
ziwia

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ZIWIA is an API client for Kraken Bitcoin exchange site. It fully supports version 0 of Kraken's API. Main goal of this project is to make it as easy as possible to contact Kraken, get information you need and return data in readable format.

WARNING: At the moment, ziwia is still in early development stage. I would really appreciate any bug report or idea how to improve it.

Features:

- Data returned as JSON.
- Parameters are checked before connection.
- Proxy support.

Requires:

Ziwia requires `requests` library to work properly. See: [Installation](#).

1.1 Installation

Ziwia is being developed with `requests >= 2.14.2` as only requirement. It uses just small set of its functionality and thus should work even with older versions of requests.

```
pip install requests
```

If you install ziwia from PyPi, all requirements should be installed with just one line:

```
pip install ziwia
```

Or you may clone github repository and install ziwia locally:

```
git clone https://github.com/malja/ziwia.git
```

That is all. See *Basic Usage* for basic examples of usage.

1.2 Basic Usage

Install ziwia package as described in *Installation*.

After successful installation, import ziwia into your project.

```
import ziwia

api = ziwia.Api()
server_time = api.time()
print( server_time["unixtime"] )
```

This example shows simple API call to public Kraken API. Public API means, you do not have to authorize yourself with private and public API key. Data accessible in public API is mostly about server.

We create an API class instance. You will always start API calls with this line. Next, we call `ziwia.Api.time()` which connects to Kraken API and returns server time in two formats. First one is [Unix timestamp](#) and the second one is [RFC 1123](#).

Last line just prints out server time as unix timestamp.

Note: Beside `ziwia.Api.time()`, every API address Kraken exposes has its corresponding method in `ziwia`. For example address `/0/public/Ticker` is mapped to `ziwia.Api.ticker()` method. As you can see, method name is made up of the part after last slash in address. Name is all lower-case and if address contains more than one word, words are separated by underscore. For example `/0/public/AssetPairs` translates as `ziwia.Api.asset_pairs()`.

1.2.1 Private and public

Kraken API is divided into two sections - public and private. Public API is accessible without any authorization and limits.

For accessing private API, you have to provide your private and public API keys. They should be passed as parameters to `ziwia.Api` constructor.

```
import ziwia

api = ziwia.Api( "public_key", "private_key" )
print( api.balance() )
```

This code retrieves your account balance. To use it, change `public_key` and `private_key` to keys from your Kraken Account settings.

1.2.2 Timeout and proxy

Since version 0.2, `ziwia` supports proxy settings. All you have to do is to pass HTTP and HTTPS specific settings to fourth parameter of `ziwia.Api` constructor.

```
import ziwia

proxy = {
    "http": "your_proxy",
    "https": "hhttps_proxy"
}

api = ziwia.Api( "public_key", "private_key", 30, proxy )
```

The third parameter is number of seconds before timeout.

1.3 API reference

This page contains documentation of all methods available in `ziwia`.

<code>ziwia.Api</code>	This class is responsible for creatin Kraken API calls.
<code>ziwia.Api.__init__</code>	Constructor.
<code>ziwia.Api.public</code>	Creates a public API call.
<code>ziwia.Api.time</code>	Gets current server time.
<code>ziwia.Api.assets</code>	Returns Assets from Kraken.

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<code>ziwia.Api.asset_pairs</code>	Returns Assets Pairs from Kraken.
<code>ziwia.Api.ticker</code>	Gets pair name ticker values like.
<code>ziwia.Api.ohlcv</code>	Returns OLHC asset pairs values.
<code>ziwia.Api.depth</code>	Returns market depth for selected asset pairs.
<code>ziwia.Api.trades</code>	Get recent trades of selected asset pairs.
<code>ziwia.Api.spread</code>	Get recent spread data of selected asset pairs.
<code>ziwia.Api.private</code>	Perform a private API call.
<code>ziwia.Api.balance</code>	Gets User account balance in all currencies.
<code>ziwia.Api.trade_balance</code>	Gets User trade balance.
<code>ziwia.Api.open_orders</code>	Gets User opened orders.
<code>ziwia.Api.closed_orders</code>	Returns closed orders according to parameters.
<code>ziwia.Api.query_orders</code>	Returns orders info.
<code>ziwia.Api.trades_history</code>	Gets trades history.
<code>ziwia.Api.query_trades</code>	Returns trade info.
<code>ziwia.Api.open_positions</code>	Returns open positions list.
<code>ziwia.Api.ledgers</code>	Returns ledgers list.
<code>ziwia.Api.query_ledgers</code>	Returns ledger info.
<code>ziwia.Api.trade_volume</code>	Gets trade volume.
<code>ziwia.Api.add_order</code>	Adds exchange order to your account.
<code>ziwia.Api.cancel_order</code>	Cancels order.

1.3.1 Methods

class `ziwia.Api` (*public_key=""*, *private_key=""*, *timeout=30*, *proxy=None*)

This class is responsible for creating Kraken API calls. Ziwia 0.2 supports Kraken API version 0. It exposes two basic methods - `public()` which calls public part of API. It does not require you to fill **public** and **private** keys. Second one is `private()` method which, as name suggests, calls private part.

Apart of these two methods, there are a few ones supporting direct requests. They check inputs and sometimes could save you some time testing your application.

public (*request*, *parameters=None*)

Creates a public API call. It does not require public and private keys to be set.

Parameters

- **request** (*str*) – One of Time, Assets, AssetPairs, Ticker, OHLC, Depth, Trades and Spread.
- **parameters** (*dict*) – Additional parameters for each request. See Kraken documentation for more information.

Returns JSON object representing Kraken API response.

Raises `ValueError`, if request string is not valid. `ConnectionError` and `ConnectionTimeout` on connection problem.

time()

Gets current server time. See [Kraken documentation](#).

Output example:

```
{
  "error": [
  ],
}
```

```

"result":{
  "rfc1123":"Wed, 10 May 17 10:32:24 +0000",
  "unixtime":1494412344
}

```

Returns Response as JSON object.

Raises Any of `public()` method exceptions.

assets (*assets=""*)

Returns Assets from Kraken. See [Kraken documentation](#)

Output example:

```

{
  "error": [
  ],
  "result": {
    "XMLN": {
      "altname": "MLN",
      "decimals": 10,
      "display_decimals": 5,
      "aclass": "currency"
    },
    ...
  }
}

```

Parameters **assets** (*str*) – Comma separated list of assets you are interested in, or empty for all.

Returns Response as JSON object.

Raises Same exceptions as `public()` method.

asset_pairs (*info='info', pairs=""*)

Returns Assets Pairs from Kraken. See [Kraken documentation](#).

Output example:

```

{
  "error": [
  ],
  "result": {
    "XXRPXXBT": {
      "pair_decimals": 8,
      "lot": "unit",
      "margin_call": 80,
      "fees_maker": [
        [
          0,
          0.16
        ],
        ...
      ]
    }
  }
}

```

```

    ],
    "altname": "XRPXBT",
    "quote": "XXBT",
    "fees": [
      [
        0,
        0.26
      ],
      ...
    ],
    "aclass_quote": "currency",
    "margin_stop": 40,
    "base": "XXRP",
    "lot_multiplier": 1,
    "fee_volume_currency": "ZUSD",
    "aclass_base": "currency",
    "leverage_sell": [
      ],
    "leverage_buy": [
      ],
    "lot_decimals": 8
  },
  ...
}

```

Parameters

- **info** – One of info, leverage, fees, margin.
- **pairs** – Comma separated list of asset pairs you are interested in, or empty for all.

Returns Response as JSON object.

Raises ValueError if info parameter is not allowed.

ticker (*pairs*)

Gets pair name ticker values like. See [Kraken documentation](#).

Output example:

```

{
  "error": [
  ],
  "result": {
    "XZECZEUR": {
      "t": [
        789,
        1563
      ],
      "h": [
        "93.88889",
        "93.88889"
      ],
      "l": [
        "83.30000",

```

```

        "82.90067"
    ],
    "a": [
        "91.13167",
        "1",
        "1.000"
    ],
    "b": [
        "91.13166",
        "1",
        "1.000"
    ],
    "v": [
        "1409.83478992",
        "3185.73131989"
    ],
    "p": [
        "90.08671",
        "87.74001"
    ],
    "c": [
        "91.13068",
        "3.23282073"
    ],
    "o": "85.87561"
}
}
}

```

Parameters `pairs` (*str*) – Comma separated list of asset pairs you are interested in.

Returns Response as JSON object.

Raises All of `public()` method exceptions.

ohlcv (*pairs, interval=1, since=0*)

Returns OLHC asset pairs values. See [Kraken documentation](#).

Output example:

```

{
  "error": [
  ],
  "result": {
    "last": 1494422340,
    "XZECZEUR": [
      [
        1494379260,
        "86.93479",
        "86.93479",
        "86.93479",
        "86.93479",
        "0.00000",
        "0.00000000",
        0
      ],
      ...
    ]
  }
}

```

```

    ]
  }
}

```

Parameters

- **pairs** (*str*) – Comma separated list of asset pairs you are interested in, or empty for all.
- **interval** (*int*) – One of 1, 5, 15, 30, 60, 240, 1440, 10080 or 21600 representing time frame in minutes.
- **since** (*int*) – ID of the last OLHC record since which you would like to get OLHC info, of zero for no limit.

Returns Response as JSON object.

Raises Any of *public()* method exceptions.

depth (*pairs, count=0*)

Returns market depth for selected asset pairs. See [Kraken documentation](#).

Output example:

```

{
  "error": [
  ],
  "result": {
    "XZECZEUR": {
      "asks": [
        [
          "89.92088",
          "34.910",
          1494422730
        ],
        ...
      ],
      "bids": [
        [
          "88.42616",
          "4.755",
          1494422729
        ],
        ...
      ]
    }
  }
}

```

Parameters

- **pairs** (*str*) – Comma separated list of asset pairs you are interested in, or empty for all.
- **count** (*int*) – Maximum number of bids/asks or zero for no limit.

Returns Response as JSON object.

Raises Any of *public()* method exceptions.

trades (*pairs*, *since=0*)

Get recent trades of selected asset pairs. See [Kraken documentation](#).

Output example:

```
{
  "error": [
  ],
  "result": {
    "last": "1494423192560021193",
    "XZECZEUR": [
      [
        "86.20035",
        "0.44929000",
        1494369147.0533,
        "b",
        "l",
        ""
      ],
      ...
    ]
  }
}
```

Parameters

- **pairs** (*str*) – Comma separated list of asset pairs you are interested in, or empty for all.
- **since** (*int*) – ID of the last OLHC record since which you would like to get OLHC info, or zero for no limit.

Returns Response as JSON object.

Raises Any of *public()* method exceptions.

spread (*pairs*, *since=0*)

Get recent spread data of selected asset pairs. See [Kraken documentation](#).

Output example:

```
{
  "error": [
  ],
  "result": {
    "XZECZEUR": [
      [
        1494423011,
        "88.42539",
        "88.91550"
      ],
      ...
    ],
    "last": 1494423011
  }
}
```

Parameters

- **pairs** (*str*) – Comma separated list of asset pairs you are interested in, or empty for all.
- **since** (*int*) – ID of the last OLHC record since which you would like to get OLHC info, of zero for no limit.

Returns Response as JSON object.

Raises Any of *public()* method exceptions.

private (*request, parameters=None*)

Perform a private API call.

Warning Calling this function requires public and private keys to be set in class constructor.

Parameters

- **request** – One of Balance, TradeBalance, OpenOrders, ClosedOrders, QueryOrders, TradesHistory, QueryTrades, OpenPositions, Ledgers, QueryLedgers, TradeVolume, AddOrder, CancelOrder.
- **parameters** – Additional parameters for each request. See Kraken documentation for more information.

Returns A JSON object representing Kraken API response.

Raises ValueError is request string is not supported. ConnectionError and ConnectionTimeout on connection problem.

balance ()

Gets User account balance in all currencies. See [Kraken documentation](#).

Returns Response as JSON object.

Raises Any of private method exceptions.

trade_balance (*asset='ZUSD'*)

Gets User trade balance. See [Kraken documentation](#).

Parameters **asset** – Base asset used to determine balance.

Returns Response as JSON object.

Raises Any of private method exceptions.

open_orders (*trades=False, userref=""*)

Gets User opened orders. See [Kraken documentation](#).

Parameters

- **trades** – Include trades in output? True/False.
- **userref** – Restrict results to given user reference ID.

Returns Response as JSON object.

Raises Any of private method exceptions.

closed_orders (*trades=False, userref="", start="", end="", offset="", closetime='both'*)

Returns closed orders according to parameters. See [Kraken documentation](#).

Parameters

- **trades** – Include trades in response?

- **userref** – Restrict response to given user reference ID.
- **start** – Starting timestamp or order ID.
- **end** – End timestamp or order ID.
- **offset** – Result offset.
- **closetime** – Which time to use. One of open, close, both.

Returns Response as JSON object.

Raises Any of private method exceptions.

query_orders (*trades=False, userref="", txid=""*)

Returns orders info. See [Kraken documentation](#).

Parameters

- **trades** – Include trades in output?
- **userref** – User reference ID.
- **txid** – Comma separated list of transaction IDs. Max 20.

Returns Response as JSON object.

Raises Any of private method exceptions.

trades_history (*ttype='all', trades=False, start="", end="", offset=""*)

Gets trades history. See [Kraken documentation](#).

Parameters

- **ttype** – Trade type. Method checks right input - it can be one of all, any, closed, no.
- **trades** – Include trades related to position in result?
- **start** – Unix timestamp or trade ID.
- **end** – Unix timestamp of trade ID.
- **offset** – History offset.

Returns Response as JSON object.

Raises Any of private method exceptions.

query_trades (*trades=False, txid=""*)

Returns trade info. See [Kraken documentation](#).

Parameters

- **trades** – Include trades related to position in response.
- **txid** – Comma separated list of transaction IDs. Max 20.

Returns Response as JSON object.

Raises Any of private method exceptions.

open_positions (*docalcs=False, txid=""*)

Returns open positions list. See [Kraken documentation](#).

Parameters

- **txid** – Comma delimited list of transaction IDs to restrict output to
- **docalcs** – Include profit/loss calculations.

Returns Response as JSON object.

Raises Any of private method exceptions.

ledgers (*asset=""*, *ltype='all'*, *start=0*, *end=0*, *offset=0*)

Returns ledgers list. See [Kraken documentation](#).

Parameters

- **asset** (*str*) – Comma delimited list of assets to restrict output to.
- **ltype** (*str*) – Type of ledger to retrieve. One of all, deposit, withdrawal, trade and margin.
- **or str start** (*int*) – Starting unix timestamp or ledger ID of results.
- **or str end** (*int*) – Ending unix timestamp or ledger ID of results.
- **offset** (*int*) – Result offset.

Returns Response as JSON object.

Raises Any of private method exceptions.

query_ledgers (*lid*)

Returns ledger info. See [Kraken documentation](#).

Parameters **lid** – Comma delimited list of ledger ids to query info about. Max 20.

Returns Response as JSON object.

Raises Any of private method exceptions.

trade_volume (*pair=""*, *fee_info=False*)

Gets trade volume. See [Kraken documentation](#).

Parameters

- **pair** – Comma delimited list of asset pairs to get fee info on.
- **fee_info** – Include fee info in results?

Returns Response as JSON object.

Raises Any of private method exceptions.

add_order (*pair*, *otype*, *ordertype*, *price*, *volume*, *price2=-1*, *leverage='none'*, *oflags=""*, *starttm=0*, *expiretm=0*, *userref=""*, *validate=False*)

Adds exchange order to your account. See [Kraken documentation](#).

Parameters

- **pair** – Asset pair.
- **otype** – Type of order (buy/sell).
- **ordertype** – Order type. Method tests right input to this parameter and thus may raise `ValueError`. Only following values are allowed - market, stop-loss, take-profit, stop-loss-profit, stop-loss-profit-limit, stop-loss-limit, take-profit-limit, trailing-stop, trailing-stop-limit stop-loss-and-limit and settle-position. :param price: Price, meaning depends on order type. :param volume: Order volume in lots.
- **price2** – Price, meaning depends on order type.
- **leverage** – Amount of desired leverage.

- **oflags** – Comma separated flags: “viqc”, “fcib”, “fcic”, “nompp”.
- **starttm** – Scheduled start time. Zero (now) or unix timestamp.
- **expiretm** – Expiration time. Zero (never) or unix timestamp.
- **userref** – User reference id. 32-bit signed number.
- **validate** – Calidate inputs only. Do not submit order.

Returns Response as JSON object.

Raises Any of private method exceptions.

cancel_order (*txid*)

Cancel order. See [Kraken documentation](#).

Parameters **txid** – Transaction id.

Returns Response as JSON object.

Raises Any of private method exceptions.

1.4 To-Do List

Todo:

- Tests
 - Cache
 - Implement kraken API calls limits.
 - Maybe: Implement ziwia to return objects instead of JSON.
-

CHAPTER 2

Reference

<code>ziwia.Api</code>	This class is responsible for creatin Kraken API calls.
<code>ziwia.Api.__init__</code>	Constructor.
<code>ziwia.Api.public</code>	Creates a public API call.
<code>ziwia.Api.time</code>	Gets current server time.
<code>ziwia.Api.assets</code>	Returns Assets from Kraken.
<code>ziwia.Api.asset_pairs</code>	Returns Assets Pairs from Kraken.
<code>ziwia.Api.ticker</code>	Gets pair name ticker values like.
<code>ziwia.Api.ohlcv</code>	Returns OLHC asset pairs values.
<code>ziwia.Api.depth</code>	Returns market depth for selected asset pairs.
<code>ziwia.Api.trades</code>	Get recent trades of selected asset pairs.
<code>ziwia.Api.spread</code>	Get recent spread data of selected asset pairs.
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<code>ziwia.Api.balance</code>	Gets User account balance in all currencies.
<code>ziwia.Api.trade_balance</code>	Gets User trade balance.
<code>ziwia.Api.open_orders</code>	Gets User opened orders.
<code>ziwia.Api.closed_orders</code>	Returns closed orders according to parameters.
<code>ziwia.Api.query_orders</code>	Returns orders info.
<code>ziwia.Api.trades_history</code>	Gets trades history.
<code>ziwia.Api.query_trades</code>	Returns trade info.
<code>ziwia.Api.open_positions</code>	Returns open positions list.
<code>ziwia.Api.ledgers</code>	Returns ledgers list.
<code>ziwia.Api.query_ledgers</code>	Returns ledger info.
<code>ziwia.Api.trade_volume</code>	Gets trade volume.
<code>ziwia.Api.add_order</code>	Adds exchange order to your account.
<code>ziwia.Api.cancel_order</code>	Cancel order.

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