High End Brokerage

# sino MX$^{pro}$

## API Documentation

Revision 2.24

sino AG | High End Brokerage

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# Contents

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# Chapter 1

# Introduction

## 1.1 Basic description

The API operates over TCP/IP or another reliable protocol. Connections are made by a client to a known TCP/IP port on the 'server' (the sino MX$^{pro}$ Client). The API operates by asynchronously sending and receiving messages. Every message receives a reply, though replies to messages will not necessarily be sent in the same order as the messages were sent. Neither side must wait for the reply to any message before sending a further message.

Each revision of this API has a version number. This document specifies version 2.24.

The terminology which appears in this document (terms such as *MSPID*, *InstrumentExchange*, etc.) is the same as that used in the sino MX$^{pro}$ Client documentation. You should familiarise yourself with these terms before reading this document.

## 1.2 TCP port number

This version of the API will use TCP/IP port number 40411. Note that this can be reconfigured using the client property `tbmx.client.api.port`.

## 1.3 Encoding

The API sends and expects to receive data in UTF-8. Note that for large parts of the API, this is equivalent to ASCII. Instrument names, order comments and the like may nevertheless appear in UTF-8.

## 1.4 Message format

All messages follow the same basic format. This is as follows:

`message`
: `command` [ `tag_value_list` ] `eom`

`eom`
: Linefeed (U+000A; decimal byte value: 10)

`command`
: One to three characters from A to Z.

`tag_value_list`
: `tag_value` [ `tag_value_list` ]

`tag_value`
: `separator` `tag` '=' `value`

`separator`
: '|' (U+007C; pipe character, decimal byte value: 124)

`tag`
: `tag_name` [ '.' `tag_index` ]

`tag_name`
: String of characters A-Z, 0-9

`tag_index`
: String of characters 0-9

`value`
: String of any characters except `separator` or `eom`

All tags should only appear once in a given message. Any message that requires the same tag more than once in a message should use the `tag_index` for all instances of that tag in the message. An example message follows:

`ML|SYM=MSFT|MKTCNT=2|MKTNAME.0=NNM|MKTNAME.1=AMEX`

In order to facilitate backwards compatibility in future versions of the API, both client and server should be prepared to accept and ignore both commands and tags of which they are unaware.



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Tags within messages will not necessarily appear in the same order in which they are specified in this document --- both client and server should be prepared to accept tags in any order.

Where decimal numbers are required, the numbers should be separated with a '.' as the decimal separator, irrespective of the system locale --- i.e. ''1.234'', not ''1,234''. A thousands separator should not be used --- i.e. ''1234.45'', not ''1,234.45''



## 1.5 Connection overview

A connection starts when the client connects to the server (sino MX$^{pro}$ Client). Immediately after connecting, the client should send a client information message (specified below). This message specifies which version of this API the client implements.

If the server and the client have the same version, the server replies with a server information message containing that version number.

If the server is newer than the client, but knows how to handle the older version of the API which the client uses, the server sends an echo message informing the client that backwards-compatibility will be enabled, then a server information message containing the client's version number.

If the client is newer than the server, but they have the same major version number (e.g. client 2.12, server 2.05), the server sends a server information message with its own version number. If the server is too old for the client, the client should send an echo message specifying this and close the connection.

If the client is newer than the server and they do not have the same major version number (e.g. client 3.00, server 2.05), the server sends an echo message specifying this and closes the connection.

Assuming both sides are happy with the other side's version, the connection proceeds. No messages other than server/client information messages may be sent by either side until this exchange is complete.

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# Chapter 2

# Messages

## 2.1 Introduction

Please note that each message described is followed by an example of the message. In examples, $\rightarrow$ signifies a message sent from the client to the server, while $\leftarrow$ signifies a message from the server to the client. In order to aid readability, line breaks have been added to some of the longer examples. These line breaks would not appear in the messages themselves. Lines which begin without either $\rightarrow$ or $\leftarrow$ are continuations of the previous line.

## 2.2 Version and Echo messages

### 2.2.1 Client information message --- message CI

The client information message, sent during the start of a connection, as described above. This document specifies version 2.24 of the API. A client implementing the API as of this writing should set `REV=2.24`.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| `REV` | Yes | `2.24` | The API revision which the client implements. |
| `NAME` | No | `Example client name` | The name of the client, as text. |

Example:

$\rightarrow$ `CI|REV=2.24|NAME=Example client name`

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```
→ CI|REV=1.4|NAME=Old-Client-Demo
← SI|REV=2.24|NAME=sino MXpro v3.6
← E|TEXT=Enabling backwards-compatibility mode for API versions before
1.60

→ CI|REV=3.8|NAME=Bogus-Rev-Demo
← E|TEXT=Cannot handle this client version, disconnecting...
```

### 2.2.2 Server information message --- message SI

The server information message, sent during the start of a connection, as described above. This document specifies version 2.24 of the API. As of this writing, the server will report itself as implementing revision 2.24.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| REV | Yes | 2.24 | The API revision which the server implements. If dealing with an older client, the server may set this field to an older value than it actually implements. |
| NAME | Yes | sino MX$^{pro}$ v3.6 | The name of the server, as text. |

Example:

```
← SI|REV=2.24|NAME=sino MXpro v3.6
```

### 2.2.3 Echo message --- message E

Either side may send this message at any time. If this message is sent to the server, the server will echo the text to the client. To avoid endless echo loops, the client should not under any circumstances echo messages sent to it from the server. In certain situations, where an error is detected, the server will send an E message explaining the error. For severe errors, the server may disconnect after sending the message.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| TEXT | Yes | Echo text | The text sent to the other side. |

Example:

```
→ E|TEXT=Echo text
← E|TEXT=Echo text

→ E|TEXT=1234
← E|TEXT=1234
```

## 2.3 Search messages

### 2.3.1 InstrumentExchange search --- message S

The client may send this message in order to search for one or more *InstrumentExchanges*. The server will respond with an *InstrumentExchange* search result message as specified below.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| SEARCH | Yes | MSFT, Microsoft, US5949181045 | The text to search for. This may either be the symbol of an *InstrumentExchange*, part of an *Instrument*'s name, an *Instrument*'s ISIN or an *InstrumentExchange*'s *MSPID*. |
| CASE | No | YES, NO | Whether the search should be case-sensitive. If this tag is set to YES, the search will be case-sensitive. If this tag is omitted or set to a value other than YES, the search will be case-insensitive. |
| EXCHANGES | No | NNM,AMEX | A comma-separated list of *Exchanges* for which results should be returned. If this tag is omitted, all available *Exchanges* are searched. |

Example:

```
→ S|SEARCH=Microsoft|EXCHANGES=NNM,AMEX

→ S|SEARCH=MSFT|EXCHANGES=NNM
```

→ S|SEARCH=US5949181045

### 2.3.2 InstrumentExchange search result --- message SR

The server sends this message in response to an *InstrumentExchange* search message from the client. All *InstrumentExchanges* found by a search will be returned in a single result message. The COUNT tag specifies how many *InstrumentExchanges* were found (which may be zero). For each *InstrumentExchange* found, the tags NAME, ISIN, SYMBOL, MSPID and EXCHANGE are given. These tags each have an index number suffixed to them, starting from 0. e.g. If 3 *InstrumentExchanges* are found, there will be 3 NAME tags: NAME.0, NAME.1 and NAME.2.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| COUNT | Yes | 2 | The number of *InstrumentExchanges* found by the search. |
| SEARCH | Yes | MSFT, Microsoft, US5949181045 | The text which was searched for by the client. |
| EXCHANGES | Yes | NNM,AMEX | A complete list of the *Exchanges* which were searched. This tag is returned with a list of all available *Exchanges* if the client did not specify which *Exchanges* to search. |
| NAME.x | Yes, COUNT times | Microsoft Cp Stk | The name of the *InstrumentExchange*'s corresponding *Instrument*. |
| SCORE.x | Yes, COUNT times | 0, 99 | A number between 0 and 99 representing how closely this result matches the specified search. 99 indicates an ideal match, 0 indicates a very poor match. Other values indicate match qualities between these two extremes. |
| ISIN.x | Yes, COUNT times | US5949181045 | The ISIN of the *InstrumentExchange*'s corresponding *Instrument*. |
| SYMBOL.x | Yes, COUNT times | MSFT | The *InstrumentExchange*'s symbol. |

| | | | |
|---|---|---|---|
| MSPID.x | Yes, COUNT times | 870747 | The *MSPID* of the *InstrumentExchange* (e.g. WKN, CUSIP, etc.). This field may be empty if the *InstrumentExchange* has no market-specific ID. |
| EXCHANGE.x | Yes, COUNT times | NNM | The *Exchange* for the *InstrumentExchange*. |
| TYPE.x | Yes, COUNT times | S | The type of the *InstrumentExchange*'s corresponding *Instrument*. The types are B for Bonds, C for FX/Crossrate, D for unfunded credit Default swaps, E for Energy, F for Futures, I for Indexes, M for cash-equivalent instruments (e.g. Money market funds), N for iNterest rates, O for Options, S for Stocks, U for fUnds, or W for Warrants. As sino MX$^{pro}$ gains support for more instrument types, additional values may appear. |
| CURRENCY.x | Yes, COUNT times | EUR | The currency in which the *InstrumentExchange* is traded. |

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Example:

```
← S|COUNT=3|SEARCH=Microsoft|EXCHANGES=NNM,AMEX|
NAME.0=MICROSOFT CP STK|ISIN.0=US5949181045|SYMBOL.0=MSFT|
MSPID.0=870747|EXCHANGE.0=NNM|TYPE.0=S|CURRENCY.0=USD
NAME.1=MICROSOFT CP STK|ISIN.1=US5949181045|SYMBOL.1=MSFT|
MSPID.1=870747|EXCHANGE.1=AMEX|TYPE.0=S|CURRENCY.0=USD
NAME.2=SMITH MICRO SOFT STK|ISIN.2=US8321541083|SYMBOL.2=SMSI|
MSPID.2=897306|EXCHANGE.2=NNM|TYPE.2=S|CURRENCY.2=USD

← S|COUNT=1|SEARCH=MSFT|EXCHANGES=NNM|
NAME.0=MICROSOFT CP STK|ISIN.0=US5949181045|SYMBOL.0=MSFT|
MSPID.0=870747|EXCHANGE.0=NNM|TYPE.0=S|CURRENCY.0=USD

← S|COUNT=3|SEARCH=US5949181045|EXCHANGES=NNM,AMEX,NYSE,XTR|
NAME.0=MICROSOFT CP STK|ISIN.0=US5949181045|SYMBOL.0=MSFT|
```

```
MSPID.0=870747|EXCHANGE.0=NNM|TYPE.0=S|CURRENCY.0=USD
NAME.1=MICROSOFT CP STK|ISIN.1=US5949181045|SYMBOL.1=MSFT|
MSPID.1=870747|EXCHANGE.1=AMEX|TYPE.0=S|CURRENCY.0=USD
NAME.2=MICROSOFT CP STK|ISIN.2=US5949181045|SYMBOL.2=MSF|
MSPID.2=870747|EXCHANGE.2=XTR|TYPE.2=S|CURRENCY.2=EUR
```



## 2.4 Quote messages

### 2.4.1 Quote tick subscription --- message QTS

This message can be used to request subscription or unsubscription to ticks for an *InstrumentExchange*. The server will reply with a tick subscription confirmation, as well as (in the case of a subscription) sending ticks either until the end of the connection, or until the client unsubscribes.

*Note: Exchange or market data vendor requirements may limit the accessibility of tick data via the API. Please consult your data provider for details regarding data licensing.*

If the client is already subscribed to ticks for the *InstrumentExchange*, sending a subsequent quote tick subscription request will be interpreted as changing the previous subscription (e.g. for turning on or off reception of Level 2 ticks, or for unsubscribing).

| Tag | Required | Example Values | Description |
|---|---|---|---|
| ISIN | This or SYMBOL | US5949181045 | The ISIN of the *InstrumentExchange* for which ticks are desired. If this is not specified, SYMBOL must be specified. |
| SYMBOL | This or ISIN | MSFT | The Symbol of the *InstrumentExchange* for which ticks are desired. If this is not specified, ISIN must be specified. |
| EXCHANGE | Yes | NNM | The *Exchange* of the *InstrumentExchange* for which ticks are desired. |

| | | | |
|---|---|---|---|
| MODE | No | LTO, ALL, L2, OFF, L1INC, L1DEC, L2INC, L2DEC | Selects "Last Tick Only" mode, "All Ticks" mode (which refers to all Level 1 ticks), "Level 2" mode, or unsubscription (OFF). Alternatively, increases or decreases the count of level 1 or level 2 subscriptions (see below for more details). If not specified, or if a value other than those listed is specified, Last Tick Only mode is selected. |

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The L1INC, L1DEC, L2INC and L2DEC modes can be used to have the API server maintain counts of how many times a given ticker is subscribed. This is useful when writing a program where several individual modules may (or may not) want to receive data. Rather than having to maintain one's own overview of whether any active modules currently require data, this job is left to the API. For example, sending a subscription message with L1INC will cause level 1 data to be sent. Sending a further subscription message with L1INC will result in level 1 data continuing to be sent. Only when the same number of subscription messages with L1DEC have been received (in this case, two) will level 1 data no longer be sent. Thus, when each module decides it wants a particular sort of data, an appropriate L1INC/L2INC subscription message can be sent, followed by an L1DEC/L2DEC subscription message when that module no longer wants data. The API will deal with always sending the appropriate data.

Example:

→ QTS|ISIN=US5949181045|EXCHANGE=NNM|MODE=L1INC
← QTR|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|....|MODE=ALL
(Level 1 data is sent, level 1 counter is now 1)
→ QTS|ISIN=US5949181045|EXCHANGE=NNM|MODE=L2INC
← QTR|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|....|MODE=L2
(Level 2 data is sent, level 1 counter is still 1, level 2 counter is now 1)
→ QTS|ISIN=US5949181045|EXCHANGE=NNM|MODE=L2INC
← QTR|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|....|MODE=L2
(Level 2 data continues to be sent, level 1 counter is still 1, level 2 counter is now 2)
→ QTS|SYMBOL=MSFT|EXCHANGE=NNM|MODE=L1INC
← QTR|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|....|MODE=L2
(Level 2 data continues to be sent, level 1 counter is now 2, level 2 counter is

still 2)
→ QTS|ISIN=US5949181045|EXCHANGE=NNM|MODE=L2DEC
← QTR|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|....|MODE=L2
(Level 2 data continues to be sent, level 1 counter is still 2, level 2 counter is now 1)
→ QTS|SYMBOL=MSFT|EXCHANGE=NNM|MODE=L1DEC
← QTR|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|....|MODE=L2
(Level 2 data continues to be sent, level 1 counter is now 1, level 2 counter is still 1)
→ QTS|ISIN=US5949181045|EXCHANGE=NNM|MODE=L1DEC
← QTR|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|....|MODE=L2
(Level 2 data continues to be sent, level 1 counter is now 0 but level 2 counter is still 1)
→ QTS|ISIN=US5949181045|EXCHANGE=NNM|MODE=L2DEC
← QTR|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|....|MODE=OFF
(No more data is sent, level 1 counter is 0 and level 2 counter is also 0)

Note the intermixing of ISINs and Symbols in the QTS strings; the subscription to ticks for the specified *InstrumentExchange* is dealt with identically in both cases --- whether the ISIN or the Symbol is used to cause the change is irrelevant.

When using the ''counter'' modes, the effect of the four ''normal'' modes is as follows:

LTO --- Sets both level 1 and level 2 counters to 0

ALL --- If level 1 counter>0, level 1 counter unchanged, otherwise sets level 1 counter to 1. Sets level 2 counter to 0.

L2 --- If level 2 counter>0, level 2 counter unchanged, otherwise sets level 2 counter to 1. Level 1 counter unchanged.

OFF --- Sets both level 1 and level 2 counters to 0.

Example:

→ QTS|ISIN=US5969181045|EXCHANGE=NNM|MODE=ALL

→ QTS|ISIN=US1234567890|EXCHANGE=AMEX

→ QTS|SYMBOL=MSFT|EXCHANGE=NNM

→ QTS|SYMBOL=ZZZZ|EXCHANGE=NNM

→ QTS|SYMBOL=MSFT|EXCHANGE=NNM|MODE=L1INC

→ QTS|SYMBOL=MSFT|EXCHANGE=NNM|MODE=L2DEC

→ QTS|ISIN=US5969181045|EXCHANGE=NNM|MODE=L2



### 2.4.2 Quote tick subscription reply --- message QTR

This message is sent by the server after the client has requested subscription to ticks for an *InstrumentExchange* using the Quote tick subscription message. If the ERROR tag is 0, no error occurred and ticks for the *InstrumentExchange* will begin to arrive after this message. Otherwise, an error occurred, and no ticks will be sent.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| ISIN | Yes | US5949181045 | The ISIN of the *InstrumentExchange* for which ticks were requested. |
| SYMBOL | Yes | MSFT | The symbol of the *InstrumentExchange* for which ticks were requested. |
| EXCHANGE | Yes | NNM | The *Exchange* of the *InstrumentExchange* for which ticks were requested. |
| MSPID | No | 870747 | The *MSPID* of the *InstrumentExchange* for which ticks were requested. |
| NAME | No | MICROSOFT CP STK | The name of the *Instrument* for the subscribed *InstrumentExchange*. |

| | | | |
|---|---|---|---|
| ITYPE | Yes | S | The type of the *Instrument* for the subscribed *InstrumentExchange*. The types are B for Bonds, C for FX/Crossrate, D for unfunded credit Default swaps, E for Energy, F for Futures, I for Indexes, M for cash-equivalent instruments (e.g. Money market funds), N for iNterest rates, O for Options, S for Stocks, U for fUnds, or W for Warrants. As sino MX$^{pro}$ gains support for more instrument types, additional values may appear. |
| CURRENCY | No | USD | The currency in which ticks will be provided (and in which orders should be entered). |
| RIC | No | MSFT.O | The Reuters RIC of the subscribed *InstrumentExchange*. |
| PRICESTEP | No | 0.01 | The current minimum price change of the subscribed *InstrumentExchange*, if available. Please note that on *Exchanges* with varying price steps based on the traded price of the *InstrumentExchange*, this price step may not remain valid for the lifetime of the subscription. |
| MODE | Yes | LTO, ALL, L2, OFF | The mode which the ticker now has as a result of the message. Note that when using the L1INC, L2INC, L1DEC or L2DEC modes, this string will reflect the data which will now be sent and will be one of the values shown --- i.e. not the mode string which was sent with the subscription message. |

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| | | | |
|---|---|---|---|
| L1COUNT | Yes | 1 | The number of L1 subscriptions to this instrument. If, for example, subscribed twice with L1INC, this would be 2. An unsubscription with L1DEC would then result in a value of 1. |
| L2COUNT | Yes | 1 | The number of L2 subscriptions to this instrument. If, for example, subscribed twice with L2INC, this would be 2. An unsubscription with L2DEC would then result in a value of 1. |
| ERROR | Yes | 0 | A numeric code indicating the error which occurred, if any. If this is 0, the request was successful. |
| ERRORTEXT | Yes | No error | A textual message indicating the error which occurred, if any. |
| SUBBEDSYMS | Yes | 100 | The total number of *InstrumentExchanges* now subscribed. |

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Example:

```
→ QTR|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|MODE=ALL|ERROR=0
|ERRORTEXT=No error

→ QTR|ISIN=US1234567890|SYMBOL=|EXCHANGE=AMEX|MODE=LTO|ERROR=100
|ERRORTEXT=ISIN not found for market

→ QTR|ISIN=|SYMBOL=ZZZZ|EXCHANGE=NNM|MODE=LTO|ERROR=101
|ERRORTEXT=Symbol not found for Market
```

### 2.4.3 Quote tick --- message T

This message is sent by the server whenever a tick occurs for one of the *InstrumentExchanges* which the client subscribed to. Normally, after the client subscribes to ticks for an *InstrumentExchange*, the server will immediately send HIGH, LOW, OPEN and CLOSE, followed by updates of BID, ASK and LAST as

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well as HIGH, LOW and VOLUME where appropriate. This behaviour is however not guaranteed. LAST prices are not available for some *InstrumentExchanges* (e.g. the EUR/USD spot price) --- for others, no BID or ASK prices are available (e.g. the DAX index price).

| Tag | Required | Example Values | Description |
|---|---|---|---|
| ISIN | Yes | US5949181045 | The ISIN of the *InstrumentExchange* for which a tick occurred. |
| SYMBOL | Yes | MSFT | The symbol of the *InstrumentExchange* for which a tick occurred. |
| EXCHANGE | Yes | NNM | The *Exchange* of the *InstrumentExchange* for which a tick occurred. |
| MSPID | No | 870747 | The *MSPID* of the *InstrumentExchange*. This field is not sent if the *InstrumentExchange* has no *MSPID*. |
| TYPE | Yes | BID, ASK, LAST, IND, HIGH, LOW, OPEN, CLOSE, L2BID, L2ASK, PHASE, VOLUME | The type of tick which occurred. IND represents an indicative tick such as may be provided during an auction. LAST generally represents a real trade that occurred. VOLUME ticks indicate an update in the total size traded during the day that do not (yet) correspond to a new LAST tick. |

| | | | |
|---|---|---|---|
| TIME | No | 435345345, 435345345.1 | The number of milliseconds between January 1 1970 00:00:00 GMT and the tick's occurrence, optionally followed by a '.' and a number which begins at zero each millisecond and is incremented for every tick within that millisecond. This is not necessarily to handle more than one tick per millisecond, but because many exchanges only provide tick times with a resolution of one second (and several ticks may therefore have the same millisecond timestamp). Rather than change the time provided with the ticks, this ''uniqueifier'' is added to the tick's time where necessary. For the first tick with a given millisecond timestamp, no suffix will be added. Note that for certain tick types (e.g. PHASE), time will not be available. |
| PRICE | No | 0.5628 | The price associated with the tick. Note that for certain tick types (e.g. PHASE), there is no price. |
| SIZE | No | 100 | The size associated with the tick. Note that not all ticks have a size associated with them and that this field is therefore optional. |
| VOLUME | No | 23400 | The total volume traded so far today, including this tick. This field will only be present for LAST ticks. |
| PHASE | No | Vola, Trade, Auct | For exchanges which have phases (e.g. Xetra), the phase in which the tick occurred. |

| | | | |
|---|---|---|---|
| MMID | No | CINN, BRUT, GSCO | The market maker ID, for exchanges which provide the market maker ID with level 2 ticks (e.g. NASDAQ). For exchanges without market maker IDs, this is equal to RANK. |
| RANK | No | 2 | The rank of the tick, as sorted by price. |
| COUNT | No | 200 | The number of orders comprising the given rank, if such information is provided by the exchange. |
| TREND | No | ++-+---++- | A sequence of at most 10 + and − symbols indicating the trend of the prices for ticks of this type (i.e. for bid ticks, the trend of bid prices, for last ticks, the trend of last prices, etc.). This field will only be present for LAST, BID and ASK ticks. It is not always available (in particular, the trend only covers ticks since the ticker was subscribed). |
| CHANGE | No | 0.03 | The change in price between the last price and the previous day's closing price. This field will only be present for LAST and CLOSE ticks. |
| CHANGEPERC | No | 0.1 | The percentage change in price between the last price and the previous day's closing price. This field will only be present for LAST and CLOSE ticks. |

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| | | | |
|---|---|---|---|
| FLAGS | No | IRG | For LAST ticks, any flags which apply to the tick. These flags are *Exchange*-specific and may indicate that the tick is an auction indicator price and not an actual last, that it is an irregular trade, or that it has some other similar special property. |
| REQID | No | 1, 2 | For ticks sent in response to a historical quote request, the request ID of the historical quote request, as generated by the server and sent in the historical quote reply. |

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Example:

```
← T|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|TYPE=BID
|PRICE=12.345|SIZE=500
← T|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|TYPE=OPEN
|PRICE=12.654
```

### 2.4.4 Rate Limit --- message RL

This message may be used by the client to limit the rate at which Quote Tick messages are sent. The server sends no reply to this message. Any limits set using this message are valid only for this client's current connection. Neither connections from other clients nor subsequently opened connections will be affected. Sending a futher Rate Limit message will overwrite limits set by any previous message.

| Tag | Required | Example Values | Description |
|---|---|---|---|

| | | | |
|---|---|---|---|
| MAXTICKSPERSECOND | No | 10 | The maximum number of Quote Tick messages which the server should send in a second. If not specified or set to 0, the number of ticks sent per second will not be limited. Note that the number of ticks sent will tend to be slightly higher than the number requested – this is because when sending ticks for an *InstrumentExchange*, the server will always send all outstanding ticks for that level. This avoids sending, for example, an updated bid without an updated ask (and thereby potentially giving the impression that the book is crossed). |
| MAXMARKETDEPTHRANKS | No | 4 | The maximum rank of market depth ticks which the server should send when delivering market depth data. If not specified or set to 0, the number of ranks will not be limited. Note that the value specified is the maximum rank that will be sent – -- e.g. if 4 is specified, the server will sent market depth data of ranks 0 to 4. |

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Example:

→ RL|MAXTICKSPERSECOND=10|MAXMARKETDEPTHRANKS=5

→ RL|MAXTICKSPERSECOND=15

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### 2.4.5 Request quote snapshot --- message QS

This message may be used by the client to request a snapshot of all available tick values for an *InstrumentExchange* without subscribing to ticks for that *InstrumentExchange*. If planning to subscribe the *InstrumentExchange*, note that it is not necessary to request a snapshot before subscribing – subscription will provide all the same values which a snapshot does.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| `ISIN` | This or `SYMBOL` | `US5949181045` | The ISIN of the *InstrumentExchange* for which a snapshot is required. Either this field or the `SYMBOL` field must be specified. |
| `SYMBOL` | This or `ISIN` | `MSFT` | The symbol of the *InstrumentExchange* for which a snapshot is required. Either this field or the `ISIN` field must be specified. |
| `EXCHANGE` | Yes | `NNM` | The *Exchange* for which a snapshot is required. |

Example:

→ `QS|ISIN=US5949181045|EXCHANGE=NNM`

→ `QS|ISIN=US1234567890|EXCHANGE=NNM`

→ `QS|SYMBOL=MSFT|EXCHANGE=NNM`

### 2.4.6 Quote snapshot reply --- message QSR

This message is sent by the server in response to a Request quote snapshot message. If `ERROR` is 0, no error occurred and all available values will be present. If an error occurred, `ERROR` will be non-zero and no values will be supplied.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| `ISIN` | Yes | `US5949181045` | The ISIN of the *InstrumentExchange* for which a snapshot was requested. |

| | | | |
|---|---|---|---|
| SYMBOL | Yes | MSFT | The symbol of the *InstrumentExchange* for which a snapshot was requested. |
| MSPID | No | 870747 | The *MSPID* of the *InstrumentExchange*. This field is not sent if the *InstrumentExchange* has no *MSPID*. |
| EXCHANGE | Yes | NNM | The *Exchange* of the *InstrumentExchange* for which a snapshot was requested. |
| ERROR | Yes | 0 | A numeric code indicating the error which occurred, if any. If this is 0, the request was successful. |
| ERRORTEXT | Yes | No error | A textual message indicating the error which occurred, if any. |
| LAST | No | 1.2345 | The price of the last trade which occurred. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| LASTSIZE | No | 100 | The size of the last trade which occurred. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| LASTTIME | No | 435345345, 435345345.123 | The time of the last trade. For a description of the format of this timestamp, see the TIME field of the Quote Tick message. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| BID | No | 1.2340 | The price of the last bid which occurred. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |

| | | | |
|---|---|---|---|
| BIDSIZE | No | 100 | The size of the last bid which occurred. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| BIDTIME | No | 435345345, 435345345.123 | The time of the last bid. For a description of the format of this timestamp, see the TIME field of the Quote Tick message. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| ASK | No | 1.2350 | The price of the last ask tick which occurred. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| ASKSIZE | No | 100 | The size of the last ask tick which occurred. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| ASKTIME | No | 435345345, 435345345.123 | The time of the last ask tick. For a description of the format of this timestamp, see the TIME field of the Quote Tick message. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| OPEN | No | 1.2100 | The opening price. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| CLOSE | No | 1.2200 | The previous closing price. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |

| | | | |
|---|---|---|---|
| HIGH | No | 1.2360 | The highest price at which a trade occurred. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| HIGHTIME | No | 435345345, 435345345.123 | The time at which the highest-priced trade occurred. For a description of the format of this timestamp, see the TIME field of the Quote Tick message. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| LOW | No | 1.2050 | The lowest price at which a trade occurred. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| LOWTIME | No | 435345345, 435345345.123 | The time at which the lowest-priced trade occurred. For a description of the format of this timestamp, see the TIME field of the Quote Tick message. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |
| VOLUME | No | 456123 | The total volume traded so far today. This is not available for all *InstrumentExchanges* and will not be present if an error occurred. |

Example:

```
← QSR|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM
|MSPID=870747
|ERROR=0|ERRORTEXT=No error
|LAST=1.2345|LASTSIZE=100
```

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```
|BID=1.2340|BIDSIZE=100
|ASK=1.2350|ASKSIZE=100
|OPEN=1.2100|CLOSE=1.2200
|HIGH=1.2360|LOW=1.2050

← QSR|ISIN=US1234567890|SYMBOL=|EXCHANGE=NNM
|ERROR=100|ERRORTEXT=ISIN not found for market
```

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### 2.4.7 Quote update request --- message QU

This message may be sent by the client to request a quote update from market makers on a public *Exchange*. Note that only certain *Exchanges* support such requests. Note also that the *Exchange* may make a charge for excessive requests.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| SYMBOL | This or ISIN | FDAXZ6 | The symbol of the *InstrumentExchange* for which to request a quote update. |
| ISIN | This or SYMBOL | EX000FDAXZ56 | The ISIN of the *InstrumentExchange* for which to request a quote update. If both this and SYMBOL are specified, SYMBOL will take precedence. |
| EXCHANGE | Yes | EUX | The *Exchange* to which the quote update request should be sent. |

Example:

```
← QU|SYMBOL=FDAXZ6|EXCHANGE=EUX
```

## 2.5 Historical quote messages

### 2.5.1 Historical quote request --- message HQR

This message may be sent by the client in order to request historical quote data. The server will initially send a Historical quote reply, followed by either historical quote messages (for requests with a granularity>every tick) or tick messages (for requests with a granularity=every tick). After all messages in reply to the request have been sent, a Historical quote end message will be sent.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| ISIN | This or SYMBOL | US5949181045 | The ISIN of the *InstrumentExchange* for which historical quotes are required. Either this field or SYMBOL must be specified. |
| SYMBOL | This or ISIN | MSFT | The Symbol of the *InstrumentExchange* for which historical quotes are required. Either this field or ISIN must be specified. |
| EXCHANGE | Yes | NNM | The *Exchange* of the *InstrumentExchange* for which historical quotes are required. |
| STARTDATE | No | 20021201 | The start date of the period for which historical ticks are required, in format YYYYMMDD. If not specified, the current date is assumed. |
| STARTTIME | No | 093500 | The start time of the period for which historical ticks are required, in the format HHMMSS. If not specified, the beginning of the selected start date is assumed. Ticks returned will be inclusive of those which occurred within this second. |
| ENDDATE | No | 20021202 | The end date of the period for which historical ticks are required, in the format YYYYMMDD. If not specified, the current date is assumed. |

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| | | | |
|---|---|---|---|
| ENDTIME | No | 093500 | The end time of the period for which historical ticks are required. If not specified, the end of the selected end day is assumed. Ticks returned will be exclusive of those which occurred within this second. This ensures that the same start and end time can be specified in order to receive exactly the specified number of days' ticks, rather than the ticks for the specified number of days plus one second. |

| | | | |
|---|---|---|---|
| GRANULARITY | Yes | 0 (all ticks), 1 (1 second), 10 (10 seconds), 20 (20 seconds), 60 (1 minute), 3600 (1 hour), 86400 (1 day), ... | The granularity of the ticks to be retrieved, in seconds. Specifying 0 will cause ticks (message T) rather than historical ticks (message HT) to be returned, if available. Note that requesting a given granularity does not guarantee that this granularity of data will be available --- for example, due to the very large quantity of data, not all ticks for a high volume stock will necessarily be available for a period 3 months ago. The historical quote reply will specify the granularity which the server is returning. The server will return the finest granularity of data which it has available and which is finer than or equal to the requested granularity. For example, if a granularity of 15 is requested, but the server only has data available with a granularity of 10 seconds, the server will return 10 second, rather than 20 second data (if 5 second granularity were requested in the same situation, the server would also return 10 second granularity). The exception to this rule is that if all ticks are requested (0), but not all ticks are available for the requested period, an error will be returned in the historical tick reply rather than the highest available granularity, since the two types of data are significantly different. The client may repeat the request specifying 1 second granularity if the highest available granularity is indeed desired. |

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Example:

```
→ HQR|ISIN=US5949181045|EXCHANGE=NNM
|STARTDATE=20021201|STARTTIME=090000
|ENDDATE=20021202|ENDTIME=090000
|GRANULARITY=10
```

Requests historical ticks with a 10 second granularity for the period from 9am on December 1 2002 until 9am on December 2 2002, using the ISIN.

```
→ HQR|SYMBOL=MSFT|EXCHANGE=NNM
|STARTDATE=20030131|STARTTIME=090000
|ENDDATE=20030131|ENDTIME=100000
|GRANULARITY=20
```

Requests historical ticks with a 20 second granularity for the period from 9am on January 31 2002 until 10am on the same day, using the symbol.

```
→ HQR|ISIN=US5949181045|EXCHANGE=NNM|GRANULARITY=0
```

Requests all ticks for the day to date.

```
→ HQR|ISIN=US5949181045|EXCHANGE=NNM
|STARTDATE=20031201|STARTTIME=083000
|ENDDATE=20031202|ENDTIME=103000
|GRANULARITY=7200
```

Requests historical ticks with a 10 second granularity for the period from 08:30 on December 1 2003 until 10:30 on December 2 2003, using the ISIN. This will result in data for the whole of the first day and the first 2 hours of the second day --- and not ticks for just 08:30–10:30 on both days.

### 2.5.2 Historical quote reply --- message HQA

This message is sent by the server in response to a Historical quote request. It specifies the granularity which the server was able to provide (which may not be the granularity requested), along with a request ID generated by the server which will also be returned with all ticks relating to this request.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| ISIN | Yes | US5949181045 | The ISIN of the *InstrumentExchange* for which historical quotes were requested. |
| SYMBOL | Yes | MSFT | The symbol of the *InstrumentExchange* for which historical quotes were requested. |

| | | | |
|---|---|---|---|
| MSPID | No | 870747 | The *MSPID* of the *InstrumentExchange*. This field is not sent if the *InstrumentExchange* has no *MSPID*. |
| EXCHANGE | Yes | NNM | The *Exchange* of the *InstrumentExchange* for which historical quotes were requested. |
| GRANULARITY | Yes | 15, 20 | The granularity which was requested. For a description of granularities, see the historical quote request. |
| RETURNED | Yes | 10, 20 | The granularity which was available and will be returned. If this is not the granularity requested and the client would like the highest granularity available, it should repeat its request, specifying a granularity of 1 second. |
| REQID | Yes | 1, 2 | A request ID generated by the server. Each of the ticks returned as a result of this request will also contain this request ID. |

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Example:

← HQA|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|GRANULARITY=15
|RETURNED=10|REQID=1

← HQA|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM|GRANULARITY=20
|RETURNED=20|REQID=2

### 2.5.3 Historical tick --- message HT

This message is returned (once for each available historical tick) by the server following the Historical quote reply message.

| Tag | Required | Example Values | Description |
|---|---|---|---|

| | | | |
|---|---|---|---|
| REQID | Yes | 1, 2 | The server-generated request ID for the historical quote request, as returned in the historical quote reply. |
| ISIN | Yes | US5949181045 | The ISIN of the *InstrumentExchange* which the historical tick is for. |
| SYMBOL | Yes | MSFT | The symbol of the *InstrumentExchange* which the historical tick is for. |
| MSPID | No | 870747 | The *MSPID* of the *InstrumentExchange*. This field is not sent if the *InstrumentExchange* has no *MSPID*. |
| EXCHANGE | Yes | NNM | The *Exchange* of the *InstrumentExchange* which the historical tick is for. |
| STARTDATE | Yes | 20021201 | The start date for the historical tick, in the format YYYYMMDD. |
| STARTTIME | Yes | 090000 | The start time for the historical tick, in the format HHMMSS. The tick includes values generated by ticks which occurred in this second. |
| ENDDATE | Yes | 20021201 | The end date for the historical tick, in the format YYYYMMDD. |
| ENDTIME | Yes | 090010 | The end time for the historical tick, in the format HHMMSS. The tick excludes values generated by ticks which occurred in this second. |
| OPEN | Yes | 1.23 | The price of the first trade which occurred within the tick's period. If no trades occurred within the tick's period, this is the same as the CLOSE of the previous tick. |

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| | | | |
|---|---|---|---|
| CLOSE | Yes | 1.26 | The price of the last trade which occurred within the tick's period. If no trades occurred within the tick's period, this is the same as the CLOSE of the previous tick. |
| HIGH | Yes | 1.28 | The highest price at which a trade occurred within the tick's period. If no trades occurred within the tick's period, this is the same as the CLOSE of the previous tick. |
| LOW | Yes | 1.20 | The lowest price at which a trade occurred within the tick's period. If no trades occurred within the tick's period, this is the same as the CLOSE of the previous tick. |
| VOLUME | Yes | 1000 | The total volume of trades within the tick's period. If no trades occurred, this will be 0 (zero). |

Example:

```
← HT|REQID=1|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM
|STARTDATE=20021201|STARTTIME=090000
|ENDDATE=20021201|ENDTIME=090010
|OPEN=1.23|CLOSE=1.26
|HIGH=1.28|LOW=1.20|VOLUME=1000

← HT|REQID=1|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM
|STARTDATE=20021201|STARTTIME=090010
|ENDDATE=20021201|ENDTIME=090020
|OPEN=1.26|CLOSE=1.26
|HIGH=1.26|LOW=1.26|VOLUME=0
```

### 2.5.4 Historical quote end --- message HQE

This message is sent by the server after all historical ticks or ticks for a given Historical quote request have been sent.

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| Tag | Required | Example Values | Description |
|---|---|---|---|
| REQID | Yes | 1, 2 | The server-generated request ID for the historical quote request, as returned in the historical quote reply. |
| ISIN | Yes | US5949181045 | The ISIN of the requested *InstrumentExchange* |
| SYMBOL | Yes | MSFT | The symbol of the requested *InstrumentExchange* |
| MSPID | No | 870747 | The *MSPID* of the *InstrumentExchange*. This field is not sent if the *InstrumentExchange* has no *MSPID*. |
| EXCHANGE | Yes | NNM | The *Exchange* of the requested *InstrumentExchange* |

Example:

← HQE|REQID=1|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM

## 2.6 Order Messages

### 2.6.1 Add new order --- message AO

This message can be used by the client to add a new order to the server. The server will send at least one order status update in reply. If the UPDATE field is set to ON, or is omitted, the server will thereafter continue to send updates until the order is completed.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| WITHCOSTS | Depends on provider | TRUE | Specifying this field as TRUE states explicitly that you understand that creating an order has associated costs. This may be required to comply with local laws. Your order will be ignored or rejected if this field is required but not specified. There is no harm in specifying this field when it is not required. |

| | | | |
|---|---|---|---|
| ISIN | This or SYMBOL | US5949181045 | The ISIN of the *InstrumentExchange* for the order. Either this field or the SYMBOL field must be specified. |
| SYMBOL | This or ISIN | MSFT | The symbol of the *InstrumentExchange* for the order. Either this field or the ISIN field must be specified. |
| EXCHANGE | Yes | NNM | The *Exchange* to which the order is to be routed. |
| ROUTE | No | MBTX | If specified, the server will attempt to route the order over the given interface. If not specified, default routing will be applied. |
| BUYSELL | Yes | BUY, SELL | Whether the order is to buy or to sell. |
| SIZE | Yes | 100 | The size of the order. Note that this number should always be positive. A sell order is detected from the BUYSELL field, not by entering a negative value in SIZE. |
| LIMIT | Yes | 1.2345 | The limit price for the order. Again, this should always be positive. If the limit is specified as 0 (zero), the order is taken to be a market order. |
| TYPE | No | STD, STOP, DISCRET, PEGGED, DYNABEAT | The type of the order. When this field is not specified, is specified as STD, or is specified as some other value but LIMIT2 is set to 0 (zero) or is not specified, the order will be placed as a limit order or market order (according to the value of LIMIT). Invalid values (i.e. Not STD, STOP, DISCRET, PEGGED or DYNABEAT) will cause an error. Note that type PEGGED is known as "Trailing Stop" in the sino MX$^{pro}$ Client. |

| | | | |
|---|---|---|---|
| LIMIT2 | No | 1.25 | For STOP orders, the limit at which the price will become active. For DISCRET orders, the real limit, not published to the market (LIMIT is published). For PEGGED orders, the difference between the current price and the stop price which is to be maintained. For DYNABEAT orders, the maximum limit which the order will be moved to in order to beat another order. |

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| | | | |
|---|---|---|---|
| FILLTYPE | No | STD, IOC, BOC, FOK, HIDDEN, MANUAL, TOP | The type of fill desired. STD reflects a standard order. IOC is Immediate Or Cancel --- either the order will be immediately filled (at least in part) or it will be cancelled. BOC is Book Or Cancel -- this is the opposite of IOC: if the order would immediately be filled, it is instead cancelled. FOK is Fill Or Kill --- the order will immediately be completely filled or it will be cancelled. HIDDEN is for hidden orders. These will not appear in the *Exchange*'s published book. MANUAL specifies that the order should be subject to manual oversight, rather than being sent directly for execution. (The precise meaning of manual oversight in this context varies depending on the route the order will take and is not covered here.) TOP is Top of Book -- the order will be rejected if it does not beat all existing orders on its side, thus reducing the spread. If this field is not specified, or is set to an invalid value, the fill type will be set to STD. Support for the various different order types depends on the capabilities of the *Exchange* and the executing broker. The Exchanges View in the sino MX$^{pro}$ Client can be consulted in order to discover which features a particular *Exchange* supports. |

| | | | |
|---|---|---|---|
| VISSIZE | No | 50 | The visible size of the order (for reserved orders, also known as iceberg orders). This size will be shown to the market. If this field is omitted, or is zero, the complete size of the order will be published to the market. |
| VALIDUNTIL | No | 20021231 | The date until which the order is to be valid, in format YYYYMMDD. The order will remain valid until the end of the specified day. Specifying a date prior to the current day will cause an error. Omitting this field will result in a default of the current date being taken. |
| ACCOUNT | No | KT0221 | The ID of the account against which the trade should be booked. If not specified, the user's default account is taken. |
| UPDATE | No | ON, OFF | If set to OFF, the server will send only an initial order status update (for purposes of immediate error reporting). If set to ON, or if the tag is left out, the server will send order status updates every time an order's status changes. |
| EXTERNID | No | ABC12345 | A string of up to 64 characters which will be returned in subsequent order status updates and may also be used when requesting changes to or deletion of the created order. |

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| | | | |
|---|---|---|---|
| PRICECHECK | No | ON, OFF, ALWAYS | If omitted or set to OFF, the server will not check the price of the order for reasonability (any resulting errors are the client's responsibility). If set to ON, the server will check that the price/size of the order is reasonable and will pop up a dialog (the same dialog used for price checks on manually-entered orders) within the sino MX$^{pro}$ Client inquiring if the user is sure the order should be sent. If set to ALWAYS, a dialog will pop up requiring confirmation regardless of the sino MX$^{pro}$ Client's configuration. When a dialog is shown, no order status updates will be sent, nor will the order be entered until the order has been confirmed by the user. If the user cancels the order at this stage, no order status updates will be sent, nor will the order be entered. |
| COMMENT | No | Some text | A comment to be associated with the order. Note that a comment can only be set when the order is initially added -- it cannot be changed later in the order's lifetime. If this tag is omitted, no comment can be set. The UTF-8 representation of the comment should be at most 128 bytes. |

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| | | | |
|---|---|---|---|
| PHASE | No | MT, CA | The phase during which the order should be valid. The available phase codes depend on the exchange to which the order will be sent, as well as on the capabilities of the executing broker. See the Exchanges View in the sino MX$^{pro}$ Client for a list of supported phases for the desired *Exchange*. The code that should be sent in this field is the code which appears in brackets in the list. |

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| | | | |
|---|---|---|---|
| IFDONEPROFIT | No | 0.12, 1.23 | If present, this field indicates that when this order is partially or fully filled, another order (the profit order) should be created. If this order is a buy order, the profit order will be a sell order. If this order is a sell order, the profit order will be a buy order. The profit order will be a limit order, with the limit set to the price of this order's first fill plus (if this order is a buy order) or minus (if this order is a sell order) the offset specified by this field. If the profit order is created as a result of a partial fill, its size will be increased appropriately should further fills of this order occur. Conversely, the limit of the profit order will be unaffected by subsequent fills (it can, however, be changed manually or by sending an Order Change request for the profit order). If one of the IFDONESTOP or IFDONEMOC fields is also specified, the size of the profit order will be decreased by the size of any fills of the orders resulting from those tags (and vice-versa). The profit order will be cancelled if one of the orders resulting from IFDONESTOP or IFDONEMOC is cancelled (and vice-versa). |

| | | | |
|---|---|---|---|
| IFDONESTOP | No | 0.12, 1.23 | If present, this field indicates that when this order is partially or fully filled, another order (the stop-loss order) should be created. If this order is a buy order, the stop-loss order will be a sell order. If this order is a sell order, the stop-loss order will be a buy order. The stop-loss order will be a stop market order, with the stop limit set to the price of this order's first fill minus (if this order is a buy order) or plus (if this order is a sell order) the offset specified by this field. If the stop-loss order is created as a result of a partial fill, its size will be increased appropriately should further fills of this order occur. Conversely, the stop limit of the stop-loss order will be unaffected by subsequent fills (it can, however, be changed manually or by sending an Order Change request for the stop-loss order). If one of the IFDONEPROFIT or IFDONEMOC fields is also specified, the size of the stop-loss order will be decreased by the size of any fills of the orders resulting from those tags (and vice-versa). The stop-loss order will be cancelled if one of the orders resulting from IFDONEPROFIT or IFDONEMOC is cancelled (and vice-versa). |

| | | | |
|---|---|---|---|
| IFDONEMOC | No | YES | If present and set to YES, this field indicates that when this order is partially or fully filled, another order (the MOC order) should be created. If this order is a buy order, the MOC order will be a sell order. If this order is a sell order, the MOC order will be a buy order. The MOC order will be a market-on-close order. If the MOC order is created as a result of a partial fill, its size will be increased appropriately should further fills of this order occur. If one of the IFDONEPROFIT or IFDONESTOP fields is also specified, the size of the MOC order will be decreased by the size of any fills of the orders resulting from those tags (and vice-versa). The MOC order will be cancelled if one of the orders resulting from IFDONEPROFIT or IFDONESTOP is cancelled (and vice-versa). Note that market-on-close orders can only be entered on *Exchanges* which support this functionality. For other *Exchanges*, a market-on-close order will appear to be a market order. This functionality should not therefore be used on those *Exchanges*. |

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| | | | |
|---|---|---|---|
| OPENCLOSE | No | OPEN, CLOSE, AUTO | For *Exchanges* that support this (e.g. Eurex), indicates whether the execution of this order will result in a position being opened (or extended) or closed (reduced). If omitted or set to AUTO, the disposition of the order will be automatically calculated by sino MX^pro based upon the portfolio's account at the time of the execution. For accounts with complete and correct portfolio information, automatic calculation is strongly recommended. For *Exchanges* that don't support opening and closing orders, the value of this tag will be ignored -- it can safely be omitted. |
| ACTIVE | No | YES, NO | Whether the order should be active on its creation. If omitted or set to any value other than NO, the order will be active. If set to NO, the order will be created inactive and can subsequently be activated, either manually by the user or via the Order Change message ( on page 75). |
| REGID | No | 42 | A regulatory ID (for example, an algorithm identifier) to be sent with the order. The exact interpretation of this tag depends on the regulatory and compliance requirements of the target exchange and possibly the executing broker. The order may be rejected if you specify an invalid value. |

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For FX orders, the following tags may also be sent:

| Tag | Required | Example Values | Description |
|---|---|---|---|
| PRIMARYSIZE | No | 100000 | The size of the order in the primary currency. If trading EUR/USD, for example, this would be the size of the order in EUR. If this tag is specified, neither SIZE nor SECONDARYSIZE should be specified. |
| SECONDARYSIZE | No | 100000 | The size of the order in the secondary currency. If trading EUR/USD, for example, this would be the size of the order in USD. If this tag is specified, neither SIZE nor PRIMARYSIZE should be specified. |

For strategy orders, the following tags may also be sent. Note that the *Required* column here refers to whether the tags are required in the context of a strategy order. For non-strategy orders, all of these tags should be omitted. The precise values that should be sent for each of the following tags depend on the capabilities of the executing broker. The executing broker's requirements for which tags should be present may also be more stringent than those described here. Consult the broker's documentation for more information.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| STRATEGY | Yes | VWAP | The name of the strategy which should be applied to the order. |
| STR_EXECSTYLE | No | PATIENT, NORMAL, AGGRESSIVE, VERYAGGR | The execution style of the strategy. This can be specified numerically, or as one of the four names PATIENT (equivalent to a numeric value of 2), NORMAL (equivalent to 5), AGGRESSIVE (8) or VERYAGGR (9). |

| | | | |
|---|---|---|---|
| STR_START | No | 130500 | The time at which execution of the strategy should start, specified in the client's timezone, in the format HHMMSS. |
| STR_END | No | 143530 | The time at which execution of the strategy should end, specified in the client's timezone, in the format HHMMSS. |
| STR_MINPCTVOL | No | 10 | The minimum percentage volume for the strategy, given as a whole number. |
| STR_MAXPCTVOL | No | 30 | The maximum percentage volume for the strategy, given as a whole number. |
| STR_TRIGGER | No | 4B | The trigger for the strategy. The range of available values is defined by the broker's documentation. |

Example:

```
→ AO|ISIN=US5949181045|EXCHANGE=NNM|ROUTE=MBTX|BUYSELL=BUY
|SIZE=10000|LIMIT=1.234|TYPE=STOP|LIMIT2=1.22|FILLTYPE=FOK|VISSIZE=100
|VALIDUNTIL=20021231|ACCOUNT=KT0221|UPDATE=ON
```

```
→ AO|ISIN=US5949181045|EXCHANGE=NNM|BUYSELL=BUY|SIZE=100|LIMIT=0
```

```
→ AO|SYMBOL=MSFT|EXCHANGE=NNM|BUYSELL=BUY|SIZE=1000|LIMIT=1.25
```

### 2.6.2 Order status --- message OS

This message is sent by the server after an Add new order or a Request Quote message is received from the client. If the Add New Order message specifies `UPDATE=ON`, or omits the `UPDATE` tag, the server will also send order status updates for the order whenever its status changes. If the client specified an `EXTERNID` when adding the order, this `EXTERNID` will be returned with any status updates.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| ISIN | Yes | US5949181045 | The ISIN of the *InstrumentExchange* for which the order was made. |

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| | | | |
|---|---|---|---|
| SYMBOL | Yes | MSFT | The symbol of the *InstrumentExchange* for which the order was made. |
| EXCHANGE | Yes | NNM | The *Exchange* which the order was sent to. |
| CURRENCY | Yes | EUR | The trading currency of the order. |
| EXTERNID | No | ABC12345 | The EXTERNID value specified in the Add New Order message. If no value was specified in the Add New Order message, this field will be omitted --- otherwise it will always be present. |
| GENID | Yes | 10188 | sino MX$^{pro}$'s generated ID number for the order. This is a monotonically increasing number --- if two orders are added one after the other, the second order is guaranteed to receive a higher ID number than the first (but note that if two orders are entered, the first requiring a price check and the second not requiring a price check, the second order is liable to actually be sent to the exchange first and thus have a lower order number). If an error occurs when adding the order, this field will not be present in the initial (and only) resulting order status update. If an error occurs subsequently (e.g. The *Exchange* rejects the order), this field will however be present. |
| BUYSELL | Yes | BUY, SELL | Whether the order is to buy or to sell. |

| | | | |
|---|---|---|---|
| TYPE | Yes | STD, STOP, DISCRET, PEGGED, DYNABEAT, QUOTEREQUEST | The type of the order. QUOTEREQUEST is only sent for orders generated in response to the Request Quote message. |
| FILLTYPE | Yes | STD, IOC, FOK, BOC | The type of fill selected for the order. STD reflects a standard order. IOC is Immediate Or Cancel --- either the order will be immediately filled (at least in part) or it will be cancelled. BOC is Book Or Cancel -- this is the opposite of IOC: if the order would immediately be filled, it is instead cancelled. FOK is Fill Or Kill --- the order will immediately be completely filled or it will be cancelled. |
| ACCOUNT | Yes | KT0221 | The ID of the account against which the trade will be booked. |
| ROUTE | No | ARCA | The destination (e.g. NASDAQ ECN) to which the order will be routed. |
| STATECNT | Yes | 1 | The number of order states attached. There will always be at least one state attached. The most recent state is 0, the second most recent is 1, etc. In order to check the current state of the order, state 0 should therefore be checked. |
| STATE.x | Yes, STATECNT times | 0, 1, 2, ... | A numeric code reflecting the current state of the order. See the ''States'' table on page 57 for a description of the possible states, together with the diagrams following it, which describe the transitions between states. |

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|---|---|---|---|
| STATENAME.x | Yes, STATECNT times | CREATED, ACTIVE, FILLED, ... | A string reflecting the current state of the order. This is the state as shown in the sino MXpro order book. Not every value of STATE.x has a separate STATENAME, in order to present a simplified representation of states to the user. |
| STATETEXT.x | Yes, STATECNT times | Rejected, MSFT not traded at exchange BER, Limit changed to 1.234 | A string describing in greater detail the change which has just taken place with the order. This string is free-form and should either be presented directly to the user or not used. It should not be parsed. |
| SIZE.x | Yes, STATECNT times | 1000 | The size of the order as of this state change. Note that in the event of an order's size being changed, this size reflects the requested size. If the size change is later rejected, the order will return to active state with its original size. |
| LIMIT.x | Yes, STATECNT times | 1.2345 | The limit price for the order as of this state change. Note that in the event of an order's limit being changed, this limit reflects the requested limit. If the limit change is later rejected, the order will return to activate state with its original size. A limit of 0 indicates a market order. |

| | | | |
|---|---|---|---|
| LIMIT2.x | Yes, STATECNT times | 1.25 | For STOP orders, the price at which the order will become active. For DISCRET orders, the real limit, not published to the market (LIMIT is published). For PEGGED orders, the difference between the current price and the stop price which is to be maintained. For DYNABEAT orders, the maximum limit which the order will be moved to in order to beat another order. |
| REGID.x | No | 1 | The regulatory ID attached to the order state.<br>All values are as of this state change. As with SIZE and LIMIT, LIMIT2 may revert to its previous value in the event of a rejected change request. |
| VISSIZE.x | Yes, STATECNT times | 100 | The visible size of the order (for reserved orders, also known as iceberg orders). This size will be shown to the market. If this field is zero, the complete size of the order will be published to the market.<br>As with the fields above, this may revert to a previous value in the event of a rejected change request. |
| PHASE.x | Yes, STATECNT times | AUCT | The phase restriction applied to the order. If empty or not present, no phase restriction has been applied.<br>As with the fields above, this may revert to a previous value in the event of a rejected change request. |

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|---|---|---|---|
| USER.x | Yes, STATECNT times | kto001 | The user who caused this state change. If the state change is the result of a server-side event (e.g. A fill or a change confirmation), the field contains the user who created this order. |
| VALIDUNTIL.x | Yes, STATECNT times | 20021231 | The date until which the order is to be valid, in format YYYYMMDD. The order will remain valid until the end of the specified day. As with the fields above, this may revert to a previous value in the event of a rejected change request. |
| TIME.x | Yes, STATECNT times | 20021231153059 | The date and time at which the state change occurred, to the nearest second, in the format YYYYMMDDHHMMSS. |
| EXECCNT | Yes | 1 | The number of order execution (trade) reports attached. The most recent execution is 0, the second most recent is 1, etc. In order to check the current total of matched shares, TOTALMATCH.0 should therefore be checked. |
| MATCHED.x | Yes, EXECCNT times | 100 | The size of the trade. |
| PRICE.x | Yes, EXECCNT times | 1.23 | The price of the trade. |
| CSPOT.x | Yes, EXECCNT times | 0.7822 | The currency spot price at the time of the trade. |
| ETIME.x | Yes, EXECCNT times | 20021231154201 | The time at which the trade occurred, in the format YYYYMMDDHHMMSS. |

| | | | |
|---|---|---|---|
| CPARTY.x | Yes, EXECCNT times | TUBDU | The counterparty of this trade. This field will always be present, but may be empty, depending on whether the relevant *Exchange* provides this information. |
| TOTALMATCH.x | Yes, EXECCNT times | 200 | The total size of all trades, up to and including this trade. |
| AVGPRICE.x | Yes, EXECCNT times | 1.235 | The average price of all trades, up to and including this trade. |

If the order is an FX order or quote request, the following additional fields may be present:

| Tag | Required | Example Values | Description |
|---|---|---|---|
| PRIMARYSIZE.x | Yes, STATECNT times | 100000 | The size of the order in the primary currency. |
| SECONDARYSIZE.x | Yes, STATECNT times | 100000 | The size of the order in the secondary currency. |
| VALUEDATE | No | 20101201 | The date on which the trade will be settled. Note that this field is not per-state. |

If the order is in fact a quote request generated with the Request Quote message, the following additional fields may be present (note that these are not per-state fields):

| Tag | Required | Example Values | Description |
|---|---|---|---|
| QUOTEDPRICE | No | 1.75 | The offered price. |
| QUOTEDSIZE | Yes | 50000 | The offered size. This may be larger than the requested size. The trade, if requested, will only happen with the size originally specified in the Request Quote message. |
| QUOTEDTIMEOUT | Yes | 3 | The time, in seconds, for which the quote is valid. |

If the order is an order which could or has triggered others (e.g. an IfDone order), the following additional fields may be present (again, these are not per-state fields):

| Tag | Required | Example Values | Description |
|---|---|---|---|
| IFDONEPROFIT | No | 0.12 | The IFDONEPROFIT value specified when adding the order. |
| IFDONESTOP | No | 0.12 | The IFDONESTOP value specified when adding the order. |
| IFDONEMOC | No | YES | The IFDONEMOC value specified when adding the order. |

If the order is an order which has triggered other orders (e.g. an IfDone order which has been partially or fully executed and thereby triggered a profit and/or stop-loss order), the following additional fields may be present (again, these are not per-state fields):

| Tag | Required | Example Values | Description |
|---|---|---|---|
| CHILD.PROFIT.GENID | No | 12346 | The GENID of the profit-side order generated as a result of this order's execution. If no profit-side order was desired, this field will be absent. |
| CHILD.STOP.GENID | No | 12347 | The GENID of the stop-loss order generated as a result of this order's execution. If no stop-loss order was desired, this field will be absent. |
| CHILD.MOC.GENID | No | 12348 | The GENID of the market-on-close order generated as a result of this order's execution. If no market-on-close order was desired, this field will be absent. |

In general, any additional types of triggered order which are implemented in the future will result in additional tags of the same form (CHILD.something.GENID) being added to the order status message.

Note that CHILD....EXTERNIDs are not sent --- these child orders have no EXTERNIDs.

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If the order is a "child" order, created by the sino MX$^{pro}$ Trade Server as a result of the execution of another order, the following additional fields will be present:

| Tag | Required | Example Values | Description |
|---|---|---|---|
| LEG | Yes | PROFIT, STOP, MOC | Which leg of the triggered orders this order represents. For example, PROFIT would mean that this is a profit-side order generated as a result of the partial or complete execution of the parent order |
| PARENT.GENID | Yes | 12345 | The GENID of the order's parent order (the order whose execution resulted in the creation of this order). |
| PARENT.EXTERNID | No | ABC12345 | The EXTERNID of the order's parent order. Note that if the parent order has no EXTERNID, this field will be absent. |

Order status updates will always be sent for a "child" order if they would be sent for the corresponding "parent" order. Child orders can nonetheless be separately subscribed to. Thus, for example, a client could be subscribed to a "parent" order, learn of the creation of the "child" orders via this subscription, separately subscribe to updates for the "child" orders, then unsubscribe from updates for the "parent" order. In this way, clients do not need to receive more updates than they want to, while still always being informed of the creation of new triggered orders. Note that attempting to unsubscribe from updates for a "child" order will have no effect whilst still subscribed to the "parent" order.

The possible states of an order are as follows:

| STATE | Name | STATENAME | Description |
|---|---|---|---|
| 0 | Created | CREATED | The order has been created on the sino MX$^{pro}$ trade server. |

| | | | |
|---|---|---|---|
| 1 | Created-Rcvd | CREATED | The order has been acknowledged as received by the trading interface for the appropriate *Exchange*. This does not mean that the order is active on the *Exchange*. |
| 2 | Inactive | INACTIVE | The order has been created on the sino MX$^{pro}$ trade server and marked as inactive. No further updates for this order will be sent until the order is set active. |
| 3 | Active | ACTIVE | The order is active at the *Exchange*. Still-active partially filled orders, successfully changed orders and unsuccessfully cancelled orders will also have this state. |
| 4 | Invalid | CANCELED | The order was found by sino MX$^{pro}$ to be invalid. This may be because it violated risk limits, because sino MX$^{pro}$ does not recognise the *Exchange* which the user requested or for other reasons. No further updates will be sent for this order. It will not be sent to the *Exchange*. |
| 5 | Rejected | CANCELED | The order was rejected by the *Exchange*. This may be because the requested *Instrument* is not traded at the requested *Exchange*, because the order broke exchange rules in some respect, or for other reasons. No further updates will be sent for this order. |

| | | | |
|---|---|---|---|
| 6 | Change-Req | ACTIVE | A change request has been received from the user and transmitted to the appropriate *Exchange* interface. This does not mean that the order has been changed. In the event of a successful change, the state will proceed to change to Change-Rcvd upon acknowledgement of reception of the change request by the *Exchange* interface, followed by returning to Active with the new limit/size/etc. |
| 7 | Change-Rcvd | ACTIVE | A change request has been acknowledged by the appropriate *Exchange* interface. This does not mean that the order has been changed, only that the *Exchange* has received the request. In the event of a successful change, the state will return to Active with the new limit/size/etc. |
| 8 | Cancel-Req | ACTIVE | A cancellation request has been received from the user and transmitted to the appropriate *Exchange* interface. This does not mean that the order has been cancelled. In the event of a successful cancellation, the state will proceed to change to Cancel-Rcvd upon acknowledgement of reception of the cancellation request by the *Exchange* interface, followed by state Cancelled. |

| | | | |
|---|---|---|---|
| 9 | Cancel-Rcvd | `ACTIVE` | A cancellation request has been acknowledged by the *Exchange* interface. This does not mean that the order has been cancelled. In the event of a successful cancellation, the state will change to Cancelled. |
| 10 | Filled | `FILLED` | The order has been completely filled. No further updates will be sent for this order. |
| 11 | Cancelled | `CANCELED` | The order was successfully cancelled by the user, or cancelled as the result of a user action. No further updates will be sent for this order. |
| 12 | Unknown | `UNKNOWN` | The *Exchange* interface for the appropriate *Exchange* is currently unavailable (at some time after the instruction to create the order was sent to the *Exchange* interface, but before the order was completed). The status of the order is therefore currently unknown. It may have been filled; if a change was requested, it may have been changed; if cancellation was requested, it may have been cancelled. The appropriate status updates for these operations will be sent as soon as the *Exchange* interface is again available. |
| 13 | Expired | `CANCELED` | The order's *Exchange* has closed on the day specified as the last valid day for the order. No further updates will be sent for this order. |

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| | | | |
|---|---|---|---|
| 14 | Info | INFO | This pseudo state indicates information attached to the order. The actual state of the order is unaffected. |
| 15 | Deactivation | ACTIVE | sino MX$^{pro}$ has been requested to deactivate the order. Note that at this point, the order is still active. If deactivation is succesful, the order will transition to state 2, INACTIVE. |

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The potential state changes and the reasons for them are shown in the diagrams on page 63.

Example:

```
← OS|ISIN=US5949181045|SYMBOL=MSFT|EXCHANGE=NNM
|EXTERNID=ABC12345|GENID=10188|BUYSELL=BUY
|TYPE=STOP|FILLTYPE=IOC|STATECNT=6
|ACCOUNT=KTO221
|STATE.0=10|STATENAME.0=FILLED|STATETEXT.0=Order filled
|SIZE.0=10000|LIMIT.0=12.20|LIMIT2.0=11.90|VISSIZE.0=1000
|USER.0=kto001|VALIDUNTIL.0=20021231|TIME.0=20021231153923
|STATE.1=3|STATENAME.1=ACTIVE|STATETEXT.1=Partially filled
|SIZE.1=10000|LIMIT.1=12.20|LIMIT2.1=11.90|VISSIZE.1=1000
|USER.1=kto001|VALIDUNTIL.1=20021231|TIME.1=20021231153920
|STATE.2=3|STATENAME.2=ACTIVE|STATETEXT.2=Order limit changed
|SIZE.2=10000|LIMIT.2=12.20|LIMIT2.2=11.90|VISSIZE.2=1000
|USER.2=kto001|VALIDUNTIL.2=20021231|TIME.2=20021231153654
|STATE.3=7|STATENAME.3=ACTIVE|STATETEXT.3=Change received
|SIZE.3=10000|LIMIT.3=12.20|LIMIT2.3=11.90|VISSIZE.3=1000
|USER.3=kto001|VALIDUNTIL.3=20021231|TIME.3=20021231153653
|STATE.4=6|STATENAME.4=ACTIVE|STATETEXT.4=Change requested
|SIZE.4=10000|LIMIT.4=12.20|LIMIT2.4=11.90|VISSIZE.4=1000
|USER.4=kto001|VALIDUNTIL.4=20021231|TIME.4=20021231153653
|STATE.5=3|STATENAME.5=ACTIVE|STATETEXT.5=Active
|SIZE.5=10000|LIMIT.5=12.34|LIMIT2.5=12.00|VISSIZE.5=1000
|USER.5=kto001|VALIDUNTIL.5=20021231|TIME.5=20021231153031
|STATE.6=1|STATENAME.6=CREATED|STATETEXT.6=Acknowledged
|SIZE.6=10000|LIMIT.6=12.34|LIMIT2.6=12.00|VISSIZE.6=1000
|USER.6=kto001|VALIDUNTIL.6=20021231|TIME.6=20021231153031
|STATE.7=0|STATENAME.7=CREATED|STATETEXT.7=Order created
|SIZE.7=10000|LIMIT.7=12.34|LIMIT2.7=12.00|VISSIZE.7=1000
```

```
|USER.7=kto001|VALIDUNTIL.7=20021231|TIME.7=20021231153030
|EXECCNT=2
|MATCHED.0=9000|PRICE.0=12.20|ETIME.0=20021231153923
|TOTALMATCH.0=10000|AVGPRICE.0=12.195
|MATCHED.1=1000|PRICE.1=12.15|ETIME.1=20021231153920
|TOTALMATCH.1=1000|AVGPRICE.1=12.15
```

The order is created as a buy order, with stop limit 12.00 and limit 12.34. The order enters the created state (state 7), is then acknowledged by the *Exchange* interface (state 6), then becomes active at the *Exchange* (state 5). The user requests a change to the order, changing the limit to 12.20 and the stop limit to 11.90 (state 4). The *Exchange* interface acknowledges the change request (state 3) and the order then becomes active again (state 2) after the change was successful. The order remains in state active as it's partially matched, 1000@12.15 (state 1), then moves to state filled when the remaining 9000 are matched at the limit, 12.20 (state 0).

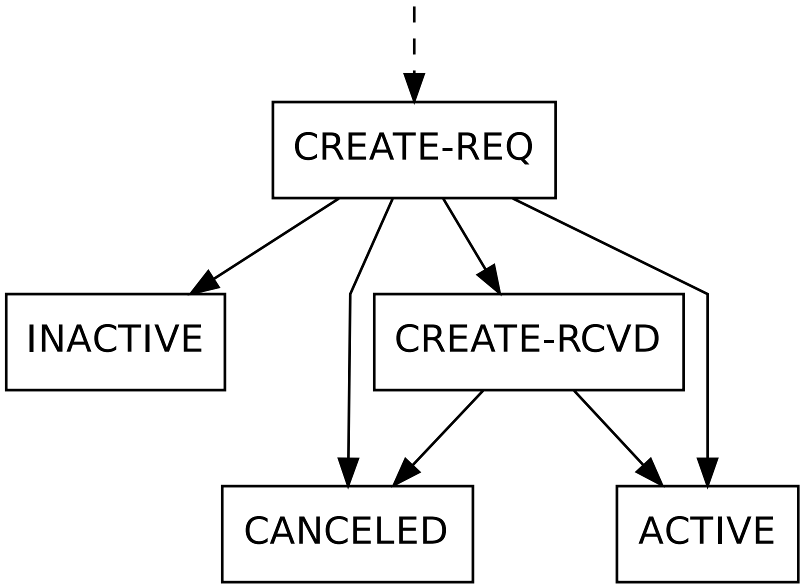


Figure 2.1: Typical order creation state flow

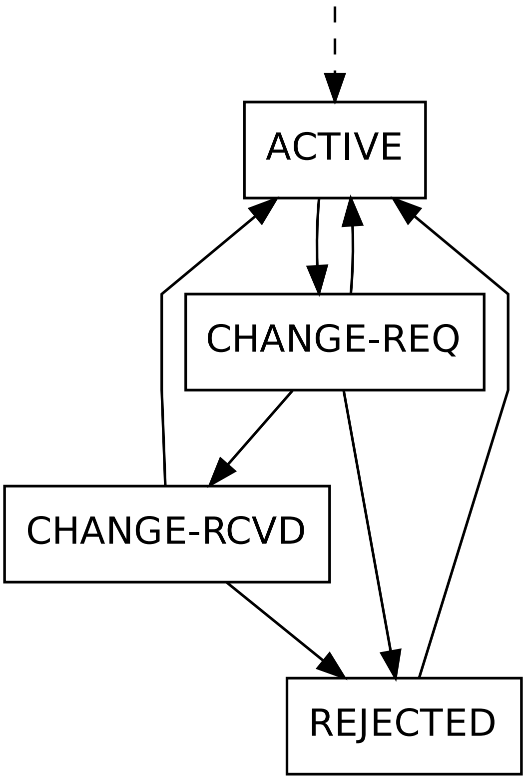


Figure 2.2: Typical order change state flow

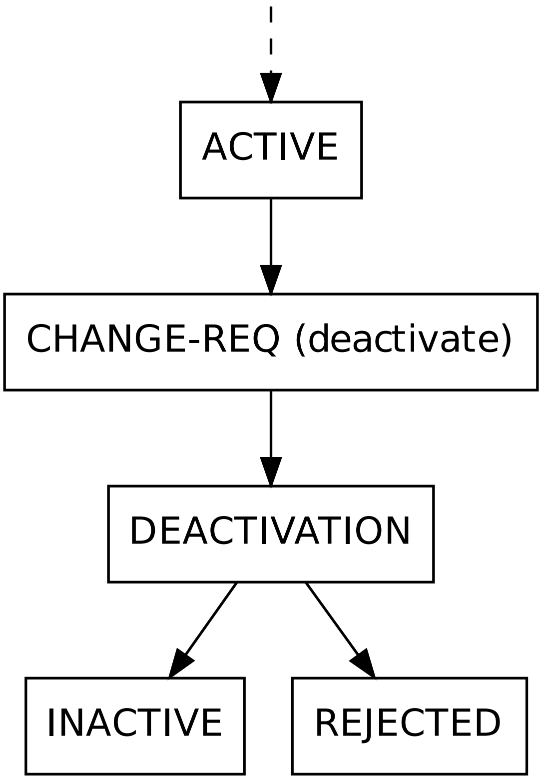


Figure 2.3: Typical order activation state flow

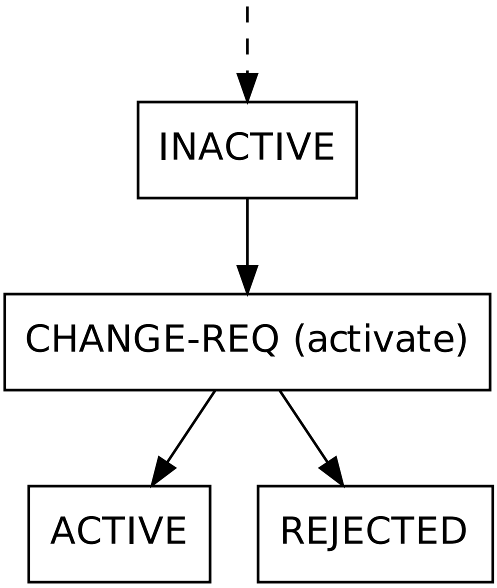


Figure 2.4: Typical order deactivation state flow

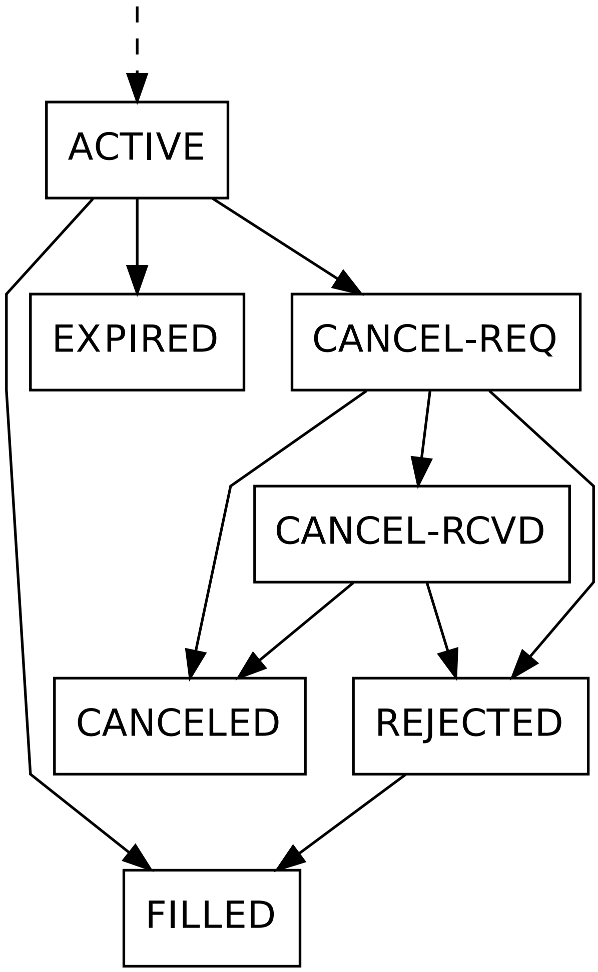


Figure 2.5: Typical order termination state flow (active order)

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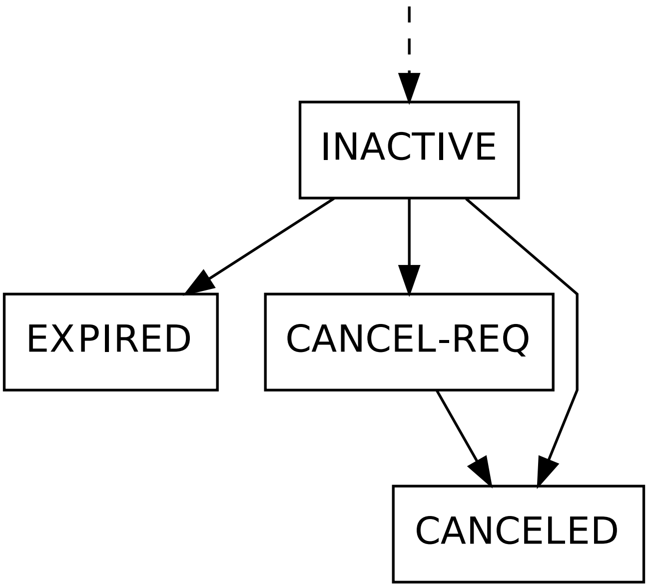


Figure 2.6: Typical order termination state flow (inactive order)

### 2.6.3 Order change request --- message OC

This message may be sent by the client in order to change the details of a given order. Note that sending this request does not mean the order will necessarily be changed before it is filled. This request should only be sent for orders currently in state Active. The server will send at least one order status update in response to this message. If order status updates were requested with the original Order Add message, or are turned on with this message, updates will continue to be sent every time the order's status changes.

When sending this message, any unspecified fields will (where appropriate) be removed from the order – in effect, the order will be changed so that its new status is as if the original Add New Order request were specified without these fields.

Note that by not specifying any changes to the order, this message may also be used to request or disable updates for an order.

| Tag | Required | Example Values | Description |
|---|---|---|---|

| | | | |
|---|---|---|---|
| EXTERNID | This or GENID | ABC12345 | The external order ID supplied when the order was added. Either this or the GENID given in the first order status update must be supplied. If both are supplied, the GENID will be used. |
| GENID | This or EXTERNID | 10188 | The GENID returned by the server in the first order status update. Either this or the EXTERNID passed in the Order Add message must be supplied. If both are supplied, this is used. |
| SIZE | No | 100 | The desired new size of the order. If this is not specified, the order's size will not be changed. |
| LIMIT | No | 1.23 | The desired new limit of the order. If this is not specified, the order's limit will not be changed. |
| LIMIT2 | No | 1.20 | The desired new STOP, DISCRET, PEGGED or DYNABEAT limit of the order. If this is not specified, the order's second limit will not be changed. Note that this may not be set to 0 for orders with type STOP, DISCRET, PEGGED or DYNABEAT (the field is ignored for orders with type STD, and may therefore be 0 for those orders). |
| FILLTYPE | No | IOC, BOC, FOK, HIDDEN, MANUAL, TOP | The desired fill type for the order. Details regarding the different types on page 37. |
| VISSIZE | No | 50 | The desired new visible size of the order. If this is not specified, the order's visible size will not be changed. |

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|---|---|---|---|
| VALIDUNTIL | No | 20021231 | The desired new validity date of the order. If this is not specified, the order's validity date will not be changed. |
| UPDATE | No | ON, OFF | Whether order status updates should continue to be sent for this order. If this is not specified, the value specified in the Order Add message (or the most recent Order Change message, if applicable) will continue to be used. |
| PRICECHECK | No | ON, OFF, ALWAYS | If omitted or set to OFF, the server will not check the price of the order for reasonableness (any resulting errors are the client's responsibility). If set to ON, the server will check that the price/size of the order is reasonable and will pop up a dialog (the same dialog used for price checks on manually entered orders) within the sino MX$^{pro}$ Client inquiring if the user is sure the order should be changed. If set to ALWAYS, a dialog will pop up requiring confirmation regardless of the sino MX$^{pro}$ Client's configuration. When a dialog is shown, no order status updates will be sent, nor will the order be changed until the change has been confirmed by the user. If the user cancels the change at this stage, no order status updates will be sent, nor will the order be changed. |

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| | | | |
|---|---|---|---|
| PHASE | No | MT, CA | The phase during which the order should be valid. The available phase codes depend on the exchange to which the order will be sent, as well as on the capabilities of the executing broker. See the Exchanges View in the sino MX$^{pro}$ Client for a list of supported phases for the desired *Exchange*. The code that should be sent in this field is the code which appears in brackets in the list. |
| ACTIVE | No | YES, NO | Whether the order should be active or not. If omitted or set to any value other than `NO`, the order will be activated (or remain active). If set to `NO`, the order will be deactivated (or remain inactive). |
| REGID | No | 42 | A regulatory ID (for example, an algorithm identifier) to be sent with the order. The exact interpretation of this tag depends on the regulatory and compliance requirements of the target exchange and possibly the executing broker. The order may be rejected if you specify an invalid value. |

Example:

```
→ OC|EXTERNID=ABC12345|SIZE=100|LIMIT=1.23|UPDATE=ON
```

### 2.6.4 Order cancellation request --- message OX

This message may be sent by the client in order to request cancellation of an order. This message should only be sent for orders in state Active. The server will send at least one order status update in response to this message. If updates are active for the order, the server will also continue to send updates whenever the order's status changes.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| EXTERNID | This or GENID | ABC12345 | The external order ID supplied when the order was added. Either this or the GENID given in the first order status update must be supplied. If both are supplied, the GENID will be used. |
| GENID | This or EXTERNID | 10188 | The GENID returned by the server in the first order status update. Either this or the EXTERNID passed in the Order Add message must be supplied. If both are supplied, this is used. |
| REGID | No | 42 | A regulatory ID (for example, an algorithm identifier) to be sent with the order. The exact interpretation of this tag depends on the regulatory and compliance requirements of the target exchange and possibly the executing broker. The order may be rejected if you specify an invalid value. |

Example:

```
→ OX|EXTERNID=ABC12345
→ OX|GENID=10188
```

### 2.6.5 Request quote --- message RQ

This message is used to request a tradeable quote on quote-request-driven markets. It is similar to the Add Order message, although it cannot immediately result in a trade. Instead, if a tradeable quote is offered, execution of the trade must be explicitly requested with the Trade Quote "TQ" message (details on page 75).

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| Tag | Required | Example Values | Description |
|---|---|---|---|
| ISIN | This or SYMBOL | US5949181045 | The ISIN of the *InstrumentExchange* for the request. Either this field or the SYMBOL field must be specified. |
| SYMBOL | This or ISIN | MSFT | The symbol of the *InstrumentExchange* for the request. Either this field or the ISIN field must be specified. |
| EXCHANGE | Yes | CATS | The *Exchange* to which the request is to be routed. |
| ROUTE | No | CITI | The sub-destination to which the request is to be routed. Consult the Exchanges View in the sino MX$^{pro}$ client for a list of available sub-destinations. |
| BUYSELL | Yes | BUY, SELL | Whether the request is to buy or to sell. |
| SIZE | Yes | 100 | The size for which to request a quote. Note that this number should always be positive. A sell request is detected from the BUYSELL field, not by entering a negative value in SIZE. |
| ACCOUNT | No | KT0221 | The ID of the account against which the trade should be booked. If not specified, the user's default account is taken. |
| UPDATE | No | ON, OFF | If set to OFF, the server will send only an initial order status update (for purposes of immediate error reporting). If set to ON, or if the tag is left out, the server will send order status updates every time the request's status changes. In general, updates will always be desirable for quote requests, in order to see any subsequently quoted price. |

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| | | | |
|---|---|---|---|
| COMMENT | No | Some text | A comment to be associated with the request. Note that a comment can only be set when the request is initially added -- it cannot be changed later in the request's lifetime. If this tag is omitted, no comment can be set. The UTF-8 representation of the comment should be at most 128 bytes. |
| EXTERNID | No | ABC12345 | A string of up to 64 characters which will be returned in subsequent order status updates and may also be used when requesting changes to or deletion of the quote request. |

For FX quote requests, the following tags may also be sent:

| Tag | Required | Example Values | Description |
|---|---|---|---|
| PRIMARYSIZE | No | 100000 | The size of the request in the primary currency. If trading EUR/USD, for example, this would be the size of the request in EUR. If this tag is specified, neither SIZE nor SECONDARYSIZE should be specified. |
| SECONDARYSIZE | No | 100000 | The size of the request in the secondary currency. If trading EUR/USD, for example, this would be the size of the request in USD. If this tag is specified, neither SIZE nor PRIMARYSIZE should be specified. |

Example:

```
→ RQ|ISIN=DE000CG00EF9|EXCHANGE=CIT|BUYSELL=BUY
```

|SIZE=10000|UPDATE=ON

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### 2.6.6 Trade quote --- message TQ

The client sends this message as a follow-up to the Request Quote message, to request execution of a trade at the QUOTEDPRICE. Success or failure of the trade request is communicated using Order Status messages. The client should not send this message before seeing an Order Status message with a valid QUOTEDPRICE tag.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| WITHCOSTS | Depends on provider | TRUE | Specifying this field as TRUE states explicitly that you understand that creating an order has associated costs. This may be required to comply with local laws. Your order will be ignored or rejected if this field is required but not specified. There is no harm in specifying this field when it is not required. |
| EXTERNID | This or GENID | CIT772424 | The external order ID supplied when the Request Quote message was sent. Either this or the GENID given in the first order status update must be supplied. If both are supplied, the GENID will be used. |
| GENID | This or EXTERNID | 10188 | The GENID returned by the server in the first order status update. Either this or the EXTERNID passed in the Request Quote message must be supplied. If both are supplied, this is used. |

Example:

→ TQ|EXTERNID=CIT772424

→ TQ|GENID=10188

### 2.6.7 Order status request --- message OS

This message may be sent by the client in order to enquire after the status of an order for which it is not receiving updates. The server will send one order status update in response to this message.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| EXTERNID | This or GENID | ABC12345 | The external order ID supplied when the order was added. Either this or the GENID given in the first order status update must be supplied. If both are supplied, the GENID will be used. |
| GENID | This or EXTERNID | 10188 | The GENID returned by the server in the first order status update. Either this or the EXTERNID passed in the Order Add (or Request Quote) message must be supplied. If both are supplied, this is used. |

Example:

→ OS|EXTERNID=ABC12345

→ OS|GENID=10188

### 2.6.8 List orders --- message LO

This message may be sent by the client in order to retrieve a list of all orders for the current day or a range of recent days.

| Tag | Required | Example Values | Description |
|---|---|---|---|

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|---|---|---|---|
| EXCHANGES | No | NNM,NYSE | A list of *Exchanges* for which orders should be returned. If not specified, orders for all *Exchanges* are returned. |
| APIONLY | No | ON, OFF | If set to OFF or not specified, all matching orders will be returned. If set to ON, only orders entered through the API will be returned. |
| DAYSBACK | No | 4 | The number of days back for which orders should be returned. If not specified, or 0, only orders for the current day will be returned. A value of 1 will result in orders for the current day and the previous day, 2 will result in orders for the current day and the previous 2 days, etc. |
| STATES | No | ACTIVE,FILLED, CANCELED | A comma-separated list of states. Only orders with these states will be returned. If not specified, orders with any state will be returned. |
| ACCOUNTS | No | KT0221,KT0222 | A list of accounts for which orders should be returned. If not specified, orders for all accounts to which the user has access are returned. |
| WITHFILL | No | ON, OFF | If set not specified, all matching orders will be returned. If set to OFF, only orders which are neither partially nor fully filled will be returned. If set to ON, only orders which have been partially or fully filled will be returned. |

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Example:

→ LO|EXCHANGES=NNM,NYSE

→ LO

→ LO|APIONLY=ON

### 2.6.9 Order list --- message OL

This message is sent by the server in response to an LO message. This message will be sent even if there are no orders to return.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| ORDERCNT | Yes | 3 | The number of orders returned within this message. Note that this may be 0. |
| GENID.x | Yes, ORDERCNT times | 123456 | The GENID of an order. Note that the GENIDs may not be returned in order. The GENID can be used to request status for the order. |
| EXTERNID.x | No | ABC12345 | The EXTERNID of an order. Note that this will appear with the same indexes as the GENIDtags --- but that orders without an EXTERNID will only have the GENID specified --- i.e. this tag will be missing for those orders. |

Example:

← OL|ORDERCNT=0

← OL|ORDERCNT=3|GENID.0=12345|GENID.1=12346|GENID.2=12347 |EXTERNID.0=ABC6543|EXTERNID.2=ABC4671

### 2.6.10 Subscribe Order Updates --- message SOU

This message can be sent by the client in order to receive all order status updates for accounts to which the logged-in user has access, irrespective of whether the client has subscribed to updates for the order in question. Note that only new order updates will be sent, the status of current orders will not be sent.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| OFF | No | ON, OFF | Whether to turn subscription for all order updates on or off. If set to ON or absent, turns updates on. If set to OFF, turns updates off. |

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## 2.7 Position messages

### 2.7.1 Net position request --- message NPR

This message is for requesting a one-time update or continuous updates of the net positions for the accounts that the user has access to.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| UPDATE | No | ON | If specified, turn continuous updating of position information on or off. |

Example:

→ NPR
→ NPR|UPDATE=OFF
→ NPR|UPDATE=ON

### 2.7.2 Net position reply --- message NP

This message is sent by the server to inform the client about the net position of accounts the user has access to.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| ISIN | Yes | US5949181045 | The ISIN of the *Instrument* of the position in question. |
| SYMBOLS | Yes | MSFT,MSF | A comma separated list of all symbols for the *Instrument* on all *Exchanges* on which the *Instrument* has been traded. |

| | | | |
|---|---|---|---|
| ACCOUNT | Yes | KT0221 | The account of this position. |
| NETPOS | Yes | 10000 | The current net size of the position. This will be negative for short positions. |
| NAME | Yes | MICROSOFT INC | The name of the *Instrument*. This field is only sent for clients of version 1.96 or up. |

Example:

```
← NP|ISIN=US5949181045|SYMBOLS=MSFT,MSF|ACCOUNT=KT0221
|NETPOS=10000|NAME=MICROSOFT INC
← NP|ISIN=US5949181045|SYMBOLS=MSFT|ACCOUNT=KT0221
|NETPOS=-3000|NAME=MICROSOFT INC
```

### 2.7.3 Net position end --- message NPE

This message is sent by the server to inform the client that it now has received all NP updates. It has no tags associated with it. It is only sent for clients of version 1.96 or up.

Example:

```
← NPE
```

## 2.8 Quote sheet message

### 2.8.1 Add row to quote sheet --- message AQ

This message may be sent by the client in order to add a row to a quote sheet within the sino MX$^{pro}$ Client.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| SYMBOL | This or ISIN or BLANK | MSFT | The symbol of the *InstrumentExchange* to be added to the quote sheet. |
| ISIN | This or SYMBOL or BLANK | US5949181045 | The ISIN of the *InstrumentExchange* to be added to the quote sheet. If both this and SYMBOL are specified, SYMBOL will take precedence. |

| | | | |
|---|---|---|---|
| BLANK | This or SYMBOL or ISIN | YES, NO | By setting BLANK=YES, a blank row can be added to the quote sheet. |
| EXCHANGE | No | NNM | The *Exchange* of the *InstrumentExchange* to be added to the quote sheet. If not specified, the given SYMBOL/ISIN will be added for all *Exchanges* on which it is listed (subject to the user's permissions and preferences). Note that for symbol, this may result in two or more different instruments being added --- i.e. DTE.NYSE is not the same company as DTE.XTR. |
| QUOTESHEET | No | US | The name of the quote sheet which should be added to. If not supplied, the most recently used quote sheet will be taken. If no quote sheet views are open, a new quote sheet view will be opened within the active worksheet. |

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Example:

→ AQ|SYMBOL=MSFT|EXCHANGE=NNM

→ AQ|ISIN=US5949181045|QUOTESHEET=US

## 2.9 API Format message

### 2.9.1 API Format --- message APIFORMAT

This message can be used to reduce the amount of data sent by the API. By default, the API attempts to provide all of the information which a client may find useful. Since some clients only require some of this information and since clients dealing with large volumes of data from the API may find the information which they don't require to be a burden on performance, the API format message allows the information sent to be customised. No reply is sent to this message.

| Tag | Required | Example Values | Description |
|---|---|---|---|
| T | No | BARE | Set the format for Quote Tick messages (details on page 19). By setting this to BARE, only one of the ISIN, SYMBOL and MSPID tags will be sent. (See INST below to determine which will be sent.) In addition, the following fields will be omitted: CHANGE, CHANGEPERC, TREND, VOLUME. |
| QTR | No | BARE | Set the format for Quote Tick Subscription Reply messages (details on page 17). By setting this to BARE, only one of the ISIN, SYMBOL and MSPID tags will be sent. (See INST below to determine which will be sent.) In addition, the following fields will be omitted: NAME, ITYPE, CURRENCY, RIC, PRICESTEP, L1COUNT, L2COUNT, SUBBEDSYMS. If no error occurred with the subscription, the tags ERROR and ERRORTEXT will also be omitted. |
| OS | No | BARE | Set the format for Order Status messages (details on page 76). By setting this to BARE, only the most recent states are sent - as many as are necessary to provide a definitive status. Typically this is one single state unless a change has been requested and not yet acknowledged. |

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| | | | |
|---|---|---|---|
| INST | No | ISIN, MSPID, SYMBOL | The client's preferred instrument specifier. If BARE is selected for on of the above messages, the tag ISIN will be sent by default and the tags MSPID and SYMBOL will be omitted. By setting this tag to ISIN, MSPID or SYMBOL, the client can instead specify which instrument identification it would prefer to receive. |
| OL | No | ISIN,ACCOUNT | The tags that the API should provide in its OL messages. A single value or a comma-separated list of any of the following values can be specified: ALL, ISIN, SYMBOL, EXCHANGE, MSPID, CURRENCY, BUYSELL, ACCOUNT, FILLTYPE, IFDONE. |

Example:

→ APIFORMAT|T=BARE|QTR=BARE|INST=ISIN

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# Chapter 3

# Revision history

| Revision | Date | Changes |
|---|---|---|
| 1.0 | 09/12/2002 | Initial revision |
| 1.1 | 18/12/2002 | SCORE field added to Security Search Result message.<br>VOLUME value for TYPE field of Quote Tick message removed.<br>Optional VOLUME field of Quote Tick message added. |
| 1.2 | 22/01/2003 | NAME field in Client Information message is no longer compulsory.<br>Added SYMBOL fields to all messages featuring ISIN fields, changed all such requests so either ISIN or SYMBOL may be specified. All replies featuring an ISIN were changed to return both ISIN and symbol.<br>Revised and extended all relevant examples to include SYMBOL fields, or to provide new examples using SYMBOLs instead of ISINs. |

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|---|---|---|
| 1.3 | 24/01/2003 | STD value added for TYPE field in order-add messages.<br>Text corrected for TYPE / FILLTYPE fields of Order Status message<br>Order status message change to separately report STATECNT states and EXECCNT executions, rather than combining executions with states.<br>Added per-state TIME field to Order Status message.<br>Added per-state USER field to Order Status message.<br>Added per-execution ETIME field to Order Status message.<br>Corrected order of Order Status example.<br>Added per-execution CPARTY field to Order Status message. |
| 1.4 | 30/01/2003 | Added L2 mode to quote subscription request for requesting Level 2 ticks.<br>Added OFF mode to quote subscription request, for unsubscription.<br>Added L2ASK, L2BID types to tick message, for L2 ticks<br>Added MMID field to tick message for market-maker ID with L2 ticks |
| 1.5 | 28/04/2003 | Added RANK field to tick message for L2 ticks, indicating the tick's rank by price. For Xetra ticks, this is equal to MMID. |
| 1.6 | 15/08/2003 | Described use of echo message for errors.<br>Added MSPID and NAME fields to quote subscription reply.<br>Added TREND, CHANGE, CHANGEPERC and FLAGS fields to tick message.<br>Removed TREND field from quote snapshot replies.<br>Added PRICECHECK field to Add-Order and Order Change request messages.<br>Added note about possible side-effect of pricechecks on monotonically increasing order IDs to Order Status response.<br>Added examples to Order status request.<br>Added list orders command and order list response.<br>Added Add-symbol-to-quotesheet command. |

| | | |
|---|---|---|
| 1.61 | 21/08/2003 | Added `DAYSBACK`, `STATES` and `MARKETS` fields to List Orders request. |
| 1.7 | 12/04/2004 | Added `CURRENCY` field to tick subscription reply method<br>Added `L1INC`, `L1DEC`, `L2INC`, `L2DEC` modes to quote subscription request.<br>Removed `NUMTICKS` field from Historical Quote Reply.<br>Added `REQID` field to Historical Quote Reply.<br>Added `REQID` field to Tick messages for ticks in response to a historical tick request.<br>Added `REQID` field to Historical Tick messages<br>Added Historical Quote End (HQE) message.<br>Added additional historical documentation.<br>Added additional `CI` examples featuring older/newer clients. |
| 1.8 | 16/04/2004 | Changed `XTPID` for `GENID` (backwards-compatibility mode will still deliver `XTPID`) |
| 1.81 | 29/10/2004 | `T` ticks now carry the `MSPID` of the instrument in question, if present |
| 1.95 | 18/05/2005 | Quote request support: Added `RQ` and `TQ` commands.<br>Add new `QUOTEREQUEST TYPE` to `OS` command, as well as `QUOTEDSIZE`, `QUOTEDPRICE` and `QUOTEDTIMEOUT` fields.<br>Quote update request support: Added `QU` command.<br>Net position support: Added `NPR` and `NP` commands.<br>Added new `PHASE` tick type to `QT` command. |
| 1.96 | 09/11/2005 | Added new `NPE` command<br>Added `NAME` tag to `NP` command. |

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|---|---|---|
| 2.0 | 15/10/2006 | Major cleanup, matching of terminology to sino MX$^{pro}$ Client manual.<br>Added WITHFILL and ACCOUNTS tags to LO command.<br>Changed all MARKET tags for EXCHANGE tags.<br>Introduced new IFDONEPROFIT, IFDONESTOP and IFDONEMOC tags for the Add Order message. Introduced new LEG, PARENT.GENID, PARENT.EXTERNID, CHILD.PROFIT.GENID, CHILD.STOP.GENID and CHILD.MOC.GENID tags for the Order Status mesage.<br>Increased the length of the EXTERNID tag from 20 to 64 characters.<br>Added the DEACTIVATION state.<br>Added CURRENCY to search results.<br>Rate limit support: Added RL command. |
| 2.02 | 05/05/2008 | Introduced new ACTIVE tags to AO and OC commands. |
| 2.10 | 30/08/2010 | QTR message: Added ITYPE, RIC, PRICESTEP, L1COUNT, L2COUNT and SUBBEDSYMS tags.<br>HQA, HT, HQE messages: Added MSPID tag.<br>OS message: Added CURRENCY, ROUTE, PHASE, PRIMARYSIZE, SECONDARYSIZE and VALUEDATE tags.<br>SR message: Added TYPE and CURRENCY tags.<br>AO message: Added PHASE, COMMENT, PRIMARYSIZE and SECONDARYSIZE tags. Add the valid values BOC, HIDDEN and MANUAL to the FILLTYPE tag.<br>OC message: Added FILLTYPE and PHASE tags.<br>RQ message: Added ROUTE, COMMENT, PRIMARYSIZE and SECONDARYSIZE tags.<br>AQ message: Added BLANK tag.<br>Introduced new APIFORMAT message. |

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|---|---|---|
| 2.21 | 23/07/2012 | OS message: Added CURRENCY and CSPOT tags.<br>APIFORMAT message: Added OS and OL tags.<br>T message: Added COUNT tag for level 2 ticks. Added IND and VOLUME tick types. Redefined LAST to only represent non-indicative ticks.<br>AO message: Added OTS tag. Added TOP value to the FILLTYPE tag.<br>OC message: Added TOP value to the FILLTYPE tag.<br>Added LOGIN and LOGOUT messages.<br>AO and TQ messages: Added WITHTAGS tag. |
| 2.22 | 13/03/2014 | AO and OS message: Added REGID tag. |
| 2.23 | 18/03/2014 | OC and OX message: Added REGID tag.<br>OS message: Made REGID.x a per-state tag. |
| 2.24 | 27/05/2014 | OS message: Again return STATE values 4 and 5 for unsolicited cancels. Previously 11 would always be returned, violating the specification of the OS message. This behavior is only activated if the API client identifies itself with a CI of 2.24 or higher. |

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