
ethextended

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ethextended is a python library with external tools provided by different services (like etherscan.io, ethgasstation.info, and others).

1.1 Installation

Install using **pip**:

```
$ pip3 install ethextended
```

Or build from **source**:

```
$ python3 setup.py install
```

1.2 Accounts

class ethextended.account

This class is the parent of all functions related to Ethereum addresses (accounts).

account.**address_autocomplete**(address)

- Uses etherscan.io API

Takes not completed address like 0x3f5CE5, and returns a list of possible addresses with any transaction like ['0x3F5ce52A7ea4471a73b7aCA7bCcc9b03ea8449bE', '0x3f5...].

```
>>> ethextended.account.address_autocomplete("0x3f5CE5")
['0x3F5ce52A7ea4471a73b7aCA7bCcc9b03ea8449bE',
↪ '0x3f5ce530eF787ce64e277D84aa4546b520D62f9E',
↪ '0x3f5ce541912eb5cFE38b9e1F84c0E37504f89212',
↪ '0x3F5CE5cBbAdB3102f62051CF14c25630bF16c65D',
↪ '0x3f5CE5FBFe3E9af3971dD833D26bA9b5C936f0bE']
```

account.**address_tags**(address)

- Uses etherscan.io API

Displays address tags, gathered from etherscan.io.

Note: The first tag would be the main tag of the address. Others would be as additional.

```
>>> ethextended.account.address_tags("0x3f5CE5FBFe3E9af3971dD833D26bA9b5C936f0bE")
['Binance', 'Exchange']
```

account.**address_label**(address)

- Uses etherscan.io API

Displays address label given by etherscan.io.

```
>>> ethextended.account.address_label("0x3f5CE5FBFe3E9af3971dD833D26bA9b5C936f0bE")
'Binance 1'
```

account.**transactions**(address)

- Uses etherscan.io API

Returns list of latest transactions (max. 10 000). Transactions sorted by new.

Warning: This method can take several seconds.

```
# Returns array with transactions
>>> transactions = ethextended.account.transactions(
    ↪ "0xD1220A0cf47c7B9Be7A2E6BA89F429762e7b9aDb")
# First transaction
>>> transactions[-1]
{
    'blockNumber': '414116',
    'timeStamp': '1445375797',
    'hash': '0x9ae04758afbea7867023ee11c631f63657c88fa07ce5b1a7666229a891bc3460',
    'nonce': '28',
    'blockHash':
    ↪ '0xcfc5396f0b0ad784ce5318b829f36fd5b4db7161e49e5abda08f4bc1290c8c02',
    'transactionIndex': '0',
    'from': '0x70e3e34c0100b1e05700fa699183c82af7a25ba0',
    'to': '0xd1220a0cf47c7b9be7a2e6ba89f429762e7b9adb',
    'value': '1000000000000000000',
    'gas': '121000',
    'gasPrice': '50000000000',
    'isError': '0',
    'txreceipt_status': '',
    'input': '0x',
    'contractAddress': '',
    'cumulativeGasUsed':
    '21000',
    'gasUsed':
    '21000',
    'confirmations': '8205501'
}
```

1.3 Gas

class ethextended.gas

This class is the parent of all functions related to Ethereum gas.

gas.fast_wei()

- Uses ethgasstation.info API

Returns fast gas price (in wei)

```
>>> ethextended.gas.fast_wei()  
24000000000
```

gas.fast_waittime()

- Uses ethgasstation.info API

Returns calculated fast waiting time.

```
>>> ethextended.gas.fast_waittime()  
24.0
```

gas.avg_wei()

- Uses ethgasstation.info API

Returns average gas price (in wei)

```
>>> ethextended.gas.avg_wei()  
22100000000
```

gas.avg_waittime()

- Uses ethgasstation.info API

Returns calculated average waiting time.

```
>>> ethextended.gas.avg_waittime()  
216.0
```

gas.slow_wei()

- Uses ethgasstation.info API

Returns slow gas price (in wei)

```
>>> ethextended.gas.slow_wei()  
22000000000
```

gas.slow_waittime()

- Uses ethgasstation.info API

Returns calculated slow waiting time.

```
>>> ethextended.gas.slow_waittime()  
474.0
```

1.4 Identicons

Warning: Identicons aren't generated locally, library uses `eth.vanity.show` public API.

class `ethextended.identicon`

This class is the parent of all functions related to Ethereum identicons.

`identicon.base64` (*address*)

- Uses `eth.vanity.show` API

Returns base64 encoded PNG image (in bytes).

```
>>> ethextended.identicon.base64("0x3f5CE5FBFe3E9af3971dD833D26bA9b5C936f0bE")
b'iVBORw0KGgoAAAANSUUEUgAAAAEAAAABACAYAAACqaXHeAAAABmJLR0QA/wD/
↪AP+gvaeTAAABE0lEQVR4nO2asQ3CMBQFbZQZAIkasQSIgpoVUrEhtFQM0AKZgCNvArPtYB/
↪1lrYp1OX8KRUY/79as0WD0WreUybz7N9d5E/
↪Waf1PlFHIAW0HEAWoDGAWgBmqroAf9O+glwAFqAxfFoARoHoAVohugG19u5uX7YHb96//
↪QT4AC0AI0D0AI0DkAL0MhzQPR/WD2vi06vnk8/AQ5AC9A4AC1A4wC0AI08B4zzU/sH4n4+irr/V36T2D/
↪9BDgALUDjALQAJThewH1Hd5YxDkiuL86JyJST4AD0AI0DkAL0DgALUBT78utvxPMjAPQAJQOQAvQOAAtdDNE37d7v6/
↪39ks/AQ5AC9A4AC1A4wC0AM0bhiwxFBovXU0AAAAASUVORK5CYII='
```

`identicon.url` (*address*)

- Uses `eth.vanity.show` API

Returns url to identicon PNG image.

```
>>> ethextended.identicon.url("0x3f5CE5FBFe3E9af3971dD833D26bA9b5C936f0bE")
'https://eth.vanity.show/0x3f5CE5FBFe3E9af3971dD833D26bA9b5C936f0bE'
```

1.5 Internal Utilities

class `ethextended.utils`

Local native ethereum utilities, that don't need internet connection.

`utils.clear_0x` (*text*)

Removes 0x prefix from text.

```
>>> ethextended.utils.clear_0x("0x3f5CE5FBFe3E9af3971dD833D26bA9b5C936f0bE")
'3f5CE5FBFe3E9af3971dD833D26bA9b5C936f0bE'
```

`utils.is_hex` (*text*)

Checks if input text is hexadecimal.

```
>>> ethextended.utils.is_hex("0x1234567890ABCDEF")
True
>>> ethextended.utils.is_hex("0x1234567890ABCDEFGHijklmnop")
False
```

`utils.is_address` (*text*)

Checks if input text is address.

```
>>> ethextended.utils.is_address("0x3f5CE5FBFe3E9af3971dD833D26bA9b5C936f0bE")
True
>>> ethextended.utils.is_address("0xE9af3971dD833D26bA")
False
```

`utils.to_checksum_address(text)`

Converts address to checksum format.

```
>>> ethextended.utils.to_checksum_address("0x3f5ce5fbfe3e9af3971dd833d26ba9b5c936f0be
↪")
'0x3f5CE5FBFe3E9af3971dD833D26bA9b5C936f0bE'
```


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