompt.

If ok, then you should be able to log in to TradeStream. If none work, the ports most likely are not open. Confirm with the Net Admin that these ports are open!

Local Server Protocol Description

Each data feed is constructed of a stream: **<SOH><DATA…. ><EXT>**

The beginning **SOH** is the value of ASCII decimal **001** which is the leading code of a data feed. ASCII decimal **003** or **EXT** is the ending code, which terminates a single data stream.

Each data feed may carry more than one record fields, the **STX** is the value of ASCII decimal 44(,), which separates each record field. If there the value of any record field is empty or not applicable, then the [STX] will join together.

1. Client to Server

1.1. User Add (Delete) Symbol Format (Type A or Type D)

```
[SOH]#[STX]?[STX]C[STX]Sym…[EXT]

   #          A:  Add Symbol
              D:  Delete Symbol
   ?
              ---------- Stock ----------------
              1:Stock Level I
              2:Stock Level II
              3:Island Book
              4:Arca Book
              5:INCABook
              6:Nasdaq Aggregated Depth (ADAP)
              7:Nyse Book

              ---------- Option & Future  ----------------
              8:Option Level II
              9:Option Level I
              b:Future Level I
              c:Future Dome

              ---------- Chart ----------------
              e:Minute Chart Require
              f:Historical Chart Require
              g:30 Minutes Chart Require
              h:5 Minutes Chart Require
   C          Constant. Always 1
   Sym…       Country+Symbol

              Stock, Option Or Future Symbol (See below rules)
              Country is ISO country code
```

Note: **For Chart Symbol Rules**
For Stock → Country+Symbol
For Option → Country+.+Symbol
For Future → Country+/+Symbol

A Time Interval to Retrieve Chart Data
1 Minute Chart with date, time requires.
[SOH]A[STX]e[STX]0[STX]Sym[STX]yyyyymmdd[STX]hh:mm[STX]yyyyymmdd [STX]hh:mm [EXT]
Ex: [SOH]A,e,0,USMSFT,20040225,12:15[EXT]
[SOH]A,e,0,USMSFT,20040225,12:15, 20040325,13:15 [EXT]

5 Minutes Chart with date, time requires.
[SOH]A[STX]h[STX]0[STX]Sym[STX]yyyyymmdd[STX]hh:mm[STX]yyyyymmdd [STX]hh:mm [EXT]
Ex: [SOH]A,h,0,USMSFT,20040225,12:30[EXT]
[SOH]A,h,0,USMSFT,20040225,12:30, 20040228,13:30 [EXT]

30 Minutes Chart with date, time requires.
[SOH]A[STX]g[STX]0[STX]Sym[STX]yyyyymmdd[STX]hh:mm[STX]yyyyymmdd [STX]hh:mm [EXT]
Ex: [SOH]A,g,0,USMSFT,20040225,12:30[EXT]
[SOH]A,g,0,USMSFT,20040225,12:30, 20040228,13:30 [EXT]

Historical Chart with date requires.
[SOH]A[STX]f[STX]0[STX]Sym[STX]yyyyymmdd[STX]yyyyymmdd[EXT]
Ex: [SOH]A,f,0,USMSFT,20040225[EXT]
[SOH]A,f,0,USMSFT,20040225,20040228[EXT]

1.2. Place Order

This message is for user place an order with user-defined order condition. The internal order server will go through the validation process of the account that places this order. The validation process is based on both account permission, account setup and the fields of this order.

[SOH]?[STX]S[STX]U[STX]A[STX]P[STX]Q[STX]SI[STX]TT[STX]
TP[STX]M[STX]MM[STX]C[STX]R[STX]QF[STX] DP[STX] SC[STX]
PC[STX]TK[STX]EX[STX]PP[STX]add item[STX]
ST [EXT]

? S: Stock

	O: Option
	F: Future
S	Symbol content country code(USMSFT)
U	Underline Symbol when order is option, be null when order is stock
	Future: Minimum fluctuation
A	Account Number
P	Price or stop price when order is stop order
Q	Quantity
SI	S: SELL
	B:BUY
TT	TIF type
	D: Day
	M: Minutes
	G: Good till Cancel
	S; Second
	T: GTD order
	I: Immediately or Cancel
TP	Number of minutes when TT is, otherwise be null
M	Trade type
	C: Cash
	M: Margin
	S: Short
MM	MMID be null when trade condition is Market
C	Trade condition
	LMT: Limit (For BUY, SELL and STOP)
	MKT: Market(For BUY, SELL)
	STP: STOP(for STOP LOSS) //Feb 04
	STL: STOP LIMIT(for STOP LIMIT) Feb 04
	// TRADE_CONDITION HAVE "TRL"=TRAIL, "LMT"=LIMIT,
	// "LOS"=LOSS "TSS" TRAIL STOP SERVER SIDE
	// OCO= OCO , OCL= OCO LIMIT, OCT = OCO TRAIL
R	Route
QF	Qualities
	AON: ALL or None
	ANY: Any
	FOK: Fill or Kill
DP	Limit Price when order is stop limit
SC	Source
	CV: Cover
	OP: open
	CL: Close
	ST: STOCK STOP ORDER
ST:	UserID
PC:	Put and Call
	0: Put

```
                1: Call
                p:  trail valuepoint
                %: trail price pencentage
TK              TokenID(generated from client application)
EX               Expiration Date(MM-DD-YYYY)   @ Strike price
PP               Underline symbol last price(for Option),Maintenance(for Future)

add item
  ?10=  ISLD_DISPLAY   // FEB 06, 2003 CHANGE

  RR   ?11=Solicited flag
     Solicited flag = S Solicited     TT_TRADE.solicit = S
                   U Unsloicited   TT_TRADE.solicit = U
  Note: TT_TRADE.solicit = U if not recive

     ?12=Discretionary flag
     Discretionary flag = T/F     TT_TRADE.discretionary = T/F
  Note: TT_TRADE.discretionary = F if not recive

     ?13=Employee ID
     if Employee ID present: TT_TRADE.employee_id = Employee ID
                        TT_TRADE.front_End_Trade = F
     if Employee ID not Present: TT_TRADE.employee_id = N/A
                          TT_TRADE.front_End_Trade = T

  ?14=Reserver order display quantity.

  ?15=liquidty_flag  ( for MOE)

  ?16= target price ( for stop OCO order)
  ?17=target trade condition ( MKT, LMT) (for stop OCO order)

  ?18= target delimit price (for stop OCO order)
  ?19= CURRENCY
  ?20=NO_COMMISSION. ='T' don't calculate commission 'F' calculate
  commssion.

  ?21=COMMISSION
  ?22=FEE
  ?23=MARKET_CODE (CHAR[6])
  ?24=CAPACITY_CODE(CHAR[6]);
   ?25=INVENTORY_CODE(CHAR[6])
  ?26= is_receive_account
   ?27= GTD expire date ( MM-DD-YYYY)
  ?28= ExecInst
  ?29=    MaxFloor ( for Discretionary order and Pegged order)
```

?30= MinQty (for Discretionary order and Pegged order)
?31= Offset1
?32 = primary_exchange
For stock:
Q:Nasdaq
N:NYSE
A:AMEX
U:OCTBB
For Future:
C:CME
O:CBOT
?33 = etf_field
T= is etf
F= is not erf
?34= discretional offset
?35= trail value (not for TSS, TSS trail value still in Delimit Price)
?36= START_SIDE, '1'=bid, '2'=ask, '3'=custom
?37= short_limit_quantity.

1.3. Cancel Order

This message for user sends "Cancel Command" to cancel order that is still open in the market.

[SOH]C[STX]T[STX]E[STX]R[STX]P[STX]V[EXT]

C	C: Cancel Order
T	TradeID come with server response, it means cancel order must
E	Expiration Date (for option only)
R	Strike price
P	0:put, 1:call
V	CV: cover OP: open CL: close

1.4. Cancel/Replace Order

This message for user sends a command with only one new value to replace the original Order.

As in Fix protocol, only a limited number of fields can be changed via the cancel/replace request message. All other fields should be retransmitted **as sent in the original order**.

[SOH]R[STX]?[STX]S[STX]U[STX]A[STX]P[STX]Q[STX]SI[STX]TT[STX]
TP[STX]M[STX]MM[STX]C[STX]R[STX]QF[STX] DP[STX] SC[STX]

PC[STX]EX[STX]]OriClOrdID[STX]OrdID[STX] Is_Reduce [stx] original quantity [EXT]

R	Cancel/Replace message flag
?	S: Stock O: Option F: Future
S	Symbol content country code(USMSFT)
U	Underline Symbol when order is option, be null when order is stock Future: Minimum fluctuation
A	client id
P	Price or stop price when order is stop order
Q	Quantity
SI	S: SELL B: BUY
TT	TIF type D: Day M: Minutes G: Good till Cancel I: Immediately or Cancel
TP	Number of minutes when TT is, otherwise be null
M	Trade type C: Cash M: Margin S: Short
MM	MMID be null when trade condition is Market
C	Trade condition LMT: Limit (For BUY, SELL and STOP) MKT: Market(For BUY, SELL) STP: STOP(for STOP LOSS) //Feb 04 STL: STOP LIMIT(for STOP LIMIT) Feb 04
R	Route
QF	Qualities AON: ALL or None ANY: Any FOK: Fill or Kill
DP	Limit Price when order is stop limit
SC	Source CV: Cover OP: open CL: Close
PC:	Put and Call 0: Put 1: Call

EX	Expiration Date(MM-DD-YYYY) @ Strike price
OriOrdID	Original OrderID as assigned by AFSI (original client ID)
OrdID	Unique identifier of original order as assigned by market (Reference ID)
Is_Reduce	R: is reduce N: normal

1.5. Order Status Request Protocol

[SOH]H[STX]OriClOrdID[STX]OrdID[STX]SI[STX]S[STX]U[STX]RE[STX]A[STX]R[STX]ID[STX]M[EXT]

H	Order Status Request message flag
ClOrdID	ClOrderID as assigned by Consolidated Research
OrdID	Unique identifier of original order as assigned by market
SI	S: SELL B: BUY T: Sell Short
S	Symbol content country code(USMSFT)
U	Underline Symbol when order is option, be null when order is stock Future: Minimum fluctuation
RE	Represents the Order Status Request type. Valid values: 1= Report Status 2=Confirm Order Received 3= Confirm Out
A	Account Number
R	Route
ID	BrokerID
M	MEMO, Not in use for this time, default is NULL

1.6. Request Account Manager History

This message is for user to send a request asking for historical information of this account number and order server will respond based on the message header ('V' or 'U').

Server message sent to client in response to 'V' message:
('E') Account Equity

Server messages sent to client in response to 'U' message:
('I') Statistical Info
('S') Trade Summary and
('P') Long/Short Position

[SOH]?[STX]T[STX]E [EXT]

?	V: Request Equity
	U: Request Trade detail
T	Account number
E	Date

1.7. Request Trade Manager History

This message is user send a request asks for historical information of trade within the User-defined time period. In our system, it is the Start Date and End Date inclusively.

Individual search criteria are Trade ID field, Order Status field, Side field and Symbol field. Start Date and End Date are required fields.

All search criteria fields are optional and leave them "%" when it is not applicable.

Server message sent to client in response to 'Z' message:
(1)"Trade Log"

[SOH]?[STX]A[STX]T[STX]E[STX]B[STX]F[STX]G[STX]H[EXT]

?	Z: Request Trade Manager History
A	Account number
T	Begin Date
E	End Date
B	Trade Id (default "%")
F	Status(default "%")
G	Side(default "%")
H	Symbol(default "%")

Note: If you send a symbol, you must append the symbol with a "%". Example is 'AABD%'

E.G. If user does not define any search criteria, store the default value ASCII decimal 37(%) in them.

1.8. Basket Trade Setup Info to DB

[SOH]R[STX]P[STX]U[STX]V[STX]M[STX]T[STX]TP
[STX]N[STX]Q[STX]S[STX]L[STX]R[STX]F[STX]

Type of Trade[STX] Order type[STX]MMID[STX]Period (for TIF) [STX]Stop Limit Price[STX]Source[STX]

Reserve Quantity number [EXT]

R	R: Basket Trade Setup Info
P	Account Number
U	Basket Name
V	index
M	side
T	quantity
TP	symbol
N	price
Q	route
S	trade condition
L	trade type
R	tif
F	qualifier

Type of Trade char(1), //(stock, option, future)
Order type char(1) //(Normal order or reserve order)
MMID char(4)

Period (for TIF) number(3)
Stop Limit Price number(22,8)
Source char(2) // for option, to identify it
Reserve Quantity number(10)

1.9. General Alert setup Info to DB

[SOH]W[STX]g[STX]U[STX]V[STX]M[STX]T[STX]TP
[STX]N[STX]Q[STX]S[STX]L[STX]R[STX]F[STX]A[STX]B[STX]C [STX]D
[STX]E [STX]G[STX]H[STX]I[EXT]

W	W: Alert
g	G: General Alert
U	Account Number
V	Alert Name

M	is crossed stock T: true F: false
T	is locked stocks T: true F: false
TP	is reached 52 week high T: true F: false
N	is reached 52 week low T: true F: false
Q	volume reaching
S	rising price
L	rising price type %: $:
R	falling price
F	falling price type %: $:
A	has filter T: true F: false
B	filter type
C	filter price High limit
D	filter price Low limit
E	is NYSE (filter Market) T: true F: false
G	is NNM T: true F: false
H	is small cap T: true F: false
I	is OTCBB T: true F: false

1.10. Specific Alert setup Info to DB

[SOH]W[STX]s[STX]U[STX]V[STX]M[STX]T[STX]TP
[STX]N[STX]Q[STX]H[STX]S[STX]L[STX]R[STX]F[STX]A[STX]B[STX]
C [STX]D[STX]E [STX]G[EXT]

W	W: Alert
s	s: specific alert
U	Account Number
V	alert name
M	is check sound T: true F: false
T	is check message T: true F: false
TP	is auto order T: true F: false
N	Alert type1
Q	Alert type2
H	Price
S	Value
L	Value type %: $:
R	Number of share
F	Route
A	Trade Condition
B	TIF type
C	Side
D	is load stock box T: true F: false
E	is sent order T: true F: false
G	qualifier

1.11. Delete General Alert setup Info from DB

[SOH]W[STX]d[STX]g[STX]V[STX]M [EXT]

W	W: Alert
d	D: Delete
g	general alert
V	Account Number
M	Alert Name

1.12. Delete Specific Alert Setup Info

[SOH]W[STX]d[STX]s[STX]V[STX]M [EXT]

W	W: Alert
d	D: Delete
s	Specific Alert
V	Account Number
M	Alert Name

1.13. Login Message Format

[SOH]l1[STX]U[STX]P[EXT]

l1	Log in server (lower case L) plus 1
U	User ID
P	Password

1.14. Select Account Message Format

[SOH]s[STX]A[EXT]

s	Select Account
A	Account No

1.15. User Send Top 10 Require Format :(Type T)

```
[SOH]T?Country@0[EXT]
   ?                3: Enable  Top 10 Require
                    4: Disable Top 10 Require
==============  When  ?  Equal 3 or 4 =================
 PS: Enable (disable) Top 10 Require
    Country@0:
            USQ@0 →NASDAQ
            USN@0→NYSE
            USA@0→AMEX
            CAT@0→Toronto Stock Exchange
            CAV@0→TSX Venture Exchange
            UKS@0→London Stock Exchange
            FRP@0→Euronext French
            DEX@0→Xetra
            NLA@0→Euronext Netherlands
            BEB@0→Euronext Belgium
            PTL@0→Euronext Portuguese
            ITM@0→Italia  Milan Stock Exchange
            CH@0→ SWX Swiss Stock Exchange
                  @         V: Volume Leaders
                             L: Price % Losers
                            G: Price % Gainers
                            W: Price Gainers
                             S: Price Losers
```

1.16. User Send Change Password Require Format :(Type g)

```
[SOH]g,UserId,ACCount,OldPassword,NewPassword[EXT]
 Ps: From Third char must or 0x80 till New Password last char.
```

2. Server to Client

2.1. Account Manager Information

2.1.1 Account Equity

This message sends to user with the detailed information of the account.

[SOH]a[STX]E:i[STX]U[STX]A[STX]P[STX]Q[STX]SI[STX]TT[STX]
TP[STX]N[STX]M[STX]MM[STX]C[STX]R[STX]QF[STX] DP[STX] SC[STX]
S[STX]ST [EXT]

CODE	*2ND CODE*	*MESSAGE*
A	a:	Hard-coded message header indicating Account Manager
E	E:	denotes Current Info
	e:	denotes Historical Info
I	Margin Maintenance Requirement	
U	Cash Maintenance Requirement	
A	Short Maintenance Requirement	
P	Account trade Type	
	C:	Cash
	M:	Margin
	S:	Short
Q	Option Market Value:	The market value of current Option long position
SI	Option Short value:	The market value of current Option short position
TT	In the Money (in dollar amount)	
TP	Total Debit	
N	Cash Balance	
MM	maintains Excel	
MM	maintains Call	
C	day Call	
R	fed Call	
QF	Total Market Value:	On hand Position market Value include Stock and Option
DP	Overnight Buying Power	
SC	intra day Buying Power	
SC	Cash available for withdrawal	
ST	SMA (not in Use)	

2.1.2 Basic Account Details

This message sends to user with the login user's information

[SOH] a[STX]B:n[STX]E[STX]R[STX]P[STX]V[STX]M[STX]ROUTE…[EXT]

CODE	*2ND-CODE*	*MESSAGE*
a		Hard-coded message header indicating Account Manager
B		Hard-coded message header indicating Basic Account Details
n		Account Number
E	Name:	Name: Current Login user name
R	address:	Current Login user address, empty when not available
P	sin/security no:	Current Login user sin/security no, empty when not available.
V	Telephone Number:	Current Login user's telephone number, empty when not available
M	E-mail address:	Current Login user's email address, empty when not available
ROUTE	Routes permission.	Here list all routes that current account is permitted to send order.

2.1.3 Account Activity

This message sends to user with money transaction of this account

[SOH]a[STX]A:n[STX]E[STX]R[STX]P[STX]V[STX]M[STX]N[STX]D
[STX]T [EXT]

CODE	*2ND -CODE*	*MESSAGE*
a		Hard-coded message header indicating Account Manager
A		Hard-coded message header indicating Account Activity
n		The date of account open in this system
E		The Last Transfer-In Date
R		Last Transfer-Out Date
P		Money Pending
V	Money In/Out	

		I: In O: Out
M		ACAT Pending: The Value of transaction ACAT
N		ACAT In/Out I: In O: Out
D		DTC Pending: The Value of transaction DTC
T	DTC In/Out	I: In O: Out

2.1.4 Trade Summary

This message sends to user with current day trade summary in this account or historical trade summary by user requested.

[SOH]a[STX]S:e[STX]U[STX]A[STX]P[STX]Q[EXT]

CODE	*2ND CODE*	*MESSAGE*
a		Hard-coded message header indicating Account Manager
S	S:	denotes Trade Summary
	S:	denotes Historical trade summary
e	number of trades:	The total number of trade made in current day.
U	totalPL:	Total profit/loss made in current day
A	TotalbasicCost:	Total invest value in current day
P	Excludebestworst number of trades:	The total number of trades excludes the best profit/loss and the worst profit/loss trades.
Q	Excludebestworst number totalPL:	The total Profit/Loss excludes the best profit/loss and the worst profit/loss trades

2.1.5 Statistical Information

This message sends to user with statistical information for this account.

[SOH]a[STX]I:U[STX]A[STX]P[STX]Q[STX]S[STX]R[EXT]

CODE	*2^{ND} CODE*	*MESSAGE*
A		Hard-coded message header indicating Account Manager
I	I:	denotes Statistical Info
	i:	denotes Historical statistical Info
U	number of Pro Trades: .	The total number of profit trades
A	Value of Pro trades:	The total value of profit trades.
P	Best Trade:	Profit/Loss value of the best trade.
Q	number of loss Trades:	The number of loss trades.
S	value of loss trades:	The total value of loss trades.
R	worst trades:	Profit/Loss value of the worst trade.

2.1.6 Dollar/Share limit Info

This message is sent to the user with the Dollar Limit and Share Limit for the account.

[SOH]a[STX]L:U[STX]A[STX]B[STX]C[EXT]

CODE	*2^{ND} CODE*	*MESSAGE*
A		Hard-coded message header indicating Account Manager
L		Hard-coded message header indicating Dollar/Share limit
U	Dollar Limit:	The maximum market value (order price times number of shares/contracts) allowed for a single order of this account.
A	Share Limit:	The maximum number of shares allowed for a single Stock order of this account.

2.1.7 Balance/Exposure

This message is sent to the user with the balance and exposure for this account.

[SOH]a[STX]X:e[STX]U[STX]A[STX]P[EXT]

CODE	*2ND CODE*	*MESSAGE*
A		Hard-coded message header indicating Account Manager
X		Hard-coded message header indicating Balance/Exposure
e	Starting Equity:	The total Equity at the beginning of the trading day.
U	Number of Positions:	The total number of holding position in this position account
A	Current Equity:	The total Equity for current time.
P	Total Market Value:	The total market value of holding position in this account

2.1.8 Long Short Position

This message sends to user with trade details in this account either current day or historical by user requested.

[SOH]a[STX]P:[STX]U[STX]A[STX]P[STX]Q[STX]S[STX]R[EXT]

CODE	*2ND CODE*	*MESSAGE*
A		Hard-coded message header indicating Account Manager
P	P:	Hard-coded message header indicating Long Short Position
	p:	Historical long short position
p		
U	number of LongTrades:	The total number of long trades (round trip)
A	number of Pro Long Trades:	The total number of profit long trade (round trip)
P	avgPL long:	The average profit/loss of the long trades
Q	number of Short Trades:	The total number of short trade(round trip)
S	number of Pro Short Trades:	The total number of profit short trades (round trip)
R	avgPL short:	The average profit/loss of the short trades

2.1.9 Updated Buying Power

This message sends to user after each order is placed with updated account balance.

[SOH]a[STX]D[STX]U[STX]A[STX]B[EXT]

CODE	*2ND CODE*	*MESSAGE*
A		Hard-coded message header indicating Account Manager
D		Hard-coded message header indicating updated buying power and cash
U	Daytime buying power:	The current real-time Daytime Buying Power
A	Cash balance:	The current real-time Cash Balance
B	Overnight Buying Power:	The current real-time Overnight Buying Power

2.1.10 Account Maint. Requirement

[SOH]a[STX]R[STX]M[STX]L[STX]S[STX]O[STX]C[STX]R[STX]NSM[STX]
NSPC[STX]A[STX]P[STX]U[STX] arca_pnp [STX]brut_pnp[STX]CURRENCY[EXT]

A	Account Manager
R	Account Maint Requirement
M	Margin_Rate
L	Long_Maint_Rate
S	Short_Maint_Rate
O	Option_Maint_Rate
C	Covered_Call_Rate
R	Naked_Short_Rate
NSM	Naked_Short_Min_Rate
NSPC	Naked_Short_Per_Contruct
A	Account Type // C: Cash; M: Margin; S: Short
P	Margin_price
U	Arca_downtick_rule ='T' or 'F'
arca_pnp	CHAR(1) DEFAULT 'F',
brut_pnp	CHAR(1) DEFAULT 'F'
currency	char(3) default 'USD'
account_level	char(1), 'N': normal, 'S' special, 'L' Long Sale Override account
LS_OVERRIDE_SHARE_LIMIT	int Long Sale Override Share Limit

2.1.11 Future realized Profit/Loss

This message sends to user with Future trade profit/loss (P/L).

```
[SOH]a[STX]R[STX]M[STX]L[EXT]

A        Account Manager
F        Future realized P/L
M        Total P/L within current day
L        Total Trade Number within current
```

2.1.12 TRIAL TRADE TRIGGER PRICE

New protocol for moniter trail order trigger price, the message is sent from order server to front-end.

```
[SOH]TR[STX]TRADE_ID[STX]ACCOUTN[STX]P [EXT]

TR          TRIAL TRADE TRIGGER =’\239’

TRADE_ID    TRADE_ID

ACCOUNT     ACCOUNT

P           TRIGGER PRICE
```

2.2. Trade Manager Information

2.2.1 Trade Log

This message sends to user with individual trade log. Each Order has one initial message for this order last status. The server will automatic send Trade Log for each Order made within current day. The server will send Historical Trade Log within a given time period when user sends a request.

```
[SOH]t[STX]TL[STX]U[STX]R[STX]P[STX]V[STX]M[STX]T[STX]TP
[STX]N[STX]MM[STX]C[STX]R[STX]QF[STX]DP[STX]SC[STX]ST[STX]
S[STX]Q[STX]D[STX]RT [STX]US[STX]ST[STX]LT[STX]add_item[EXT]
```

t	Trade Manager
TL	TL: Trade log HS: historical trade log
U	Situation '*' : not historical Info '@': end of the historical info E: EXECUTED S: SENT P: PENDING C: REJECTED CANCEL R: REVIEW L: CANCELED J: REJECTED G: CANCEL PENDING O: STOP X: EXPIRED
R	Situation class
P	Symbol
V	side B:BUY S: SELL
M	qualifier
T	price
TP	quantity
N	unfillqty
MM	mmid
C	time
R	tradeid
QF	referenceid
DP	tiftype
SC	tifperiod
ST	source

S tradetype
Q trade condition
D Delimit price
RT Route
US Underline Symbol
ST SECURITY TYPE //Stock:S, Option:O, Future:F
LT liquidity tag
Add itme:
?4=CURRENCY,
?5=BASE_RATE,
?6=EXECINST,
?7=MAXFLOOR,
?8=MINQTY,
?9=OFFSET1,
?10=DISCRETIONAL_OFFSET,
?11=TRAIL_VALUE
?12=put_or_call
?13=expire date
?14= option expire date and strike price.
Example : expire date step 30,2004, strike price=20.5
,?14=09-30-2004@20.5
?15=start_side
?16=trail_start_price
?17=trail_trigger_price

2.2.2 Position

This message sends to user with current holding position.

[SOH]t[STX]PD[STX]U[STX] US[STX]V[STX]M[STX]T[STX]TP
[STX]N[STX]Q[STX]B[STX]C[EXT]

t Trade Manager
PD Position
U Symbol
US Underlying Symbol
V Cost
M Shares
T Trade Type // C: Cash, M: Margin S: Short
TP IS_LONG // Option: T,F
N SOURCE // Option: CV, OP
Q SECURITY TYPE // Stock:S, Option:O, Future:F
B Is Bullet
C Currency

2.2.3 Confirm status from Order Server

[SOH]o, OM_Confirm_Status, tradeID, token,quantity, ReasonID,Time [EXT]

OM_Confirm_Status: 0 OrderManger Confirm Order send message
1 Reject order
Error Code:
tradeID: OrderManager generate ID
token: WebServer send to QM
ReasonID: Reject reason id when reject order
Quantity: If reject return old quantity

2.2.4 Confirm status from Market

[SOH]m, Market_Confirm_Status, tradeID, reference, ExecID, Time, ReasonID,ErrorPosition,text [EXT]

Market_Confirm_Status: 0 Market Confirm Order send message
1 Reject
reference: Market generate reference Number
execID: Market generate Execute ID
ReasonID: Reject reason id when reject order
ErrorPositon: Error Position in WebServer Order
Text: Reason text
Time: Market confirm time

2.2.5 Execute from Market

[SOH]e,Execute_Status, tradeID, reference, execID, Price, Volume, unfill volume, Commission, Time,MMID, liquidity tag [EXT]

Eexecut_Status: 0 execute
2 market nothing done
4 URSTOP market system shutdown
X EXPIRE
T TRADE CLOSED
J execute delete
K execute modify

Price: Execute price
Volume: Execute volume
Commission: Trade Commission
Time: Execute time
execID: Market generate Eexecut ID
MMID:
liquidity tag

2.2.6 Confirm cancel message from Order Server

[SOH]c, OM_cancel_confirm, tradeID, reference, ReasonID [EXT]

OM_cancel_confirm: 0 Order Manger confirm client cancel message
1 Reject cancel
2 Reject cancel/replace
ReasonID: reject reason id when reject cancel message

2.2.7 Confirm cancel message from Market

[SOH]b, Market_cancel_confirm, tradeID, reference, ExecID, Time, ReasonID, ErrorPosition, text [EXT]

Market_cancel_confirm: 0 OrderManger confirm client cancel message
1 Reject client cancel Error Code

reference: Market generate reference Number
execID: Market generate Eexecut ID
ReasonID: Reject reason id when reject cancel message
ErrorPositon: Error Position in WebServer cancel message
Text: Reason text
Time: Market confirm time

2.2.8 Execute cancel from Market

[SOH]f, Execute_cancel_status, tradeID, reference, execID , Time , TEXT[EXT]

Execute_cancel_status: 0 Cancel done
3 YOU ARE OUT
8 CANDEL DONE
2 market nothing done
4 URSTOP market system shutdown
7 Cancel Too late
M REPLACE DONE

Price: Execute price
Volume: Execute volume
Commission: Trade Commission

Time: Execute time
execID: Market generate Eexecut ID
Text: Reason text

2.2.9 Trade Maintenance

[SOH]g, Trade_Maintenance_Status, TradeID, Symbol, Underline_Symbol, ExecID, last_ExecID, Price, Shares, unfill_shares, Commission, Time [EXT]

Trade_Maintenance_status: F New
G Cancel
H Correct
I Status

Or_tradeID: Original Trade ID
ExecID: Unique ID for Maintenance message
Last_ExecID: Last ExecID
Price: Execute price
Shares: Execute volume
Commission: Trade Commission
Time: Execute time

2.2.10 Reject the account login

[SOH]j, accounts, ReasonID [EXT]

2.2.11 Send Drop Copy info to front end

[SOH]d, Account,operate,trade id, Symbol, Side, Trade condition, reference, ExecID, ExecRefId, price, Shares, Time, Text, Route, DiscountFlag [EXT]

operate:"U"= New order accepted,
"T"= Existing order executed,
"V"= Existing order canceled,
"P"= Previous execution broken.

Side:B--Buy;S--Sell;T--Short;
Trade condition:M--Market;L--Limit

2.3. Basket Trade Setup Info

[SOH]r[STX]P[STX]U[STX]V[STX]M[STX]T[STX]TP
[STX]N[STX]Q[STX]S[STX]L[STX]R[STX]F[STX]

Type of Trade[STX]
Order type[STX]MMID[STX] Period (for TIF) [STX]Stop Limit Price[STX]Source[STX]
Reserve Quantity number([EXT]

r	Initial Basket Trade Setup Info
P	Account Number
U	Basket Name
V	index
M	side
T	quantity
TP	symbol
N	price
Q	route
S	trade condition
L	trade type
R	tif
F	qualifier

Type of Trade	char(1),	//(stock, option, future)
Order type	char(1)	//(Normal order or reserve order)
MMID	char(4)	
Period (for TIF)	number(3)	
Stop Limit Price	number(22,8)	
Source	char(2)	// for option, to identify it
Reserve Quantity	number(10)	

2.4. Alert

2.4.1 General Alert setup Info

[SOH]w[STX]g[STX]U[STX]V[STX]M[STX]T[STX]TP
[STX]N[STX]Q[STX]S[STX]L[STX]R[STX]F[STX]A[STX]B[STX]C [STX]D
[STX]E [STX]G[STX]H[STX]I[EXT]

w	Alert
g	General alert
U	Account Number
V	alert name
M	is crossed stock T: true F: false
T	is locked stocks T: true F: false
TP	is reached 52 week high T: true F: false
N	is reached 52 week low T: true F: false
Q	volume reaching
S	rising price
L	rising price type %: $:
R	falling price
F	falling price type %: $:
A	has filter T: true F: false
B	filter type
C	filter price High limit
D	filter price Low limit
E	is NYSE (filter Market) T: true F: false
G	is NNM T: true F: false

H	is small cap T: true F: false
I	is OTCBB T: true F: false

2.4.2 Specific Alert setup Info

[SOH]w[STX]s[STX]U[STX]V[STX]M[STX]T[STX]TP
[STX]N[STX]Q[STX]H[STX]S[STX]L[STX]R[STX]F[STX]A[STX]B[STX]
C[STX]D[STX]E [STX]G [EXT]

w	Alert
s	specific alert
U	Account Number
V	alert name
M	is check sound T: true F: false
T	is check message T: true F: false
TP	is auto order T: true F: false
N	Alert type1
Q	Alert type2
H	price
S	value
L	value type %: $:
R	number of share
F	route
A	trade condition
B	tif type
C	side
D	is load stock box T: true F: false
E	is sent order T: true F: false
G	qualifier

2.4.3 Specific Alert Event

[SOH]w[STX]e[STX]s[STX]V[STX]M[STX]
T[STX]TP[STX]N[STX]Q [EXT]

w	Alert
e	event
s	specific alert
V	Event type: null
M	symbol
T	Bid
TP	Ask
N	Last Price
Q	Volume

2.4.4 General Alert Event

[SOH]w[STX]e[STX]g[STX]V[STX]M[STX]
T[STX]TP[STX]N[STX]Q [EXT]

w	Alert	
e	Event	
g	general alert	
V	Event type:	
	c:	crossed
	l:	locked
	h:	52weekhigh
	w:	52weeklow
	r:	volume reached
	u:	price up reached(change)
	d:	price down reached (change)
M	symbol	
T	Bid	
TP	Ask	
N	Last Price	
Q	Volume	

2.5. General Info

2.5.1 Route Info

[SOH]i[STX]A[STX]B[STX]C[STX]…..[EXT]

A	T: means the route is available	F: means it's down
B	T: means the route is available	F: means it's down
C	T: means the route is available	F: means it's down
…	…	

Routes sequence:

ARCA,XTRA,ENXT,BRUT,INET,ATDS,BAMM,NITE,BELZ,SNET,SOES,NYSB, NYB+,AMXB,GNET,F,CME,SIS,NYSA,AMEA,INCA,***SCHB***,CBOT,LIFF,TSE, NYA+,BULL,F,SIAC,SIA+,HELN,HELA,HEL+

So if A is T, ARCA is available, otherwise ARCA is down
If B is T, XTRA is available, otherwise XTRA is down
….

2.5.2 Quote Permission

[SOH]q[STX]FGHIJKPQRSVWX [EXT]

q	quote permission
F	NEWS
G	NYSE
H	NASDAQ
I	MUTUAL FUNDS
J	FUTURES
K	OPTIONS
P	GERMANY
Q	FRANCE
R	USA
S	ISLD
V	ARCA
W	INCA
X	LEVEL 2

If this permission is not premised , set to 0.

2.5.3 Initial End Code

[SOH]k[STX]@[EXT]

k finish initial data transfer

2.5.4 Bullet Position

[SOH]x[STX]F[STX]G[STX]H[EXT]

X	Bullet Position
F	symbol
G	position
H	on_hand

2.5.5 US Eastern Time Message data Format

[SOH]Mhh:mm:ss-mmddyyyy[EXT] M Time Message
[SOH]&**hh:mm:ss-mmddyyyy[EXT] M Time Message ** Simplified country name EU → Frence,Germany, Netherlands, Belgium and Central Eur. GB → Great Britain

2.5.6 Other country Local Time Message data Format

[SOH]&**hh:mm:ss-mmddyyyy[EXT] ** Simplified country name EU → Frence,Germany, Netherlands, Belgium and Central Eur. GB → Great Britain

2.5.7 Equity Top 10 Message data Format

Top 10 record: (rec_type = V, L or G record length =?)

[SOH]T?#C…CC[STX]EEEE[STX]Company[STX]HH:MM:SS[STX]P…PP[STX]Chg [STX]persent[STX]Share[EXT]	
?	V: **Volume Leaders** L: **Price % Losers** G: **Price % Gainers** W: **Price Gainers** S: **Price Losers**
#	**Top 10 Number (From 0~19) So #->AscII +0x30**
C….CC	Symbol (First Two Char is Simplified country name)
EEE	Exchange ID
Company	Stock Company name
HH:MM	Stamp Time [String]
P….PP	Last Price [Numeric]
Chg	
Percent	
Share..	Total number of shares [Numeric]

2.5.8 "Client can send data now" Message data Format

[SOH]L5,hh:mm:ss-yyyymmdd,?,#,@[EXT]	
?	is 1 Swiss American Client Login, otherwise others
#	is 4 special account
@	Account's Base Currency

2.5.9 Client Fetch Account Message data Format:

```
[SOH] L? [EXT]
  ?      2: Username, Password wrong or no active account can be selected. User Try
            again!
         3: User try Login In Over 3 times, Server is going to shut down this client.
         4: Server Setup User Account Fail. User Try again!
         5: Client can send data now.
            PS: [SOH] L5, hh:mm:ss-yyyymmdd,?,#,@[EXT]
                ?  reserved by TSG.
                #  reserved by TSG.
                @  This Account's Base Currency
         6: Server Send User Account is finished.
         7: No more account for client
         8: Password Already Locked By Over 6 times try to login.
         9: Password must change. Since password already Expired (over 90 days).
         A: Password Change successful.
         B: Cannot change password. Maybe Userid ,account,old password  wrong
         C: Cannot change password. Oracle error.
         D: password already Expired ,Client Can not Login
            Ps: [SOH] LD???[EXT]
            ???→How many days this user will be expired
            ??? < 0  Front End Must pop up message "password already Expired"
            ??? >=0 && <=10 Fron end must pop up message " Your password will  be
             expired still have ??? days left "
         E: Client doesn't Sign Exchange Agreements.
         G:Access restricted by backoffice
         H:Access is denied ,Please use right front-end version
         Z:Server Want Front-end Pop some Message,
           PS: : [SOH] LZ?,@#$%^&*[EXT]
               ? =0 Front-end must shut down
               @#$%^&* →Message
         g:Client Clearing Firm and Group Info
            PS:[SOH]Lg,Group id,BD ID, Clearing firm ID[EXT]
         w: working order trader account info:
            PS:[SOH]Lw,trade1account, trade2account,…[EXT]
```

2.5.10 Login return Account Message data Format:

```
[SOH]L1######### [EXT]
 1          Server return Account Message
 ######     Client Account String
```

2.6. Stock Screener

2.6.1 Filter

[SOH]D[STX]f[STX]A[STX]B[STX]C[STX]H[STX]I[STX]J[STX]K[STX]
L[STX]M[STX]N[STX]O [EXT]

D	Stock Screener	
F	Filter	
A	basic filter: Volume	
B	basic filter: Min Price	
C	basic filter: Max Price	
H		
	1:	Intraday Low
	2:	High Ask
	3:	Low Bid
	4:	2 Day High
	5:	3 Day High
	6:	4 Day High
	7:	2 Day Low
	8:	3 Day Low
	9:	4 Day Low
	10:	Prev. Close
	11:	Open
	12:	Close
I	Advanced filter: Min Value	
K	Advanced filter: Max Value	
L	Advanced filter: UP or Down	
	U:	Up
	D:	Down
	E:	At
M	Advanced filter: Trading	
	A:	Above
	B:	Below
	O:	Approach
O	Advanced filter: Min Time	

2.6.2 Symbol List

[SOH]D[STX]q[STX]A[STX]B[STX]C
[STX]E[STX]F[STX]G[STX]H[STX]I
[STX]J[STX]K[STX]L[STX]M[STX]N
[STX]O[STX]P[EXT]

D	Stock Screener
q	symbol list
A~P	Symbol(flexible length)

2.6.3 Delete

[SOH]D[STX]d[EXT]

D	Stock Screener
d	Inactive function

2.6.4 Query

[SOH]D[STX]a[EXT]

D	Stock Screener
a	query for certain time period

2.6.5 Stock Screener Return Message from server

2.6.5.1 Whole message for real time

[SOH]D[STX]w[STX]m[EXT]

s	Stock Screener
w	real time message
m	show whole message

2.6.5.2 Return query response

[SOH]D[STX]w[STX]m[STX]n….. [EXT] s s: Stock Screener s s: Return query response m symbol list

2.7. Quote Data Format

2.7.1 Trade data Format

(rec_type = 2 record length =?)

[SOH]2OC…CC[STX]ECI[STX]P…PP[STX]V...VVV[STX]
HHMMSS[STX]TVTV.. [EXT]

O	Volume category:	
	1)	total volume
	2)	transaction volume
C….CC	Symbol (First Two Char is Simplified country name)	
E	Exchange ID (Please See Appendix A)	
C	Sale Condition (Please See Appendix B)	
I	"Space":	Stock
	O:	Option
	F:	Future
C….CC	Symbol (First 2 Characters are the simplified country name)	
P….PP	Last Price [Numeric] Price to be last trade Price to be open if blank Price to be high if greater than high or high is blank Price to be low if lower than low or low is blank	
V….VV	Volume [Numeric]	
HHMMSS	Stamp Time [String]	
TVTV….	Total Volume [Numeric] -- JUST CARRY if Volume category=2	

2.7.2 Quotes data Format(Best Bid /Offer)

record: (rec_type = 3 record length =?)

[SOH]3C…CC[STX]ECI[STX]Bid[STX]BidSize [STX]
Ask[STX]AskSize[STX]LevIIExchange[EXT]

C….CC	Symbol (The first two characters are country code.)	
E	Exchange ID (Please See Appendix A)	
C	NASDAQ Short Sale Indicators (Please See Appendix C)	
I	"Space":	Stock
	O:	Option
	F:	Future
Bid…	Bid Price [Numeric]	
BidSize..	Bid Size [Numeric]	
Ask…	Ask Price [Numeric]	
AskSize..	Ask Size [Numeric]	

2.7.3 Updating data Format

record: (rec_type = 4 record length =?)

[SOH]4?C…CC[STX]ECI[STX]P….PP[STX][EXT]

C….CC	Symbol (The first two characters are country code.)	
E	Exchange ID (Please See Appendix A)	
C	Always 0x20(Space)	
I	"Space":	Stock
	O:	Option
	F:	Future
?	Price category	
A	Update to Last Price	
G	Open	
	Price to be open	
E	High	
	Price to be High	
F	Low	
	Price to be low	

I	Previous Price to be previous close
J	Settlement Price to be last trade as settlement Price to be high if greater than high or high is blank Price to low if lower than low or low is blank
V	Total Volume
W	VWAP
L	SunRise (Only happen in Future and Future Option) Price to be P.set and Set open,high,low, bid,ask ,bidsize,asksize to Zero.
P…PP	Price [Numeric]

2.7.4 Refresh or Initial-data Format

record: (rec_type = 6 record length =?)

[SOH]6 C…CC[STX]ECI[STX]O….OO[STX]H…HH[STX]L…LL
[STX]P.SET. [STX]P…PP [STX]BID…
[STX]ASK.. [STX]BIDSIZ[STX]ASKSIZ
[STX]V….VV[STX]YA…H[STX]YA…L
[STX]EXDIV[STX]RATIO [STX]YIELD
[STX]EARIN[STX]DIVIDE[STX]SharesOut
[STX]Comp[STX]ISIN [STX]LOCAL[STX]
Hard To Borrow[STX]VWAP[STX]
Currency[STX]$[EXT]

C….CC	Symbol (The first two characters are country code.)	
E	Primary Exchange ID	
C	In Futures: The 2nd E is Decimal Position Or Fraction Type Ex: When The 2nd E is From 'a' to 'i' is Fraction a-> 1/8th b-> 1/16th c-> 1/32nd d->1/64th e->1/128th f->1/256th Ex: When The 2nd less Zero please ignore this . In Stocks: The 2nd E is Quote Condition	
I	"Space":	Stock
	O:	Option
	F:	Future
O…. OO	Open [Numeric]	
H…. HH	High [Numeric]	
L…. LL	Low [Numeric]	
P.SET	Previous [Numeric]	
P… PP	Last [Numeric]	
BID…	Bid [Numeric]	
ASK…	Ask [Numeric]	
BIDSIZ	Bid Size [Numeric]	
ASKSIZ	Ask Size [Numeric]	
V…. VV	Total Volume [Numeric]	

YA… H	52 Week High [Numeric] (for Futures it is Yesterday Volume)	Option is NULL
YA… L 52 Week Low [Numeric] Option is NULL)	52 Week Low [Numeric] (for Futures it is Settlement)	Option is NULL
EXEDIV	Dividend Date (Stock) [String] Expired Date (Option,Future) [String]	Option is NULL
RATIO	Price Earnings Ratio [Numeric] (for Futures it is SpecMaint Fee)	Option is NULL
YIELD	Dividend Yield [Numeric] (for Futures it is SpecInit Fee)	Option is NULL
EARIN	Earnings per Share [Numeric] (for Futures it is The minimum fluctuation of this futures contract)	Option is NULL
DIVIDE	Dividend (Stock) [Numeric] Open Interest (Option and Futures)	
SharesOut	Shares Outstanding [Numeric] Strike Price (Option) [Numeric] MarketValue (Futures) [Numeric]	
Comp	Company Name [String] (Futures, Stocks) BaseSymbol [String] (Options) (for Futures it is Symbol Whole Name)	
ISIN	ISIN Number (Futures : 'E' àCME E-Min Symbol àCBOT a/c/e Symbol Other:Regular Future Symbol)	
Local	LocalCode (for Futures it is the trading current date)	
Hard To Borrow	'4' Do not Check Down Tick can Short 'T' Hard to borrow. 't' Hard to borrow and do not check downtick	

VWAP	Volume Weighted Average Price
Currency	Currency code
$	ASCII 4 (If this value carries this mark (ASCII 4), it means this value comes from the database when user makes a symbol request; otherwise it comes from the real time server.)

2.8. Chart Data Format

2.8.1 Tick Char Message data Format

```
[SOH]?C…CC[STX]Date[STX]Time[STX]OPEN[STX]CLOSE
                  [STX]HIGH[STX]LOW[STX]VOL[EXT]
 ?                T is     Minutes Chart
                  I  is 30 Minutes Chart
 C….CC            Symbol  (First Two Char is Simplified country name )
 Date             YYYYMMDD Format
 Time             HH:MM         Format

 OPEN             This Minute First Price
 CLOSE            This Minute Last Price
 HIGH             This Minute most high price
 LOW              This Minute most low price
 VOL              This Minute Total Volume

PS  : When @ In Date Position  is meaning End Of  Tick Char
             *   In Date Position  is meaning no such symbol found
             ~   In Date Position  is meaning Oracle get problem
             Ex:\1TUSCSCO,@,\3→End Of  Tick Char
```

2.8.2 Historical Char Message data Format

```
[SOH]HC…CC[STX]Date[STX]Time[STX]OPEN[STX]CLOSE
                  [STX]HIGH[STX]LOW[STX]VOL[EXT]
 C….CC            Symbol  (First Two Char is Simplified country name )
 Date             YYYYMMDD Format
 Time             NULL(Nothing)
 OPEN             This Date First Price
 CLOSE            This Date Last Price
 HIGH             This Date most high price
```

LOW	This Date most low price
VOL	This Date Total Vplume

PS : When @ In Date Position is meaning End Of Historical Char
* In Date Position is meaning no such symbol found
~ In Date Position is meaning Oracle get problem
Ex:\1TUS1234CO,*\3→ no such symbol found

2.9. Books Messages

2.9.1 Book Add Order Message data Format

Add Sell/Buy Order record: (rec_type = B or S record length =?)

[SOH]?C…CC[STX]EEEE[STX]Price[STX]Share[STX]
HHMMSS[STX] Ref[STX]#@[EXT]

?	B: Buy Order S: Sell Older
C….CC	Symbol (The first two characters are country code.)
EEEE	MMID (Length is 4)
Price…	The limit price of the order [Numeric]
Share..	Total number of shares being added to the book [Numeric]
HHMMSS	Stamp Time [String]
Ref…	Order reference [Alphanumeric]
#@	#: T -- routed F -- not routed @ -- Minimum Quantity

The indicators are as follows:

Minimum	Indicator
1,000	1
2,000	2
3,000	3
4,000	4
5,000	5
6,000	6
7,000	7
8,000	8
9,000	9
10,000	a
15,000	b
25,000	c
50,000	d
100,000	e
All or None	F

Example:

The size on an order to Buy 20,000 shares with a minimum quantity of 5,000 shares would appear like this: 20000 (5).

Minimum quantity does not change when the size of the order changes, so it is possible to receive an order revision where minimum quantity is greater than order quantity. In this case, we would display the All or None indicator (f).

Note: The #@ Column is for INCA only. Other books may be NULL .So when the value does not carry #@ field , it ends at the Ref column.

2.9.2 Book Replace Order Message data Format

Replace Sell/Buy Order record: (rec_type = R)

[SOH]RC.CC[STX]EEEE[STX]Price[STX]Share[STX]HHMMSS
[STX]Ref[STX]SIDE[STX]#@[EXT]

C….CC	Symbol (The first two characters are country code.)
EEEE	MMID (Length is 4)
Price…	The limit price of the order [Numeric] If Price is NULL please ignore .
Share..	Total number of shares being added to the book [Numeric] If Share is NULL please ignore
HHMMSS	Stamp Time [String]
Ref…	Order reference [Alphanumeric]
SIDE	B: Buy Side S: Sell Side
#@	#: T -- routed F -- not routed @ -- Minimum Quantity

Note: Since some data providers do not send buy/sell side, so end user must check his/her own database to find the sell/buy side. When the data does not carry "SIDE" column, this data will end at the Ref column.

2.9.3 Book Cancel Message data Format

Cancel Order record: (rec_type = X record length =?)

[SOH]?C…CC[STX]EEEE[STX]Price[STX]Share[STX]
HHMMSS[STX]Ref[STX]SIDE[EXT]

?	X: Order Cancel
C….CC	Symbol (The first two characters are country code.)
EEEE	MMID (Length is 4)
Price	Always is NULL
Share	The reference number of the order being canceled or reduced. References a previously sent Add Order Message. [Numeric]
HHMMSS	Stamp Time [String]
Ref…	Order reference [Alphanumeric]
SIDE	B: Buy Side S: Sell Side

Note:

A).When Share field or Price field is zero, it indicates that the order was executed or cancelled.

B).Since some data providers do not send buy/sell side, so end user must check his/her own database to find the sell/buy side. When the data do not carry "SIDE" field , data is end at the Ref column.

2.9.4 NYSE Open Book Format

Quote record: (rec_type = 9 record length =?) NYSE Open Book data

[SOH]9OC…CC[STX]EEE[STX]Bid/Ask[STX]BidSize/AskSize[STX]****[EXT]

O	'1': Bid Side only '2': Ask Side only
C….CC	Symbol (The first two characters are country code.)
EEE	Exchange ID
Bid/Ask	Bid or Ask Price [Numeric]

BidSize/AskSize	Bid Or Ask Size [Numeric]
****	Order id

Note:

A). When Bid(ask) or BidSize(ask size) is Zero ,this is delete message

B). Cancel/Replace/Execute message is the same as the new order message. Front-end must lookup order id to check this message either a new order or an existing order, with the price and size adjustment

2.9.5 Nasdaq ADAP and CME DOME Format

Quote record: (rec_type = 8record length =?)   Nasdaq ADAP data

[SOH]8OC…CC [STX]ECI[EXT]Bid/Ask[STX]BidSize/AskSize[EXT]

O	*-- For ADAP --*	
	'B': Bid Side only (ADAP)	
	'A': Ask Side only (ADAP)	
	-- For CME Dome --	
	'1': Bid Side only (CME DOME)	
	'2': Ask Side only (CME DOME)	
	'3': Both Side	
C….CC	Symbol (The first two characters are country code.)	
E	Exchange ID (Please See Appendix A)	
C	Market Level (Max. 5 Levels)	
	Level 1	ASCII 4+1
	Level 2	ASCII 4+2
I	Space (0x20): Nasdaq ADAP	
	F : Futures Dome	
Bid…	Bid Price [Numeric]	
BidSize..	Bid Size [Numeric]	
Ask…	Ask Price [Numeric]	
AskSize..	Ask Size [Numeric]	

Note:

When O is 3 Format is

[SOH]8OC…CC[STX]ECI[STX]Bid[STX]BidSize[STX]Ask[STX]AskSize[EXT]

2.9.6 Nasdaq and Option Level II Messages

Level II data Format:
Quote record: (rec_type = P record length =?)

[SOH]PC…CC[STX]EEEE[STX]Bid[STX]BidSize [STX]
Ask[STX]AskSize[EXT]

C….CC	Symbol (The first two characters are country code.)
EEEE	MM Name(Length is 4)
Bid…	Bid Price [Numeric]
BidSize..	Bid Size [Numeric]
Ask…	Ask Price [Numeric]
AskSize..	Ask Size [Numeric]

Note.: When Size field or Price field is zero, it indicates that the order was executed or cancelled.

2.9.7 Level II , Futures Dome & Books Initial Data Messages

Books Nasdaq Level II & Nasdaq ADAP initial data message format

[SOH]?*C…CC[STX]EEEE[STX]P…PP[STX]Share[STX]%^&[EXT]

?	J: Nasdaq Level2	
	K: IslandBook	
	N: ArcaBook	
	O: INCABook	
	G: ADAP	
	H: NyseBook	
*	B: Bid Field	
	A: Ask Field	
C….CC	Symbol (The first two characters are country code.)	
EEEE	MMID (Length is 4)	
	In ECNBook or NyseBook, this field indicates Order ID	
	In ADAP, this field indicates Level Number	
	Level 1	ASCII 4+1
	Level 2	ASCII 4+2
	………	
P….PP	Last Price [Numeric]	

Share..	Total number of shares being added to the book [Numeric]
%	%: Island Y: displayed in NASDAQ S: Subscriber Only Inca T: routed order indicator Others: Please Ignore
^	INCA Pegtype Pegtype =O; Please ignore trade price field and put "OPNG" Others: Please Ignore
&	Inca MinQuantity (See above) Others: Please Ignore

Note: Sometimes ^ and & will be NULL
Note: When @ In EEEE Field indicates end of file.
* In EEEE Field indicates symbol not found.
$ In EEEE Field indicates no permission.

Ex : [SOH]JAUSMSFT[STX]$[EXT] →No Nasdaq LeveLII Permission
[SOH]OAUSMSFT [STX]$[EXT] →No INCA Book Nasdaq Permission
[SOH]JAUS1234[STX]*[EXT] →Can not Find 1234 in Nasdaq LeveLII database .

2.9.8 Future Dome initial data message format

[SOH]?*C…CC[STX]Bid[STX]BidSize[STX]Ask[STX]AskSize[EXT]

?	J->DOME	
*	Level Number	
	Level 0 :	ASCII 4+1
	Level 1:	ASCII 4+2
	…….	
C….CC	Symbol (The first two characters are country code.)	
Bid…	Bid Price [Numeric]	
BidSize..	Bid Size [Numeric]	
Ask…	Ask Price [Numeric]	
AskSize..	Ask Size [Numeric]	

Note.: When @ In EEEE Field indicates end of file.
* In EEEE Field indicates symbol not found.
$ In EEEE Field indicates no permission.

Appendix A: Rejection Messages

These are the messages generated by the client interface. In addition to these types of messages clients can get messages from the servers or from the markets. Market and Server messages vary so they cannot be outlined here. (Please refer to error_message_id.xls for more information.)

Messages from Markets can be confirmed or explained by calling the market.

Messages from servers must be confirmed or explained by Tradestream Global support staff.

Client Messages

"Data Format Error" Error Code:-1

This means that the system message contains information which is incorrectly formatted, such as missing decimal place, or letters where numbers should be. If a trader gets this message Tradestream developers should be notified as it is unusual and should not happen.

"Order Format Error" Error Code:-2

This means that the order message contains information which is incorrectly formatted, such as missing decimal place, or letters where numbers should be. If a trader gets this message they should first check that they have correctly entered data and then Tradestream developers should be notified if the trader entered correct data.

"Trading Not Permitted." Error Code:-3

This means that the account has not been given permission to use that route, trade that country or trade that security type. The trader should get trader support to enable that route for them to trade via it.

"Closing Transactions Only!" Error Code:-4

This means that the client has been locked from trading and is permitted only to sell their existing positions. The client should contact trader support to ask why they are locked and trader support has the power to unlock them.

"Exceeds Share and Dollar Limit!" Error Code:-5

This means that the account has been given restriction levels of either total shares, accumulated shares or dollar value and that the current order is exceeding one of those restrictions. The client is therefore not allowed to do that trade and should contact trader support to have the limits changed if they want them higher.

"Exceeds Day Trading Buying Power!" Error Code:-6

This means that the client has used up their day buying power and is being prevented from trading due to this restriction. It prevents exceeding their allowed margin.

"No LONG cash position" Error Code:-7

"Exceeds Long Position!" Error Code:-8

This means that the client is trying to sell more shares then they hold without shorting. A client should sell their long positions and short the additional shares.

"short position are not enough" Error Code:-9

"Option Trade not permitted!" Error Code:-10

Same message exists for Futures and Equities. This means that this account is not enabled to trade options. The client should have trader support add Options to the available securities types that account can trade.

"Exceeds Open Options Position!" Error Code:-11

This means that the client is trying to trade options to close and does not have an existing option position. They should buy to open.

"Insufficient Shares to Cover Contracts!" Error Code:-12

This means that the client is trying to trade options to cover and the underlying equity does not exist in their account.

"Save Client ID Error!" Error Code:-13

This means that the system has had a failure in writing data that is related to a login error. The client should log out and log back in. If this problem persists contact Tradestream technical support. It is most likely with FIX hub and automated trading systems and unlikely with clients using the user interface.

"DB Off-line!" Error Code: -14

This means that the database is not available to authorize or process the trade. The client should contact Tradestream technical support.

"Wrong trade condition" Error Code: -15

"Invalid Order Size!" Error Code:-16

This means that the selected route does not accept the specified order size. The client should change the order size to the amount allowed by that route or change the route to one which allows that size.

"Order canceled by market!" Error Code:-17

This means that the market has sent a U R OUT message and the order has been canceled. It is likely on IOC orders and sometimes happens when market makers decide to reject a trade or unlikely but possible when ECNs have system failures.

"Cancel Timed out!" Error Code:-18

This means that the cancel has been rejected.

"Order Filled: Too Late to Cancel!" Error Code:-19

This means that the order was completed before the cancel message was received by the market.

"Existing cancel pending for this order!" Error Code:-20

This means that there is already a cancel order in the market and the client has attempted to send another.

"Too soon to cancel - Order in route." Error Code:-21

This means that SNET 10sec rule is being enforced and the order cannot be canceled yet.

"Market Connection Off-line!" Error Code:-22

This means that the order server has closed its connection to the market route. This happens when a market closes or when a market has a failure. If this message happens when a market is open the client should contact technical support as it likely means there has been a line failure or market failure.

“Account didn't login” Error Code:-23

"Please sell Long Position first!" Error Code:-24

This means that the client is trying to short while holding a long position. They should first sell the long position. This prevents a straddle.

"Can't find Trade ID." Error Code: 25

This means that the server is not able to find the trade ID or the trade ID is false. If the trade ID is real the client should contact trader support to cancel or correct their order and Tradestream technical support to identify the cause of the failure.

"No Cash Available." Error Code:-26

This means that the client has used up all their cash and is being prevented from trading. The client should deposit cash in their account.

"Internal Network Problem." Error Code:-27

This means that the client has lost its connection to the Dallas ASP or the ASP is having a network problem and cannot communicate across the Internet or between servers.

"Order server connection error." Error Code:-28

This means that the order server has lost its connection to the client and the client should contact Tradestream technical support.

“Exceeds Bullet Position” Error Code:-30

This means that the client has used up all their Bullet position, can’t send sell order.

“Account can't login, database is not ready” Error Code:-31

“DISCONNECT WITH STOP_SERVER” Error Code:-32

“Invalid cancel/replace quantity” Error Code:-33

“Out off stop order time” Error Code:-34

“The stock no short able” Error Code:-35

“No this account” Error Code:-36

“Firm symbol limit reached” Error Code:-37

“Firm order limit reached” Error Code:-38

“Account symbol position limit reached” Error Code:-39

“Account order limit reached” Error Code:-40

“Account specific symbol limit reaches” Error Code:-41

Appendix B: Exchange ID

US Stock

Market Center Code	Exchange
T,Q	NASDAQ Market
A	American Stock Exchange
B	Boston Stock Exchange
C	Cincinnati Stock Exchange
D	Alternative Display Facility
E	Market Independent
M	Chicago Stock Exchange (Mid West)
N	New York Stock Exchange
P	Pacific Stock Exchange
X	Philadelphia Stock Exchange

US Option

Market Center Code	Exchange
A	AMEX Options Exchange
B	Box Notices
C	Chicago Board of Options Exchange
P	Pacific Options Exchange
X	Philadelphia Options Exchange
I	International Securities Exchange

US Futures

Market Center Code	Exchange
C	Chicago Mercantile Exchange CME
O	Chicago Board of Trade CBoT

Appendix C: Sale Conditions

NYSE Sale Conditions

Code	Sales Condition	Update Last	Update High/Low	Update Open
0x20	Regular sale (no condition sent)	Yes	Yes	Yes
A	Cash(only)Market	Yes	Yes	Yes
B	Average price trade	No	No	No
C	Cash Sale	No	No	No
D	Next Day (only) Market	Yes	Yes	Yes
E	Direct Plus	Yes	Yes	Yes
F	Burst basket execution	Yes	Yes	Yes
G	Opening/Reopening trade detail	No	No	No
H	Intraday trade detail	No	No	No
I	Basket Index on close transaction	No	No	No
J	Rule 127 Trade	Yes	Yes	Yes
K	Rule 155 Trade	Yes	Yes	Yes
L	Sold Last	Yes	Yes	Yes
N	Next Day	No	No	No
O	Opened (Late Report of Opened Trade)	Yes	Yes	Yes
R	Seller	No	No	No
S	Reserved	N/A	N/A	N/A
T	Form T(Pre|Post market Close Trade)	No	No	No
Z	Sold (out of sequences)	Yes	Yes	Yes

NASDAQ Sale Conditions				
Code	**Description**	**Update High/low**	**Update Last**	**Update Volume**
0x20	Regular sale	Yes	Yes	Yes
A	Acquisition	Yes	Yes	Yes
B	Bunched Trade	Yes	Yes	Yes
C	Cash Trade	Yes	No	Yes
D	Distribution	Yes	Yes	Yes
G	Bunched Sold Trades	Yes	No	Yes
K	Rule 155 Trade	Yes	Yes	Yes
L	Sold Last	Yes	Yes	Yes
N	Next Day	No	No	Yes
O	Opened(Late Report ofOpened Trade)	Yes	No	Yes
P	Prior Reference Price	Yes	No	Yes
R	Seller	No	No	Yes
S	Split Trade	Yes	Yes	Yes
T	Form T(Pre|Post marketClose Trade)	No	No	Yes
W	Average Price Trade	No	No	Yes
Z	Sold (Out of Sequence)	Yes	No	Yes
a	Stopped Stock -Regular Trade	Yes	Yes	Yes
b	Stopped Stock -Sold Last	Yes	Yes	Yes
C	Stopped Stock -Sold(OutofSequence)	Yes	No	Yes
AMEX Sale Conditions				
Code	**Sales Condition**	**Update Last**	**UpdateHigh/Low**	**Update Open**
0x20	Regular sale (no condition sent)	Yes	Yes	Yes
A	Cash(only)Market	Yes	Yes	Yes
B	Average price trade	No	No	No
C	Cash Sale	No	No	No
D	Next Day (only) Market	Yes	Yes	Yes
E	Direct Plus	Yes	Yes	Yes
F	Burst basket execution	Yes	Yes	Yes
G	Opening/Reopening trade detail	No	No	No
H	Intraday trade detail	No	No	No
I	Basket Index on close transaction	No	No	No
J	Rule 127 Trade	Yes	Yes	Yes
K	Rule 155 Trade	Yes	Yes	Yes
L	Sold Last	Yes	Yes	Yes
N	Next Day	No	No	No
O	Opened (Late Report of Opened Trade)	Yes	Yes	Yes
R	Seller	No	No	No
S	Reserved	No	No	No
T	Form T (Pre and Post market Close Trade)	No	No	No
Z	Sold (out of sequences)	Yes	Yes	Yes

Appendix D: NASDAQ Short Sale Indicators:

	Non-restricted
0x200	No Tick indicator.
U	Up Tick indicator.
D	Down Tick indicator.
	Restricted
R	No Tick indicator.
V	Up Tick indicator.
E	Down Tick indicator

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