

Orders (Level 3)

CHANNEL `wss://ws-auth.kraken.com/v2` `level3`*Authentication Required*

Summary

The `level3` channel has an additional level of granularity over the `book` channel, it provides visibility of individual orders in the book.

L3 shows orders resting in the visible order book and it will never be crossed (i.e. no overlapping buy and sell orders). This feed excludes:

- In-flight orders.
- Unmatched market orders.
- Untriggered stop-loss and take-profit orders.
- Hidden quantity of iceberg orders.

For more detail on maintaining the order book and generating a checksum, see [guide](#).

Subscription limits

The `level3` channel is authenticated (i.e. it requires an API token to subscribe) and there are restrictions of the number of symbols and the subscription rate.

- The total number of symbols per websocket connection is `200`. A client can open multiple websockets connections to increase symbol coverage.
- The subscription rate determined by client tier and order book depth. Standard rate count limit per second is `200` and the pro limit is `500`.
- The counter increase per book depth subscription is given in the table below.

Order Book Depth	Rate Counter Increase per Symbol
10	5
100	25
1000	100

****Example: **** Pro client can subscribe to 100 symbols of 10 depth every second.

Subscribe Request

Only one subscription to one depth level per symbol is supported, i.e. cannot subscribe to 10 levels and 1000 levels of "BTC/USD".

[Subscribe Schema](#)[Subscribe Ack Schema](#)[Example: Subscribe](#)[Example: Subscribe Ack](#)

MESSAGE BODY

method string	REQUIRED
Value: <input type="text" value="subscribe"/>	
params object	
channel string	REQUIRED
Value: <input type="text" value="level3"/>	
symbol array of strings	REQUIRED
Example: ["BTC/USD", "MATIC/GBP"] A list of currency pairs.	
depth integer	
Possible values: [<input type="text" value="10"/> , <input type="text" value="100"/> , <input type="text" value="1000"/>] Default value: <input type="text" value="10"/> The number of price levels to be received.	
snapshot boolean	
Possible values: [<input type="text" value="true"/> , <input type="text" value="false"/>] Default value: <input type="text" value="true"/> Request a snapshot after subscribing.	
token string	REQUIRED
This is a authenticated channel, a session token is required. See guides on how to generate a token via REST.	
req_id integer	
Optional client originated request identifier sent as acknowledgment in the response.	

Snapshot Response

Snapshot Response

Example: Snapshot

MESSAGE BODY

— **channel** string

Value: `level3`

— **type** string

Value: `snapshot`

— **data** array [

— [0] book object

The book element is always the first and only item in the data payload.

— **symbol** string

Example: "BTC/USD"

The symbol of the currency pair.

— **bids** array [

A list of buy orders posted in the book.

— [many] order object

— **order_id** string

The Kraken order identifier of the order in the book

— **limit_price** float

Limit price of the order

— **order_qty** float

The remaining order quantity visible in the book

— **timestamp** string

Format: RFC3339

Example: 2022-12-25T09:30:59.123456Z

The time the order was inserted or amended.

]

— **asks** array [

A list of sell orders posted in the book.

- [many] order object

- **order_id** string

- The Kraken order identifier of the order in the book

- **limit_price** float

- Limit price of the order

- **order_qty** float

- The remaining order quantity visible in the book

- **timestamp** string

- Format:** RFC3339

- Example:** 2022-12-25T09:30:59.123456Z

- The time the order was inserted or amended.

-]

- **checksum** integer

- CRC32 checksum for the top 10 price levels on both sides.

-]

Update Response

- The updates will be streamed following the initial snapshot, no sequencing is required.
- The L3 channel is not throttled, updates will be provided in the real-time.
- If a price level is removed from the subscribed levels (i.e. result of trades/cancels) then all orders in the next available level will generate an add event.

Maintaining the book

After each update, the book should be truncated to your subscribed depth, there will be no `delete` event for price levels that fall out of scope. In other words, if you are subscribed with `depth` of 10 and an insert into the book results in 11 bids, you must remove the 11th worst bid.

Update Schema Example

MESSAGE BODY

channel	string
Value:	<code>level3</code>
type	string
Value:	<code>update</code>
data	array [
[0]	book object
The book element is always the first and only item in the data payload.	
checksum	integer
	CRC32 checksum for the top 10 price levels on both sides.
symbol	string
	Example: "BTC/USD"
	The symbol of the currency pair.
bids	array [
	A list of order events to the bid side of book.
[many]	order_event object
event	string
	Possible values: [<code>add</code> , <code>modify</code> , <code>delete</code>]

The type of order event for this update:

- `add`: A new order added to the book.
- `modify`: The order quantity has been modified, i.e. a fill.
- `delete`: The order has been removed from the book, i.e. full fill or cancel.

— **order_id** string

The Kraken order identifier of the order in the book

— **limit_price** float

Limit price of the order

— **order_qty** float

The remaining order quantity visible in the book

— **timestamp** string

Format: RFC3339

Example: 2022-12-25T09:30:59.123456Z

The time the order was inserted or amended.

]

— **asks** array [

A list of order events to the ask side of book.

— [many] **order_event** object

— **event** string

Possible values: [`add`, `modify`, `delete`]

The type of order event for this update:

- `add`: A new order added to the book.
- `modify`: The order quantity has been modified, i.e. a fill.
- `delete`: The order has been removed from the book, i.e. full fill or cancel.

— **order_id** string

The Kraken order identifier of the order in the book

— **limit_price** float

Limit price of the order

— **order_qty** float

The remaining order quantity visible in the book

— **timestamp** string

Format: RFC3339

Example: 2022-12-25T09:30:59.123456Z

The time the order was inserted or amended.

Unsubscribe Request

Unsubscribe Schema

Unsubscribe Ack Schema

Example: Unsubscribe

Example: Unsubscribe Ack

MESSAGE BODY

method

string

REQUIRED

Value:

params

object

channel

string

REQUIRED

Value:

symbol

array of strings

REQUIRED

Example: ["BTC/USD", "MATIC/GBP"]

A list of currency pairs.

depth

integer

Possible values: , ,

Default value:

The number of price levels to be received.

token

string

REQUIRED

This is a authenticated channel, a session token is required. See guides on how to generate a token via REST.

req_id

integer

Optional client originated request identifier sent as acknowledgment in the response.