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EXCHANGE

Ali Protocol - Binário

Lorem ipsum

ALI Protocol

This document provides essential information regarding the **Binary Market Data Protocol**, referred to as the **ALI Protocol**.

Disclaimer: This document is a work in progress and should not be considered as final. It is subject to further revisions and modifications pending approval from regulatory agencies. Any information contained herein is preliminary and may be subject to change.

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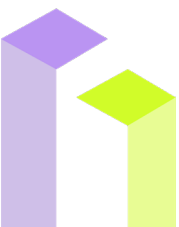

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1. Summary

ALI is a native binary-format protocol for market data, aiming at simplicity and performance. Market data messages include daily available instruments, instrument status, market status, books and trades data.

The ALI protocol consists of a one-way communication channel between the market data gateway and the client application, intermediated by a lower-level protocol, MoldUDP64. Outbound messages, i.e. from the market data gateway to the client, are always sequenced and are delivered through one of the market data multicast channels.

In case of client-side message loss the user can send a retransmission request to one of the ALI retransmitters instances, again using the MoldUDP64 protocol, specifying the messages needed to resync. If the client lost too many messages or wishes for an updated snapshot there is also the option to request the latest snapshot available, through the SoupBinTCP protocol.

All field lengths are considered to be bytes.

2. System Event Messages

2.1 System Event

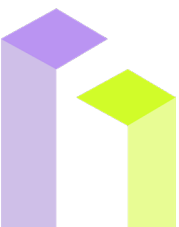
Name	Length	Values	Notes
Type	1	Alpha	'S' = System Event
Timestamp	8	Integer	Nanoseconds since midnight
Event Code	1	Alpha	'O' = Start of Messages. Outside of time stamp messages, the start of day message is the first message sent every trading day. 'S' = Start of System hours. This message indicates that it is open and ready to start accepting orders. 'E' = End of System hours. It indicates that it is now closed and will not accept any new orders today. It is still possible to receive Broken Trade messages and Order Delete messages after the End of Day.

	'C' = End of Messages. This is always the last message sent every trading day.

3. Stock Related Messages

3.1 Stock Directory

Name	Length	Values	Notes
Type	1	Alpha	'R' = Stock Directory
Timestamp	8	Integer	Nanoseconds since midnight
SecurityId	2	Integer	SecurityId uniquely assigned to the security symbol for the day
Symbol	8	Alpha	Denotes the security symbol for the issue in the execution system
RoundLotSize	4	Integer	Denotes the number of shares that represent a round lot for the issue
PriceDecimals	4	Integer	Number of decimal places in price fields. Value is 2.
SecurityType	1	Alpha	Identifies the security class for the issue
SecuritySubType	2	Alpha	Identifies the security sub-type for the issue
SecurityGroup	2	Alpha	Group used for risk management
Authenticity	1	Alpha	'P' = Live/Production 'T' = Test
VCMThreshold	2	Integer	VCM Triggering Threshold
MaxOrderQty	4	Integer	The maximum order quantity that can be submitted for a security. The value is the minimum between % of shares issued and % of average traded quantity within 30 days



3.2 Participant Directory

This message maps the FirmId on AddOrder messages to the participant's proper name.

Name	Length	Values	Notes
Type	1	Alpha	'F' = Participant Directory
Timestamp	8	Integer	Nanoseconds since midnight
ParticipantId	2	Integer	Unique identifier for the market participant
ParticipantCode	12	Alpha	Company's participant code

3.3 Stock Trading Action

Indicates Stock trading state.

Name	Length	Values	Notes
Type	1	Alpha	'H' = Stock Trading Action
Timestamp	8	Integer	Nanoseconds since midnight
SecurityId	2	Integer	SecurityId identifying the security
TradingState	1	Alpha	H = Halted T = Trading
Reason	1	Alpha	Trading Action reason "B" – status change from listing market "O" – operational status change

3.4 VCM Reference Price

Indicates VCM current reference, upper and lower price band.

Name	Length	Values	Notes
Type	1	Alpha	'P' = VCM Reference Price
Timestamp	8	Integer	Nanoseconds since midnight
SecurityId	2	Integer	SecurityId identifying the security
VCMReferencePrice	4	Integer	VCM Reference Price
VCMLowerPrice	4	Integer	Lower price in the price band
VCMUpperPrice	4	Integer	Upper price in the price band

3.5 VCM Trigger

Message sent when the VCM for given security is triggered.

Name	Length	Values	Notes
Type	1	Alpha	'V' = VCM Trigger
Timestamp	8	Integer	Nanoseconds since midnight
SecurityId	2	Integer	SecurityId identifying the security
CoolingOffStartTime	8	Integer	Time when the cooling off period starts Expressed as nanoseconds since midnight
CoolingOffEndTime	8	Integer	Time when the cooling off period ends Expressed as nanoseconds since midnight
VCMReferencePrice	4	Integer	Reference Price for the cooling off period
VCMLowerPrice	4	Integer	Lower price in the price band allowed during the cooling off period
VCMUpperPrice	4	Integer	Upper price in the price band allowed during the cooling off period

4. Add Order Message

4.1 Add Order

Name	Length	Values	Notes
Type	1	Alpha	'A' = Add Order
Timestamp	8	Integer	Nanoseconds since midnight
OrderRefNum	8	Integer	The unique reference number assigned to the new order at the time of receipt
Side	1	Alpha	The type of order being added. “B” = Buy Order. “S” = SellOrder.
Quantity	4	Integer	The total number of shares associated with the order being added to the book
SecurityId	2	Integer	SecurityId identifying the security
Price	4	Integer	The display price of the new order
FirmId	2	Integer	Market participant identifier associated with the entered order. A value of 0 indicates that no participant firm is applicable.

5. Modify Order Messages

5.1 Order Executed

Name	Length	Values	Notes
Type	1	Alpha	'E' = Order Executed
Timestamp	8	Integer	Nanoseconds since midnight
OrderRefNum	8	Integer	The unique reference number assigned to the new order at the time of receipt
Quantity	4	Alpha	The number of shares executed
MatchNumber	8	Integer	The generated day unique Match Number of this execution. The Match Number is also referenced in the Broken Trade Message.
AggressorFirmId	2	Integer	The unique participant firm identifier for the aggressor order in the execution

5.2 Order Delete

Name	Length	Values	Notes
Type	1	Alpha	'D' = Order Delete
Timestamp	8	Integer	Nanoseconds since midnight
OrderRefNum	8	Integer	The reference number of the order being canceled

5.3 Order Replace

Firms should retain the side, stock symbol and FirmId from the original Add Order message.

Name	Length	Values	Notes
Type	1	Alpha	'U' = Order Replace
Timestamp	8	Integer	Nanoseconds since midnight
OrigOrderRefNum	8	Integer	The original order reference number of the order being replaced
NewOrderRefNum	8	Integer	The new reference number for this order at time of replacement
Quantity	4	Integer	The new total displayed quantity
Price	4	Integer	The new display price for the order

6. Trade Messages

6.1 Broken Trade

Name	Length	Values	Notes
Type	1	Alpha	'B' = Broken Trade
Timestamp	8	Integer	Nanoseconds since midnight
MatchNumber	8	Integer	The Match Number of the execution that was broken. This refers to a Match Number from a previously transmitted Order Executed Message.