Japannext JNX

OUCH Trading Specification (Bonds)

Version 2.00

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1 Introduction

This document explains access to the **bonds trading services** of **Japannext PTS** via the **OUCH** protocol. It describes the service configuration and specifies application messages.

For further information and inquiries regarding trading services, and for questions concerning connectivity, contact Japannext Technical Support at ito@japannext.co.jp.

2 Overview

OUCH is an industry-standard binary order entry message protocol widely used by financial institutions to implement electronic exchange of securities transactions. OUCH enables clients to access different markets and liquidity pools operated by Japannext PTS. Clients can use OUCH to enter new orders, modify or cancel existing orders, and receive execution reports in real-time.

OUCH messages are encapsulated by **SoupBinTCP** as the point-to-point messaging protocol.

3 Fault Redundancy

A single OUCH account can be bound to multiple physical OUCH machines serving as mirrors for fault redundancy. Such a configuration enables the OUCH machines to accept orders and cancel requests, while simultaneously generating outbound messages.

4 Service Configuration

An OUCH trading service can be configured to accept and maintain multiple OUCH sessions per client. However, only one active connection to a particular OUCH port is allowed per account.

The **Cancel on Disconnect** feature is always active for OUCH accounts. Any open orders created by an OUCH account that is subsequently disconnected from all OUCH hosts for any reason are automatically withdrawn. For every withdrawn order, an unsolicited cancellation message is generated.

5 Data Types

- Integer fields are unsigned big-endian (network byte order) binary-encoded numbers.
- Signed integer fields are signed big-endian (network byte order) binary encoded numbers.
- Alpha fields are left-justified and right-padded with spaces.
- Token fields are 4-byte integer fields. Must be unique per OUCH account within a trading day and increase on each subsequent transaction.
- Price fields are 4-byte signed integer fields. When converted to a fixed-point number format, price fields have 7 whole number digits and 3 decimal places. The maximum representable value is 2,147,483.646 (7FFFFFFE hex) and the minimum representable value is –2,147,483.648 (80000000 hex).
- Quantity fields are 4-byte integer fields with a maximum representable value of 2,147,483,647 (7FFFFFFF hex).

6 Inbound Messages

Inbound messages are sent from the client application to the OUCH host. To eliminate any uncertainty of failed delivery to Japannext PTS following a connection loss or an application error, inbound messages may be repeatedly re-sent.

The idea of such benign inbound message retransmission with end-to-end acknowledgment is fundamental to fault redundancy implementation. For example, if a client connection should fail, there would be no way of knowing if pending messages were ever delivered. To mitigate such a risk, a robust OUCH client can safely re-send any pending messages over a mirrored link without any concern about generating duplicates.

All inbound messages on an OUCH port are processed sequentially. This guarantees that if two orders are entered consecutively on the same connection, the first order entered is always the first order accepted.

6.1 Enter Order Message

An **Enter Order Message** is used to enter a new order into the Japannext PTS execution system. Every valid order sent is acknowledged by an **Order Accepted Message**. An **Enter Order Message** with an **Order Token** out of sequence is silently ignored.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is O = Enter Order Message.
Order Token	1	4	Token	Must be unique per OUCH account within a trading day and increase on each subsequent transaction.
Client Reference	5	10	Alpha	Assigned by client. Not validated.
Buy/Sell Indicator	15	1	Alpha	Side of order. Values: B = Buy S = Sell
Quantity	16	4	Integer	Number of bonds.
Orderbook Id	20	4	Integer	Bond code per SICC definition.

Group	24	4	Alpha	Order book group identifier. Value: DJGB = JGB Market
Price	28	4	Signed Integer	Order yield.
Time in Force	32	4	Integer	How long the order remains in effect. Values: 0 = Immediate 99999 = Day Other values not supported (order rejected).
Firm Id	36	4	Integer	Order entry firm identifier. Should be zero initialized unless specifying client MPID. Forwarded to downstream systems if required.
Display	40	1	Alpha	Order handling instruction. Value: P = Post-only Enter space if unused.
Capacity	41	1	Alpha	Capacity of firm placing order. Values: A = Agency P = Principal
Minimum Quantity	42	4	Integer	Minimum acceptable quantity to execute. Non-zero values only supported for immediate orders.
Order Classification	46	1	Alpha	High-frequency trading (HFT) order classification. Values: 1 = Non HFT 3 = HFT market making strategy 4 = HFT arbitrage strategy 5 = HFT directional strategy 6 = HFT other strategy
Cash Margin Type	47	1	Alpha	Cash margin type of order. Value: 1 = Cash

6.2 Replace Order Message

A **Replace Order Message** is used to modify an existing order. It requires two valid order tokens: an existing token which must match an existing order for the account; and a replacement token compliant with the **Enter Order Message**. A **Replace Order Message** is silently ignored if the **Existing Order Token** is no longer live or if the **Replacement Order Token** is out of sequence.

If the order associated with the **Existing Order Token** is live but the replace details (except the **Replacement Order Token**) are invalid, the order is canceled and removed from the order book. In this case, the **Replacement Order Token** is not consumed and may be reused. The **Quantity** field in the **Replace Order Message** denotes the total quantity for the entire order chain. For example:

- An order for a quantity of 100 is entered, validated, and accepted.
- A quantity of 25 is executed.
- An additional quantity of 15 is executed.
- If the client wishes to replace the order and still be exposed to the balance of 60, the **Replace Order Message** must specify a quantity of 100 (i.e., the current balance plus the cumulative executed quantity).

An order may not be replaced with a new total quantity less than the cumulative executed quantity. Attempting to do so results in cancellation of the existing order.

For an order replaced with a new total quantity equal to the cumulative executed quantity, the replace action is accepted with state Dead.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is U = Replace Order Message.
Existing Order Token	1	4	Token	Must match current live order.
Replacement Order Token	5	4	Token	Must be unique per OUCH account within a trading day and increase on each subsequent transaction.
Quantity	9	4	Integer	Total number of bonds for the entire order chain (i.e., desired balance plus cumulative number of bonds executed).
Price	13	4	Signed Integer	Order yield.
Time in Force	17	4	Integer	How long the order remains in effect. Values: 0 = Immediate 99999 = Day Other values not supported (order rejected).
Display	21	1	Alpha	Order handling instructions. Value: P = Post-only Enter space if unused.
Minimum Quantity	22	4	Integer	Minimum acceptable quantity to execute. Non-zero values only supported for immediate orders.

6.3 Cancel Order Message

A **Cancel Order Message** is used to request that an order be canceled. Note that the only acknowledgment to a **Cancel Order Message** is the resulting **Order Canceled Message**. There is no "too late to cancel" message, and superfluous **Cancel Order Messages** are silently ignored.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is X = Cancel Order Message.
Order Token	1	4	Token	Must match current live order.
Quantity	5	4	Integer	Reserved. Value ignored; but recommended to set to zero.

7 Outbound Sequenced Messages

Outbound messages are generated by the OUCH host and received by the client application.

7.1 System Event Message

A **System Event Message** signals a Japannext PTS system-wide event.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is S = System Event Message.
Timestamp	1	8	Integer	Number of nanoseconds past midnight of the current calendar date.
System Event	9	1	Alpha	Refer to **Table 1** below.

Table 1 - System events description

Value	Description
S	Start of Day: Always the first message; market is open and ready to start accepting orders.
E	End of Day: Market is closed and will not accept any new orders; no further executions.

7.2 Order Accepted Message

An **Order Accepted Message** acknowledges the receipt and acceptance of a valid **Enter Order Message** and echoes the data fields of the **Enter Order Message**. An **Order Accepted Message** is sent with state Dead for an immediate order which is accepted but fails to execute. No additional messages are sent for the order. Order state Dead denotes that the order was accepted and automatically canceled.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is A = Order Accepted Message.
Timestamp	1	8	Integer	Number of nanoseconds past midnight of the current calendar date.
Order Token	9	4	Token	Order Token as entered.
Client Reference	13	10	Alpha	Client Reference as entered.
Buy/Sell Indicator	23	1	Alpha	Buy/Sell Indicator as entered. Values: B = Buy S = Sell
Quantity	24	4	Integer	Number of bonds accepted.
Orderbook Id	28	4	Integer	Order book identifier as entered.
Group	32	4	Alpha	Order book group identifier as entered. Value: DJGB = JGB Market
Price	36	4	Signed Integer	Accepted order yield.

Time in Force	40	4	Integer	Time in Force as accepted. Values: 0 = Immediate 99999 = Day
Firm Id	44	4	Integer	Firm identifier as accepted.
Display	48	1	Alpha	Display as accepted. Value: P = Post-only Space if unused.
Capacity	49	1	Alpha	Capacity of firm placing order. Values: A = Agency P = Principal
Order Number	50	8	Integer	Order reference number unique within trading day.
Minimum Quantity	58	4	Integer	Accepted minimum acceptable quantity to execute.
Order State	62	1	Alpha	Order state upon acceptance. Values: L = Live D = Dead
Order Classification	63	1	Alpha	High-frequency trading (HFT) order classification. Values: 1 = Non HFT 3 = HFT market making strategy 4 = HFT arbitrage strategy 5 = HFT directional strategy 6 = HFT other strategy
Cash Margin Type	64	1	Alpha	Cash margin type of order. Value: 1 = Cash

7.3 Order Replaced Message

An **Order Replaced Message** acknowledges the receipt and acceptance of a valid **Replace Order Message** and echoes the data fields of the **Replace Order Message**. In the same manner as **Order Accepted Messages**, **Order Replaced Messages** sent with state Dead denote that a replace action was accepted and automatically canceled.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is U = Order Replaced Message.
Timestamp	1	8	Integer	Number of nanoseconds past midnight of the current calendar date.
Replacement Order Token	9	4	Token	Replacement Order Token as entered.
Buy/Sell Indicator	13	1	Alpha	Buy/Sell Indicator as entered on the original order in the chain. Values: B = Buy S = Sell
Quantity	14	4	Integer	Total number of bonds outstanding.
Orderbook Id	18	4	Integer	Order book identifier as entered on the original order in the chain.
Group	22	4	Alpha	Order book group identifier as entered on the original order in the chain. Value: DJGB = JGB Market

Price	26	4	Signed Integer	Accepted order yield.
Time in Force	30	4	Integer	Time in Force as accepted. Values: 0 = Immediate 99999 = Day
Display	34	1	Alpha	Display as accepted. Value: P = Post-only Space if unused.
Order Number	35	8	Integer	Order reference number unique within trading day.
Minimum Quantity	43	4	Integer	Accepted minimum acceptable quantity to execute.
Order State	47	1	Alpha	Order state upon replacement. Values: L = Live D = Dead
Previous Order Token	48	4	Token	Order token of replaced order.

7.4 Order Canceled Message

An **Order Canceled Message** denotes that an order has been canceled. An **Order Canceled Message** could be acknowledging a **Cancel Order Message** or the result of an order being canceled automatically.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is C = Order Canceled Message.
Timestamp	1	8	Integer	Number of nanoseconds past midnight of the current calendar date.
Order Token	9	4	Token	Order token of canceled order.
Decrement Quantity	13	4	Integer	Number of bonds decremented from order. This number is incremental, not cumulative.
Order Canceled Reason	17	1	Alpha	Reason order was reduced or canceled. Refer to **Table 2** below.

Table 2 - Order canceled reason

Value	Description
U	User requested the order to be canceled. Sent in response to a Cancel Order Message or a Replace Order Message.
L	User logged off.
S	The order was manually canceled by a supervisory terminal (e.g., an emergency withdrawal or in response to a user request or a user suspension).
I	An order with 'Immediate' Time in Force was executed, and the remaining quantity was canceled due to no further matches available in the order book.
M	Order expired during matching.
X	Invalid price.
Z	Invalid quantity.

N	Invalid minimum quantity.
Y	Invalid order type.
D	Invalid display type.
R	Order not allowed at this time.
F	Flow control is enabled and this OUCH port is being throttled.
G	Margin order canceled due to margin restriction.
O	Other.

7.5 Order AIQ Canceled Message

An **Order AIQ Canceled Message** denotes that an order has been canceled by Japannext PTS to prevent a self-trade. This is an extended version of the **Order Canceled Message** with specifics of the prevented trade.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is D = Order AIQ Canceled Message.
Timestamp	1	8	Integer	Number of nanoseconds past midnight of the current calendar date.
Order Token	9	4	Token	Order token of canceled order.
Decrement Quantity	13	4	Integer	Number of bonds decremented from the order. This number is incremental, not cumulative.
Order Canceled Reason	17	1	Alpha	Reason the order was reduced or canceled. Value is M = Order expired during matching.
Quantity Prevented from Trading	18	4	Integer	Number of bonds that would have executed if the trade had occurred.
Execution Price	22	4	Signed Integer	Yield at which the trade would have occurred.
Liquidity Indicator	26	1	Alpha	Identifies whether this would-be trade was a result of a liquidity provider providing or liquidity taker taking the liquidity. Values: A = Added (for the passive firm) R = Removed (for the aggressor)

7.6 Order Executed with Counter Party Message

An **Order Executed with Counter Party Message** denotes that all or part of an order has been executed.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is E = Order Executed with Counter Party Message.
Timestamp	1	8	Integer	Number of nanoseconds past midnight of the current calendar date.
Order Token	9	4	Token	Order token of the executed order.
Executed Quantity	13	4	Integer	Incremental number of bonds executed.

Execution Price	17	4	Signed Integer	Yield at which the bonds were executed.
Liquidity Indicator	21	1	Alpha	Identifies whether this trade was a result of a liquidity provider providing or liquidity taker taking the liquidity. Values: A = Added (for the passive firm) R = Removed (for the aggressor)
Counter Party	22	12	Alpha	Trade counterparty identifier.
Match Number	34	8	Integer	Reference number of the match unique within trading day. The matching buy and sell executions have the same match number.

7.7 Order Rejected Message

An **Order Rejected Message** may be sent in response to an **Enter Order Message** if the order cannot be accepted.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is J = Order Rejected Message.
Timestamp	1	8	Integer	Number of nanoseconds past midnight of the current calendar date.
Order Token	9	4	Token	Order token of the rejected order.
Order Rejected Reason	13	1	Alpha	Reason the order was rejected. Refer to **Table 3** below.

Table 3 - Order rejected reason

Value	Description
H	Due to a trading halt, no orders can be accepted for this order book at this time.
S	Invalid order book identifier.
X	Invalid price.
Z	Invalid quantity.
N	Invalid minimum quantity.
Y	Invalid order type.
D	Invalid display type.
R	Order not allowed at this time.
F	Flow control is enabled and this OUCH port is being throttled.
G	Invalid margin specification.
L	MPID not allowed for this port.
c	User does not have permission to enter an order on the given board.
O	Other.

8 Revision History

Date	Version	Description
2025-09-17	2.00	Document format has been revamped. Section numbers changed to accommodate new format. Added link to Japannext SoupBinTCP Specification. Display field comment clarified: “blank” changed to “space”. Parts of the text have been reworded to improve readability. No factual changes made to technical content.
2019-02-21	1.4	Added Cash Margin Type field to Enter Order Message and Order Accepted Message. Added “G” to Order Canceled Reasons and Order Rejected Reasons.
2017-12-18	1.3	Corrected order of Order Classification field. Changed field names: Canceled Order Reason → Order Canceled Reason, Rejected Order Reason → Order Rejected Reason. Changed message names: Accepted Message → Order Accepted Message, Replaced Message → Order Replaced Message, Canceled Message → Order Canceled Message, AIQ Canceled Message → Order AIQ Canceled Message, Executed Message → Order Executed Message, Rejected Message → Order Rejected Message.
2017-11-08	1.2	Added Order Classification field to Enter Order Message and Accepted Message.
2017-10-26	1.1	Replaced Order Reference Number field name with Order Number. Replaced Security Id field name with Orderbook Id. Replaced Bonds with Quantity in data type descriptor and field names. Replaced Yield with Price in data type descriptor and field names.
2016-12-05	1.0	Initial version.