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# **beem Documentation**

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## Contents

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<b>1</b>	<b>About this Library</b>	<b>3</b>
<b>2</b>	<b>Quickstart</b>	<b>5</b>
<b>3</b>	<b>General</b>	<b>7</b>
<b>4</b>	<b>Indices and tables</b>	<b>219</b>
	<b>Python Module Index</b>	<b>221</b>
	<b>Index</b>	<b>223</b>



Steem/Hive is a blockchain-based rewards platform for publishers to monetize content and grow community.

It is based on *Graphene* (tm), a blockchain technology stack (i.e. software) that allows for fast transactions and ascalable blockchain solution. In case of Steem/Hive, it comes with decentralized publishing of content.

The beem library has been designed to allow developers to easily access its routines and make use of the network without dealing with all the related blockchain technology and cryptography. This library can be used to do anything that is allowed according to the Steem/Hive blockchain protocol.



# CHAPTER 1

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## About this Library

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The purpose of *beem* is to simplify development of products and services that use the Hive blockchain. It comes with

- its own (bip32-encrypted) wallet
- RPC interface for the Blockchain backend
- JSON-based blockchain objects (accounts, blocks, prices, markets, etc)
- a simple to use yet powerful API
- transaction construction and signing
- push notification API
- *and more*





## CHAPTER 2

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### Quickstart

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#### Note:

All methods that construct and sign a transaction can be given the `account=` parameter to identify the user that is going to be affected by this transaction, e.g.:

- the source account in a transfer
- the account that buys/sells an asset in the exchange
- the account whose collateral will be modified

**Important,** If no `account` is given, then the `default_account` according to the settings in `config` is used instead.

---

```
from beem import Hive
hive = Hive()
hive.wallet.unlock("wallet-passphrase")
account = Account("test", blockchain_instance=hive)
account.transfer("<to>", "<amount>", "<asset>", "<memo>")
```

```
from beem.blockchain import Blockchain
blockchain = Blockchain()
for op in blockchain.stream():
    print(op)
```

```
from beem.block import Block
print(Block(1))
```

```
from beem.account import Account
account = Account("test")
print(account.balances)
for h in account.history():
    print(h)
```

```
from beem.hive import Hive
hive = Hive()
hive.wallet.wipe(True)
hive.wallet.create("wallet-passphrase")
hive.wallet.unlock("wallet-passphrase")
hive.wallet.addPrivateKey("512345678")
hive.wallet.lock()
```

```
from beem.market import Market
market = Market("HBD:HIVE")
print(market.ticker())
market.steem.wallet.unlock("wallet-passphrase")
print(market.sell(300, 100)  # sell 100 HIVE for 300 HIVE/HBD
```

### 3.1 Installation

The minimal working python version is 3.5.x

beem can be installed parallel to python-steem.

For Debian and Ubuntu, please ensure that the following packages are installed:

```
sudo apt-get install build-essential libssl-dev python-dev curl
```

For Fedora and RHEL-derivatives, please ensure that the following packages are installed:

```
sudo yum install gcc openssl-devel python-devel
```

For OSX, please do the following:

```
brew install openssl  
export CFLAGS="-I$(brew --prefix openssl)/include $CFLAGS"  
export LDFLAGS="-L$(brew --prefix openssl)/lib $LDFLAGS"
```

For Termux on Android, please install the following packages:

```
pkg install clang openssl-dev python-dev
```

Install pip (<https://pip.pypa.io/en/stable/installing/>):

```
curl https://bootstrap.pypa.io/get-pip.py -o get-pip.py  
python get-pip.py
```

Signing and Verify can be fasten (200 %) by installing cryptography. Install cryptography with pip:

```
pip install -U cryptography
```

Install beem with pip:

```
pip install -U beem
```

Sometimes this does not work. Please try:

```
pip3 install -U beem
```

or:

```
python -m pip install beem
```

### 3.1.1 Manual installation

You can install beem from this repository if you want the latest but possibly non-compiling version:

```
git clone https://github.com/holgern/beem.git
cd beem
python setup.py build
python setup.py install --user
```

Run tests after install:

```
pytest
```

### 3.1.2 Installing beem with conda-forge

Installing beem from the conda-forge channel can be achieved by adding conda-forge to your channels with:

```
conda config --add channels conda-forge
```

Once the conda-forge channel has been enabled, beem can be installed with:

```
conda install beem
```

Signing and Verify can be fasten (200 %) by installing cryptography:

```
conda install cryptography
```

### 3.1.3 Enable Logging

Add the following for enabling logging in your python script:

```
import logging
log = logging.getLogger(__name__)
logging.basicConfig(level=logging.INFO)
```

When you want to see only critical errors, replace the last line by:

```
logging.basicConfig(level=logging.CRITICAL)
```

## 3.2 Quickstart

### 3.2.1 Hive/Steem blockchain

Nodes for using beem with the Hive blockchain can be set by the command line tool with:

```
beempy updatenodes --hive
```

Nodes for the Hive blockchain are set with

```
beempy updatenodes
```

Hive nodes can be set in a python script with

```
from beem import Hive
from beem.nodelist import NodeList
nodelist = NodeList()
nodelist.update_nodes()
nodes = nodelist.get_hive_nodes()
hive = Hive(node=nodes)
print(hive.is_hive)
```

Steem nodes can be set in a python script with

```
from beem import Steem
from beem.nodelist import NodeList
nodelist = NodeList()
nodelist.update_nodes()
nodes = nodelist.get_steem_nodes()
hive = Steem(node=nodes)
print(hive.is_hive)
```

### 3.2.2 Hive

The hive object is the connection to the Hive blockchain. By creating this object different options can be set.

**Note:** All init methods of beem classes can be given the `blockchain_instance=` parameter to assure that all objects use the same steem object. When the `blockchain_instance=` parameter is not used, the steem object is taken from `get_shared_blockchain_instance()`.

`beem.instance.shared_blockchain_instance()` returns a global instance of steem. It can be set by `beem.instance.set_shared_blockchain_instance()` otherwise it is created on the first call.

```
from beem import Hive
from beem.account import Account
hive = Hive()
account = Account("test", blockchain_instance=hive)
```

```
from beem import Hive
from beem.account import Account
from beem.instance import set_shared_blockchain_instance
hive = Hive()
```

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```
set_shared_blockchain_instance(hive)
account = Account("test")
```

### 3.2.3 Wallet and Keys

Each account has the following keys:

- Posting key (allows accounts to post, vote, edit, resteem and follow/mute)
- Active key (allows accounts to transfer, power up/down, voting for witness, ...)
- Memo key (Can be used to encrypt/decrypt memos)
- Owner key (The most important key, should not be used with beem)

Outgoing operation, which will be stored in the steem blockchain, have to be signed by a private key. E.g. Comment or Vote operation need to be signed by the posting key of the author or upvoter. Private keys can be provided to beem temporary or can be stored encrypted in a sql-database (wallet).

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**Note:** Before using the wallet the first time, it has to be created and a password has to set. The wallet content is available to beem.py and all python scripts, which have access to the sql database file.

---

#### Creating a wallet

`hive.wallet.wipe(True)` is only necessary when there was already an wallet created.

```
from beem import Hive
hive = Hive()
hive.wallet.wipe(True)
hive.wallet.unlock("wallet-passphrase")
```

#### Adding keys to the wallet

```
from beem import Steem
hive = Hive()
hive.wallet.unlock("wallet-passphrase")
hive.wallet.addPrivateKey("xxxxxxx")
hive.wallet.addPrivateKey("xxxxxxx")
```

#### Using the keys in the wallet

```
from beem import Hive
hive = Hive()
hive.wallet.unlock("wallet-passphrase")
account = Account("test", blockchain_instance=hive)
account.transfer("<to>", "<amount>", "<asset>", "<memo>")
```

### Private keys can also set temporary

```
from beem import Hive
hive = Hive(keys=["xxxxxxxxx"])
account = Account("test", blockchain_instance=hive)
account.transfer("<to>", "<amount>", "<asset>", "<memo>")
```

## 3.2.4 Receiving information about blocks, accounts, votes, comments, market and witness

### Receive all Blocks from the Blockchain

```
from beem.blockchain import Blockchain
blockchain = Blockchain()
for op in blockchain.stream():
    print(op)
```

### Access one Block

```
from beem.block import Block
print(Block(1))
```

### Access an account

```
from beem.account import Account
account = Account("test")
print(account.balances)
for h in account.history():
    print(h)
```

### A single vote

```
from beem.vote import Vote
vote = Vote(u"@gtg/ffdhu-gtg-witness-log|gandalf")
print(vote.json())
```

### All votes from an account

```
from beem.vote import AccountVotes
allVotes = AccountVotes("gtg")
```

### Access a post

```
from beem.comment import Comment
comment = Comment("@gtg/ffdhu-gtg-witness-log")
print(comment["active_votes"])
```

### Access the market

```
from beem.market import Market
market = Market("HBD:HIVE")
print(market.ticker())
```

### Access a witness

```
from beem.witness import Witness
witness = Witness("gtg")
print(witness.is_active)
```

## 3.2.5 Sending transaction to the blockchain

### Sending a Transfer

```
from beem import Hive
hive = Hive()
hive.wallet.unlock("wallet-passphrase")
account = Account("test", blockchain_instance=hive)
account.transfer("null", 1, "SBD", "test")
```

### Upvote a post

```
from beem.comment import Comment
from beem import Hive
hive = Hive()
hive.wallet.unlock("wallet-passphrase")
comment = Comment("@gtg/ffdhg-gtg-witness-log", blockchain_instance=hive)
comment.upvote(weight=10, voter="test")
```

### Publish a post to the blockchain

```
from beem import Hive
hive = Hive()
hive.wallet.unlock("wallet-passphrase")
hive.post("title", "body", author="test", tags=["a", "b", "c", "d", "e"], self_
↪vote=True)
```

### Sell HIVE on the market

```
from beem.market import Market
from beem import Hive
hive.wallet.unlock("wallet-passphrase")
market = Market("HBD:HIVE", blockchain_instance=hive)
print(market.ticker())
market.hive.wallet.unlock("wallet-passphrase")
print(market.sell(300, 100)) # sell 100 HIVE for 300 HIVE/HBD
```

## 3.3 Tutorials

### 3.3.1 Bundle Many Operations

With Steem, you can bundle multiple operations into a single transactions. This can be used to do a multi-send (one sender, multiple receivers), but it also allows to use any other kind of operation. The advantage here is that the user can be sure that the operations are executed in the same order as they are added to the transaction.

A block can only include one vote operation and one comment operation from each sender.



```

from pprint import pprint
from beem import Steem
from beem.account import Account
from beem.comment import Comment
from beem.instance import set_shared_blockchain_instance

# not a real working key
wif = "5KQwrPbwdL6PhXujxW37FSSQZlJiwsST4cqQzDeyXtP79zkvFD3"

stm = Steem(
    bundle=True, # Enable bundle broadcast
    # nobroadcast=True, # Enable this for testing
    keys=[wif],
)
# Set stm as shared instance
set_shared_blockchain_instance(stm)

# Account and Comment will use now stm
account = Account("test")

# Post
c = Comment("@gtg/witness-gtg-log")

account.transfer("test1", 1, "STEEM")
account.transfer("test2", 1, "STEEM")
account.transfer("test3", 1, "SBD")
# Upvote post with 25%
c.upvote(25, voter=account)

pprint(stm.broadcast())

```

### 3.3.2 Use nobroadcast for testing

When using *nobroadcast=True* the transaction is not broadcasted but printed.

```

from pprint import pprint
from beem import Steem
from beem.account import Account
from beem.instance import set_shared_blockchain_instance

# Only for testing not a real working key
wif = "5KQwrPbwdL6PhXujxW37FSSQZlJiwsST4cqQzDeyXtP79zkvFD3"

# set nobroadcast always to True, when testing
testnet = Steem(
    nobroadcast=True, # Set to false when want to go live
    keys=[wif],
)
# Set testnet as shared instance
set_shared_blockchain_instance(testnet)

# Account will use now testnet
account = Account("test")

pprint(account.transfer("test1", 1, "STEEM"))

```

When executing the script above, the output will be similar to the following:

```
Not broadcasting anything!
{'expiration': '2018-05-01T16:16:57',
 'extensions': [],
 'operations': [[{'transfer',
                  {'amount': '1.000 STEEM',
                    'from': 'test',
                    'memo': '',
                    'to': 'test1'}}]],
 'ref_block_num': 33020,
 'ref_block_prefix': 2523628005,
 'signatures': [
  ↳ '1f57da50f241e70c229ed67b5d61898e792175c0f18ae29df8af414c46ae91eb5729c867b5d7dcc578368e7024e414c23'
  ↳ '']]
```

### 3.3.3 Clear BlockchainObject Caching

Each BlockchainObject (Account, Comment, Vote, Witness, Amount, ...) has a global cache. This cache stores all objects and could lead to increased memory consumption. The global cache can be cleared with a `clear_cache()` call from any BlockchainObject.

```
from pprint import pprint
from beem.account import Account

account = Account("test")
pprint(str(account._cache))
account1 = Account("test1")
pprint(str(account._cache))
pprint(str(account1._cache))
account.clear_cache()
pprint(str(account._cache))
pprint(str(account1._cache))
```

### 3.3.4 Simple Sell Script

```
from beem import Steem
from beem.market import Market
from beem.price import Price
from beem.amount import Amount

# Only for testing not a real working key
wif = "5KQwrPbwdL6PhXujxW37FSSQZ1JiwsST4cqQzDeyXtP79zkvFD3"

#
# Instantiate Steem (pick network via API node)
#
steem = Steem(
    nobroadcast=True,    # <--- set this to False when you want to fire!
    keys=[wif]           # <--- use your real keys, when going live!
)

#
# This defines the market we are looking at.
```

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```

# The first asset in the first argument is the *quote*
# Sell and buy calls always refer to the *quote*
#
market = Market("SBD:STEEM",
    blockchain_instance=steem
)

#
# Sell an asset for a price with amount (quote)
#
print(market.sell(
    Price(100.0, "STEEM/SBD"),
    Amount("0.01 SBD")
))

```

### 3.3.5 Sell at a timely rate

```

import threading
from beem import Steem
from beem.market import Market
from beem.price import Price
from beem.amount import Amount

# Only for testing not a real working key
wif = "5KQwrPbwdL6PhXujxW37FSSQZlJiwsST4cqQzDeyXtP79zkvFD3"

def sell():
    """ Sell an asset for a price with amount (quote)
    """
    print(market.sell(
        Price(100.0, "SBD/STEEM"),
        Amount("0.01 STEEM")
    ))

    threading.Timer(60, sell).start()

if __name__ == "__main__":
    #
    # Instantiate Steem (pick network via API node)
    #
    steem = Steem(
        nobroadcast=True, # <--- set this to False when you want to fire!
        keys=[wif]        # <--- use your real keys, when going live!
    )

    #
    # This defines the market we are looking at.
    # The first asset in the first argument is the *quote*
    # Sell and buy calls always refer to the *quote*
    #
    market = Market("STEEM:SBD",
        blockchain_instance=steem
    )

```

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```
sell()
```

### 3.3.6 Batch api calls on AppBase

Batch api calls are possible with AppBase RPC nodes. If you call a Api-Call with `add_to_queue=True` it is not submitted but stored in `rpc_queue`. When a call with `add_to_queue=False` (default setting) is started, the complete queue is sendd at once to the node. The result is a list with replies.

```
from beem import Steem
stm = Steem("https://api.steemit.com")
stm.rpc.get_config(add_to_queue=True)
stm.rpc.rpc_queue
```

```
[{'method': 'condenser_api.get_config', 'jsonrpc': '2.0', 'params': [], 'id': 6}]
```

```
result = stm.rpc.get_block({"block_num":1}, api="block", add_to_queue=False)
len(result)
```

```
2
```

### 3.3.7 Account history

Lets calculate the curation reward from the last 7 days:

```
from datetime import datetime, timedelta
from beem.account import Account
from beem.amount import Amount

acc = Account("gtg")
stop = datetime.utcnow() - timedelta(days=7)
reward_vests = Amount("0 VESTS")
for reward in acc.history_reverse(stop=stop, only_ops=["curation_reward"]):
    reward_vests += Amount(reward['reward'])
curation_rewards_SP = acc.steem.vests_to_sp(reward_vests.amount)
print("Rewards are %.3f SP" % curation_rewards_SP)
```

Lets display all Posts from an account:

```
from beem.account import Account
from beem.comment import Comment
from beem.exceptions import ContentDoesNotExistsException
account = Account("holger80")
c_list = {}
for c in map(Comment, account.history(only_ops=["comment"])):
    if c.permlink in c_list:
        continue
    try:
        c.refresh()
    except ContentDoesNotExistsException:
        continue
    c_list[c.permlink] = 1
```

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```
if not c.is_comment():
    print("%s " % c.title)
```

### 3.3.8 Transactionbuilder

Sign transactions with beem without using the wallet and build the transaction by hand. Example with one operation with and without the wallet:

```
from beem import Steem
from beem.transactionbuilder import TransactionBuilder
from beembase import operations
stm = Steem()
# Uncomment the following when using a wallet:
# stm.wallet.unlock("secret_password")
tx = TransactionBuilder(blockchain_instance=stm)
op = operations.Transfer(**{"from": 'user_a',
                           "to": 'user_b',
                           "amount": '1.000 SBD',
                           "memo": 'test 2'})

tx.appendOps(op)
# Comment appendWif out and uncomment appendSigner when using a stored key from the
↳ wallet
tx.appendWif('5.....') # `user_a`
# tx.appendSigner('user_a', 'active')
tx.sign()
tx.broadcast()
```

Example with signing and broadcasting two operations:

```
from beem import Steem
from beem.transactionbuilder import TransactionBuilder
from beembase import operations
stm = Steem()
# Uncomment the following when using a wallet:
# stm.wallet.unlock("secret_password")
tx = TransactionBuilder(blockchain_instance=stm)
ops = []
op = operations.Transfer(**{"from": 'user_a',
                           "to": 'user_b',
                           "amount": '1.000 SBD',
                           "memo": 'test 2'})

ops.append(op)
op = operations.Vote(**{"voter": v,
                       "author": author,
                       "permlink": permlink,
                       "weight": int(percent * 100)})

ops.append(op)
tx.appendOps(ops)
# Comment appendWif out and uncomment appendSigner when using a stored key from the
↳ wallet
tx.appendWif('5.....') # `user_a`
# tx.appendSigner('user_a', 'active')
tx.sign()
tx.broadcast()
```

## 3.4 beempy CLI

*beempy* is a convenient CLI utility that enables you to manage your wallet, transfer funds, check balances and more.

### 3.4.1 Using the Wallet

*beempy* lets you leverage your BIP38 encrypted wallet to perform various actions on your accounts.

The first time you use *beempy*, you will be prompted to enter a password. This password will be used to encrypt the *beempy* wallet, which contains your private keys.

You can change the password via *changewalletpassphrase* command.

```
beempy changewalletpassphrase
```

From this point on, every time an action requires your private keys, you will be prompted to enter this password (from CLI as well as while using *steem* library).

To bypass password entry, you can set an environment variable UNLOCK.

```
UNLOCK=mysecretpassword beempy transfer <recipient_name> 100 STEEM
```

### 3.4.2 Using a key json file

A *key\_file.json* can be used to provide private keys to *beempy*:

```
{
  "account_a": {"posting": "5xx", "active": "5xx"},
  "account_b": {"posting": "5xx"},
}
```

with

```
beempy --key key_file.json command
```

When set, the wallet cannot be used.

### 3.4.3 Common Commands

First, you may like to import your Steem account:

```
beempy importaccount
```

You can also import individual private keys:

```
beempy addkey <private_key>
```

Listing accounts:

```
beempy listaccounts
```

Show balances:

```
beempy balance account_name1 account_name2
```

Sending funds:

```
beempy transfer --account <account_name> <recipient_name> 100 STEEM memo
```

Upvoting a post:

```
beempy upvote --account <account_name> https://steemit.com/funny/@mynameisbrian/the-
↪content-stand-a-comic
```

### 3.4.4 Setting Defaults

For a more convenient use of `beempy` as well as the `beem` library, you can set some defaults. This is especially useful if you have a single Steem account.

```
beempy set default_account test
beempy set default_vote_weight 100

beempy config
+-----+-----+
| Key           | Value   |
+-----+-----+
| default_account | test    |
| default_vote_weight | 100    |
+-----+-----+
```

If you've set up your *default\_account*, you can now send funds by omitting this field:

```
beempy transfer <recipient_name> 100 STEEM memo
```

### 3.4.5 Commands

#### beempy

```
beempy [OPTIONS] COMMAND1 [ARGS]... [COMMAND2 [ARGS]...]...
```

#### Options

- n, --node <node>**  
URL for public Steem API (e.g. <https://api.steemit.com>)
- o, --offline**  
Prevent connecting to network
- d, --no-broadcast**  
Do not broadcast
- p, --no-wallet**  
Do not load the wallet
- x, --unsigned**  
Nothing will be signed, changes the default value of expires to 3600

- l, --create-link**  
Creates steemconnect/hivesigner links from all broadcast operations
- s, --steem**  
Connect to the Steem blockchain
- h, --hive**  
Connect to the Hive blockchain
- k, --keys <keys>**  
JSON file that contains account keys, when set, the wallet cannot be used.
- u, --use-ledger**  
Uses the ledger device Nano S for signing.
- path <path>**  
BIP32 path from which the keys are derived, when not set, default\_path is used.
- t, --token**  
Uses a hivesigner/steemconnect token to broadcast (only broadcast operation with posting permission)
- e, --expires <expires>**  
Delay in seconds until transactions are supposed to expire(defaults to 30)
- v, --verbose <verbose>**  
Verbosity
- version**  
Show the version and exit.

## about

About beempy

```
beempy about [OPTIONS]
```

## addkey

Add key to wallet

When no [OPTION] is given, a password prompt for unlocking the wallet and a prompt for entering the private key are shown.

```
beempy addkey [OPTIONS]
```

## Options

- unsafe-import-key <unsafe\_import\_key>**  
Private key to import to wallet (unsafe, unless shell history is deleted afterwards)

## addtoken

Add key to wallet

When no [OPTION] is given, a password prompt for unlocking the wallet and a prompt for entering the private key are shown.



```
beempy addtoken [OPTIONS] NAME
```

### Options

**--unsafe-import-token** <unsafe\_import\_token>  
Private key to import to wallet (unsafe, unless shell history is deleted afterwards)

### Arguments

**NAME**  
Required argument

### allow

Allow an account/key to interact with your account

**foreign\_account:** The account or key that will be allowed to interact with account. When not given, password will be asked, from which a public key is derived. This derived key will then interact with your account.

```
beempy allow [OPTIONS] [FOREIGN_ACCOUNT]
```

### Options

**--permission** <permission>  
The permission to grant (defaults to “posting”)

**-a, --account** <account>  
The account to allow action for

**-w, --weight** <weight>  
The weight to use instead of the (full) threshold. If the weight is smaller than the threshold, additional signatures are required

**-t, --threshold** <threshold>  
The permission’s threshold that needs to be reached by signatures to be able to interact

**-e, --export** <export>  
When set, transaction is stored in a file

### Arguments

**FOREIGN\_ACCOUNT**  
Optional argument

### approvewitness

Approve a witnesses

```
beempy approvewitness [OPTIONS] WITNESS
```

## Options

- a, --account** <account>  
Your account
- e, --export** <export>  
When set, transaction is stored in a file

## Arguments

- WITNESS**  
Required argument

## balance

Shows balance

```
beempy balance [OPTIONS] [ACCOUNT]...
```

## Arguments

- ACCOUNT**  
Optional argument(s)

## beneficiaries

Set beneficiaries

```
beempy beneficiaries [OPTIONS] AUTHORPERM [BENEFICIARIES]...
```

## Options

- e, --export** <export>  
When set, transaction is stored in a file

## Arguments

- AUTHORPERM**  
Required argument
- BENEFICIARIES**  
Optional argument(s)

## broadcast

broadcast a signed transaction

```
beempy broadcast [OPTIONS]
```

## Options

**-f, --file** <file>  
Load transaction from file. If “-“, read from stdin (defaults to “-“)

## buy

Buy STEEM/HIVE or SBD/HBD from the internal market

Limit buy price denoted in (SBD per STEEM or HBD per HIVE)

```
beempy buy [OPTIONS] AMOUNT ASSET [PRICE]
```

## Options

**-a, --account** <account>  
Buy with this account (defaults to “default\_account”)

**--orderid** <orderid>  
Set an orderid

**-e, --export** <export>  
When set, transaction is stored in a file

## Arguments

**AMOUNT**  
Required argument

**ASSET**  
Required argument

**PRICE**  
Optional argument

## cancel

Cancel order in the internal market

```
beempy cancel [OPTIONS] ORDERID
```

## Options

**-a, --account** <account>  
Sell with this account (defaults to “default\_account”)

**-e, --export** <export>  
When set, transaction is stored in a file

## Arguments

### ORDERID

Required argument

## changekeys

Changes all keys for the specified account Keys are given in their public form. Asks for the owner key for broadcasting the op to the chain.

```
beempy changekeys [OPTIONS] ACCOUNT
```

## Options

**--owner** <owner>

Main owner public key - when not given, a passphrase is used to create keys.

**--active** <active>

Active public key - when not given, a passphrase is used to create keys.

**--posting** <posting>

posting public key - when not given, a passphrase is used to create keys.

**--memo** <memo>

Memo public key - when not given, a passphrase is used to create keys.

**-i, --import-pub** <import\_pub>

Load public keys from file.

**-e, --export** <export>

When set, transaction is stored in a file

## Arguments

### ACCOUNT

Required argument

## changerecovery

Changes the recovery account with the owner key (needs 30 days to be active)

```
beempy changerecovery [OPTIONS] NEW_RECOVERY_ACCOUNT
```

## Options

**-a, --account** <account>

Change the recovery account from this account

**-e, --export** <export>

When set, transaction is stored in a file

## Arguments

### **NEW\_RECOVERY\_ACCOUNT**

Required argument

## **changewalletpassphrase**

Change wallet password

```
beem.py changewalletpassphrase [OPTIONS]
```

## **claimaccount**

Claim account for claimed account creation.

```
beem.py claimaccount [OPTIONS] CREATOR
```

## Options

**--fee** <fee>

When fee is 0 (default) a subsidized account is claimed and can be created later with `create_claimed_account`

**-n, --number** <number>

Number of subsidized accounts to be claimed (default = 1), when fee = 0 STEEM

**-e, --export** <export>

When set, transaction is stored in a file (should be used with number = 1)

## Arguments

### **CREATOR**

Required argument

## **claimreward**

Claim reward balances

By default, this will claim all outstanding balances.

```
beem.py claimreward [OPTIONS] [ACCOUNT]
```

## Options

**--reward\_steem** <reward\_steem>

Amount of STEEM/HIVE you would like to claim

**--reward\_sbd** <reward\_sbd>

Amount of SBD/HBD you would like to claim

**--reward\_vests** <reward\_vests>

Amount of VESTS you would like to claim

**--claim\_all\_steem**  
Claim all STEEM/HIVE, overwrites reward\_steem

**--claim\_all\_sbd**  
Claim all SBD/HBD, overwrites reward\_sbd

**--claim\_all\_vests**  
Claim all VESTS, overwrites reward\_vests

**-e, --export** <export>  
When set, transaction is stored in a file

## Arguments

**ACCOUNT**  
Optional argument

## config

Shows local configuration

```
beempy config [OPTIONS]
```

## convert

Convert SBD/HBD to Steem/Hive (takes a week to settle)

```
beempy convert [OPTIONS] AMOUNT
```

## Options

**-a, --account** <account>  
Powerup from this account

**-e, --export** <export>  
When set, transaction is stored in a file

## Arguments

**AMOUNT**  
Required argument

## createpost

Creates a new markdown file with YAML header

```
beempy createpost [OPTIONS] MARKDOWN_FILE
```

## Options

- a, --account** <account>  
Account are you posting from
- t, --title** <title>  
Title of the post
- g, --tags** <tags>  
A komma separated list of tags to go with the post.
- c, --community** <community>  
Name of the community (optional)
- b, --beneficiaries** <beneficiaries>  
Post beneficiaries (komma separated, e.g. a:10%,b:20%)
- d, --percent-steem-dollars** <percent\_steem\_dollars>  
50% SBD /50% SP is 10000 (default), 100% SP is 0
- d, --percent-hive-dollars** <percent\_hive\_dollars>  
50% SBD /50% SP is 10000 (default), 100% SP is 0
- m, --max-accepted-payout** <max\_accepted\_payout>  
Default is 1000000.000 [SBD]
- n, --no-parse-body**  
Disable parsing of links, tags and images

## Arguments

**MARKDOWN\_FILE**  
Required argument

## createwallet

Create new wallet with a new password

```
beem createwallet [OPTIONS]
```

## Options

- wipe**  
Wipe old wallet without prompt.

## curation

Lists curation rewards of all votes for authorperm

When authorperm is empty or “all”, the curation rewards for all account votes are shown.

authorperm can also be a number. e.g. 5 is equivalent to the fifth account vote in the given time duration (default is 7 days)

```
beempy curation [OPTIONS] [AUTHORPERM]
```

## Options

- a, --account** <account>  
Show only curation for this account
- m, --limit** <limit>  
Show only the first minutes
- v, --min-vote** <min\_vote>  
Show only votes higher than the given value
- w, --max-vote** <max\_vote>  
Show only votes lower than the given value
- x, --min-performance** <min\_performance>  
Show only votes with performance higher than the given value in HBD/SBD
- y, --max-performance** <max\_performance>  
Show only votes with performance lower than the given value in HBD/SBD
- payout** <payout>  
Show the curation for a potential payout in SBD as float
- e, --export** <export>  
Export results to HTML-file
- s, --short**  
Show only Curation without sum
- l, --length** <length>  
Limits the permalink character length
- p, --permalink**  
Show the permalink for each entry
- t, --title**  
Show the title for each entry
- d, --days** <days>  
Limit shown rewards by this amount of days (default: 7), max is 7 days.

## Arguments

**AUTHORPERM**  
Optional argument

## currentnode

Sets the currently working node at the first place in the list

```
beempy currentnode [OPTIONS]
```



## Options

- version**  
Returns only the raw version value
- url**  
Returns only the raw url value

## customjson

Broadcasts a custom json

First parameter is the custom json id, the second field is a json file or a json key value combination e.g. beem customjson -a holger80 dw-heist username holger80 amount 100

```
beem customjson [OPTIONS] JSONID [JSON_DATA]...
```

## Options

- a, --account <account>**  
The account which broadcasts the custom\_json
- t, --active**  
When set, the active key is used for broadcasting
- e, --export <export>**  
When set, transaction is stored in a file

## Arguments

- JSONID**  
Required argument
- JSON\_DATA**  
Optional argument(s)

## decrypt

decrypt a (or more than one) decrypted memo/file with your memo key

```
beem decrypt [OPTIONS] [MEMO]...
```

## Options

- a, --account <account>**  
Account which decrypts the memo with its memo key
- o, --output <output>**  
Output file name. Result is stored, when set instead of printed.
- i, --info**  
Shows information about public keys and used nonce

- t, --text**  
Reads the text file content
- b, --binary**  
Reads the binary file content

## Arguments

**MEMO**  
Optional argument(s)

## delegate

Delegate (start delegating VESTS to another account)  
amount is in VESTS / Steem

```
beem.py delegate [OPTIONS] AMOUNT TO_ACCOUNT
```

## Options

- a, --account <account>**  
Delegate from this account
- e, --export <export>**  
When set, transaction is stored in a file

## Arguments

**AMOUNT**  
Required argument

**TO\_ACCOUNT**  
Required argument

## delete

delete a post/comment  
POST is @author/permlink

```
beem.py delete [OPTIONS] POST
```

## Options

- a, --account <account>**  
Account name
- e, --export <export>**  
When set, transaction is stored in a file

## Arguments

### POST

Required argument

## delkey

Delete key from the wallet

PUB is the public key from the private key which will be deleted from the wallet

```
beempy delkey [OPTIONS] PUB
```

## Options

### --confirm

Please confirm!

## Arguments

### PUB

Required argument

## delprofile

Delete a variable in an account's profile

```
beempy delprofile [OPTIONS] VARIABLE...
```

## Options

**-a, --account** <account>  
delprofile as this user

**-e, --export** <export>  
When set, transaction is stored in a file

## Arguments

### VARIABLE

Required argument(s)

## delproxy

Delete your witness/proposal system proxy

```
beempy delproxy [OPTIONS]
```

## Options

- a, --account** <account>  
Your account
- e, --export** <export>  
When set, transaction is stored in a file

## deltoken

Delete name from the wallet

name is the public name from the private token which will be deleted from the wallet

```
beempy deltoken [OPTIONS] NAME
```

## Options

- confirm**  
Please confirm!

## Arguments

- NAME**  
Required argument

## disallow

Remove allowance an account/key to interact with your account

```
beempy disallow [OPTIONS] [FOREIGN_ACCOUNT]
```

## Options

- p, --permission** <permission>  
The permission to grant (defaults to “posting”)
- a, --account** <account>  
The account to disallow action for
- t, --threshold** <threshold>  
The permission’s threshold that needs to be reached by signatures to be able to interact
- e, --export** <export>  
When set, transaction is stored in a file

## Arguments

- FOREIGN\_ACCOUNT**  
Optional argument

## disapprovewitness

Disapprove a witnesses

```
beempy disapprovewitness [OPTIONS] WITNESS
```

### Options

- a, --account** <account>  
Your account
- e, --export** <export>  
When set, transaction is stored in a file

### Arguments

**WITNESS**  
Required argument

## download

Download body with yaml header

```
beempy download [OPTIONS] [PERMLINK]...
```

### Options

- a, --account** <account>  
Account are you posting from
- s, --save**  
Saves markdown in current directoy as date\_permalink.md
- e, --export** <export>  
Export markdown to given a md-file name

### Arguments

**PERMLINK**  
Optional argument(s)

## downvote

Downvote a post/comment

POST is @author/permlink

```
beempy downvote [OPTIONS] POST
```

## Options

- a, --account** <account>  
Downvoter account name
- w, --weight** <weight>  
Downvote weight (from 0.1 to 100.0)
- e, --export** <export>  
When set, transaction is stored in a file

## Arguments

**POST**  
Required argument

## draw

Generate pseudo-random numbers based on trx id, block id and previous block id.

When using `-reply`, the result is directly broadcasted as comment

```
beem.py draw [OPTIONS]
```

## Options

- b, --block** <block>  
Select a block number, when skipped the latest block is used.
- t, --trx-id** <trx\_id>  
Select a trx-id, When skipped, the latest one is used.
- d, --draws** <draws>  
Number of draws (default = 1)
- p, --participants** <participants>  
Number of participants or file name including participants (one participant per line), (default = 100)
- h, --hashtype** <hashtype>  
Can be md5, sha256, sha512 (default = sha256)
- s, --separator** <separator>  
Is used for sha256 and sha512 to separate the draw number from the seed (default = ,)
- a, --account** <account>  
The account which broadcasts the reply
- r, --reply** <reply>  
Parent post/comment authorperm. When set, the results will be broadcasted as reply to this authorperm.
- w, --without-replacement**  
When set, numbers are drawn without replacement.
- m, --markdown**  
When set, results are returned in markdown format

## encrypt

encrypt a (or more than one) memo text/file with the your memo key

```
beempy encrypt [OPTIONS] RECEIVER [MEMO]...
```

### Options

- a, --account** <account>  
Account which encrypts the memo with its memo key
- o, --output** <output>  
Output file name. Result is stored, when set instead of printed.
- t, --text**  
Reads the text file content
- b, --binary**  
Reads the binary file content

### Arguments

**RECEIVER**  
Required argument

**MEMO**  
Optional argument(s)

## featureflags

Get the account's feature flags.

The request has to be signed by the requested account or an admin account.

```
beempy featureflags [OPTIONS] [ACCOUNT]
```

### Options

- s, --signing-account** <signing\_account>  
Signing account, when empty account is used.

### Arguments

**ACCOUNT**  
Optional argument

## follow

Follow another account

Can be blog ignore blacklist unblacklist follow\_blacklist unfollow\_blacklist follow\_muted unfollow\_muted on HIVE

```
beempy follow [OPTIONS] [FOLLOW]...
```

## Options

- a, --account** <account>  
Follow from this account
- what** <what>  
Follow these objects (defaults to ["blog"])
- e, --export** <export>  
When set, transaction is stored in a file

## Arguments

**FOLLOW**  
Optional argument(s)

## follower

Get information about followers

```
beempy follower [OPTIONS] [ACCOUNT]...
```

## Arguments

**ACCOUNT**  
Optional argument(s)

## following

Get information about following

```
beempy following [OPTIONS] [ACCOUNT]...
```

## Arguments

**ACCOUNT**  
Optional argument(s)

## followlist

Get information about followed lists

follow\_type can be blog On Hive, follow type can also be one the following: blacklisted, follow\_blacklist, muted, or follow\_muted



```
beempy followlist [OPTIONS] FOLLOW_TYPE
```

### Options

- a, --account** <account>  
Get follow list for this account
- l, --limit** <limit>  
Limits the returned accounts

### Arguments

**FOLLOW\_TYPE**  
Required argument

### history

Returns account history operations as table

```
beempy history [OPTIONS] [ACCOUNT]
```

### Options

- n, --number** <number>  
Defines how many ops should be printed (default=10)
- order** <order>  
Defines how many ops should be printed (default=-1)
- v, --virtual-ops**  
When set, virtual ops are also shown
- o, --only-ops** <only\_ops>  
Included comma separated list of op types, which limits the shown operations. When set, virtual-ops is always set to true
- e, --exclude-ops** <exclude\_ops>  
Excluded comma separated list of op types, which limits the shown operations.
- j, --json-file** <json\_file>  
When set, the results are written into a json file

### Arguments

**ACCOUNT**  
Optional argument

## importaccount

Import an account using a passphrase

```
beempy importaccount [OPTIONS] ACCOUNT
```

### Options

**--roles** <roles>  
Import specified keys (owner, active, posting, memo).

### Arguments

**ACCOUNT**  
Required argument

## info

Show basic blockchain info

General information about the blockchain, a block, an account, a post/comment and a public key

```
beempy info [OPTIONS] [OBJECTS]...
```

### Arguments

**OBJECTS**  
Optional argument(s)

## interest

Get information about interest payment

```
beempy interest [OPTIONS] [ACCOUNT]...
```

### Arguments

**ACCOUNT**  
Optional argument(s)

## keygen

Creates a new random BIP39 key or password based key and prints its derived private key and public key. The generated key is not stored. Can also be used to create new keys for an account. Can also be used to derive account keys from a password or BIP39 wordlist

```
beempy keygen [OPTIONS]
```

## Options

- l, --import-word-list**  
Imports a BIP39 wordlist and derives a private and public key
- strength** <strength>  
Defines word list length for BIP39 (default = 256).
- p, --passphrase**  
Sets a BIP39 passphrase
- m, --path** <path>  
Sets a path for BIP39 key creations. When path is set, network, role, account\_keys, account and sequence is not used
- n, --network** <network>  
Network index, when using BIP39, 0 for steem and 13 for hive, (default is 13)
- r, --role** <role>  
Defines the key role for BIP39 when a single key is generated (default = owner).
- k, --account-keys**  
Derives four BIP39 keys for each role
- s, --sequence** <sequence>  
Sequence key number, when using BIP39 (default is 0)
- a, --account** <account>  
account name for password based key generation or sequence number for BIP39 key, default = 0
- i, --import-password**  
Imports a password and derives all four account keys
- c, --create-password**  
Creates a new password and derives four account keys from it
- w, --wif** <wif>  
Defines how many times the password is replaced by its WIF representation for password based keys (default = 0).
- u, --export-pub** <export\_pub>  
Exports the public account keys to a json file for account creation or keychange
- e, --export** <export>  
The results are stored in a text file and will not be shown

## listaccounts

Show stored accounts

Can be used with the ledger to obtain all accounts that uses pubkeys derived from this ledger

```
beempy listaccounts [OPTIONS]
```

## Options

- r, --role** <role>  
When set, limits the shown keys for this role

- a, --max-account-index** <max\_account\_index>  
Set maximum account index to check pubkeys (only when using ledger)
- s, --max-sequence** <max\_sequence>  
Set maximum key sequence to check pubkeys (only when using ledger)

## listkeys

Show stored keys

Can be used to receive and approve the pubkey obtained from the ledger

```
beempy listkeys [OPTIONS]
```

## Options

- p, --path** <path>  
Set path (when using ledger)
- a, --ledger-approval**  
When set, you can confirm the shown pubkey on your ledger.

## listtoken

Show stored token

```
beempy listtoken [OPTIONS]
```

## message

Sign and verify a message

```
beempy message [OPTIONS] [MESSAGE_FILE]
```

## Options

- a, --account** <account>  
Account which should sign
- v, --verify**  
Verify a message instead of signing it

## Arguments

**MESSAGE\_FILE**  
Optional argument

## mute

Mute another account

```
beempy mute [OPTIONS] MUTE
```

### Options

- a, --account** <account>  
Mute from this account
- what** <what>  
Mute these objects (defaults to ["ignore"])
- e, --export** <export>  
When set, transaction is stored in a file

### Arguments

**MUTE**  
Required argument

## muter

Get information about muter

```
beempy muter [OPTIONS] [ACCOUNT]...
```

### Arguments

**ACCOUNT**  
Optional argument(s)

## muting

Get information about muting

```
beempy muting [OPTIONS] [ACCOUNT]...
```

### Arguments

**ACCOUNT**  
Optional argument(s)

## newaccount

Create a new account Default setting is that a fee is paid for account creation Use `--create-claimed-account` for free account creation

Please use `keygen` and set public keys

```
beem newaccount [OPTIONS] ACCOUNTNAME
```

### Options

- a, --account** <account>  
Account that pays the fee or uses account tickets
- owner** <owner>  
Main public owner key - when not given, a passphrase is used to create keys.
- active** <active>  
Active public key - when not given, a passphrase is used to create keys.
- memo** <memo>  
Memo public key - when not given, a passphrase is used to create keys.
- posting** <posting>  
posting public key - when not given, a passphrase is used to create keys.
- w, --wif** <wif>  
Defines how many times the password is replaced by its WIF representation for password based keys (default = 0).
- c, --create-claimed-account**  
Instead of paying the account creation fee a subsidized account is created.
- i, --import-pub** <import\_pub>  
Load public keys from file.
- e, --export** <export>  
When set, transaction is stored in a file

### Arguments

**ACCOUNTNAME**  
Required argument

## nextnode

Uses the next node in list

```
beem nextnode [OPTIONS]
```

### Options

- results**  
Shows result of changing the node.

## notifications

Show notifications of an account

```
beempy notifications [OPTIONS] [ACCOUNT]
```

### Options

- l, --limit <limit>**  
Limits shown notifications
- a, --all**  
Show all notifications (when not set, only unread are shown)
- m, --mark\_as\_read**  
Broadcast a mark all as read custom json
- r, --replies**  
Show only replies
- t, --mentions**  
Show only mentions
- f, --follows**  
Show only follows
- v, --votes**  
Show only upvotes
- b, --reblogs**  
Show only reblogs
- s, --reverse**  
Reverse sorting of notifications

### Arguments

**ACCOUNT**  
Optional argument

## openorders

Show open orders

```
beempy openorders [OPTIONS] [ACCOUNT]
```

### Arguments

**ACCOUNT**  
Optional argument

## orderbook

Obtain orderbook of the internal market

```
beempy orderbook [OPTIONS]
```

### Options

- chart**  
Enable charting
- l, --limit <limit>**  
Limit number of returned open orders (default 25)
- show-date**  
Show dates
- w, --width <width>**  
Plot width (default 75)
- h, --height <height>**  
Plot height (default 15)
- ascii**  
Use only ascii symbols

## parsewif

Parse a WIF private key without importing

```
beempy parsewif [OPTIONS]
```

### Options

- unsafe-import-key <unsafe\_import\_key>**  
WIF key to parse (unsafe, unless shell history is deleted afterwards)

## pending

Lists pending rewards

```
beempy pending [OPTIONS] [ACCOUNTS]...
```

### Options

- s, --only-sum**  
Show only the sum
- p, --post**  
Show pending post payout



- c, --comment**  
Show pending comments payout
- v, --curation**  
Shows pending curation
- l, --length <length>**  
Limits the permalink character length
- a, --author**  
Show the author for each entry
- e, --permalink**  
Show the permalink for each entry
- t, --title**  
Show the title for each entry
- d, --days <days>**  
Limit shown rewards by this amount of days (default: 7), max is 7 days.
- f, --from <\_from>**  
Start day from which on rewards are shown (default: 0), max is 7 days.

## Arguments

### ACCOUNTS

Optional argument(s)

## permissions

Show permissions of an account

```
beempy permissions [OPTIONS] [ACCOUNT]
```

## Arguments

### ACCOUNT

Optional argument

## pingnode

Returns the answer time in milliseconds

```
beempy pingnode [OPTIONS]
```

## Options

- s, --sort**  
Sort all nodes by ping value
- r, --remove**  
Remove node with errors from list

## post

broadcasts a post/comment. All image links which links to a file will be uploaded. The yaml header can contain:

— title: your title tags: tag1,tag2 community: hive-100000 beneficiaries: beempy:5%,holger80:5% —

```
beempy post [OPTIONS] MARKDOWN_FILE
```

## Options

- a, --account** <account>  
Account are you posting from
- t, --title** <title>  
Title of the post
- p, --permlink** <permlink>  
Manually set the permlink (optional)
- g, --tags** <tags>  
A komma separated list of tags to go with the post.
- r, --reply-identifier** <reply\_identifier>  
Identifier of the parent post/comment, when set a comment is broadcasted
- c, --community** <community>  
Name of the community (optional)
- u, --canonical-url** <canonical\_url>  
Canonical url, can also set to <https://hive.blog> or <https://peakd.com> (optional)
- b, --beneficiaries** <beneficiaries>  
Post beneficiaries (komma separated, e.g. a:10%,b:20%)
- d, --percent-steem-dollars** <percent\_steem\_dollars>  
50% SBD /50% SP is 10000 (default), 100% SP is 0
- d, --percent-hive-dollars** <percent\_hive\_dollars>  
50% SBD /50% SP is 10000 (default), 100% SP is 0
- m, --max-accepted-payout** <max\_accepted\_payout>  
Default is 1000000.000 [SBD]
- n, --no-parse-body**  
Disable parsing of links, tags and images
- e, --no-patch-on-edit**  
Disable patch posting on edits (when the permlink already exists)
- export** <export>  
When set, transaction is stored in a file

## Arguments

### MARKDOWN\_FILE

Required argument

## power

Shows vote power and bandwidth

```
beempy power [OPTIONS] [ACCOUNT] ...
```

### Arguments

#### ACCOUNT

Optional argument(s)

## powerdown

Power down (start withdrawing VESTS from Steem POWER)

amount is in VESTS

```
beempy powerdown [OPTIONS] AMOUNT
```

### Options

**-a, --account** <account>

Powerup from this account

**-e, --export** <export>

When set, transaction is stored in a file

### Arguments

#### AMOUNT

Required argument

## powerdownroute

Setup a powerdown route

```
beempy powerdownroute [OPTIONS] TO
```

### Options

**--percentage** <percentage>

The percent of the withdraw to go to the “to” account

**-a, --account** <account>

Powerup from this account

**--auto\_vest**

Set to true if the from account should receive the VESTS as VESTS, or false if it should receive them as STEEM/HIVE.

**-e, --export** <export>  
When set, transaction is stored in a file

## Arguments

**TO**  
Required argument

## powerup

Power up (vest STEEM/HIVE as STEEM/HIVE POWER)

```
beempy powerup [OPTIONS] AMOUNT
```

## Options

**-a, --account** <account>  
Powerup from this account

**-t, --to** <to>  
Powerup this account

**-e, --export** <export>  
When set, transaction is stored in a file

## Arguments

**AMOUNT**  
Required argument

## pricehistory

Show price history

```
beempy pricehistory [OPTIONS]
```

## Options

**-w, --width** <width>  
Plot width (default 75)

**-h, --height** <height>  
Plot height (default 15)

**--ascii**  
Use only ascii symbols

## reblog

Reblog an existing post

```
beempy reblog [OPTIONS] IDENTIFIER
```

### Options

**-a, --account** <account>  
Reblog as this user

### Arguments

**IDENTIFIER**  
Required argument

## reply

replies to a comment

```
beempy reply [OPTIONS] AUTHORPERM BODY
```

### Options

**-a, --account** <account>  
Account are you posting from

**-t, --title** <title>  
Title of the post

**-e, --export** <export>  
When set, transaction is stored in a file

### Arguments

**AUTHORPERM**  
Required argument

**BODY**  
Required argument

## rewards

Lists received rewards

```
beempy rewards [OPTIONS] [ACCOUNTS]...
```

## Options

- s, --only-sum**  
Show only the sum
- p, --post**  
Show post payout
- c, --comment**  
Show comments payout
- v, --curation**  
Shows curation
- l, --length <length>**  
Limits the permalink character length
- a, --author**  
Show the author for each entry
- e, --permalink**  
Show the permalink for each entry
- t, --title**  
Show the title for each entry
- d, --days <days>**  
Limit shown rewards by this amount of days (default: 7)

## Arguments

**ACCOUNTS**  
Optional argument(s)

## sell

Sell STEEM/HIVE or SBD/HBD from the internal market

Limit sell price denoted in (SBD per STEEM) or (HBD per HIVE)

```
beem sell [OPTIONS] AMOUNT ASSET [PRICE]
```

## Options

- a, --account <account>**  
Sell with this account (defaults to “default\_account”)
- orderid <orderid>**  
Set an orderid
- e, --export <export>**  
When set, transaction is stored in a file

## Arguments

### **AMOUNT**

Required argument

### **ASSET**

Required argument

### **PRICE**

Optional argument

## set

Set default\_account, default\_vote\_weight or nodes

set [key] [value]

Examples:

Set the default vote weight to 50 %: set default\_vote\_weight 50

```
beempy set [OPTIONS] KEY VALUE
```

## Arguments

### **KEY**

Required argument

### **VALUE**

Required argument

## setprofile

Set a variable in an account's profile

```
beempy setprofile [OPTIONS] [VARIABLE] [VALUE]
```

## Options

**-a, --account** <account>  
setprofile as this user

**-p, --pair** <pair>  
"Key=Value" pairs

**-e, --export** <export>  
When set, transaction is stored in a file

## Arguments

### **VARIABLE**

Optional argument

## VALUE

Optional argument

## setproxy

Set your witness/proposal system proxy

```
beempy setproxy [OPTIONS] PROXY
```

## Options

**-a, --account** <account>

Your account

**-e, --export** <export>

When set, transaction is stored in a file

## Arguments

### PROXY

Required argument

## sign

Sign a provided transaction with available and required keys

```
beempy sign [OPTIONS]
```

## Options

**-i, --file** <file>

Load transaction from file. If “-“, read from stdin (defaults to “-“)

**-o, --outfile** <outfile>

Load transaction from file. If “-“, read from stdin (defaults to “-“)

## ticker

Show ticker

```
beempy ticker [OPTIONS]
```

## Options

**-i, --sbd-to-steem**

Show ticker in SBD/STEEM



## tradehistory

Show price history

```
beempy tradehistory [OPTIONS]
```

### Options

- d, --days** <days>  
Limit the days of shown trade history (default 7)
- hours** <hours>  
Limit the intervall history intervall (default 2 hours)
- i, --sbd-to-steem**  
Show ticker in SBD/STEEM
- l, --limit** <limit>  
Limit number of trades which is fetched at each intervall point (default 100)
- w, --width** <width>  
Plot width (default 75)
- h, --height** <height>  
Plot height (default 15)
- ascii**  
Use only ascii symbols

## transfer

Transfer SBD/HBD or STEEM/HIVE

```
beempy transfer [OPTIONS] TO AMOUNT ASSET [MEMO]
```

### Options

- a, --account** <account>  
Transfer from this account
- e, --export** <export>  
When set, transaction is stored in a file

### Arguments

- TO**  
Required argument
- AMOUNT**  
Required argument
- ASSET**  
Required argument

## MEMO

Optional argument

### unfollow

Unfollow/Unmute another account

```
beempy unfollow [OPTIONS] UNFOLLOW
```

### Options

- a, --account** <account>  
UnFollow/UnMute from this account
- e, --export** <export>  
When set, transaction is stored in a file

### Arguments

#### UNFOLLOW

Required argument

### updatememokey

Update an account's memo key

```
beempy updatememokey [OPTIONS]
```

### Options

- a, --account** <account>  
The account to updatememokey action for
- key** <key>  
The new memo key
- e, --export** <export>  
When set, transaction is stored in a file

### updatenodes

Update the nodelist from @fullnodeupdate

```
beempy updatenodes [OPTIONS]
```

## Options

- s, --show**  
Prints the updated nodes
- h, --hive**  
Switch to HIVE blockchain, when set to true.
- e, --steem**  
Switch to STEEM nodes, when set to true.
- t, --test**  
Do change the node list, only print the newest nodes setup.
- only-https**  
Use only https nodes.
- only-wss**  
Use only websocket nodes.

## uploadimage

```
beempy uploadimage [OPTIONS] IMAGE
```

## Options

- a, --account <account>**  
Account name
- n, --image-name <image\_name>**  
Image name

## Arguments

**IMAGE**  
Required argument

## upvote

Upvote a post/comment  
POST is @author/permlink

```
beempy upvote [OPTIONS] POST
```

## Options

- w, --weight <weight>**  
Vote weight (from 0.1 to 100.0)
- a, --account <account>**  
Voter account name

**-e, --export** <export>  
When set, transaction is stored in a file

## Arguments

**POST**  
Required argument

### userdata

Get the account's email address and phone number.

The request has to be signed by the requested account or an admin account.

```
beempy userdata [OPTIONS] [ACCOUNT]
```

## Options

**-s, --signing-account** <signing\_account>  
Signing account, when empty account is used.

## Arguments

**ACCOUNT**  
Optional argument

### verify

Returns the public signing keys for a block

```
beempy verify [OPTIONS] [BLOCKNUMBER]
```

## Options

**-t, --trx** <trx>  
Show only one transaction number

**-u, --use-api**  
Uses the get\_potential\_signatures api call

## Arguments

**BLOCKNUMBER**  
Optional argument

## votes

List outgoing/incoming account votes

```
beempy votes [OPTIONS] [ACCOUNT]
```

### Options

- direction** <direction>  
in or out
- o, --outgoing**  
Show outgoing votes
- i, --incoming**  
Show incoming votes
- d, --days** <days>  
Limit shown vote history by this amount of days (default: 2)
- e, --export** <export>  
Export results to TXT-file

### Arguments

**ACCOUNT**  
Optional argument

## walletinfo

Show info about wallet

```
beempy walletinfo [OPTIONS]
```

### Options

- u, --unlock**  
Unlock wallet
- l, --lock**  
Lock wallet

## witness

List witness information

```
beempy witness [OPTIONS] WITNESS
```

## Arguments

### WITNESS

Required argument

## witnesscreate

Create a witness

```
beempy witnesscreate [OPTIONS] WITNESS PUB_SIGNING_KEY
```

## Options

**--maximum\_block\_size** <maximum\_block\_size>

Max block size

**--account\_creation\_fee** <account\_creation\_fee>

Account creation fee

**--sbd\_interest\_rate** <sbd\_interest\_rate>

SBD interest rate in percent

**--url** <url>

Witness URL

**-e, --export** <export>

When set, transaction is stored in a file

## Arguments

### WITNESS

Required argument

### PUB\_SIGNING\_KEY

Required argument

## witnessdisable

Disable a witness

```
beempy witnessdisable [OPTIONS] WITNESS
```

## Options

**-e, --export** <export>

When set, transaction is stored in a file

## Arguments

### WITNESS

Required argument

## witnessenable

Enable a witness

```
beempy witnessenable [OPTIONS] WITNESS SIGNING_KEY
```

### Options

**-e, --export** <export>  
When set, transaction is stored in a file

### Arguments

**WITNESS**  
Required argument

**SIGNING\_KEY**  
Required argument

## witnesses

List witnesses

```
beempy witnesses [OPTIONS] [ACCOUNT]
```

### Options

**--limit** <limit>  
How many witnesses should be shown

### Arguments

**ACCOUNT**  
Optional argument

## witnessfeed

Publish price feed for a witness

```
beempy witnessfeed [OPTIONS] WITNESS [WIF]
```

### Options

**-b, --base** <base>  
Set base manually, when not set the base is automatically calculated.

**-q, --quote** <quote>  
Steem quote manually, when not set the base is automatically calculated.

**--support-peg**

Supports peg adjusting the quote, is overwritten by --set-quote!

## Arguments

**WITNESS**

Required argument

**WIF**

Optional argument

## witnessproperties

Update witness properties of witness WITNESS with the witness signing key WIF

```
beem.py witnessproperties [OPTIONS] WITNESS WIF
```

## Options

**--account\_creation\_fee** <account\_creation\_fee>

Account creation fee (float)

**--account\_subsidy\_budget** <account\_subsidy\_budget>

Account subsidy per block

**--account\_subsidy\_decay** <account\_subsidy\_decay>

Per block decay of the account subsidy pool

**--maximum\_block\_size** <maximum\_block\_size>

Max block size

**--sbd\_interest\_rate** <sbd\_interest\_rate>

SBD interest rate in percent

**--new\_signing\_key** <new\_signing\_key>

Set new signing key

**--url** <url>

Witness URL

## Arguments

**WITNESS**

Required argument

**WIF**

Required argument

## witnessupdate

Change witness properties

```
beem.py witnessupdate [OPTIONS]
```



## Options

```

--witness <witness>
    Witness name

--maximum_block_size <maximum_block_size>
    Max block size

--account_creation_fee <account_creation_fee>
    Account creation fee

--sbd_interest_rate <sbd_interest_rate>
    SBD interest rate in percent

--hbd_interest_rate <hbd_interest_rate>
    HBD interest rate in percent

--url <url>
    Witness URL

--signing_key <signing_key>
    Signing Key

-e, --export <export>
    When set, transaction is stored in a file

```

### 3.4.6 beempy -help

You can see all available commands with `beempy --help`

```

~ % beempy --help
Usage: cli.py [OPTIONS] COMMAND1 [ARGS]... [COMMAND2 [ARGS]...]...

Options:
  -n, --node TEXT          URL for public Steem API (e.g.
                           https://api.steemit.com)
  -o, --offline            Prevent connecting to network
  -d, --no-broadcast       Do not broadcast
  -p, --no-wallet          Do not load the wallet
  -x, --unsigned           Nothing will be signed
  -e, --expires INTEGER    Delay in seconds until transactions are supposed to
                           expire (defaults to 60)
  -v, --verbose INTEGER    Verbosity
  --version                Show the version and exit.
  --help                   Show this message and exit.

Commands:
  addkey                  Add key to wallet When no [OPTION] is given,...
  allow                   Allow an account/key to interact with your...
  approvewitness          Approve a witnesses
  balance                 Shows balance
  broadcast                broadcast a signed transaction
  buy                     Buy STEEM or SBD from the internal market...
  cancel                  Cancel order in the internal market
  changewalletpassphrase  Change wallet password
  claimreward             Claim reward balances By default, this will...
  config                  Shows local configuration
  convert                 Convert STEEMDollars to Steem (takes a week...

```

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createwallet	Create new wallet <b>with</b> a new password
currentnode	Sets the currently working node at the first...
delkey	Delete key <b>from the</b> wallet PUB <b>is</b> the public...
delprofile	Delete a variable <b>in</b> an account's <b>profile</b>
disallow	Remove allowance an account/key to interact...
disapprovewitness	Disapprove a witnesses
downvote	Downvote a post/comment POST <b>is</b> ...
follow	Follow another account
follower	Get information about followers
following	Get information about following
importaccount	Import an account using a passphrase
info	Show basic blockchain info General...
interest	Get information about interest payment
listaccounts	Show stored accounts
listkeys	Show stored keys
mute	Mute another account
muter	Get information about muter
muting	Get information about muting
newaccount	Create a new account
nextnode	Uses the <b>next</b> node <b>in</b> list
openorders	Show <b>open</b> orders
orderbook	Obtain orderbook of the internal market
parsewif	Parse a WIF private key without importing
permissions	Show permissions of an account
pingnode	Returns the answer time <b>in</b> milliseconds
power	Shows vote power <b>and</b> bandwidth
powerdown	Power down (start withdrawing VESTS from...
powerdownroute	Setup a powerdown route
powerup	Power up (vest STEEM <b>as</b> STEEM POWER)
pricehistory	Show price history
resteen	Resteen an existing post
sell	Sell STEEM <b>or</b> SBD <b>from the</b> internal market...
<b>set</b>	Set default_account, default_vote_weight <b>or</b> ...
setprofile	Set a variable <b>in</b> an account's <b>profile</b>
sign	Sign a provided transaction <b>with</b> available...
ticker	Show ticker
tradehistory	Show price history
transfer	Transfer SBD/STEEM
unfollow	Unfollow/Unmute another account
updatememokey	Update an account's <b>memo key</b>
upvote	Upvote a post/comment POST <b>is</b> ...
votes	List outgoing/incoming account votes
walletinfo	Show info about wallet
witnesscreate	Create a witness
witnesses	List witnesses
witnessupdate	Change witness properties

## 3.5 Configuration

The pysteem library comes with its own local configuration database that stores information like

- API node URLs
- default account name
- the encrypted master password

- the default voting weight
- if keyring should be used for unlocking the wallet

and potentially more.

You can access those variables like a regular dictionary by using

```
from beem import Steem
steem = Steem()
print(steem.config.items())
```

Keys can be added and changed like they are for regular dictionaries.

If you don't want to load the `beem.steem.Steem` class, you can load the configuration directly by using:

```
from beem.storage import configStorage as config
```

It is also possible to access the configuration with the commandline tool *beempy*:

```
beempy config
```

### 3.5.1 API node URLs

The default node URLs which will be used when *node* is *None* in `beem.steem.Steem` class is stored in `config["nodes"]` as string. The list can be get and set by:

```
from beem import Steem
steem = Steem()
node_list = steem.get_default_nodes()
node_list = node_list[1:] + [node_list[0]]
steem.set_default_nodes(node_list)
```

beempy can also be used to set nodes:

```
beempy set nodes wss://steemd.privex.io
beempy set nodes "['wss://steemd.privex.io', 'wss://gtg.steem.house:8090']"
```

The default nodes can be reset to the default value. When the first node does not answer, steem should be set to the offline mode. This can be done by:

```
beempy -o set nodes ""
```

or

```
from beem import Steem
steem = Steem(offline=True)
steem.set_default_nodes("")
```

### 3.5.2 Default account

The default account name is used in some functions, when no account name is given. It is also used in *beempy* for all account related functions.

```
from beem import Steem
steem = Steem()
steem.set_default_account("test")
steem.config["default_account"] = "test"
```

or by beem.py with

```
beem.py set default_account test
```

### 3.5.3 Default voting weight

The default vote weight is used for voting, when no vote weight is given.

```
from beem import Steem
steem = Steem()
steem.config["default_vote_weight"] = 100
```

or by beem.py with

```
beem.py set default_vote_weight 100
```

### 3.5.4 Setting password\_storage

The password\_storage can be set to:

- environment, this is the default setting. The master password for the wallet can be provided in the environment variable *UNLOCK*.
- keyring (when set with beem.py, it asks for the wallet password)

```
beem.py set password_storage environment
beem.py set password_storage keyring
```

#### Environment variable for storing the master password

When *password\_storage* is set to *environment*, the master password can be stored in *UNLOCK* for unlocking automatically the wallet.

#### Keyring support for beem.py and wallet

In order to use keyring for storing the wallet password, the following steps are necessary:

- Install keyring: *pip install keyring*
- Change *password\_storage* to *keyring* with *beem.py* and enter the wallet password.

It also possible to change the password in the keyring by

```
python -m keyring set beem wallet
```

The stored master password can be displayed in the terminal by

```
python -m keyring get beem wallet
```

When keyring is set as *password\_storage* and the stored password in the keyring is identically to the set master password of the wallet, the wallet is automatically unlocked everytime it is used.

### Testing if unlocking works

Testing if the master password is correctly provided by keyring or the *UNLOCK* variable:

```
from beem import Steem
steem = Steem()
print(steem.wallet.locked())
```

When the output is False, automatic unlocking with keyring or the *UNLOCK* variable works. It can also be tested by beem.py with

```
beem.py walletinfo --test-unlock
```

When no password prompt is shown, unlocking with keyring or the *UNLOCK* variable works.

## 3.6 Api Definitions

### 3.6.1 condenser\_api

#### broadcast\_block

not implemented

#### broadcast\_transaction

```
from beem.transactionbuilder import TransactionBuilder
t = TransactionBuilder()
t.broadcast()
```

#### broadcast\_transaction\_synchronous

```
from beem.transactionbuilder import TransactionBuilder
t = TransactionBuilder()
t.broadcast()
```

#### get\_account\_bandwidth

```
from beem.account import Account
account = Account("test")
account.get_account_bandwidth()
```

### get\_account\_count

```
from beem.blockchain import Blockchain
b = Blockchain()
b.get_account_count()
```

### get\_account\_history

```
from beem.account import Account
acc = Account("steemit")
for h in acc.get_account_history(1,0):
    print(h)
```

### get\_account\_reputations

```
from beem.blockchain import Blockchain
b = Blockchain()
for h in b.get_account_reputations():
    print(h)
```

### get\_account\_votes

```
from beem.account import Account
acc = Account("gtg")
for h in acc.get_account_votes():
    print(h)
```

### get\_active\_votes

```
from beem.vote import ActiveVotes
acc = Account("gtg")
post = acc.get_feed(0,1)[0]
a = ActiveVotes(post["authorperm"])
a.printAsTable()
```

### get\_active\_witnesses

```
from beem.witness import Witnesses
w = Witnesses()
w.printAsTable()
```

### get\_block

```
from beem.block import Block
print(Block(1))
```

### get\_block\_header

```
from beem.block import BlockHeader
print(BlockHeader(1))
```

### get\_blog

```
from beem.account import Account
acc = Account("gtg")
for h in acc.get_blog():
    print(h)
```

### get\_blog\_authors

```
from beem.account import Account
acc = Account("gtg")
for h in acc.get_blog_authors():
    print(h)
```

### get\_blog\_entries

```
from beem.account import Account
acc = Account("gtg")
for h in acc.get_blog_entries():
    print(h)
```

### get\_chain\_properties

```
from beem import Steem
stm = Steem()
print(stm.get_chain_properties())
```

### get\_comment\_discussions\_by\_payout

```
from beem.discussions import Query, Comment_discussions_by_payout
q = Query(limit=10)
for h in Comment_discussions_by_payout(q):
    print(h)
```

### get\_config

```
from beem import Steem
stm = Steem()
print(stm.get_config())
```

### get\_content

```
from beem.account import Account
from beem.comment import Comment
acc = Account("gtg")
post = acc.get_feed(0,1)[0]
print(Comment(post["authorperm"]))
```

### get\_content\_replies

```
from beem.account import Account
from beem.comment import Comment
acc = Account("gtg")
post = acc.get_feed(0,1)[0]
c = Comment(post["authorperm"])
for h in c.get_replies():
    print(h)
```

### get\_conversion\_requests

```
from beem.account import Account
acc = Account("gtg")
print(acc.get_conversion_requests())
```

### get\_current\_median\_history\_price

```
from beem import Steem
stm = Steem()
print(stm.get_current_median_history())
```

### get\_discussions\_by\_active

```
from beem.discussions import Query, Discussions_by_active
q = Query(limit=10)
for h in Discussions_by_active(q):
    print(h)
```

### get\_discussions\_by\_author\_before\_date

```
from beem.discussions import Query, Discussions_by_author_before_date
for h in Discussions_by_author_before_date(limit=10, author="gtg"):
    print(h)
```

### get\_discussions\_by\_blog



```
from beem.discussions import Query, Discussions_by_blog
q = Query(limit=10)
for h in Discussions_by_blog(q):
    print(h)
```

### get\_discussions\_by\_cashout

```
from beem.discussions import Query, Discussions_by_cashout
q = Query(limit=10)
for h in Discussions_by_cashout(q):
    print(h)
```

### get\_discussions\_by\_children

```
from beem.discussions import Query, Discussions_by_children
q = Query(limit=10)
for h in Discussions_by_children(q):
    print(h)
```

### get\_discussions\_by\_comments

```
from beem.discussions import Query, Discussions_by_comments
q = Query(limit=10, start_author="steemit", start_permlink="firstpost")
for h in Discussions_by_comments(q):
    print(h)
```

### get\_discussions\_by\_created

```
from beem.discussions import Query, Discussions_by_created
q = Query(limit=10)
for h in Discussions_by_created(q):
    print(h)
```

### get\_discussions\_by\_feed

```
from beem.discussions import Query, Discussions_by_feed
q = Query(limit=10, tag="steem")
for h in Discussions_by_feed(q):
    print(h)
```

### get\_discussions\_by\_hot

```
from beem.discussions import Query, Discussions_by_hot
q = Query(limit=10, tag="steem")
for h in Discussions_by_hot(q):
    print(h)
```

### get\_discussions\_by\_promoted

```
from beem.discussions import Query, Discussions_by_promoted
q = Query(limit=10, tag="steem")
for h in Discussions_by_promoted(q):
    print(h)
```

### get\_discussions\_by\_trending

```
from beem.discussions import Query, Discussions_by_trending
q = Query(limit=10, tag="steem")
for h in Discussions_by_trending(q):
    print(h)
```

### get\_discussions\_by\_votes

```
from beem.discussions import Query, Discussions_by_votes
q = Query(limit=10)
for h in Discussions_by_votes(q):
    print(h)
```

### get\_dynamic\_global\_properties

```
from beem import Steem
stm = Steem()
print(stm.get_dynamic_global_properties())
```

### get\_escrow

```
from beem.account import Account
acc = Account("gtg")
print(acc.get_escrow())
```

### get\_expiring\_vesting\_delegations

```
from beem.account import Account
acc = Account("gtg")
print(acc.get_expiring_vesting_delegations())
```

### get\_feed

```
from beem.account import Account
acc = Account("gtg")
for f in acc.get_feed():
    print(f)
```

### get\_feed\_entries

```
from beem.account import Account
acc = Account("gtg")
for f in acc.get_feed_entries():
    print(f)
```

### get\_feed\_history

```
from beem import Steem
stm = Steem()
print(stm.get_feed_history())
```

### get\_follow\_count

```
from beem.account import Account
acc = Account("gtg")
print(acc.get_follow_count())
```

### get\_followers

```
from beem.account import Account
acc = Account("gtg")
for f in acc.get_followers():
    print(f)
```

### get\_following

```
from beem.account import Account
acc = Account("gtg")
for f in acc.get_following():
    print(f)
```

### get\_hardfork\_version

```
from beem import Steem
stm = Steem()
print(stm.get_hardfork_properties()["hf_version"])
```

### get\_key\_references

```
from beem.account import Account
from beem.wallet import Wallet
acc = Account("gtg")
w = Wallet()
print(w.getAccountFromPublicKey(acc["posting"]["key_auths"][0][0]))
```

### get\_market\_history

```
from beem.market import Market
m = Market()
for t in m.market_history():
    print(t)
```

### get\_market\_history\_buckets

```
from beem.market import Market
m = Market()
for t in m.market_history_buckets():
    print(t)
```

### get\_next\_scheduled\_hardfork

```
from beem import Steem
stm = Steem()
print(stm.get_hardfork_properties())
```

### get\_open\_orders

```
from beem.market import Market
m = Market()
print(m.accountopenorders(account="gtg"))
```

### get\_ops\_in\_block

```
from beem.block import Block
b = Block(2e6, only_ops=True)
print(b)
```

### get\_order\_book

```
from beem.market import Market
m = Market()
print(m.orderbook())
```

### get\_owner\_history

```
from beem.account import Account
acc = Account("gtg")
print(acc.get_owner_history())
```

### get\_post\_discussions\_by\_payout

```
from beem.discussions import Query, Post_discussions_by_payout
q = Query(limit=10)
for h in Post_discussions_by_payout(q):
    print(h)
```

### get\_potential\_signatures

```
from beem.transactionbuilder import TransactionBuilder
from beem.blockchain import Blockchain
b = Blockchain()
block = b.get_current_block()
trx = block.json()["transactions"][0]
t = TransactionBuilder(trx)
print(t.get_potential_signatures())
```

### get\_reblogged\_by

```
from beem.account import Account
from beem.comment import Comment
acc = Account("gtg")
post = acc.get_feed(0,1)[0]
c = Comment(post["authorperm"])
for h in c.get_reblogged_by():
    print(h)
```

### get\_recent\_trades

```
from beem.market import Market
m = Market()
for t in m.recent_trades():
    print(t)
```

### get\_recovery\_request

```
from beem.account import Account
acc = Account("gtg")
print(acc.get_recovery_request())
```

### get\_replies\_by\_last\_update

```
from beem.discussions import Query, Replies_by_last_update
q = Query(limit=10, start_author="steemit", start_permlink="firstpost")
for h in Replies_by_last_update(q):
    print(h)
```

### get\_required\_signatures

```
from beem.transactionbuilder import TransactionBuilder
from beem.blockchain import Blockchain
b = Blockchain()
block = b.get_current_block()
trx = block.json()["transactions"][0]
t = TransactionBuilder(trx)
print(t.get_required_signatures())
```

### get\_reward\_fund

```
from beem import Steem
stm = Steem()
print(stm.get_reward_funds())
```

### get\_savings\_withdraw\_from

```
from beem.account import Account
acc = Account("gtg")
print(acc.get_savings_withdrawals(direction="from"))
```

### get\_savings\_withdraw\_to

```
from beem.account import Account
acc = Account("gtg")
print(acc.get_savings_withdrawals(direction="to"))
```

### get\_state

```
from beem.comment import RecentByPath
for p in RecentByPath(path="promoted"):
    print(p)
```

### get\_tags\_used\_by\_author

```
from beem.account import Account
acc = Account("gtg")
print(acc.get_tags_used_by_author())
```

### get\_ticker

```
from beem.market import Market
m = Market()
print(m.ticker())
```

### get\_trade\_history

```
from beem.market import Market
m = Market()
for t in m.trade_history():
    print(t)
```

### get\_transaction

```
from beem.blockchain import Blockchain
b = Blockchain()
print(b.get_transaction("6fde0190a97835ea6d9e651293e90c89911f933c"))
```

### get\_transaction\_hex

```
from beem.blockchain import Blockchain
b = Blockchain()
block = b.get_current_block()
trx = block.json()["transactions"][0]
print(b.get_transaction_hex(trx))
```

### get\_trending\_tags

```
from beem.discussions import Query, Trending_tags
q = Query(limit=10, start_tag="steemit")
for h in Trending_tags(q):
    print(h)
```

### get\_version

not implemented

### get\_vesting\_delegations

```
from beem.account import Account
acc = Account("gtg")
for v in acc.get_vesting_delegations():
    print(v)
```

### get\_volume

```
from beem.market import Market
m = Market()
print(m.volume24h())
```

### get\_withdraw\_routes

```
from beem.account import Account
acc = Account("gtg")
print(acc.get_withdraw_routes())
```

### get\_witness\_by\_account

```
from beem.witness import Witness
w = Witness("gtg")
print(w)
```

### get\_witness\_count

```
from beem.witness import Witnesses
w = Witnesses()
print(w.witness_count)
```

### get\_witness\_schedule

```
from beem import Steem
stm = Steem()
print(stm.get_witness_schedule())
```

### get\_witnesses

not implemented

### get\_witnesses\_by\_vote

```
from beem.witness import WitnessesRankedByVote
for w in WitnessesRankedByVote():
    print(w)
```

### lookup\_account\_names

```
from beem.account import Account
acc = Account("gtg", full=False)
print(acc.json())
```

### lookup\_accounts

```
from beem.account import Account
acc = Account("gtg")
for a in acc.get_similar_account_names(limit=100):
    print(a)
```



### lookup\_witness\_accounts

```
from beem.witness import ListWitnesses
for w in ListWitnesses():
    print(w)
```

### verify\_account\_authority

disabled and not implemented

### verify\_authority

```
from beem.transactionbuilder import TransactionBuilder
from beem.blockchain import Blockchain
b = Blockchain()
block = b.get_current_block()
trx = block.json()["transactions"][0]
t = TransactionBuilder(trx)
t.verify_authority()
print("ok")
```

## 3.7 Modules

### 3.7.1 beem Modules

#### beem.account

**class** `beem.account.Account` (*account*, *full=True*, *lazy=False*, *blockchain\_instance=None*, *\*\*kwargs*)

Bases: `beem.blockchainobject.BlockchainObject`

This class allows to easily access Account data

#### Parameters

- **account\_name** (*str*) – Name of the account
- **blockchain\_instance** (*Steem/Hive*) – Hive or Steem instance
- **lazy** (*bool*) – Use lazy loading
- **full** (*bool*) – Obtain all account data including orders, positions, etc.
- **hive\_instance** (*Hive*) – Hive instance
- **steem\_instance** (*Steem*) – Steem instance

**Returns** Account data

**Return type** dictionary

**Raises** `beem.exceptions.AccountDoesNotExistException` – if account does not exist

Instances of this class are dictionaries that come with additional methods (see below) that allow dealing with an account and its corresponding functions.

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("gtg", blockchain_instance=stm)
>>> print(account)
<Account gtg>
>>> print(account.balances)
```

---

**Note:** This class comes with its own caching function to reduce the load on the API server. Instances of this class can be refreshed with `Account.refresh()`. The cache can be cleared with `Account.clear_cache()`

---

**allow** (*foreign*, *weight=None*, *permission='posting'*, *account=None*, *threshold=None*, *\*\*kwargs*)

Give additional access to an account by some other public key or account.

#### Parameters

- **foreign** (*str*) – The foreign account that will obtain access
- **weight** (*int*) – (optional) The weight to use. If not define, the threshold will be used. If the weight is smaller than the threshold, additional signatures will be required. (defaults to threshold)
- **permission** (*str*) – (optional) The actual permission to modify (defaults to `posting`)
- **account** (*str*) – (optional) the account to allow access to (defaults to `default_account`)
- **threshold** (*int*) – (optional) The threshold that needs to be reached by signatures to be able to interact

**approvewitness** (*witness*, *account=None*, *approve=True*, *\*\*kwargs*)

Approve a witness

#### Parameters

- **witness** (*list*) – list of Witness name or id
- **account** (*str*) – (optional) the account to allow access to (defaults to `default_account`)

#### **available\_balances**

List balances of an account. This call returns instances of `beem.amount.Amount`.

#### **balances**

Returns all account balances as dictionary

**blog\_history** (*limit=None*, *start=-1*, *reblogs=True*, *account=None*)

Stream the blog entries done by an account in reverse time order.

---

**Note:** RPC nodes keep a limited history of entries for the user blog. Older blog posts of an account may not be available via this call due to these node limitations.

---

#### Parameters

- **limit** (*int*) – (optional) stream the latest *limit* blog entries. If unset (default), all available blog entries are streamed.
- **start** (*int*) – (optional) start streaming the blog entries from this index. *start=-1* (default) starts with the latest available entry.
- **reblogs** (*bool*) – (optional) if set *True* (default) reblogs / resteems are included. If set *False*, reblogs/resteems are omitted.
- **account** (*str*) – (optional) the account to stream blog entries for (defaults to *default\_account*)

blog\_history\_reverse example:

```
from beem.account import Account
from beem import Steem
from beem.nodelist import NodeList
nodelist = NodeList()
nodelist.update_nodes()
stm = Steem(node=nodelist.get_hive_nodes())
acc = Account("steemitblog", blockchain_instance=stm)
for post in acc.blog_history(limit=10):
    print(post)
```

**cancel\_transfer\_from\_savings** (*request\_id*, *account=None*, *\*\*kwargs*)

Cancel a withdrawal from ‘savings’ account.

#### Parameters

- **request\_id** (*str*) – Identifier for tracking or cancelling the withdrawal
- **account** (*str*) – (optional) the source account for the transfer if not *default\_account*

**change\_recovery\_account** (*new\_recovery\_account*, *account=None*, *\*\*kwargs*)

Request a change of the recovery account.

---

**Note:** It takes 30 days until the change applies. Another request within this time restarts the 30 day period. Setting the current recovery account again cancels any pending change request.

---

#### Parameters

- **new\_recovery\_account** (*str*) – account name of the new recovery account
- **account** (*str*) – (optional) the account to change the recovery account for (defaults to *default\_account*)

**claim\_reward\_balance** (*reward\_steem=0*, *reward\_sbd=0*, *reward\_hive=0*, *reward\_hbd=0*, *reward\_vests=0*, *account=None*, *\*\*kwargs*)

Claim reward balances. By default, this will claim all outstanding balances. To bypass this behaviour, set desired claim amount by setting any of *reward\_steem*/<sup>“</sup>*reward\_hive*, *reward\_sbd*/<sup>“</sup>*reward\_hbd* or *reward\_vests*.

#### Parameters

- **reward\_steem** (*str*) – Amount of STEEM you would like to claim.
- **reward\_hive** (*str*) – Amount of HIVE you would like to claim.
- **reward\_sbd** (*str*) – Amount of SBD you would like to claim.

- **reward\_hbd** (*str*) – Amount of HBD you would like to claim.
- **reward\_vests** (*str*) – Amount of VESTS you would like to claim.
- **account** (*str*) – The source account for the claim if not `default_account` is used.

**comment\_history** (*limit=None, start\_permlink=None, account=None*)

Stream the comments done by an account in reverse time order.

---

**Note:** RPC nodes keep a limited history of user comments for the user feed. Older comments may not be available via this call due to these node limitations.

---

#### Parameters

- **limit** (*int*) – (optional) stream the latest *limit* comments. If unset (default), all available comments are streamed.
- **start\_permlink** (*str*) – (optional) start streaming the comments from this permlink. *start\_permlink=None* (default) starts with the latest available entry.
- **account** (*str*) – (optional) the account to stream comments for (defaults to `default_account`)

`comment_history_reverse` example:

```
from beem.account import Account
from beem import Steem
from beem.nodelist import NodeList
nodelist = NodeList()
nodelist.update_nodes()
stm = Steem(node=nodelist.get_hive_nodes())
acc = Account("ned", blockchain_instance=stm)
for comment in acc.comment_history(limit=10):
    print(comment)
```

**convert** (*amount, account=None, request\_id=None*)

Convert SteemDollars to Steem (takes 3.5 days to settle)

#### Parameters

- **amount** (*float*) – amount of SBD to convert
- **account** (*str*) – (optional) the source account for the transfer if not `default_account`
- **request\_id** (*str*) – (optional) identifier for tracking the conversion‘

**curation\_stats** ()

Returns the curation reward of the last 24h and 7d and the average of the last 7 days

**Returns** Account curation

**Return type** dictionary

Sample output:

```
{
  '24hr': 0.0,
  '7d': 0.0,
  'avg': 0.0
}
```

**delegate\_vesting\_shares** (*to\_account, vesting\_shares, account=None, \*\*kwargs*)

Delegate SP to another account.

#### Parameters

- **to\_account** (*str*) – Account we are delegating shares to (delegatee).
- **vesting\_shares** (*str*) – Amount of VESTS to delegate eg. *10000 VESTS*.
- **account** (*str*) – The source account (delegator). If not specified, *default\_account* is used.

**disallow** (*foreign, permission='posting', account=None, threshold=None, \*\*kwargs*)

Remove additional access to an account by some other public key or account.

#### Parameters

- **foreign** (*str*) – The foreign account that will obtain access
- **permission** (*str*) – (optional) The actual permission to modify (defaults to *posting*)
- **account** (*str*) – (optional) the account to allow access to (defaults to *default\_account*)
- **threshold** (*int*) – The threshold that needs to be reached by signatures to be able to interact

**disapprovewitness** (*witness, account=None, \*\*kwargs*)

Disapprove a witness

#### Parameters

- **witness** (*list*) – list of Witness name or id
- **account** (*str*) – (optional) the account to allow access to (defaults to *default\_account*)

**ensure\_full** ()

Ensure that all data are loaded

**estimate\_virtual\_op\_num** (*blocktime, stop\_diff=0, max\_count=100*)

Returns an estimation of an virtual operation index for a given time or blockindex

#### Parameters

- **blocktime** (*int, datetime*) – start time or start block index from which account operation should be fetched
- **stop\_diff** (*int*) – Sets the difference between last estimation and new estimation at which the estimation stops. Must not be zero. (default is 1)
- **max\_count** (*int*) – sets the maximum number of iterations. -1 disables this (default 100)

```
utc = pytz.timezone('UTC')
start_time = utc.localize(datetime.utcnow()) - timedelta(days=7)
acc = Account("gtg")
start_op = acc.estimate_virtual_op_num(start_time)

b = Blockchain()
start_block_num = b.get_estimated_block_num(start_time)
start_op2 = acc.estimate_virtual_op_num(start_block_num)
```

```
acc = Account("gtg")
block_num = 21248120
start = t.time()
op_num = acc.estimate_virtual_op_num(block_num, stop_diff=1, max_count=10)
stop = t.time()
print(stop - start)
for h in acc.get_account_history(op_num, 0):
    block_est = h["block"]
    print(block_est - block_num)
```

**feed\_history** (*limit=None, start\_author=None, start\_permlink=None, account=None*)

Stream the feed entries of an account in reverse time order.

---

**Note:** RPC nodes keep a limited history of entries for the user feed. Older entries may not be available via this call due to these node limitations.

---

#### Parameters

- **limit** (*int*) – (optional) stream the latest *limit* feed entries. If unset (default), all available entries are streamed.
- **start\_author** (*str*) – (optional) start streaming the replies from this author. *start\_permlink=None* (default) starts with the latest available entry. If set, *start\_permlink* has to be set as well.
- **start\_permlink** (*str*) – (optional) start streaming the replies from this permlink. *start\_permlink=None* (default) starts with the latest available entry. If set, *start\_author* has to be set as well.
- **account** (*str*) – (optional) the account to get replies to (defaults to *default\_account*)

comment\_history\_reverse example:

```
from beem.account import Account
from beem import Steem
from beem.nodelist import NodeList
nodelist = NodeList()
nodelist.update_nodes()
stm = Steem(node=nodelist.get_hive_nodes())
acc = Account("ned", blockchain_instance=stm)
for reply in acc.feed_history(limit=10):
    print(reply)
```

**follow** (*other, what=['blog'], account=None*)

Follow/Unfollow/Mute/Unmute another account's blog

---

**Note:** what can be one of the following on HIVE:

---

blog, ignore, blacklist, unblacklist, follow\_blacklist, unfollow\_blacklist, follow\_muted, unfollow\_muted

#### Parameters

- **other** (*str/list*) – Follow this account / accounts (only hive)

- **what** (*list*) – List of states to follow. ['blog'] means to follow other, [] means to unfollow/unmute other, ['ignore'] means to ignore other, (defaults to ['blog'])
- **account** (*str*) – (optional) the account to allow access to (defaults to default\_account)

**getSimilarAccountNames** (*limit=5*)

Deprecated, please use get\_similar\_account\_names

**get\_account\_bandwidth** (*bandwidth\_type=1, account=None*)

**get\_account\_history** (*index, limit, order=-1, start=None, stop=None, use\_block\_num=True, only\_ops=[], exclude\_ops=[], raw\_output=False*)

Returns a generator for individual account transactions. This call can be used in a for loop.

#### Parameters

- **index** (*int*) – first number of transactions to return
- **limit** (*int*) – limit number of transactions to return
- **start** (*int, datetime*) – start number/date of transactions to return (*optional*)
- **stop** (*int, datetime*) – stop number/date of transactions to return (*optional*)
- **use\_block\_num** (*bool*) – if true, start and stop are block numbers, otherwise virtual OP count numbers.
- **only\_ops** (*array*) – Limit generator by these operations (*optional*)
- **exclude\_ops** (*array*) – Exclude these operations from generator (*optional*)
- **batch\_size** (*int*) – internal api call batch size (*optional*)
- **order** (*int*) – 1 for chronological, -1 for reverse order
- **raw\_output** (*bool*) – if False, the output is a dict, which includes all values. Otherwise, the output is list.

---

**Note:** only\_ops and exclude\_ops takes an array of strings: The full list of operation ID's can be found in beembase.operationids.ops. Example: ['transfer', 'vote']

---

**get\_account\_posts** (*sort='feed', account=None, observer=None, raw\_data=False*)

Returns account feed

**get\_account\_votes** (*account=None, start\_author="", start\_permlink=""*)

Returns all votes that the account has done

#### Return type list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("beem.app", blockchain_instance=stm)
>>> account.get_account_votes()
```

**get\_balance** (*balances, symbol*)

Obtain the balance of a specific Asset. This call returns instances of *beem.amount.Amount*. Available balance types:

- “available”
- “saving”
- “reward”
- “total”

**Parameters**

- **balances** (*str*) – Defines the balance type
- **symbol** (*str, dict*) – Can be “SBD”, “STEEM” or “VESTS”

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("beem.app", blockchain_instance=stm)
>>> account.get_balance("rewards", "HBD")
0.000 HBD
```

**get\_balances** ()

Returns all account balances as dictionary

**Returns** Account balances

**Return type** dictionary

Sample output:

```
{
  'available': [102.985 STEEM, 0.008 SBD, 146273.695970 VESTS],
  'savings': [0.000 STEEM, 0.000 SBD],
  'rewards': [0.000 STEEM, 0.000 SBD, 0.000000 VESTS],
  'total': [102.985 STEEM, 0.008 SBD, 146273.695970 VESTS]
}
```

**get\_bandwidth** ()

Returns used and allocated bandwidth

**Return type** dictionary

Sample output:

```
{
  'used': 0,
  'allocated': 2211037
}
```

**get\_blog** (*start\_entry\_id=0, limit=100, raw\_data=False, short\_entries=False, account=None*)

Returns the list of blog entries for an account

**Parameters**

- **start\_entry\_id** (*int*) – default is 0



- **limit** (*int*) – default is 100
- **raw\_data** (*bool*) – default is False
- **short\_entries** (*bool*) – when set to True and raw\_data is True, get\_blog\_entries is used instead of get\_blog
- **account** (*str*) – When set, a different account name is used (Default is object account name)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("steemit", blockchain_instance=stm)
>>> account.get_blog(0, 1)
[<Comment @steemit/firstpost>]
```

**get\_blog\_authors** (*account=None*)

Returns a list of authors that have had their content reblogged on a given blog account

**Parameters** **account** (*str*) – When set, a different account name is used (Default is object account name)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("gtg", blockchain_instance=stm)
>>> account.get_blog_authors()
```

**get\_blog\_entries** (*start\_entry\_id=0, limit=100, raw\_data=True, account=None*)

Returns the list of blog entries for an account

**Parameters**

- **start\_entry\_id** (*int*) – default is 0
- **limit** (*int*) – default is 100
- **raw\_data** (*bool*) – default is False
- **account** (*str*) – When set, a different account name is used (Default is object account name)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("steemit", blockchain_instance=stm)
```

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```
>>> entry = account.get_blog_entries(0, 1, raw_data=True)[0]
>>> print("%s - %s - %s" % (entry["author"], entry["permlink"], entry["blog
↪"]))
steemit - firstpost - steemit
```

**get\_conversion\_requests** (*account=None*)

Returns a list of SBD conversion request

**Parameters** **account** (*str*) – When set, a different account is used for the request (Default is object account name)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("beem.app", blockchain_instance=stm)
>>> account.get_conversion_requests()
[]
```

**get\_creator** ()

Returns the account creator or *None* if the account was mined

**get\_curation\_reward** (*days=7*)

Returns the curation reward of the last *days* days

**Parameters** **days** (*int*) – limit number of days to be included int the return value

**get\_downvote\_manabar** ()

Return downvote manabar

**get\_downvoting\_power** (*with\_regeneration=True*)

Returns the account downvoting power in the range of 0-100%

**get\_effective\_vesting\_shares** ()

Returns the effective vesting shares

**get\_escrow** (*escrow\_id=0, account=None*)

Returns the escrow for a certain account by id

**Parameters**

- **escrow\_id** (*int*) – Id (only pre appbase)
- **account** (*str*) – When set, a different account is used for the request (Default is object account name)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("beem.app", blockchain_instance=stm)
```

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```
>>> account.get_escrow(1234)
[]
```

**get\_expiring\_vesting\_delegations** (*after=None, limit=1000, account=None*)

Returns the expirations for vesting delegations.

#### Parameters

- **after** (*datetime*) – expiration after (only for pre appbase nodes)
- **limit** (*int*) – limits number of shown entries (only for pre appbase nodes)
- **account** (*str*) – When set, a different account is used for the request (Default is object account name)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("beem.app", blockchain_instance=stm)
>>> account.get_expiring_vesting_delegations()
[]
```

**get\_feed** (*start\_entry\_id=0, limit=100, raw\_data=False, short\_entries=False, account=None*)

Returns a list of items in an account's feed

#### Parameters

- **start\_entry\_id** (*int*) – default is 0
- **limit** (*int*) – default is 100
- **raw\_data** (*bool*) – default is False
- **short\_entries** (*bool*) – when set to True and raw\_data is True, get\_feed\_entries is used instead of get\_feed
- **account** (*str*) – When set, a different account name is used (Default is object account name)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("steemit", blockchain_instance=stm)
>>> account.get_feed(0, 1, raw_data=True)
[]
```

**get\_feed\_entries** (*start\_entry\_id=0, limit=100, raw\_data=True, account=None*)

Returns a list of entries in an account's feed

#### Parameters

- **start\_entry\_id** (*int*) – default is 0

- **limit** (*int*) – default is 100
- **raw\_data** (*bool*) – default is False
- **short\_entries** (*bool*) – when set to True and raw\_data is True, get\_feed\_entries is used instead of get\_feed
- **account** (*str*) – When set, a different account name is used (Default is object account name)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("steemit", blockchain_instance=stm)
>>> account.get_feed_entries(0, 1)
[]
```

**get\_follow\_count** (*account=None*)

**get\_follow\_list** (*follow\_type, starting\_account=None, limit=100, raw\_name\_list=True*)

Returns the follow list for the specified follow\_type (Only HIVE with HF >= 24)

**Parameters** **follow\_type** (*list*) – follow\_type can be *blacklisted*, *follow\_blacklist muted*, or *follow\_muted*

**get\_followers** (*raw\_name\_list=True, limit=100*)

Returns the account followers as list

**get\_following** (*raw\_name\_list=True, limit=100*)

Returns who the account is following as list

**get\_manabar** ()

Return manabar

**get\_manabar\_recharge\_time** (*manabar, recharge\_pct\_goal=100*)

Returns the account mana recharge time in minutes

**Parameters**

- **manabar** (*dict*) – manabar dict from get\_manabar() or get\_rc\_manabar()
- **recharge\_pct\_goal** (*float*) – mana recovery goal in percentage (default is 100)

**get\_manabar\_recharge\_time\_str** (*manabar, recharge\_pct\_goal=100*)

Returns the account manabar recharge time as string

**Parameters**

- **manabar** (*dict*) – manabar dict from get\_manabar() or get\_rc\_manabar()
- **recharge\_pct\_goal** (*float*) – mana recovery goal in percentage (default is 100)

**get\_manabar\_recharge\_timedelta** (*manabar, recharge\_pct\_goal=100*)

Returns the account mana recharge time as timedelta object

**Parameters**

- **manabar** (*dict*) – manabar dict from get\_manabar() or get\_rc\_manabar()
- **recharge\_pct\_goal** (*float*) – mana recovery goal in percentage (default is 100)

**get\_muters** (*raw\_name\_list=True, limit=100*)

Returns the account muters as list

**get\_mutings** (*raw\_name\_list=True, limit=100*)

Returns who the account is muting as list

**get\_notifications** (*only\_unread=True, limit=100, raw\_data=False, account=None*)

Returns account notifications

#### Parameters

- **only\_unread** (*bool*) – When True, only unread notifications are shown
- **limit** (*int*) – When set, the number of shown notifications is limited (max limit = 100)
- **raw\_data** (*bool*) – When True, the raw data from the api call is returned.
- **account** (*str*) – (optional) the account for which the notification should be received to (defaults to `default_account`)

**get\_owner\_history** (*account=None*)

Returns the owner history of an account.

**Parameters** **account** (*str*) – When set, a different account is used for the request (Default is object account name)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("beem.app", blockchain_instance=stm)
>>> account.get_owner_history()
[]
```

**get\_rc** ()

Return RC of account

**get\_rc\_manabar** ()

Returns current\_mana and max\_mana for RC

**get\_recharge\_time** (*voting\_power\_goal=100, starting\_voting\_power=None*)

Returns the account voting power recharge time in minutes

#### Parameters

- **voting\_power\_goal** (*float*) – voting power goal in percentage (default is 100)
- **starting\_voting\_power** (*float*) – returns recharge time if current voting power is the provided value.

**get\_recharge\_time\_str** (*voting\_power\_goal=100, starting\_voting\_power=None*)

Returns the account recharge time as string

#### Parameters

- **voting\_power\_goal** (*float*) – voting power goal in percentage (default is 100)
- **starting\_voting\_power** (*float*) – returns recharge time if current voting power is the provided value.

**get\_recharge\_timedelta** (*voting\_power\_goal=100, starting\_voting\_power=None*)

Returns the account voting power recharge time as timedelta object

**Parameters**

- **voting\_power\_goal** (*float*) – voting power goal in percentage (default is 100)
- **starting\_voting\_power** (*float*) – returns recharge time if current voting power is the provided value.

**get\_recovery\_request** (*account=None*)

Returns the recovery request for an account

**Parameters** **account** (*str*) – When set, a different account is used for the request (Default is object account name)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("beem.app", blockchain_instance=stm)
>>> account.get_recovery_request()
[]
```

**get\_reputation** ()

Returns the account reputation in the (steemit) normalized form

**get\_savings\_withdrawals** (*direction='from', account=None*)

Returns the list of savings withdrawals for an account.

**Parameters**

- **account** (*str*) – When set, a different account is used for the request (Default is object account name)
- **direction** (*str*) – Can be either from or to (only non appbase nodes)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("beem.app", blockchain_instance=stm)
>>> account.get_savings_withdrawals()
[]
```

**get\_similar\_account\_names** (*limit=5*)

Returns limit account names similar to the current account name as a list

**Parameters** **limit** (*int*) – limits the number of accounts, which will be returned

**Returns** Similar account names as list

**Return type** list

This is a wrapper around `beem.blockchain.Blockchain.get_similar_account_names()` using the current account name as reference.

**get\_steem\_power** (*onlyOwnSP=False*)

Returns the account steem power

**get\_tags\_used\_by\_author** (*account=None*)

Returns a list of tags used by an author.

**Parameters** **account** (*str*) – When set, a different account is used for the request (Default is object account name)

**Return type** list

**get\_token\_power** (*only\_own\_vests=False*)

Returns the account Hive/Steem power (amount of staked token + delegations)

**get\_vesting\_delegations** (*start\_account="", limit=100, account=None*)

Returns the vesting delegations by an account.

**Parameters**

- **account** (*str*) – When set, a different account is used for the request (Default is object account name)
- **start\_account** (*str*) – delegatee to start with, leave empty to start from the first by name
- **limit** (*int*) – maximum number of results to return

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("beem.app", blockchain_instance=stm)
>>> account.get_vesting_delegations()
[]
```

**get\_vests** (*only\_own\_vests=False*)

Returns the account vests

**get\_vote** (*comment*)

Returns a vote if the account has already voted for comment.

**Parameters** **comment** (*str*, `Comment`) – can be a Comment object or a authorpermlink

**get\_vote\_pct\_for\_SBD** (*sbd, post\_rshares=0, voting\_power=None, steem\_power=None, not\_broadcasted\_vote=True*)

Returns the voting percentage needed to have a vote worth a given number of SBD.

If the returned number is bigger than 10000 or smaller than -10000, the given SBD value is too high for that account

**Parameters** **sbd** (*str, int, amount.Amount*) – The amount of SBD in vote value

**get\_vote\_pct\_for\_vote\_value** (*token\_units, post\_rshares=0, voting\_power=None, token\_power=None, not\_broadcasted\_vote=True*)

Returns the voting percentage needed to have a vote worth a given number of Hive/Steem token units

If the returned number is bigger than 10000 or smaller than -10000, the given SBD value is too high for that account

**Parameters** `token_units` (*str*, *int*, `amount.Amount`) – The amount of HBD/SBD in vote value

**get\_voting\_power** (*with\_regeneration=True*)

Returns the account voting power in the range of 0-100%

**get\_voting\_value** (*post\_rshares=0*, *voting\_weight=100*, *voting\_power=None*, *token\_power=None*, *not\_broadcasted\_vote=True*)

Returns the account voting value in Hive/Steem token units

**get\_voting\_value\_SBD** (*post\_rshares=0*, *voting\_weight=100*, *voting\_power=None*, *steem\_power=None*, *not\_broadcasted\_vote=True*)

Returns the account voting value in SBD

**get\_withdraw\_routes** (*account=None*)

Returns the withdraw routes for an account.

**Parameters** `account` (*str*) – When set, a different account is used for the request (Default is object account name)

**Return type** list

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("beem.app", blockchain_instance=stm)
>>> account.get_withdraw_routes()
[]
```

**has\_voted** (*comment*)

Returns if the account has already voted for comment

**Parameters** `comment` (*str*, `Comment`) – can be a Comment object or a authorpermlink

**history** (*start=None*, *stop=None*, *use\_block\_num=True*, *only\_ops=[]*, *exclude\_ops=[]*, *batch\_size=1000*, *raw\_output=False*)

Returns a generator for individual account transactions. The earliest operation will be first. This call can be used in a `for` loop.

**Parameters**

- **start** (*int*, *datetime*) – start number/date of transactions to return (*optional*)
- **stop** (*int*, *datetime*) – stop number/date of transactions to return (*optional*)
- **use\_block\_num** (*bool*) – if true, start and stop are block numbers, otherwise virtual OP count numbers.
- **only\_ops** (*array*) – Limit generator by these operations (*optional*)
- **exclude\_ops** (*array*) – Exclude these operations from generator (*optional*)
- **batch\_size** (*int*) – internal api call batch size (*optional*)
- **raw\_output** (*bool*) – if False, the output is a dict, which includes all values. Otherwise, the output is list.



**Note:** `only_ops` and `exclude_ops` takes an array of strings: The full list of operation ID's can be found in `beembase.operationids.ops`. Example: `['transfer', 'vote']`

```
acc = Account("gtg")
max_op_count = acc.virtual_op_count()
# Returns the 100 latest operations
acc_op = []
for h in acc.history(start=max_op_count - 99, stop=max_op_count, use_block_
↪num=False):
    acc_op.append(h)
len(acc_op)
```

100

```
acc = Account("test")
max_block = 21990141
# Returns the account operation inside the last 100 block. This can be empty.
acc_op = []
for h in acc.history(start=max_block - 99, stop=max_block, use_block_
↪num=True):
    acc_op.append(h)
len(acc_op)
```

0

```
acc = Account("test")
start_time = datetime(2018, 3, 1, 0, 0, 0)
stop_time = datetime(2018, 3, 2, 0, 0, 0)
# Returns the account operation from 1.4.2018 back to 1.3.2018
acc_op = []
for h in acc.history(start=start_time, stop=stop_time):
    acc_op.append(h)
len(acc_op)
```

0

**history\_reverse** (*start=None, stop=None, use\_block\_num=True, only\_ops=[], exclude\_ops=[], batch\_size=1000, raw\_output=False*)

Returns a generator for individual account transactions. The latest operation will be first. This call can be used in a `for` loop.

#### Parameters

- **start** (*int, datetime*) – start number/date of transactions to return. If negative the `virtual_op_count` is added. (*optional*)
- **stop** (*int, datetime*) – stop number/date of transactions to return. If negative the `virtual_op_count` is added. (*optional*)
- **use\_block\_num** (*bool*) – if true, start and stop are block numbers, otherwise virtual OP count numbers.
- **only\_ops** (*array*) – Limit generator by these operations (*optional*)
- **exclude\_ops** (*array*) – Exclude these operations from generator (*optional*)
- **batch\_size** (*int*) – internal api call batch size (*optional*)

- **raw\_output** (*bool*) – if False, the output is a dict, which includes all values. Otherwise, the output is list.

---

**Note:** only\_ops and exclude\_ops takes an array of strings: The full list of operation ID's can be found in beembase.operationids.ops. Example: ['transfer', 'vote']

---

```
acc = Account("gtg")
max_op_count = acc.virtual_op_count()
# Returns the 100 latest operations
acc_op = []
for h in acc.history_reverse(start=max_op_count, stop=max_op_count - 99, use_
↪block_num=False):
    acc_op.append(h)
len(acc_op)
```

```
100
```

```
max_block = 21990141
acc = Account("test")
# Returns the account operation inside the last 100 block. This can be empty.
acc_op = []
for h in acc.history_reverse(start=max_block, stop=max_block-100, use_block_
↪num=True):
    acc_op.append(h)
len(acc_op)
```

```
0
```

```
acc = Account("test")
start_time = datetime.datetime(2018, 4, 1, 0, 0, 0)
stop_time = datetime.datetime(2018, 3, 1, 0, 0, 0)
# Returns the account operation from 1.4.2018 back to 1.3.2018
acc_op = []
for h in acc.history_reverse(start=start_time, stop=stop_time):
    acc_op.append(h)
len(acc_op)
```

```
0
```

### **interest()**

Calculate interest for an account

**Parameters** **account** (*str*) – Account name to get interest for

**Return type** dictionary

Sample output:

```
{
    'interest': 0.0,
    'last_payment': datetime.datetime(2018, 1, 26, 5, 50, 27, tzinfo=<UTC>),
    'next_payment': datetime.datetime(2018, 2, 25, 5, 50, 27, tzinfo=<UTC>),
    'next_payment_duration': datetime.timedelta(-65, 52132, 684026),
    'interest_rate': 0.0
}
```

**is\_fully\_loaded**

Is this instance fully loaded / e.g. all data available?

**Return type** bool

**json()****json\_metadata****list\_all\_subscriptions** (*account=None*)

Returns all subscriptions

**mark\_notifications\_as\_read** (*last\_read=None, account=None*)

Broadcast a mark all notification as read custom\_json

**Parameters**

- **last\_read** (*str*) – When set, this datestring is used to set the mark as read date
- **account** (*str*) – (optional) the account to broadcast the custom\_json to (defaults to *default\_account*)

**mute** (*mute, account=None*)

Mute another account

**Parameters**

- **mute** (*str*) – Mute this account
- **account** (*str*) – (optional) the account to allow access to (defaults to *default\_account*)

**name**

Returns the account name

**posting\_json\_metadata****print\_info** (*force\_refresh=False, return\_str=False, use\_table=False, \*\*kwargs*)

Prints import information about the account

**profile**

Returns the account profile

**refresh()**

Refresh/Obtain an account's data from the API server

**rep**

Returns the account reputation

**reply\_history** (*limit=None, start\_author=None, start\_permalink=None, account=None*)

Stream the replies to an account in reverse time order.

---

**Note:** RPC nodes keep a limited history of entries for the replies to an author. Older replies to an account may not be available via this call due to these node limitations.

---

**Parameters**

- **limit** (*int*) – (optional) stream the latest *limit* replies. If unset (default), all available replies are streamed.
- **start\_author** (*str*) – (optional) start streaming the replies from this author. *start\_permalink=None* (default) starts with the latest available entry. If set, *start\_permalink* has to be set as well.

- **start\_permlink** (*str*) – (optional) start streaming the replies from this permliink. *start\_permlink=None* (default) starts with the latest available entry. If set, *start\_author* has to be set as well.
- **account** (*str*) – (optional) the account to get replies to (defaults to *default\_account*)

`comment_history_reverse` example:

```
from beem.account import Account
acc = Account("ned")
for reply in acc.reply_history(limit=10):
    print(reply)
```

**reward\_balances**

**saving\_balances**

**set\_withdraw\_vesting\_route** (*to*, *percentage=100*, *account=None*, *auto\_vest=False*, *\*\*kwargs*)

Set up a vesting withdraw route. When vesting shares are withdrawn, they will be routed to these accounts based on the specified weights.

**Parameters**

- **to** (*str*) – Recipient of the vesting withdrawal
- **percentage** (*float*) – The percent of the withdraw to go to the ‘to’ account.
- **account** (*str*) – (optional) the vesting account
- **auto\_vest** (*bool*) – Set to true if the ‘to’ account should receive the VESTS as VESTS, or false if it should receive them as STEEM. (defaults to `False`)

**setproxy** (*proxy=*”, *account=None*)

Set the witness and proposal system proxy of an account

**Parameters**

- **proxy** (*str or Account*) – The account to set the proxy to (Leave empty for removing the proxy)
- **account** (*str or Account*) – The account the proxy should be set for

**sp**

Returns the accounts Steem Power

**total\_balances**

**tp**

Returns the accounts Hive/Steem Power

**transfer** (*to*, *amount*, *asset*, *memo=*”, *account=None*, *\*\*kwargs*)

Transfer an asset to another account.

**Parameters**

- **to** (*str*) – Recipient
- **amount** (*float*) – Amount to transfer
- **asset** (*str*) – Asset to transfer
- **memo** (*str*) – (optional) Memo, may begin with # for encrypted messaging

- **account** (*str*) – (optional) the source account for the transfer if not default\_account

Transfer example:

```
from beem.account import Account
from beem import Hive
active_wif = "5xxxx"
stm = Hive(keys=[active_wif])
acc = Account("test", blockchain_instance=stm)
acc.transfer("test1", 1, "HIVE", "test")
```

**transfer\_from\_savings** (*amount, asset, memo, request\_id=None, to=None, account=None, \*\*kwargs*)

Withdraw SBD or STEEM from ‘savings’ account.

#### Parameters

- **amount** (*float*) – STEEM or SBD amount
- **asset** (*float*) – ‘STEEM’ or ‘SBD’
- **memo** (*str*) – (optional) Memo
- **request\_id** (*str*) – (optional) identifier for tracking or cancelling the withdrawal
- **to** (*str*) – (optional) the source account for the transfer if not default\_account
- **account** (*str*) – (optional) the source account for the transfer if not default\_account

**transfer\_to\_savings** (*amount, asset, memo, to=None, account=None, \*\*kwargs*)

Transfer SBD or STEEM into a ‘savings’ account.

#### Parameters

- **amount** (*float*) – STEEM or SBD amount
- **asset** (*float*) – ‘STEEM’ or ‘SBD’
- **memo** (*str*) – (optional) Memo
- **to** (*str*) – (optional) the source account for the transfer if not default\_account
- **account** (*str*) – (optional) the source account for the transfer if not default\_account

**transfer\_to\_vesting** (*amount, to=None, account=None, \*\*kwargs*)

Vest STEEM

#### Parameters

- **amount** (*float*) – Amount to transfer
- **to** (*str*) – Recipient (optional) if not set equal to account
- **account** (*str*) – (optional) the source account for the transfer if not default\_account

**type\_id** = 2

**unfollow** (*unfollow, account=None*)

Unfollow/Unmute another account’s blog

#### Parameters

- **unfollow** (*str*) – Unfollow/Unmute this account

- **account** (*str*) – (optional) the account to allow access to (defaults to `default_account`)

**update\_account\_jsonmetadata** (*metadata*, *account=None*, *\*\*kwargs*)

Update an account's profile in `json_metadata` using the posting key

#### Parameters

- **metadata** (*dict*) – The new metadata to use
- **account** (*str*) – (optional) the account to allow access to (defaults to `default_account`)

**update\_account\_keys** (*new\_password*, *account=None*, *\*\*kwargs*)

Updates all account keys

This method does **not** add any private keys to your wallet but merely changes the public keys.

#### Parameters

- **new\_password** (*str*) – is used to derive the owner, active, posting and memo key
- **account** (*str*) – (optional) the account to allow access to (defaults to `default_account`)

**update\_account\_metadata** (*metadata*, *account=None*, *\*\*kwargs*)

Update an account's profile in `json_metadata`

#### Parameters

- **metadata** (*dict*) – The new metadata to use
- **account** (*str*) – (optional) the account to allow access to (defaults to `default_account`)

**update\_account\_profile** (*profile*, *account=None*, *\*\*kwargs*)

Update an account's profile in `json_metadata`

#### Parameters

- **profile** (*dict*) – The new profile to use
- **account** (*str*) – (optional) the account to allow access to (defaults to `default_account`)

Sample profile structure:

```
{
  'name': 'Holger',
  'about': 'beem Developer',
  'location': 'Germany',
  'profile_image': 'https://c1.staticflickr.com/5/4715/38733717165_
↪7070227c89_n.jpg',
  'cover_image': 'https://farm1.staticflickr.com/894/26382750057_69f5c8e568.
↪jpg',
  'website': 'https://github.com/holgern/beem'
}
```

```
from beem.account import Account
account = Account("test")
profile = account.profile
profile["about"] = "test account"
account.update_account_profile(profile)
```

**update\_memo\_key** (*key*, *account=None*, *\*\*kwargs*)

Update an account's memo public key

This method does **not** add any private keys to your wallet but merely changes the memo public key.

#### Parameters

- **key** (*str*) – New memo public key
- **account** (*str*) – (optional) the account to allow access to (defaults to `default_account`)

**verify\_account\_authority** (*keys*, *account=None*)

Returns true if the signers have enough authority to authorize an account.

#### Parameters

- **keys** (*list*) – public key
- **account** (*str*) – When set, a different account is used for the request (Default is object account name)

**Return type** dictionary

```
>>> from beem.account import Account
>>> from beem import Hive
>>> from beem.nodelist import NodeList
>>> nodelist = NodeList()
>>> nodelist.update_nodes()
>>> stm = Hive(node=nodelist.get_hive_nodes())
>>> account = Account("steemit", blockchain_instance=stm)
>>> print(account.verify_account_authority([
↪ "STM7Q2rLBqzPzFeteQZewv9Lu3NLE69fZoLeL6YK59t7UmssCBNTU"])) ["valid"])
False
```

**virtual\_op\_count** (*until=None*)

Returns the number of individual account transactions

**Return type** list

**vp**

Returns the account voting power in the range of 0-100%

**withdraw\_vesting** (*amount*, *account=None*, *\*\*kwargs*)

Withdraw VESTS from the vesting account.

#### Parameters

- **amount** (*float*) – number of VESTS to withdraw over a period of 13 weeks
- **account** (*str*) – (optional) the source account for the transfer if not `default_account`

**class** beem.account.Accounts (*name\_list*, *batch\_limit=100*, *lazy=False*, *full=True*,  
*blockchain\_instance=None*, *\*\*kwargs*)

Bases: `beem.account.AccountsObject`

Obtain a list of accounts

#### Parameters

- **name\_list** (*list*) – list of accounts to fetch
- **batch\_limit** (*int*) – (optional) maximum number of accounts to fetch per call, defaults to 100

- **blockchain\_instance** (*Steem/Hive*) – Steem() or Hive() instance to use when accessing a RPCcreator = Account(creator, blockchain\_instance=self)

```
class beem.account.AccountsObject
```

```
    Bases: list
```

```
    printAsTable()
```

```
    print_summarize_table(tag_type='Follower', return_str=False, **kwargs)
```

## beem.amount

```
class beem.amount.Amount(amount, asset=None, fixed_point_arithmetic=False,
                           new_apbase_format=True, blockchain_instance=None, **kwargs)
```

```
    Bases: dict
```

This class deals with Amounts of any asset to simplify dealing with the tuple:

```
(amount, asset)
```

### Parameters

- **args** (*list*) – Allows to deal with different representations of an amount
- **amount** (*float*) – Let's create an instance with a specific amount
- **asset** (*str*) – Let's you create an instance with a specific asset (symbol)
- **fixed\_point\_arithmetic** (*boolean*) – when set to True, all operation are fixed point operations and the amount is always be rounded down to the precision
- **steem\_instance** (*Steem*) – Steem instance

**Returns** All data required to represent an Amount/Asset

**Return type** dict

**Raises** **ValueError** – if the data provided is not recognized

Way to obtain a proper instance:

- args can be a string, e.g.: “1 SBD”
- args can be a dictionary containing amount and asset\_id
- args can be a dictionary containing amount and asset
- args can be a list of a float and str (symbol)
- args can be a list of a float and a *beem.asset.Asset*
- amount and asset are defined manually

An instance is a dictionary and comes with the following keys:

- amount (float)
- symbol (str)
- asset (instance of *beem.asset.Asset*)

Instances of this class can be used in regular mathematical expressions (+-\*/%) such as:



```

from beem.amount import Amount
from beem.asset import Asset
a = Amount("1 STEEM")
b = Amount(1, "STEEM")
c = Amount("20", Asset("STEEM"))
a + b
a * 2
a += b
a /= 2.0

```

```

2.000 STEEM
2.000 STEEM

```

**amount**

Returns the amount as float

**amount\_decimal**

Returns the amount as decimal

**asset**

Returns the asset as instance of `steem.asset.Asset`

**copy()**

Copy the instance and make sure not to use a reference

**json()****symbol**

Returns the symbol of the asset

**tuple()**

`beem.amount.check_asset(other, self, stm)`

`beem.amount.quantize(amount, precision)`

**beem.asciichart**

```

class beem.asciichart.AsciiChart (height=None, width=None, offset=3, placeholder='{ :8.2f} ',
                                  charset='utf8')

```

Bases: `object`

Can be used to plot price and trade history

**Parameters**

- **height** (*int*) – Height of the plot
- **width** (*int*) – Width of the plot
- **offset** (*int*) – Offset between tick strings and y-axis (default is 3)
- **placeholder** (*str*) – Defines how the numbers on the y-axes are formatted (default is '{ :8.2f}')
- **charset** (*str*) – sets the charset for plotting, utf8 or ascii (default: utf8)

**adapt\_on\_series** (*series*)

Calculates the minimum, maximum and length from the given list

**Parameters** **series** (*list*) – time series to plot

```
from beem.asciichart import AsciiChart
chart = AsciiChart()
series = [1, 2, 3, 7, 2, -4, -2]
chart.adapt_on_series(series)
chart.new_chart()
chart.add_axis()
chart.add_curve(series)
print(str(chart))
```

**add\_axis()**

Adds a y-axis to the canvas

```
from beem.asciichart import AsciiChart
chart = AsciiChart()
series = [1, 2, 3, 7, 2, -4, -2]
chart.adapt_on_series(series)
chart.new_chart()
chart.add_axis()
chart.add_curve(series)
print(str(chart))
```

**add\_curve(*series*)**

Add a curve to the canvas

**Parameters** *series* (*list*) – List with float data points

```
from beem.asciichart import AsciiChart
chart = AsciiChart()
series = [1, 2, 3, 7, 2, -4, -2]
chart.adapt_on_series(series)
chart.new_chart()
chart.add_axis()
chart.add_curve(series)
print(str(chart))
```

**clear\_data()**

Clears all data

**new\_chart(*minimum=None, maximum=None, n=None*)**

Clears the canvas

```
from beem.asciichart import AsciiChart
chart = AsciiChart()
series = [1, 2, 3, 7, 2, -4, -2]
chart.adapt_on_series(series)
chart.new_chart()
chart.add_axis()
chart.add_curve(series)
print(str(chart))
```

**plot(*series, return\_str=False*)**

All in one function for plotting

```
from beem.asciichart import AsciiChart
chart = AsciiChart()
series = [1, 2, 3, 7, 2, -4, -2]
chart.plot(series)
```

**set\_parameter** (*height=None, offset=None, placeholder=None*)  
Can be used to change parameter

## beem.asset

**class** beem.asset.**Asset** (*asset, lazy=False, full=False, blockchain\_instance=None, \*\*kwargs*)  
Bases: *beem.blockchainobject.BlockchainObject*

Deals with Assets of the network.

### Parameters

- **Asset** (*str*) – Symbol name or object id of an asset
- **lazy** (*bool*) – Lazy loading
- **full** (*bool*) – Also obtain bitasset-data and dynamic asset dat
- **steem\_instance** (*Steem*) – Steem instance

**Returns** All data of an asset

---

**Note:** This class comes with its own caching function to reduce the load on the API server. Instances of this class can be refreshed with `Asset.refresh()`.

---

**asset**

**precision**

**refresh()**

Refresh the data from the API server

**symbol**

**type\_id** = 3

## beem.block

**class** beem.block.**Block** (*block, only\_ops=False, only\_virtual\_ops=False, full=True, lazy=False, blockchain\_instance=None, \*\*kwargs*)  
Bases: *beem.blockchainobject.BlockchainObject*

Read a single block from the chain

### Parameters

- **block** (*int*) – block number
- **steem\_instance** (*Steem*) – Steem instance
- **lazy** (*bool*) – Use lazy loading
- **only\_ops** (*bool*) – Includes only operations, when set to True (default: False)
- **only\_virtual\_ops** (*bool*) – Includes only virtual operations (default: False)

Instances of this class are dictionaries that come with additional methods (see below) that allow dealing with a block and its corresponding functions.

When `only_virtual_ops` is set to True, `only_ops` is always set to True.

In addition to the block data, the block number is stored as `self["id"]` or `self.identifier`.

```
>>> from beem.block import Block
>>> block = Block(1)
>>> print(block)
<Block 1>
```

**Note:** This class comes with its own caching function to reduce the load on the API server. Instances of this class can be refreshed with `Account.refresh()`.

```
block_num
```

Returns the block number

**json()**

## json\_operations

Returns all block operations as list, all dates are strings.

json\_transactions

Returns all transactions as list, all dates are strings.

operations

Returns all block operations as list

**ops\_statistics** (*add\_to\_ops\_stat=None*)

Returns a statistic with the occurrence of the different operation types

```
refresh()
```

Even though blocks never change, you freshly obtain its contents from an API with this method

```
time ()
```

Return a datetime instance for the timestamp of this block

transactions

Returns all transactions as list

```
class beem.block.BlockHeader(block, full=True, lazy=False, blockchain_instance=None,
                             **kwargs)
```

Bases: `beem.blockchainobject.BlockchainObject`

### Read a single block header from the chain

## Parameters

- **block** (*int*) – block number
- **steem\_instance** (*Steem*) – Steem instance
- **lazy** (*bool*) – Use lazy loading

In addition to the block data, the block number is stored as `self["id"]` or `self.identifier`.

```
>>> from beem.block import BlockHeader
>>> block = BlockHeader(1)
>>> print(block)
<BlockHeader 1>
```

block num

Returns the block number

**json()**

**refresh()**

Even though blocks never change, you freshly obtain its contents from an API with this method

**time()**

Return a datetime instance for the timestamp of this block

## beem.blockchain

```
class beem.blockchain.Blockchain (blockchain_instance=None,          mode='irreversible',
                                  max_block_wait_repetition=None,
                                  data_refresh_time_seconds=900, **kwargs)
```

Bases: object

This class allows to access the blockchain and read data from it

### Parameters

- **blockchain\_instance** (*Steem/Hive*) – Steem or Hive instance
- **mode** (*str*) – (default) Irreversible block (*irreversible*) or actual head block (*head*)
- **max\_block\_wait\_repetition** (*int*) – maximum wait repetition for next block where each repetition is *block\_interval* long (default is 3)

This class let's you deal with blockchain related data and methods. Read blockchain related data:

Read current block and blockchain info

```
print(chain.get_current_block())
print(chain.blockchain.info())
```

Monitor for new blocks. When *stop* is not set, monitoring will never stop.

```
blocks = []
current_num = chain.get_current_block_num()
for block in chain.blocks(start=current_num - 99, stop=current_num):
    blocks.append(block)
len(blocks)
```

```
100
```

or each operation individually:

```
ops = []
current_num = chain.get_current_block_num()
for operation in chain.ops(start=current_num - 99, stop=current_num):
    ops.append(operation)
```

**awaitTxConfirmation** (*transaction*, *limit=10*)

Returns the transaction as seen by the blockchain after being included into a block

### Parameters

- **transaction** (*dict*) – transaction to wait for
- **limit** (*int*) – (optional) number of blocks to wait for the transaction (default: 10)

**Note:** If you want instant confirmation, you need to instantiate class: *beem.blockchain.Blockchain* with *mode="head"*, otherwise, the call will wait until confirmed in an irreversible block.

---

**Note:** This method returns once the blockchain has included a transaction with the **same signature**. Even though the signature is not usually used to identify a transaction, it still cannot be forfeited and is derived from the transaction content and thus identifies a transaction uniquely.

---

**block\_time** (*block\_num*)

Returns a datetime of the block with the given block number.

**Parameters** **block\_num** (*int*) – Block number

**block\_timestamp** (*block\_num*)

Returns the timestamp of the block with the given block number as integer.

**Parameters** **block\_num** (*int*) – Block number

**blocks** (*start=None, stop=None, max\_batch\_size=None, threading=False, thread\_num=8, only\_ops=False, only\_virtual\_ops=False*)

Yields blocks starting from *start*.

**Parameters**

- **start** (*int*) – Starting block
- **stop** (*int*) – Stop at this block
- **max\_batch\_size** (*int*) – only for appbase nodes. When not None, batch calls of are used. Cannot be combined with threading
- **threading** (*bool*) – Enables threading. Cannot be combined with batch calls
- **thread\_num** (*int*) – Defines the number of threads, when *threading* is set.
- **only\_ops** (*bool*) – Only yield operations (default: False). Cannot be combined with *only\_virtual\_ops=True*.
- **only\_virtual\_ops** (*bool*) – Only yield virtual operations (default: False)

---

**Note:** If you want instant confirmation, you need to instantiate class:*beem.blockchain.Blockchain* with *mode="head"*, otherwise, the call will wait until confirmed in an irreversible block.

---

**find\_change\_recovery\_account\_requests** (*accounts*)

Find pending *change\_recovery\_account* requests for one or more specific accounts.

**Parameters** **accounts** (*str/list*) – account name or list of account names to find *change\_recovery\_account* requests for.

**Returns** list of *change\_recovery\_account* requests for the given account(s).

**Return type** list

```
>>> from beem.blockchain import Blockchain
>>> from beem import Steem
>>> stm = Steem("https://api.steemit.com")
>>> blockchain = Blockchain(blockchain_instance=stm)
>>> ret = blockchain.find_change_recovery_account_requests('bott')
```

**find\_rc\_accounts** (*name*)

Returns the RC parameters of one or more accounts.

**Parameters** **name** (*str*) – account name to search rc params for (can also be a list of accounts)

**Returns** RC params

**Return type** list

```
>>> from beem.blockchain import Blockchain
>>> from beem import Steem
>>> stm = Steem("https://api.steemit.com")
>>> blockchain = Blockchain(blockchain_instance=stm)
>>> ret = blockchain.find_rc_accounts(["test"])
>>> len(ret) == 1
True
```

**get\_account\_count()**

Returns the number of accounts

**get\_account\_reputations** (*start=""*, *stop=""*, *steps=1000.0*, *limit=-1*, *\*\*kwargs*)

Yields account reputation between start and stop.

**Parameters**

- **start** (*str*) – Start at this account name
- **stop** (*str*) – Stop at this account name
- **steps** (*int*) – Obtain *steps* ret with a single call from RPC

**get\_all\_accounts** (*start=""*, *stop=""*, *steps=1000.0*, *limit=-1*, *\*\*kwargs*)

Yields account names between start and stop.

**Parameters**

- **start** (*str*) – Start at this account name
- **stop** (*str*) – Stop at this account name
- **steps** (*int*) – Obtain *steps* ret with a single call from RPC

**get\_current\_block** (*only\_ops=False*, *only\_virtual\_ops=False*)

This call returns the current block

**Parameters**

- **only\_ops** (*bool*) – Returns block with operations only, when set to True (default: False)
- **only\_virtual\_ops** (*bool*) – Includes only virtual operations (default: False)

---

**Note:** The block number returned depends on the *mode* used when instantiating from this class.

---

**get\_current\_block\_num()**

This call returns the current block number

---

**Note:** The block number returned depends on the *mode* used when instantiating from this class.

---

**get\_estimated\_block\_num** (*date*, *estimateForwards=False*, *accurate=True*)

This call estimates the block number based on a given date

**Parameters** **date** (*datetime*) – block time for which a block number is estimated

---

**Note:** The block number returned depends on the *mode* used when instantiating from this class.

---

```
>>> from beem.blockchain import Blockchain
>>> from datetime import datetime
>>> blockchain = Blockchain()
>>> block_num = blockchain.get_estimated_block_num(datetime(2019, 6, 18, 5, 8,
↳ 27))
>>> block_num == 33898184
True
```

**get\_similar\_account\_names** (*name*, *limit=5*)

Returns limit similar accounts with name as list

**Parameters**

- **name** (*str*) – account name to search similars for
- **limit** (*int*) – limits the number of accounts, which will be returned

**Returns** Similar account names as list

**Return type** list

```
>>> from beem.blockchain import Blockchain
>>> from beem import Steem
>>> stm = Steem("https://api.steemit.com")
>>> blockchain = Blockchain(blockchain_instance=stm)
>>> ret = blockchain.get_similar_account_names("test", limit=5)
>>> len(ret) == 5
True
```

**get\_transaction** (*transaction\_id*)

Returns a transaction from the blockchain

**Parameters** **transaction\_id** (*str*) – transaction\_id

**get\_transaction\_hex** (*transaction*)

Returns a hexdump of the serialized binary form of a transaction.

**Parameters** **transaction** (*dict*) – transaction

**static hash\_op** (*event*)

This method generates a hash of blockchain operation.

**is\_irreversible\_mode** ()

**is\_transaction\_existing** (*transaction\_id*)

Returns true, if the transaction\_id is valid

**list\_change\_recovery\_account\_requests** (*start=*", *limit=1000*, *order='by\_account'*)

List pending *change\_recovery\_account* requests.

**Parameters**

- **start** (*str/list*) – Start the listing from this entry. Leave empty to start from the beginning. If *order* is set to *by\_account*, *start* has to be an account name. If *order* is set to *by\_effective\_date*, *start* has to be a list of [effective\_on, account\_to\_recover], e.g. *start*=[*'2018-12-18T01:46:24'*, *'bott'*].
- **limit** (*int*) – maximum number of results to return (default and maximum: 1000).
- **order** (*str*) – valid values are “by\_account” (default) or “by\_effective\_date”.

**Returns** list of *change\_recovery\_account* requests.

**Return type** list



```

>>> from beem.blockchain import Blockchain
>>> from beem import Steem
>>> stm = Steem("https://api.steemit.com")
>>> blockchain = Blockchain(blockchain_instance=stm)
>>> ret = blockchain.list_change_recovery_account_requests(limit=1)

```

**ops** (*start=None, stop=None, only\_virtual\_ops=False, \*\*kwargs*)

Blockchain.ops() is deprecated. Please use Blockchain.stream() instead.

**ops\_statistics** (*start, stop=None, add\_to\_ops\_stat=None, with\_virtual\_ops=True, verbose=False*)

Generates statistics for all operations (including virtual operations) starting from *start*.

#### Parameters

- **start** (*int*) – Starting block
- **stop** (*int*) – Stop at this block, if set to None, the *current\_block\_num* is taken
- **add\_to\_ops\_stat** (*dict*) – if set, the result is added to *add\_to\_ops\_stat*
- **verbose** (*bool*) – if True, the current block number and timestamp is printed

This call returns a dict with all possible operations and their occurrence.

#### participation\_rate

Returns the witness participation rate in a range from 0 to 1

**stream** (*opNames=[], raw\_ops=False, \*args, \*\*kwargs*)

Yield specific operations (e.g. comments) only

#### Parameters

- **opNames** (*array*) – List of operations to filter for
- **raw\_ops** (*bool*) – When set to True, it returns the unmodified operations (default: False)
- **start** (*int*) – Start at this block
- **stop** (*int*) – Stop at this block
- **max\_batch\_size** (*int*) – only for appbase nodes. When not None, batch calls of are used. Cannot be combined with *threading*
- **threading** (*bool*) – Enables threading. Cannot be combined with batch calls
- **thread\_num** (*int*) – Defines the number of threads, when *threading* is set.
- **only\_ops** (*bool*) – Only yield operations (default: False) Cannot be combined with *only\_virtual\_ops=True*
- **only\_virtual\_ops** (*bool*) – Only yield virtual operations (default: False)

The dict output is formatted such that *type* carries the operation type. Timestamp and *block\_num* are taken from the block the operation was stored in and the other keys depend on the actual operation.

---

**Note:** If you want instant confirmation, you need to instantiate class:*beem.blockchain.Blockchain* with *mode="head"*, otherwise, the call will wait until confirmed in an irreversible block.

---

output when *raw\_ops=False* is set:

```
{
  'type': 'transfer',
  'from': 'johnngreenfield',
  'to': 'thundercurator',
  'amount': '0.080 SBD',
  'memo': 'https://steemit.com/lofi/@johnngreenfield/lofi-joji-yeah-right',
  '_id': '6d4c5f2d4d8ef1918acaee4a8dce34f9da384786',
  'timestamp': datetime.datetime(2018, 5, 9, 11, 23, 6, tzinfo=<UTC>),
  'block_num': 22277588, 'trx_num': 35, 'trx_id':
  ↪ 'cf11b2ac8493c71063ec121b2e8517ab1e0e6bea'
}
```

output when `raw_ops=True` is set:

```
{
  'block_num': 22277588,
  'op':
    [
      'transfer',
      {
        'from': 'johnngreenfield', 'to': 'thundercurator',
        'amount': '0.080 SBD',
        'memo': 'https://steemit.com/lofi/@johnngreenfield/lofi-
  ↪ joji-yeah-right'
      }
    ],
  'timestamp': datetime.datetime(2018, 5, 9, 11, 23, 6, tzinfo=<UTC>)
}
```

**wait\_for\_and\_get\_block** (*block\_number*, *blocks\_waiting\_for=None*, *only\_ops=False*,  
*only\_virtual\_ops=False*, *block\_number\_check\_cnt=-1*,  
*last\_current\_block\_num=None*)

Get the desired block from the chain, if the current head block is smaller (for both head and irreversible) then we wait, but a maximum of `blocks_waiting_for * max_block_wait_repetition` time before failure.

#### Parameters

- **block\_number** (*int*) – desired block number
- **blocks\_waiting\_for** (*int*) – difference between `block_number` and current head and defines how many blocks we are willing to wait, positive int (default: None)
- **only\_ops** (*bool*) – Returns blocks with operations only, when set to True (default: False)
- **only\_virtual\_ops** (*bool*) – Includes only virtual operations (default: False)
- **block\_number\_check\_cnt** (*int*) – limit the number of retries when greater than -1
- **last\_current\_block\_num** (*int*) – can be used to reduce the number of `get_current_block_num()` api calls

**class** `beem.blockchain.Pool` (*thread\_count*, *batch\_mode=True*, *exception\_handler=<function default\_handler>*)

Bases: `object`

Pool of threads consuming tasks from a queue

**abort** (*block=False*)

Tell each worker that its done working

```

alive()
    Returns True if any threads are currently running

done()
    Returns True if not tasks are left to be completed

enqueue(func, *args, **kargs)
    Add a task to the queue

idle()
    Returns True if all threads are waiting for work

join()
    Wait for completion of all the tasks in the queue

results(sleep_time=0)
    Get the set of results that have been processed, repeatedly call until done

run(block=False)
    Start the threads, or restart them if you've aborted

class beem.blockchain.Worker(name, queue, results, abort, idle, exception_handler)
    Bases: threading.Thread

    Thread executing tasks from a given tasks queue

    run()
        Thread work loop calling the function with the params

beem.blockchain.default_handler(name, exception, *args, **kwargs)

```

### beem.blockchainobject

```

class beem.blockchainobject.BlockchainObject(data,          klass=None,          space_id=1,
                                              object_id=None,        lazy=False,
                                              use_cache=True,         id_item=None,
                                              blockchain_instance=None, *args,
                                              **kwargs)

    Bases: dict

    cache()

    static clear_cache()

    clear_cache_from_expired_items()

    get_cache_auto_clean()

    get_cache_expiration()

    getcache(id)

    iscached(id)

    items() → a set-like object providing a view on D's items

    json()

    set_cache_auto_clean(auto_clean)

    set_cache_expiration(expiration)

    space_id = 1

    test_valid_objectid(i)

```

```
testid(id)
type_id = None
type_ids = []
class beem.blockchainobject.ObjectCache(initial_data={},          default_expiration=10,
                                         auto_clean=True)
    Bases: dict
    clear_expired_items()
    get(key, default)
        Return the value for key if key is in the dictionary, else default.
```

### beem.blockchaininstance

```
class beem.blockchaininstance.BlockChainInstance(node="", rpcuser=None, rpc-
                                                  password=None, debug=False,
                                                  data_refresh_time_seconds=900,
                                                  **kwargs)
```

Bases: object

Connect to a Graphene network.

#### Parameters

- **node** (*str*) – Node to connect to (*optional*)
- **rpcuser** (*str*) – RPC user (*optional*)
- **rpcpassword** (*str*) – RPC password (*optional*)
- **nobroadcast** (*bool*) – Do **not** broadcast a transaction! (*optional*)
- **unsigned** (*bool*) – Do **not** sign a transaction! (*optional*)
- **debug** (*bool*) – Enable Debugging (*optional*)
- **keys** (*array, dict, string*) – Predefine the wif keys to shortcut the wallet database (*optional*)
- **wif** (*array, dict, string*) – Predefine the wif keys to shortcut the wallet database (*optional*)
- **offline** (*bool*) – Boolean to prevent connecting to network (defaults to `False`) (*optional*)
- **expiration** (*int*) – Delay in seconds until transactions are supposed to expire (*optional*) (default is 30)
- **blocking** (*str*) – Wait for broadcasted transactions to be included in a block and return full transaction (can be “head” or “irreversible”)
- **bundle** (*bool*) – Do not broadcast transactions right away, but allow to bundle operations. It is not possible to send out more than one vote operation and more than one comment operation in a single broadcast (*optional*)
- **appbase** (*bool*) – Use the new appbase rpc protocol on nodes with version 0.19.4 or higher. The settings has no effect on nodes with version of 0.19.3 or lower.
- **num\_retries** (*int*) – Set the maximum number of reconnects to the nodes before NumRetriesReached is raised. Disabled for -1. (default is -1)

- **num\_retries\_call** (*int*) – Repeat num\_retries\_call times a rpc call on node error (default is 5)
- **timeout** (*int*) – Timeout setting for https nodes (default is 60)
- **use\_sc2** (*bool*) – When True, a steemconnect object is created. Can be used for broadcast posting op or creating hot\_links (default is False)
- **steemconnect** (*SteemConnect*) – A SteemConnect object can be set manually, set use\_sc2 to True
- **custom\_chains** (*dict*) – custom chain which should be added to the known chains

Three wallet operation modes are possible:

- **Wallet Database:** Here, the steemlibs load the keys from the locally stored wallet SQLite database (see `storage.py`). To use this mode, simply call `Steem()` without the `keys` parameter
- **Providing Keys:** Here, you can provide the keys for your accounts manually. All you need to do is add the wif keys for the accounts you want to use as a simple array using the `keys` parameter to `Steem()`.
- **Force keys:** This more is for advanced users and requires that you know what you are doing. Here, the `keys` parameter is a dictionary that overwrite the `active`, `owner`, `posting` or `memo` keys for any account. This mode is only used for *foreign* signatures!

If no node is provided, it will connect to default nodes of <http://geo.steem.pl>. Default settings can be changed with:

```
steem = Steem(<host>)
```

where <host> starts with `https://`, `ws://` or `wss://`.

The purpose of this class it to simplify interaction with Steem.

The idea is to have a class that allows to do this:

```
>>> from beem import Steem
>>> steem = Steem()
>>> print(steem.get_blockchain_version())
```

This class also deals with edits, votes and reading content.

Example for adding a custom chain:

```
from beem import Steem
stm = Steem(node=["https://mytstnet.com"], custom_chains={"MYTESTNET":
    {'chain_assets': [{'asset': 'SBD', 'id': 0, 'precision': 3, 'symbol': 'SBD'},
                      {'asset': 'STEEM', 'id': 1, 'precision': 3, 'symbol': 'STEEM'}
    ],
    {'asset': 'VESTS', 'id': 2, 'precision': 6, 'symbol': 'VESTS'}
    ],
    'chain_id': '79276aea5d4877d9a25892eaaa01b0adf019d3e5cb12a97478df3298ccdd01674',
    'min_version': '0.0.0',
    'prefix': 'MTN'}
)
```

#### **backed\_token\_symbol**

get the current chains symbol for SBD (e.g. “TBD” on testnet)

#### **broadcast** (*tx=None, trx\_id=True*)

Broadcast a transaction to the Hive/Steem network

**Parameters**

- **tx** (*tx*) – Signed transaction to broadcast
- **trx\_id** (*bool*) – when True, the `trx_id` will be included into the return dict.

**chain\_params**

**claim\_account** (*creator, fee=None, \*\*kwargs*)

Claim account for claimed account creation.

When fee is 0 STEEM/HIVE a subsidized account is claimed and can be created later with `create_claimed_account`. The number of subsidized account is limited.

**Parameters**

- **creator** (*str*) – which account should pay the registration fee (RC or STEEM/HIVE) (defaults to `default_account`)
- **fee** (*str*) – when set to 0 STEEM (default), claim account is paid by RC

**clear** ()

**clear\_data** ()

Clears all stored blockchain parameters

**comment\_options** (*options, identifier, beneficiaries=[], account=None, \*\*kwargs*)

Set the comment options

**Parameters**

- **options** (*dict*) – The options to define.
- **identifier** (*str*) – Post identifier
- **beneficiaries** (*list*) – (optional) list of beneficiaries
- **account** (*str*) – (optional) the account to allow access to (defaults to `default_account`)

For the options, you have these defaults::

```
{
    "author": "",
    "permlink": "",
    "max_accepted_payout": "1000000.000 SBD",
    "percent_steem_dollars": 10000,
    "allow_votes": True,
    "allow_curation_rewards": True,
}
```

**connect** (*node=", rpcuser=", rpcpassword=", \*\*kwargs*)

Connect to Steem network (internal use only)

**create\_account** (*account\_name, creator=None, owner\_key=None, active\_key=None, memo\_key=None, posting\_key=None, password=None, additional\_owner\_keys=[], additional\_active\_keys=[], additional\_posting\_keys=[], additional\_owner\_accounts=[], additional\_active\_accounts=[], additional\_posting\_accounts=[], storekeys=True, store\_owner\_key=False, json\_meta=None, \*\*kwargs*)

Create new account on Hive/Steem

The brainkey/password can be used to recover all generated keys (see [beemgraphenebase.account](#) for more details).

By default, this call will use `default_account` to register a new name `account_name` with all keys being derived from a new brain key that will be returned. The corresponding keys will automatically be installed in the wallet.

**Warning:** Don't call this method unless you know what you are doing! Be sure to understand what this method does and where to find the private keys for your account.

**Note:** Please note that this imports private keys (if password is present) into the wallet by default when `nobroadcast` is set to `False`. However, it **does not import the owner key** for security reasons by default. If you set `store_owner_key` to `True`, the owner key is stored. Do NOT expect to be able to recover it from the wallet if you lose your password!

**Note:** Account creations cost a fee that is defined by the network. If you create an account, you will need to pay for that fee!

#### Parameters

- **account\_name** (*str*) – (required) new account name
- **json\_meta** (*str*) – Optional meta data for the account
- **owner\_key** (*str*) – Main owner key
- **active\_key** (*str*) – Main active key
- **posting\_key** (*str*) – Main posting key
- **memo\_key** (*str*) – Main memo\_key
- **password** (*str*) – Alternatively to providing keys, one can provide a password from which the keys will be derived
- **additional\_owner\_keys** (*array*) – Additional owner public keys
- **additional\_active\_keys** (*array*) – Additional active public keys
- **additional\_posting\_keys** (*array*) – Additional posting public keys
- **additional\_owner\_accounts** (*array*) – Additional owner account names
- **additional\_active\_accounts** (*array*) – Additional active account names
- **storekeys** (*bool*) – Store new keys in the wallet (default: `True`)
- **creator** (*str*) – which account should pay the registration fee (defaults to `default_account`)

Raises **`AccountExistsException`** – if the account already exists on the blockchain

```
create_claimed_account (account_name, creator=None, owner_key=None, active_key=None,
                        memo_key=None, posting_key=None, password=None,
                        additional_owner_keys=[], additional_active_keys=[],
                        additional_posting_keys=[], additional_owner_accounts=[],
                        additional_active_accounts=[], additional_posting_accounts=[],
                        storekeys=True, store_owner_key=False, json_meta=None,
                        combine_with_claim_account=False, fee=None, **kwargs)
```

Create new claimed account on Steem

The brainkey/password can be used to recover all generated keys (see `beemgraphenebase.account` for more details).

By default, this call will use `default_account` to register a new name `account_name` with all keys being derived from a new brain key that will be returned. The corresponding keys will automatically be installed in the wallet.

**Warning:** Don't call this method unless you know what you are doing! Be sure to understand what this method does and where to find the private keys for your account.

---

**Note:** Please note that this imports private keys (if password is present) into the wallet by default when `nobroadcast` is set to `False`. However, it **does not import the owner key** for security reasons by default. If you set `store_owner_key` to `True`, the owner key is stored. Do NOT expect to be able to recover it from the wallet if you lose your password!

---

---

**Note:** Account creations cost a fee that is defined by the network. If you create an account, you will need to pay for that fee!

---

#### Parameters

- **account\_name** (*str*) – (**required**) new account name
- **json\_meta** (*str*) – Optional meta data for the account
- **owner\_key** (*str*) – Main owner key
- **active\_key** (*str*) – Main active key
- **posting\_key** (*str*) – Main posting key
- **memo\_key** (*str*) – Main memo\_key
- **password** (*str*) – Alternatively to providing keys, one can provide a password from which the keys will be derived
- **additional\_owner\_keys** (*array*) – Additional owner public keys
- **additional\_active\_keys** (*array*) – Additional active public keys
- **additional\_posting\_keys** (*array*) – Additional posting public keys
- **additional\_owner\_accounts** (*array*) – Additional owner account names
- **additional\_active\_accounts** (*array*) – Additional active account names
- **storekeys** (*bool*) – Store new keys in the wallet (default: `True`)
- **combine\_with\_claim\_account** (*bool*) – When set to `True`, a `claim_account` operation is additionally broadcasted
- **fee** (*str*) – When `combine_with_claim_account` is set to `True`, this parameter is used for the `claim_account` operation
- **creator** (*str*) – which account should pay the registration fee (defaults to `default_account`)

Raises `AccountExistsException` – if the account already exists on the blockchain



**custom\_json** (*id*, *json\_data*, *required\_auths*=[], *required\_posting\_auths*=[], *\*\*kwargs*)

Create a custom json operation

#### Parameters

- **id** (*str*) – identifier for the custom json (max length 32 bytes)
- **json\_data** (*json*) – the json data to put into the custom\_json operation
- **required\_auths** (*list*) – (optional) required auths
- **required\_posting\_auths** (*list*) – (optional) posting auths

---

**Note:** While required\_auths and required\_posting\_auths are both optional, one of the two are needed in order to send the custom json.

---

```
steem.custom_json("id", "json_data",
required_posting_auths=['account'])
```

**finalizeOp** (*ops*, *account*, *permission*, *\*\*kwargs*)

This method obtains the required private keys if present in the wallet, finalizes the transaction, signs it and broadcasts it

#### Parameters

- **ops** (*list*, *GrapheneObject*) – The operation (or list of operations) to broadcast
- **account** (*Account*) – The account that authorizes the operation
- **permission** (*string*) – The required permission for signing (active, owner, posting)
- **append\_to** (*TransactionBuilder*) – This allows to provide an instance of TransactionBuilder (see *BlockChainInstance.new\_tx()*) to specify where to put a specific operation.

---

**Note:** append\_to is exposed to every method used in the BlockChainInstance class

---

---

**Note:** If ops is a list of operation, they all need to be signable by the same key! Thus, you cannot combine ops that require active permission with ops that require posting permission. Neither can you use different accounts for different operations!

---

---

**Note:** This uses *BlockChainInstance.txbuffer()* as instance of *beem.transactionbuilder.TransactionBuilder*. You may want to use your own txbuffer

---

---

**Note:** when doing sign + broadcast, the *trx\_id* is added to the returned dict

---

**get\_api\_methods** ()

Returns all supported api methods

**get\_apis** ()

Returns all enabled apis

**get\_block\_interval** (*use\_stored\_data=True*)

Returns the block interval in seconds

**get\_blockchain\_name** (*use\_stored\_data=True*)

Returns the blockchain version

**get\_blockchain\_version** (*use\_stored\_data=True*)

Returns the blockchain version

**get\_chain\_properties** (*use\_stored\_data=True*)

Return witness elected chain properties

Properties::

```
{
  'account_creation_fee': '30.000 STEEM',
  'maximum_block_size': 65536,
  'sbd_interest_rate': 250
}
```

**get\_config** (*use\_stored\_data=True*)

Returns internal chain configuration.

**Parameters** *use\_stored\_data* (*bool*) – If True, the cached value is returned

**get\_current\_median\_history** (*use\_stored\_data=True*)

Returns the current median price

**Parameters** *use\_stored\_data* (*bool*) – if True, stored data will be returned. If stored data are empty or old, *refresh\_data()* is used.

**get\_default\_nodes** ()

Returns the default nodes

**get\_dust\_threshold** (*use\_stored\_data=True*)

Returns the vote dust threshold

**get\_dynamic\_global\_properties** (*use\_stored\_data=True*)

This call returns the *dynamic global properties*

**Parameters** *use\_stored\_data* (*bool*) – if True, stored data will be returned. If stored data are empty or old, *refresh\_data()* is used.

**get\_feed\_history** (*use\_stored\_data=True*)

Returns the feed\_history

**Parameters** *use\_stored\_data* (*bool*) – if True, stored data will be returned. If stored data are empty or old, *refresh\_data()* is used.

**get\_hardfork\_properties** (*use\_stored\_data=True*)

Returns Hardfork and live\_time of the hardfork

**Parameters** *use\_stored\_data* (*bool*) – if True, stored data will be returned. If stored data are empty or old, *refresh\_data()* is used.

**get\_median\_price** (*use\_stored\_data=True*)

Returns the current median history price as Price

**get\_network** (*use\_stored\_data=True, config=None*)

Identify the network

**Parameters** *use\_stored\_data* (*bool*) – if True, stored data will be returned. If stored data are empty or old, *refresh\_data()* is used.

**Returns** Network parameters

**Return type** dictionary

**get\_rc\_cost** (*resource\_count*)

Returns the RC costs based on the *resource\_count*

**get\_replace\_hive\_by\_steem** ()

**get\_reserve\_ratio** ()

This call returns the *reserve ratio*

**get\_resource\_params** ()

Returns the resource parameter

**get\_resource\_pool** ()

Returns the resource pool

**get\_reward\_funds** (*use\_stored\_data=True*)

Get details for a reward fund.

**Parameters** *use\_stored\_data* (*bool*) – if True, stored data will be returned. If stored data are empty or old, *refresh\_data()* is used.

**get\_token\_per\_mvest** (*time\_stamp=None*, *use\_stored\_data=True*)

Returns the MVEST to TOKEN ratio

**Parameters** *time\_stamp* (*int*) – (optional) if set, return an estimated TOKEN per MVEST ratio for the given time stamp. If unset the current ratio is returned (default). (can also be a datetime object)

**get\_witness\_schedule** (*use\_stored\_data=True*)

Return witness elected chain properties

**hardfork**

**info** (*use\_stored\_data=True*)

Returns the global properties

**is\_connected** ()

Returns if rpc is connected

**is\_hive**

**is\_steem**

**move\_current\_node\_to\_front** ()

Returns the default node list, until the first entry is equal to the current working node url

**newWallet** (*pwd*)

Create a new wallet. This method is basically only calls *beem.wallet.Wallet.create()*.

**Parameters** *pwd* (*str*) – Password to use for the new wallet

**Raises** *WalletExists* – if there is already a wallet created

**new\_tx** (*\*args*, *\*\*kwargs*)

Let's obtain a new txbuffer

**Returns** id of the new txbuffer

**Return type** int

**post** (*title*, *body*, *author=None*, *permalink=None*, *reply\_identifier=None*, *json\_metadata=None*, *comment\_options=None*, *community=None*, *app=None*, *tags=None*, *beneficiaries=None*, *self\_vote=False*, *parse\_body=False*, *\*\*kwargs*)

Create a new post. If this post is intended as a reply/comment, *reply\_identifier* needs to be set with the identifier of the parent post/comment (eg. *@author/permlink*). Optionally you can also set *json\_metadata*, *comment\_options* and upvote the newly created post as an author. Setting category, tags or community will override the values provided in *json\_metadata* and/or *comment\_options* where appropriate.

#### Parameters

- **title** (*str*) – Title of the post
- **body** (*str*) – Body of the post/comment
- **author** (*str*) – Account are you posting from
- **permalink** (*str*) – Manually set the permalink (defaults to None). If left empty, it will be derived from title automatically.
- **reply\_identifier** (*str*) – Identifier of the parent post/comment (only if this post is a reply/comment).
- **json\_metadata** (*str*, *dict*) – JSON meta object that can be attached to the post.
- **comment\_options** (*dict*) – JSON options object that can be attached to the post.

Example:

```
comment_options = {
    'max_accepted_payout': '1000000.000 SBD',
    'percent_steem_dollars': 10000,
    'allow_votes': True,
    'allow_curation_rewards': True,
    'extensions': [[0, {
        'beneficiaries': [
            {'account': 'account1', 'weight': 5000},
            {'account': 'account2', 'weight': 5000},
        ]
    }]]
}
```

#### Parameters

- **community** (*str*) – (Optional) Name of the community we are posting into. This will also override the community specified in *json\_metadata* and the category
- **app** (*str*) – (Optional) Name of the app which are used for posting when not set, beem/<version> is used
- **tags** (*str*, *list*) – (Optional) A list of tags to go with the post. This will also override the tags specified in *json\_metadata*. The first tag will be used as a ‘category’ when community is not specified. If provided as a string, it should be space separated.
- **beneficiaries** (*list*) – (Optional) A list of beneficiaries for posting reward distribution. This argument overrides beneficiaries as specified in *comment\_options*.

For example, if we would like to split rewards between account1 and account2:

```
beneficiaries = [
    {'account': 'account1', 'weight': 5000},
```

(continues on next page)

(continued from previous page)

```
{'account': 'account2', 'weight': 5000}
]
```

### Parameters

- **self\_vote** (*bool*) – (Optional) Upvote the post as author, right after posting.
- **parse\_body** (*bool*) – (Optional) When set to True, all mentioned users, used links and images are put into users, links and images array inside json\_metadata. This will override provided links, images and users inside json\_metadata. Hashtags will added to tags until its length is below five entries.

### prefix

**refresh\_data** (*chain\_property*, *force\_refresh=False*, *data\_refresh\_time\_seconds=None*)

Read and stores steem blockchain parameters If the last data refresh is older than data\_refresh\_time\_seconds, data will be refreshed

### Parameters

- **force\_refresh** (*bool*) – if True, a refresh of the data is enforced
- **data\_refresh\_time\_seconds** (*float*) – set a new minimal refresh time in seconds

**rshares\_to\_token\_backed\_dollar** (*rshares*, *not\_broadcasted\_vote=False*, *use\_stored\_data=True*)

Calculates the current HBD value of a vote

**set\_default\_account** (*account*)

Set the default account to be used

**set\_default\_nodes** (*nodes*)

Set the default nodes to be used

**set\_default\_vote\_weight** (*vote\_weight*)

Set the default vote weight to be used

**set\_password\_storage** (*password\_storage*)

Set the password storage mode.

When set to “no”, the password has to be provided each time. When set to “environment” the password is taken from the UNLOCK variable

When set to “keyring” the password is taken from the python keyring module. A wallet password can be stored with python -m keyring set beem wallet password

**Parameters password\_storage** (*str*) – can be “no”, “keyring” or “environment”

**sign** (*tx=None*, *wifs=[]*, *reconstruct\_tx=True*)

Sign a provided transaction with the provided key(s)

### Parameters

- **tx** (*dict*) – The transaction to be signed and returned
- **wifs** (*string*) – One or many wif keys to use for signing a transaction. If not present, the keys will be loaded from the wallet as defined in “missing\_signatures” key of the transactions.
- **reconstruct\_tx** (*bool*) – when set to False and tx is already constructed, it will not be reconstructed and already added signatures remain

---

**Note:** The `trx_id` is added to the returned dict

---

**switch\_blockchain** (*blockchain*, *update\_nodes=False*)

Switches the connected blockchain. Can be either hive or steem.

**Parameters**

- **blockchain** (*str*) – can be “hive” or “steem”
- **update\_nodes** (*bool*) – When true, the nodes are updated, using `NodeList.update_nodes()`

**token\_power\_to\_token\_backed\_dollar** (*token\_power*, *post\_rshares=0*, *voting\_power=10000*, *vote\_pct=10000*, *not\_broadcasted\_vote=True*, *use\_stored\_data=True*)

Obtain the resulting Token backed dollar vote value from Token power

**Parameters**

- **hive\_power** (*number*) – Token Power
- **post\_rshares** (*int*) – rshares of post which is voted
- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)
- **not\_broadcasted\_vote** (*bool*) – not\_broadcasted or already broadcasted vote (True = not\_broadcasted vote).

Only impactful for very big votes. Slight modification to the value calculation, as the not\_broadcasted vote rshares decreases the reward pool.

**token\_power\_to\_vests** (*token\_power*, *timestamp=None*, *use\_stored\_data=True*)

Converts TokenPower to vests

**Parameters**

- **token\_power** (*float*) – Token power to convert
- **timestamp** (*datetime*) – (Optional) Can be used to calculate the conversion rate from the past

**token\_symbol**

get the current chains symbol for STEEM (e.g. “TESTS” on testnet)

**tx()**

Returns the default transaction buffer

**txbuffer**

Returns the currently active tx buffer

**unlock** (*\*args*, *\*\*kwargs*)

Unlock the internal wallet

**update\_account** (*account*, *owner\_key=None*, *active\_key=None*, *memo\_key=None*, *posting\_key=None*, *password=None*, *additional\_owner\_keys=[]*, *additional\_active\_keys=[]*, *additional\_posting\_keys=[]*, *additional\_owner\_accounts=[]*, *additional\_active\_accounts=[]*, *additional\_posting\_accounts=None*, *storekeys=True*, *store\_owner\_key=False*, *json\_meta=None*, *\*\*kwargs*)

Update account

The brainkey/password can be used to recover all generated keys (see `beemgraphenebase.account` for more details).

The corresponding keys will automatically be installed in the wallet.

**Warning:** Don't call this method unless you know what you are doing! Be sure to understand what this method does and where to find the private keys for your account.

**Note:** Please note that this imports private keys (if password is present) into the wallet by default when `nobroadcast` is set to `False`. However, it **does not import the owner key** for security reasons by default. If you set `store_owner_key` to `True`, the owner key is stored. Do NOT expect to be able to recover it from the wallet if you lose your password!

#### Parameters

- **account\_name** (*str*) – (required) account name
- **json\_meta** (*str*) – Optional updated meta data for the account
- **owner\_key** (*str*) – Main owner (public) key
- **active\_key** (*str*) – Main active (public) key
- **posting\_key** (*str*) – Main posting (public) key
- **memo\_key** (*str*) – Main memo (public) key
- **password** (*str*) – Alternatively to providing keys, one can provide a password from which the keys will be derived
- **additional\_owner\_keys** (*array*) – Additional owner public keys
- **additional\_active\_keys** (*array*) – Additional active public keys
- **additional\_posting\_keys** (*array*) – Additional posting public keys
- **additional\_owner\_accounts** (*array*) – Additional owner account names
- **additional\_active\_accounts** (*array*) – Additional active account names
- **storekeys** (*bool*) – Store new keys in the wallet (default: `True`)

Raises `AccountExistsException` – if the account already exists on the blockchain

**update\_proposal\_votes** (*proposal\_ids*, *approve*, *account=None*, *\*\*kwargs*)

Update proposal votes

#### Parameters

- **proposal\_ids** (*list*) – list of proposal ids
- **approve** (*bool*) – True/False
- **account** (*str*) – (optional) witness account name

**vest\_token\_symbol**

get the current chains symbol for VESTS

**vests\_to\_rshares** (*vests*, *voting\_power=10000*, *vote\_pct=10000*, *subtract\_dust\_threshold=True*, *use\_stored\_data=True*)

Obtain the r-shares from vests

**Parameters**

- **vests** (*number*) – vesting shares
- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)

**vests\_to\_token\_power** (*vests, timestamp=None, use\_stored\_data=True*)  
Converts vests to TokenPower

**Parameters**

- **vests/float vests** (*amount.Amount*) – Vests to convert
- **timestamp** (*int*) – (Optional) Can be used to calculate the conversion rate from the past

**vote** (*weight, identifier, account=None, \*\*kwargs*)  
Vote for a post

**Parameters**

- **weight** (*float*) – Voting weight. Range: -100.0 - +100.0.
- **identifier** (*str*) – Identifier for the post to vote. Takes the form @author/permlink.
- **account** (*str*) – (optional) Account to use for voting. If *account* is not defined, the *default\_account* will be used or a *ValueError* will be raised

**witness\_set\_properties** (*wif, owner, props, use\_condenser\_api=True*)  
Set witness properties

**Parameters**

- **wif** (*str*) – Private signing key
- **props** (*dict*) – Properties
- **owner** (*str*) – witness account name

Properties::

```
{
  "account_creation_fee": x,
  "account_subsidy_budget": x,
  "account_subsidy_decay": x,
  "maximum_block_size": x,
  "url": x,
  "sbd_exchange_rate": x,
  "sbd_interest_rate": x,
  "new_signing_key": x
}
```

**witness\_update** (*signing\_key, url, props, account=None, \*\*kwargs*)  
Creates/updates a witness

**Parameters**

- **signing\_key** (*str*) – Public signing key
- **url** (*str*) – URL
- **props** (*dict*) – Properties



- **account** (*str*) – (optional) witness account name

Properties::

```
{
    "account_creation_fee": "3.000 STEEM",
    "maximum_block_size": 65536,
    "sbd_interest_rate": 0,
}
```

## beem.comment

**class** `beem.comment.Comment` (*authorperm*, *use\_tags\_api=True*, *full=True*, *lazy=False*,  
*blockchain\_instance=None*, *\*\*kwargs*)

Bases: `beem.blockchainobject.BlockchainObject`

Read data about a Comment/Post in the chain

### Parameters

- **authorperm** (*str*) – identifier to post/comment in the form of @author/permlink
- **use\_tags\_api** (*boolean*) – when set to False, `list_comments` from the `database_api` is used
- **blockchain\_instance** (*Steem*) – `beem.steem.Steem` instance to use when accessing a RPC

```
>>> from beem.comment import Comment
>>> from beem.account import Account
>>> from beem import Steem
>>> stm = Steem()
>>> acc = Account("gtg", blockchain_instance=stm)
>>> authorperm = acc.get_blog(limit=1)[0]["authorperm"]
>>> c = Comment(authorperm)
>>> postdate = c["created"]
>>> postdate_str = c.json()["created"]
```

**author**

**authorperm**

**body**

**category**

**curation\_penalty\_compensation\_SBD()**

Returns The required post payout amount after 15 minutes which will compensate the curation penalty, if voting earlier than 15 minutes

**delete** (*account=None*, *identifier=None*)

Delete an existing post/comment

### Parameters

- **account** (*str*) – (optional) Account to use for deletion. If `account` is not defined, the `default_account` will be taken or a `ValueError` will be raised.

- **identifier** (*str*) – (optional) Identifier for the post to delete. Takes the form @author/permlink. By default the current post will be used.

---

**Note:** A post/comment can only be deleted as long as it has no replies and no positive rshares on it.

---

### depth

**downvote** (*weight=100, voter=None*)

Downvote the post

#### Parameters

- **weight** (*float*) – (optional) Weight for posting (-100.0 - +100.0) defaults to -100.0
- **voter** (*str*) – (optional) Voting account

**edit** (*body, meta=None, replace=False*)

Edit an existing post

#### Parameters

- **body** (*str*) – Body of the reply
- **meta** (*json*) – JSON meta object that can be attached to the post. (optional)
- **replace** (*bool*) – Instead of calculating a *diff*, replace the post entirely (defaults to False)

**estimate\_curation\_SBD** (*vote\_value\_SBD, estimated\_value\_SBD=None*)

Estimates curation reward

#### Parameters

- **vote\_value\_SBD** (*float*) – The vote value in SBD for which the curation should be calculated
- **estimated\_value\_SBD** (*float*) – When set, this value is used for calculate the curation. When not set, the current post value is used.

**get\_all\_replies** (*parent=None*)

Returns all content replies

**get\_author\_rewards** ()

Returns the author rewards.

Example:

```
{
  'pending_rewards': True,
  'payout_SP': 0.912 STEEM,
  'payout_SBD': 3.583 SBD,
  'total_payout_SBD': 7.166 SBD
}
```

**get\_beneficiaries\_pct** ()

Returns the sum of all post beneficiaries in percentage

**get\_curation\_penalty** (*vote\_time=None*)

If post is less than 5 minutes old, it will incur a curation reward penalty.

**Parameters** **vote\_time** (*datetime*) – A vote time can be given and the curation penalty is calculated regarding the given time (default is None) When set to None, the current date is used.

**Returns** Float number between 0 and 1 (0.0 -> no penalty, 1.0 -> 100 % curation penalty)

**Return type** float

**get\_curation\_rewards** (*pending\_payout\_SBD=False, pending\_payout\_value=None*)

Returns the curation rewards. The split between creator/curator is currently 50%/50%.

#### Parameters

- **pending\_payout\_SBD** (*bool*) – If True, the rewards are returned in SBD and not in STEEM (default is False)
- **pending\_payout\_value** (*float, str*) – When not None this value instead of the current value is used for calculating the rewards

*pending\_rewards* is True when the post is younger than 7 days. *unclaimed\_rewards* is the amount of curation\_rewards that goes to the author (self-vote or votes within the first 30 minutes). *active\_votes* contains all voter with their curation reward.

Example:

```
{
  'pending_rewards': True, 'unclaimed_rewards': 0.245 STEEM,
  'active_votes': {
    'leprechaun': 0.006 STEEM, 'timcliff': 0.186 STEEM,
    'st3llar': 0.000 STEEM, 'crokkon': 0.015 STEEM, 'feedyourminnows': 0.
↪003 STEEM,
    'isnochys': 0.003 STEEM, 'loshcat': 0.001 STEEM, 'greenorange': 0.000_
↪STEEM,
    'gustodian': 0.123 STEEM, 'jpphotography': 0.002 STEEM, 'thinkingmind
↪': 0.001 STEEM,
    'oups': 0.006 STEEM, 'mattockfs': 0.001 STEEM, 'holger80': 0.003_
↪STEEM, 'michaelizer': 0.004 STEEM,
    'flugschwein': 0.010 STEEM, 'ulissessabeque': 0.000 STEEM, 'hakancelik
↪': 0.002 STEEM, 'sbi2': 0.008 STEEM,
    'zcool': 0.000 STEEM, 'steemhq': 0.002 STEEM, 'rowdiya': 0.000 STEEM,
↪'curator-tier-1-2': 0.012 STEEM
  }
}
```

**get\_parent** (*children=None*)

Returns the parent post with depth == 0

**get\_reblogged\_by** (*identifier=None*)

Shows in which blogs this post appears

**get\_replies** (*raw\_data=False, identifier=None*)

Returns content replies

**Parameters** *raw\_data* (*bool*) – When set to False, the replies will be returned as Comment class objects

**get\_rewards** ()

Returns the total\_payout, author\_payout and the curator payout in SBD. When the payout is still pending, the estimated payout is given out.

---

**Note:** Potential beneficiary rewards were already deducted from the *author\_payout* and the *total\_payout*

---

Example::

```
{
  'total_payout': 9.956 SBD,
  'author_payout': 7.166 SBD,
  'curator_payout': 2.790 SBD
}
```

**get\_vote\_with\_curation** (*voter=None, raw\_data=False, pending\_payout\_value=None*)  
Returns vote for voter. Returns None, if the voter cannot be found in *active\_votes*.

#### Parameters

- **voter** (*str*) – Voter for which the vote should be returned
- **raw\_data** (*bool*) – If True, the raw data are returned
- **pending\_payout\_SBD** (*float, str*) – When not None this value instead of the current value is used for calculating the rewards

**get\_votes** (*raw\_data=False*)  
Returns all votes as ActiveVotes object

**id**

**is\_comment** ()  
Returns True if post is a comment

**is\_main\_post** ()  
Returns True if main post, and False if this is a comment (reply).

**is\_pending** ()  
Returns if the payout is pending (the post/comment is younger than 7 days)

**json** ()

**json\_metadata**

**parent\_author**

**parent\_permlink**

**permlink**

**refresh** ()

**reply** (*body, title="", author="", meta=None*)  
Reply to an existing post

#### Parameters

- **body** (*str*) – Body of the reply
- **title** (*str*) – Title of the reply post
- **author** (*str*) – Author of reply (optional) if not provided *default\_user* will be used, if present, else a *ValueError* will be raised.
- **meta** (*json*) – JSON meta object that can be attached to the post. (optional)

**resteen** (*identifier=None, account=None*)  
Resteen a post

#### Parameters

- **identifier** (*str*) – post identifier (@<account>/<permlink>)

- **account** (*str*) – (optional) the account to allow access to (defaults to `default_account`)

**reward**

Return the estimated total SBD reward.

**time\_elapsed()**

Returns a `timedelta` on how old the post is.

**title****type\_id = 8****upvote** (*weight=100, voter=None*)

Upvote the post

**Parameters**

- **weight** (*float*) – (optional) Weight for posting (-100.0 - +100.0) defaults to +100.0
- **voter** (*str*) – (optional) Voting account

**vote** (*weight, account=None, identifier=None, \*\*kwargs*)

Vote for a post

**Parameters**

- **weight** (*float*) – Voting weight. Range: -100.0 - +100.0.
- **account** (*str*) – (optional) Account to use for voting. If `account` is not defined, the `default_account` will be used or a `ValueError` will be raised
- **identifier** (*str*) – Identifier for the post to vote. Takes the form `@author/permlink`.

```
class beem.comment.RankedPosts (sort='trending', tag="", observer="", lazy=False, full=True,  
                                blockchain_instance=None, **kwargs)
```

Bases: `list`

Obtain a list of ranked posts

**Parameters**

- **account** (*str*) – Account name
- **blockchain\_instance** (`Steem`) – `Steem()` instance to use when accessing a RPC

```
class beem.comment.RecentByPath (path='trending', category=None, lazy=False, full=True,  
                                blockchain_instance=None, **kwargs)
```

Bases: `list`

Obtain a list of posts recent by path

**Parameters**

- **account** (*str*) – Account name
- **blockchain\_instance** (`Steem`) – `Steem()` instance to use when accessing a RPC

```
class beem.comment.RecentReplies (author, skip_own=True, lazy=False, full=True,  
                                blockchain_instance=None, **kwargs)
```

Bases: `list`

Obtain a list of recent replies

**Parameters**

- **author** (*str*) – author

- **skip\_own** (*bool*) – (optional) Skip replies of the author to him/herself. Default: True
- **blockchain\_instance** (*Steem*) – Steem() instance to use when accessing a RPC

## beem.conveyor

**class** beem.conveyor.Conveyor (*url='https://conveyor.steemit.com', blockchain\_instance=None, \*\*kwargs*)

Bases: object

Class to access Steemit Conveyor instances: <https://github.com/steemit/conveyor>

Description from the official documentation:

- Feature flags: “Feature flags allows our apps (condenser mainly) to hide certain features behind flags.”
- User data: “Conveyor is the central point for storing sensitive user data (email, phone, etc). No other services should store this data and should instead query for it here every time.”
- User tags: “Tagging mechanism for other services, allows defining and assigning tags to accounts (or other identifiers) and querying for them.”

Not contained in the documentation, but implemented and working:

- Draft handling: saving, listing and removing post drafts consisting of a post title and a body.

The underlying RPC authentication and request signing procedure is described here: <https://github.com/steemit/rpc-auth>

**get\_feature\_flag** (*account, flag, signing\_account=None*)

Test if a specific feature flag is set for an account. The request has to be signed by the requested account or an admin account.

### Parameters

- **account** (*str*) – requested account
- **flag** (*str*) – flag to be tested
- **signing\_account** (*str*) – (optional) account to sign the request. If unset, *account* is used.

Example:

```
from beem import Steem
from beem.conveyor import Conveyor
s = Steem(keys=["5JPOSTINGKEY"])
c = Conveyor(blockchain_instance=s)
print(c.get_feature_flag('accountname', 'accepted_tos'))
```

**get\_feature\_flags** (*account, signing\_account=None*)

Get the account's feature flags. The request has to be signed by the requested account or an admin account.

### Parameters

- **account** (*str*) – requested account
- **signing\_account** (*str*) – (optional) account to sign the request. If unset, *account* is used.

Example:

```

from beem import Steem
from beem.conveyor import Conveyor
s = Steem(keys=["5JPOSTINGKEY"])
c = Conveyor(blockchain_instance=s)
print(c.get_feature_flags('accountname'))

```

#### **get\_user\_data** (*account*, *signing\_account=None*)

Get the account’s email address and phone number. The request has to be signed by the requested account or an admin account.

##### Parameters

- **account** (*str*) – requested account
- **signing\_account** (*str*) – (optional) account to sign the request. If unset, *account* is used.

Example:

```

from beem import Steem
from beem.conveyor import Conveyor
s = Steem(keys=["5JPOSTINGKEY"])
c = Conveyor(blockchain_instance=s)
print(c.get_user_data('accountname'))

```

#### **healthcheck** ()

Get the Conveyor status

Sample output:

```

{
    'ok': True, 'version': '1.1.1-4d28e36-1528725174',
    'date': '2018-07-21T12:12:25.502Z'
}

```

#### **list\_drafts** (*account*)

List all saved drafts from *account*

**Parameters** **account** (*str*) – requested account

Sample output:

```

{
    'jsonrpc': '2.0', 'id': 2, 'result': [
        {'title': 'draft-title', 'body': 'draft-body',
         'uuid': '06497e1e-ac30-48cb-a069-27e1672924c9'}
    ]
}

```

#### **prehash\_message** (*timestamp*, *account*, *method*, *params*, *nonce*)

Prepare a hash for the Conveyor API request with SHA256 according to <https://github.com/steemit/rpc-auth> Hashing of *second* is then done inside *ecdsasig.sign\_message()*.

##### Parameters

- **timestamp** (*str*) – valid iso8601 datetime ending in “Z”
- **account** (*str*) – valid steem blockchain account name
- **method** (*str*) – Conveyor method name to be called
- **param** (*bytes*) – base64 encoded request parameters

- **nonce** (*bytes*) – random 8 bytes

**remove\_draft** (*account, uuid*)

Remove a draft from the Conveyor database

#### Parameters

- **account** (*str*) – requested account
- **uuid** (*str*) – draft identifier as returned from *list\_drafts*

**save\_draft** (*account, title, body*)

Save a draft in the Conveyor database

#### Parameters

- **account** (*str*) – requested account
- **title** (*str*) – draft post title
- **body** (*str*) – draft post body

**set\_user\_data** (*account, params, signing\_account=None*)

Set the account's email address and phone number. The request has to be signed by an admin account.

#### Parameters

- **account** (*str*) – requested account
- **param** (*dict*) – user data to be set
- **signing\_account** (*str*) – (optional) account to sign the request. If unset, *account* is used.

Example:

```
from beem import Steem
from beem.conveyor import Conveyor
s = Steem(keys=["5JADMINPOSTINGKEY"])
c = Conveyor(blockchain_instance=s)
userdata = {'email': 'foo@bar.com', 'phone': '+123456789'}
c.set_user_data('accountname', userdata, 'adminaccountname')
```

## beem.discussions

```
class beem.discussions.Comment_discussions_by_payout (discussion_query, lazy=False,
                                                         use_appbase=False,
                                                         raw_data=False,
                                                         blockchain_instance=None,
                                                         **kwargs)
```

Bases: list

Get comment\_discussions\_by\_payout

#### Parameters

- **discussion\_query** (*Query*) – Defines the parameter for searching posts
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** (*Steem*) – Steem instance



```

from beem.discussions import Query, Comment_discussions_by_payout
q = Query(limit=10)
for h in Comment_discussions_by_payout(q):
    print(h)

```

```

class beem.discussions.Discussions(lazy=False, use_appbase=False,
                                   blockchain_instance=None, **kwargs)

```

Bases: object

Get Discussions

**Parameters** `blockchain_instance` (`Steem`) – Steem instance

```

get_discussions(discussion_type, discussion_query, limit=1000, raw_data=False)

```

Get Discussions

**Parameters**

- **discussion\_type** (`str`) – Defines the used discussion query
- **discussion\_query** (`Query`) – Defines the parameter for searching posts
- **raw\_data** (`bool`) – returns list of comments when False, default is False

```

from beem.discussions import Query, Discussions
query = Query(limit=51, tag="steemit")
discussions = Discussions()
count = 0
for d in discussions.get_discussions("tags", query, limit=200):
    print("%d. " % (count + 1)) + str(d)
    count += 1

```

```

class beem.discussions.Discussions_by_active(discussion_query, lazy=False,
                                              use_appbase=False, raw_data=False,
                                              blockchain_instance=None, **kwargs)

```

Bases: list

get\_discussions\_by\_active

**Parameters**

- **discussion\_query** (`Query`) – Defines the parameter searching posts
- **use\_appbase** (`bool`) – use condenser call when set to False, default is False
- **raw\_data** (`bool`) – returns list of comments when False, default is False
- **blockchain\_instance** (`Steem`) – Steem() instance to use when accessing a RPC

```

from beem.discussions import Query, Discussions_by_active
q = Query(limit=10)
for h in Discussions_by_active(q):
    print(h)

```

```
class beem.discussions.Discussions_by_author_before_date (author="",
                                                           start_permalink="",
                                                           before_date='1970-
01-01T00:00:00',
                                                           limit=100, lazy=False,
                                                           use_appbase=False,
                                                           raw_data=False,
                                                           blockchain_instance=None,
                                                           **kwargs)
```

Bases: list

Get Discussions by author before date

---

**Note:** To retrieve discussions before date, the time of creation of the discussion @author/start\_permalink must be older than the specified before\_date parameter.

---

#### Parameters

- **author** (*str*) – Defines the author (*required*)
- **start\_permalink** (*str*) – Defines the permalink of a starting discussion
- **before\_date** (*str*) – Defines the before date for query
- **limit** (*int*) – Defines the limit of discussions
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** (*Steem*) – Steem instance

```
from beem.discussions import Query, Discussions_by_author_before_date
for h in Discussions_by_author_before_date(limit=10, author="gtg"):
    print(h)
```

```
class beem.discussions.Discussions_by_blog (discussion_query, lazy=False,
                                             use_appbase=False, raw_data=False,
                                             blockchain_instance=None, **kwargs)
```

Bases: list

Get discussions by blog

#### Parameters

- **discussion\_query** (*Query*) – Defines the parameter searching posts, tag must be set to a username
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** (*Steem*) – Steem instance

```
from beem.discussions import Query, Discussions_by_blog
q = Query(limit=10)
for h in Discussions_by_blog(q):
    print(h)
```

```
class beem.discussions.Discussions_by_cashout (discussion_query, lazy=False,
                                             use_appbase=False, raw_data=False,
                                             blockchain_instance=None, **kwargs)
```

Bases: list

Get discussions\_by\_cashout. This query seems to be broken at the moment. The output is always empty.

#### Parameters

- **discussion\_query** ([Query](#)) – Defines the parameter searching posts
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** ([Steem](#)) – Steem instance

```
from beem.discussions import Query, Discussions_by_cashout
q = Query(limit=10)
for h in Discussions_by_cashout(q):
    print (h)
```

```
class beem.discussions.Discussions_by_children (discussion_query, lazy=False,
                                             use_appbase=False, raw_data=False,
                                             blockchain_instance=None, **kwargs)
```

Bases: list

Get discussions by children

#### Parameters

- **discussion\_query** ([Query](#)) – Defines the parameter searching posts
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** ([Steem](#)) – Steem instance

```
from beem.discussions import Query, Discussions_by_children
q = Query(limit=10)
for h in Discussions_by_children(q):
    print (h)
```

```
class beem.discussions.Discussions_by_comments (discussion_query, lazy=False,
                                             use_appbase=False, raw_data=False,
                                             blockchain_instance=None, **kwargs)
```

Bases: list

Get discussions by comments

#### Parameters

- **discussion\_query** ([Query](#)) – Defines the parameter searching posts, start\_author and start\_permalink must be set.
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** ([Steem](#)) – Steem instance

```
from beem.discussions import Query, Discussions_by_comments
q = Query(limit=10, start_author="steemit", start_permlink="firstpost")
for h in Discussions_by_comments(q):
    print(h)
```

```
class beem.discussions.Discussions_by_created(discussion_query, lazy=False,
                                              use_appbase=False, raw_data=False,
                                              blockchain_instance=None, **kwargs)
```

Bases: list

Get discussions\_by\_created

#### Parameters

- **discussion\_query** ([Query](#)) – Defines the parameter for searching posts
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** ([Steem](#)) – Steem instance

```
from beem.discussions import Query, Discussions_by_created
q = Query(limit=10)
for h in Discussions_by_created(q):
    print(h)
```

```
class beem.discussions.Discussions_by_feed(discussion_query, lazy=False,
                                           use_appbase=False, raw_data=False,
                                           blockchain_instance=None, **kwargs)
```

Bases: list

Get discussions by feed

#### Parameters

- **discussion\_query** ([Query](#)) – Defines the parameter searching posts, tag must be set to a username
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** ([Steem](#)) – Steem instance

```
from beem.discussions import Query, Discussions_by_feed
q = Query(limit=10, tag="steem")
for h in Discussions_by_feed(q):
    print(h)
```

```
class beem.discussions.Discussions_by_hot(discussion_query, lazy=False,
                                           use_appbase=False, raw_data=False,
                                           blockchain_instance=None, **kwargs)
```

Bases: list

Get discussions by hot

#### Parameters

- **discussion\_query** ([Query](#)) – Defines the parameter searching posts
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False

- **blockchain\_instance** (*Steem*) – Steem instance

```
from beem.discussions import Query, Discussions_by_hot
q = Query(limit=10, tag="steem")
for h in Discussions_by_hot(q):
    print(h)
```

```
class beem.discussions.Discussions_by_promoted (discussion_query, lazy=False,
                                                use_appbase=False, raw_data=False,
                                                blockchain_instance=None, **kwargs)
```

Bases: list

Get discussions by promoted

#### Parameters

- **discussion\_query** (*Query*) – Defines the parameter searching posts
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** (*Steem*) – Steem instance

```
from beem.discussions import Query, Discussions_by_promoted
q = Query(limit=10, tag="steem")
for h in Discussions_by_promoted(q):
    print(h)
```

```
class beem.discussions.Discussions_by_trending (discussion_query, lazy=False,
                                                use_appbase=False, raw_data=False,
                                                blockchain_instance=None, **kwargs)
```

Bases: list

Get Discussions by trending

#### Parameters

- **discussion\_query** (*Query*) – Defines the parameter for searching posts
- **blockchain\_instance** (*Steem*) – Steem instance
- **raw\_data** (*bool*) – returns list of comments when False, default is False

```
from beem.discussions import Query, Discussions_by_trending
q = Query(limit=10, tag="steem")
for h in Discussions_by_trending(q):
    print(h)
```

```
class beem.discussions.Discussions_by_votes (discussion_query, lazy=False,
                                              use_appbase=False, raw_data=False,
                                              blockchain_instance=None, **kwargs)
```

Bases: list

Get discussions\_by\_votes

#### Parameters

- **discussion\_query** (*Query*) – Defines the parameter searching posts
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** (*Steem*) – Steem instance

```
from beem.discussions import Query, Discussions_by_votes
q = Query(limit=10)
for h in Discussions_by_votes(q):
    print(h)
```

```
class beem.discussions.Post_discussions_by_payout (discussion_query, lazy=False,
                                                    use_appbase=False,
                                                    raw_data=False,
                                                    blockchain_instance=None,
                                                    **kwargs)
```

Bases: list

Get post\_discussions\_by\_payout

#### Parameters

- **discussion\_query** (*Query*) – Defines the parameter for searching posts
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** (*Steem*) – Steem instance

```
from beem.discussions import Query, Post_discussions_by_payout
q = Query(limit=10)
for h in Post_discussions_by_payout(q):
    print(h)
```

```
class beem.discussions.Query (limit=0, tag="", truncate_body=0, filter_tags=[], se-
                                lect_authors=[], select_tags=[], start_author=None,
                                start_permlink=None, start_tag=None, parent_author=None,
                                parent_permlink=None, start_parent_author=None, be-
                                fore_date=None, author=None)
```

Bases: dict

Query to be used for all discussion queries

#### Parameters

- **limit** (*int*) – limits the number of posts
- **tag** (*str*) – tag query
- **truncate\_body** (*int*) –
- **filter\_tags** (*array*) –
- **select\_authors** (*array*) –
- **select\_tags** (*array*) –
- **start\_author** (*str*) –
- **start\_permlink** (*str*) –
- **start\_tag** (*str*) –
- **parent\_author** (*str*) –
- **parent\_permlink** (*str*) –
- **start\_parent\_author** (*str*) –
- **before\_date** (*str*) –

- **author** (*str*) – Author (see `Discussions_by_author_before_date`)

```
from beem.discussions import Query
query = Query(limit=10, tag="steemit")
```

```
class beem.discussions.Replies_by_last_update (discussion_query, lazy=False,
                                                use_appbase=False, raw_data=False,
                                                blockchain_instance=None, **kwargs)
```

Bases: list

Returns a list of replies by last update

#### Parameters

- **discussion\_query** (*Query*) – Defines the parameter searching posts  
start\_parent\_author and start\_permlink must be set.
- **use\_appbase** (*bool*) – use condenser call when set to False, default is False
- **raw\_data** (*bool*) – returns list of comments when False, default is False
- **blockchain\_instance** (*Steem*) – Steem instance

```
from beem.discussions import Query, Replies_by_last_update
q = Query(limit=10, start_parent_author="steemit", start_permlink="firstpost")
for h in Replies_by_last_update(q):
    print(h)
```

```
class beem.discussions.Trending_tags (discussion_query, lazy=False, use_appbase=False,
                                       blockchain_instance=None, **kwargs)
```

Bases: list

Returns the list of trending tags.

#### Parameters

- **discussion\_query** (*Query*) – Defines the parameter searching posts, start\_tag can be set. :param bool use\_appbase: use condenser call when set to False, default is False
- **blockchain\_instance** (*Steem*) – Steem instance

```
from beem.discussions import Query, Trending_tags
q = Query(limit=10, start_tag="")
for h in Trending_tags(q):
    print(h)
```

## beem.exceptions

**exception** beem.exceptions.AccountDoesNotExistException

Bases: Exception

The account does not exist

**exception** beem.exceptions.AccountExistsException

Bases: Exception

The requested account already exists

**exception** beem.exceptions.AssetDoesNotExistException

Bases: Exception

The asset does not exist

**exception** `beem.exceptions.BatchedCallsNotSupported`

Bases: `Exception`

Batch calls do not work

**exception** `beem.exceptions.BlockDoesNotExistsException`

Bases: `Exception`

The block does not exist

**exception** `beem.exceptions.BlockWaitTimeExceeded`

Bases: `Exception`

Wait time for new block exceeded

**exception** `beem.exceptions.ContentDoesNotExistsException`

Bases: `Exception`

The content does not exist

**exception** `beem.exceptions.InsufficientAuthorityError`

Bases: `Exception`

The transaction requires signature of a higher authority

**exception** `beem.exceptions.InvalidAssetException`

Bases: `Exception`

An invalid asset has been provided

**exception** `beem.exceptions.InvalidMemoKeyException`

Bases: `Exception`

Memo key in message is invalid

**exception** `beem.exceptions.InvalidMessageSignature`

Bases: `Exception`

The message signature does not fit the message

**exception** `beem.exceptions.InvalidWifError`

Bases: `Exception`

The provided private Key has an invalid format

**exception** `beem.exceptions.MissingKeyError`

Bases: `Exception`

A required key couldn't be found in the wallet

**exception** `beem.exceptions.NoWalletException`

Bases: `Exception`

No Wallet could be found, please use `beem.wallet.Wallet.create()` to create a new wallet

**exception** `beem.exceptions.NoWriteAccess`

Bases: `Exception`

Cannot store to sqlite3 database due to missing write access

**exception** `beem.exceptions.OfflineHasNoRPCEException`

Bases: `Exception`

When in offline mode, we don't have RPC



**exception** `beem.exceptions.RPCConnectionRequired`

Bases: `Exception`

An RPC connection is required

**exception** `beem.exceptions.VestingBalanceDoesNotExistsException`

Bases: `Exception`

Vesting Balance does not exist

**exception** `beem.exceptions.VoteDoesNotExistsException`

Bases: `Exception`

The vote does not exist

**exception** `beem.exceptions.VotingInvalidOnArchivedPost`

Bases: `Exception`

The transaction requires signature of a higher authority

**exception** `beem.exceptions.WalletExists`

Bases: `Exception`

A wallet has already been created and requires a password to be unlocked by means of `beem.wallet.Wallet.unlock()`.

**exception** `beem.exceptions.WitnessDoesNotExistsException`

Bases: `Exception`

The witness does not exist

**exception** `beem.exceptions.WrongMasterPasswordException`

Bases: `Exception`

The password provided could not properly unlock the wallet

**exception** `beem.exceptions.WrongMemoKey`

Bases: `Exception`

The memo provided is not equal the one on the blockchain

## beem.hive

**class** `beem.hive.Hive` (`node="`, `rpcuser=None`, `rpcpassword=None`, `debug=False`,  
`data_refresh_time_seconds=900`, `**kwargs`)

Bases: `beem.blockchaininstance.BlockChainInstance`

Connect to the Hive network.

### Parameters

- **node** (`str`) – Node to connect to (*optional*)
- **rpcuser** (`str`) – RPC user (*optional*)
- **rpcpassword** (`str`) – RPC password (*optional*)
- **nobroadcast** (`bool`) – Do **not** broadcast a transaction! (*optional*)
- **unsigned** (`bool`) – Do **not** sign a transaction! (*optional*)
- **debug** (`bool`) – Enable Debugging (*optional*)
- **keys** (`array`, `dict`, `string`) – Predefine the wif keys to shortcut the wallet database (*optional*)

- **wif** (*array, dict, string*) – Predefine the wif keys to shortcut the wallet database (*optional*)
- **offline** (*bool*) – Boolean to prevent connecting to network (defaults to `False`) (*optional*)
- **expiration** (*int*) – Delay in seconds until transactions are supposed to expire (*optional*) (default is 30)
- **blocking** (*str*) – Wait for broadcasted transactions to be included in a block and return full transaction (can be “head” or “irreversible”)
- **bundle** (*bool*) – Do not broadcast transactions right away, but allow to bundle operations. It is not possible to send out more than one vote operation and more than one comment operation in a single broadcast (*optional*)
- **appbase** (*bool*) – Use the new appbase rpc protocol on nodes with version 0.19.4 or higher. The settings has no effect on nodes with version of 0.19.3 or lower.
- **num\_retries** (*int*) – Set the maximum number of reconnects to the nodes before NumRetriesReached is raised. Disabled for -1. (default is -1)
- **num\_retries\_call** (*int*) – Repeat num\_retries\_call times a rpc call on node error (default is 5)
- **timeout** (*int*) – Timeout setting for https nodes (default is 60)
- **use\_hs** (*bool*) – When True, a hivesigner object is created. Can be used for broadcast posting op or creating hot\_links (default is False)
- **hivesigner** (*HiveSigner*) – A HiveSigner object can be set manually, set use\_hs to True
- **custom\_chains** (*dict*) – custom chain which should be added to the known chains

Three wallet operation modes are possible:

- **Wallet Database:** Here, the beemlibs load the keys from the locally stored wallet SQLite database (see `storage.py`). To use this mode, simply call `Hive()` without the `keys` parameter
- **Providing Keys:** Here, you can provide the keys for your accounts manually. All you need to do is add the wif keys for the accounts you want to use as a simple array using the `keys` parameter to `Steem()`.
- **Force keys:** This more is for advanced users and requires that you know what you are doing. Here, the `keys` parameter is a dictionary that overwrite the `active`, `owner`, `posting` or `memo` keys for any account. This mode is only used for *foreign* signatures!

If no node is provided, it will connect to default nodes from `beem.NodeList`. Default settings can be changed with:

```
hive = Hive(<host>)
```

where `<host>` starts with `https://`, `ws://` or `wss://`.

The purpose of this class it to simplify interaction with Steem.

The idea is to have a class that allows to do this:

```
>>> from beem import Hive
>>> hive = Hive()
>>> print(hive.get_blockchain_version())
```

This class also deals with edits, votes and reading content.

Example for adding a custom chain:

```
from beem import Hive
stm = Hive(node=["https://mytstnet.com"], custom_chains={"MYTESTNET":
    {'chain_assets': [{'asset': 'HBD', 'id': 0, 'precision': 3, 'symbol': 'HBD'},
                      {'asset': 'STEEM', 'id': 1, 'precision': 3, 'symbol': 'STEEM'}
    ],
    {'asset': 'VESTS', 'id': 2, 'precision': 6, 'symbol': 'VESTS'}
    ],
    'chain_id': '79276aea5d4877d9a25892eaa01b0adf019d3e5cb12a97478df3298ccdd01674',
    'min_version': '0.0.0',
    'prefix': 'MTN'}
    )
```

#### chain\_params

**get\_hbd\_per\_rshares** (*not\_broadcasted\_vote\_rshares=0, use\_stored\_data=True*)

Returns the current rshares to HBD ratio

**get\_hive\_per\_mvest** (*time\_stamp=None, use\_stored\_data=True*)

Returns the MVEST to HIVE ratio

**Parameters** *time\_stamp* (*int*) – (optional) if set, return an estimated HIVE per MVEST ratio for the given time stamp. If unset the current ratio is returned (default). (can also be a datetime object)

**get\_network** (*use\_stored\_data=True, config=None*)

Identify the network

**Parameters** *use\_stored\_data* (*bool*) – if True, stored data will be returned. If stored data are empty or old, *refresh\_data()* is used.

**Returns** Network parameters

**Return type** dictionary

**get\_token\_per\_mvest** (*time\_stamp=None, use\_stored\_data=True*)

Returns the MVEST to TOKEN ratio

**Parameters** *time\_stamp* (*int*) – (optional) if set, return an estimated TOKEN per MVEST ratio for the given time stamp. If unset the current ratio is returned (default). (can also be a datetime object)

#### hardfork

##### hbd\_symbol

get the current chains symbol for HBD (e.g. “TBD” on testnet)

**hbd\_to\_rshares** (*hbd, not\_broadcasted\_vote=False, use\_stored\_data=True*)

Obtain the r-shares from HBD

##### Parameters

- **hbd** (*str, int, amount.Amount*) – HBD
- **not\_broadcasted\_vote** (*bool*) – not\_broadcasted or already broadcasted vote (True = not\_broadcasted vote). Only impactful for very high amounts of HBD. Slight modification to the value calculation, as the not\_broadcasted vote rshares decreases the reward pool.

**hbd\_to\_vote\_pct** (*hbd*, *post\_rshares*=0, *hive\_power*=None, *vests*=None, *voting\_power*=10000, *not\_broadcasted\_vote*=True, *use\_stored\_data*=True)

Obtain the voting percentage for a desired HBD value for a given Hive Power or vesting shares and voting power Give either Hive Power or vests, not both. When the output is greater than 10000 or smaller than -10000, the HBD value is too high.

Returns the required voting percentage (100% = 10000)

#### Parameters

- **hbd** (*str*, *int*, *amount.Amount*) – desired HBD value
- **hive\_power** (*number*) – Hive Power
- **vests** (*number*) – vesting shares
- **not\_broadcasted\_vote** (*bool*) – not\_broadcasted or already broadcasted vote (True = not\_broadcasted vote). Only impactful for very high amounts of HBD. Slight modification to the value calculation, as the not\_broadcasted vote rshares decreases the reward pool.

**hive\_symbol**

get the current chains symbol for HIVE (e.g. “TESTS” on testnet)

**hp\_to\_hbd** (*hp*, *post\_rshares*=0, *voting\_power*=10000, *vote\_pct*=10000, *not\_broadcasted\_vote*=True, *use\_stored\_data*=True)

Obtain the resulting HBD vote value from Hive power

#### Parameters

- **hive\_power** (*number*) – Hive Power
- **post\_rshares** (*int*) – rshares of post which is voted
- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)
- **not\_broadcasted\_vote** (*bool*) – not\_broadcasted or already broadcasted vote (True = not\_broadcasted vote).

Only impactful for very big votes. Slight modification to the value calculation, as the not\_broadcasted vote rshares decreases the reward pool.

**hp\_to\_rshares** (*hive\_power*, *post\_rshares*=0, *voting\_power*=10000, *vote\_pct*=10000, *use\_stored\_data*=True)

Obtain the r-shares from Hive power

#### Parameters

- **hive\_power** (*number*) – Hive Power
- **post\_rshares** (*int*) – rshares of post which is voted
- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)

**hp\_to\_vests** (*hp*, *timestamp*=None, *use\_stored\_data*=True)

Converts HP to vests

#### Parameters

- **hp** (*float*) – Hive power to convert
- **timestamp** (*datetime*) – (Optional) Can be used to calculate the conversion rate from the past

**is\_hive**

**rshares\_to\_hbd** (*rshares*, *not\_broadcasted\_vote=False*, *use\_stored\_data=True*)

Calculates the current HBD value of a vote

**rshares\_to\_token\_backed\_dollar** (*rshares*, *not\_broadcasted\_vote=False*, *use\_stored\_data=True*)

Calculates the current HBD value of a vote

**rshares\_to\_vote\_pct** (*rshares*, *post\_rshares=0*, *hive\_power=None*, *vests=None*, *voting\_power=10000*, *use\_stored\_data=True*)

Obtain the voting percentage for a desired rshares value for a given Hive Power or vesting shares and voting\_power Give either hive\_power or vests, not both. When the output is greater than 10000 or less than -10000, the given absolute rshares are too high

Returns the required voting percentage (100% = 10000)

#### Parameters

- **rshares** (*number*) – desired rshares value
- **hive\_power** (*number*) – Hive Power
- **vests** (*number*) – vesting shares
- **voting\_power** (*int*) – voting power (100% = 10000)

**token\_power\_to\_token\_backed\_dollar** (*token\_power*, *post\_rshares=0*, *voting\_power=10000*, *vote\_pct=10000*, *not\_broadcasted\_vote=True*, *use\_stored\_data=True*)

Obtain the resulting Token backed dollar vote value from Token power

#### Parameters

- **hive\_power** (*number*) – Token Power
- **post\_rshares** (*int*) – rshares of post which is voted
- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)
- **not\_broadcasted\_vote** (*bool*) – not\_broadcasted or already broadcasted vote (True = not\_broadcasted vote).

Only impactful for very big votes. Slight modification to the value calculation, as the not\_broadcasted vote rshares decreases the reward pool.

**token\_power\_to\_vests** (*token\_power*, *timestamp=None*, *use\_stored\_data=True*)

Converts TokenPower to vests

#### Parameters

- **token\_power** (*float*) – Token power to convert
- **timestamp** (*datetime*) – (Optional) Can be used to calculate the conversion rate from the past

**vests\_symbol**

get the current chains symbol for VESTS

**vests\_to\_hbd** (*vests*, *post\_rshares=0*, *voting\_power=10000*, *vote\_pct=10000*, *not\_broadcasted\_vote=True*, *use\_stored\_data=True*)

Obtain the resulting HBD vote value from vests

#### Parameters

- **vests** (*number*) – vesting shares
- **post\_rshares** (*int*) – rshares of post which is voted
- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)
- **not\_broadcasted\_vote** (*bool*) – not\_broadcasted or already broadcasted vote (True = not\_broadcasted vote).

Only impactful for very big votes. Slight modification to the value calculation, as the not\_broadcasted vote rshares decreases the reward pool.

**vests\_to\_hp** (*vests, timestamp=None, use\_stored\_data=True*)

Converts vests to HP

#### Parameters

- **vests/float vests** (*amount.Amount*) – Vests to convert
- **timestamp** (*int*) – (Optional) Can be used to calculate the conversion rate from the past

**vests\_to\_rshares** (*vests, post\_rshares=0, voting\_power=10000, vote\_pct=10000, subtract\_dust\_threshold=True, use\_stored\_data=True*)

Obtain the r-shares from vests

#### Parameters

- **vests** (*number*) – vesting shares
- **post\_rshares** (*int*) – rshares of post which is voted
- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)

**vests\_to\_token\_power** (*vests, timestamp=None, use\_stored\_data=True*)

Converts vests to TokenPower

#### Parameters

- **vests/float vests** (*amount.Amount*) – Vests to convert
- **timestamp** (*int*) – (Optional) Can be used to calculate the conversion rate from the past

## beem.hivesigner

**class** beem.hivesigner.HiveSigner (*blockchain\_instance=None, \*args, \*\*kwargs*)

Bases: object

**Parameters scope** (*str*) – comma separated string with scopes login,offline,vote,comment,delete\_comment,comment\_options,custom\_json,claim\_reward\_balance

```
# Run the login_app in examples and login with a account
from beem import Steem
from beem.HiveSigner import HiveSigner
from beem.comment import Comment
hs = HiveSigner(client_id="beem.app")
steem = Steem(HiveSigner=hs)
steem.wallet.unlock("supersecret-passphrase")
```

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```
post = Comment("author/permlink", blockchain_instance=steem)
post.upvote(voter="test") # replace "test" with your account
```

Examples for creating HiveSigner urls for broadcasting in browser:

```
from beem import Steem
from beem.account import Account
from beem.HiveSigner import HiveSigner
from pprint import pprint
steem = Steem(nobroadcast=True, unsigned=True)
hs = HiveSigner(blockchain_instance=steem)
acc = Account("test", blockchain_instance=steem)
pprint(hs.url_from_tx(acc.transfer("test1", 1, "HIVE", "test")))
```

```
'https://hivesigner.com/sign/transfer?from=test&to=test1&amount=1.000+HIVE&
↳memo=test'
```

```
from beem import Steem
from beem.transactionbuilder import TransactionBuilder
from beembase import operations
from beem.HiveSigner import HiveSigner
from pprint import pprint
stm = Steem(nobroadcast=True, unsigned=True)
hs = HiveSigner(blockchain_instance=stm)
tx = TransactionBuilder(blockchain_instance=stm)
op = operations.Transfer(**{"from": 'test',
                           "to": 'test1',
                           "amount": '1.000 HIVE',
                           "memo": 'test'})
tx.appendOps(op)
pprint(hs.url_from_tx(tx.json()))
```

```
'https://hivesigner.com/sign/transfer?from=test&to=test1&amount=1.000+HIVE&
↳memo=test'
```

**addToken** (*name*, *token*)

**broadcast** (*operations*, *username=None*)

Broadcast an operation

Sample operations:

```
[
  [
    'vote', {
      'voter': 'gandalf',
      'author': 'gtg',
      'permlink': 'steem-pressure-4-need-for-speed',
      'weight': 10000
    }
  ]
]
```

**changePassphrase** (*new\_pwd*)

Change the passphrase for the wallet database

**create** (*pwd*)

Alias for `newWallet()`

**Parameters** **pwd** (*str*) – Passphrase for the created wallet

**create\_hot\_sign\_url** (*operation, params, redirect\_uri=None*)

Creates a link for broadcasting an operation

**Parameters**

- **operation** (*str*) – operation name (e.g.: vote)
- **params** (*dict*) – operation dict params
- **redirect\_uri** (*str*) – Redirects to this uri, when set

**created** ()

Do we have a wallet database already?

**getPublicNames** ()

Return all installed public token

**getTokenForAccountName** (*name*)

Obtain the private token for a given public name

**Parameters** **name** (*str*) – Public name

**get\_access\_token** (*code*)

**get\_login\_url** (*redirect\_uri, \*\*kwargs*)

Returns a login url for receiving token from HiveSigner

**headers**

**is\_encrypted** ()

Is the key store encrypted?

**lock** ()

Lock the wallet database

**locked** ()

Is the wallet database locked?

**me** (*username=None*)

Calls the me function from HiveSigner

```
from beem.HiveSigner import HiveSigner
hs = HiveSigner()
hs.steem.wallet.unlock("supersecret-passphrase")
hs.me(username="test")
```

**newWallet** (*pwd*)

Create a new wallet database

**Parameters** **pwd** (*str*) – Passphrase for the created wallet

**refresh\_access\_token** (*code, scope*)

**removeTokenFromPublicName** (*name*)

Remove a token from the wallet database

**Parameters** **name** (*str*) – token to be removed

**revoke\_token** (*access\_token*)



**setToken** (*loadtoken*)

This method is strictly only for in memory token that are passed to Wallet/Steem with the `token` argument

**set\_access\_token** (*access\_token*)

Is needed for `broadcast()` and `me()`

**set\_username** (*username, permission='posting'*)

Set a username for the next `broadcast()` or `me()` operation. The necessary token is fetched from the wallet

**unlock** (*pwd*)

Unlock the wallet database

**unlocked** ()

Is the wallet database unlocked?

**update\_user\_metadata** (*metadata*)

**url\_from\_tx** (*tx, redirect\_uri=None*)

Creates a link for broadcasting an operation

#### Parameters

- **tx** (*dict*) – includes the operation, which should be broadcast
- **redirect\_uri** (*str*) – Redirects to this uri, when set

## beem.imageuploader

```
class beem.imageuploader.ImageUploader (base_url='https://steemitimages.com',
                                         challenge='ImageSigningChallenge',
                                         blockchain_instance=None, **kwargs)
```

Bases: object

**upload** (*image, account, image\_name=None*)

Uploads an image

#### Parameters

- **image** (*str, bytes*) – path to the image or image in bytes representation which should be uploaded
- **account** (*str*) – Account which is used to upload. A posting key must be provided.
- **image\_name** (*str*) – optional

```
from beem import Steem
from beem.imageuploader import ImageUploader
stm = Steem(keys=["5xxx"]) # private posting key
iu = ImageUploader(blockchain_instance=stm)
iu.upload("path/to/image.png", "account_name") # "private posting key belongs_
↳to account_name
```

## beem.instance

```
class beem.instance.SharedInstance
```

Bases: object

Singelton for the Steem Instance

```
config = {}
```

```
instance = None
```

```
beem.instance.clear_cache()  
Clear Caches
```

```
beem.instance.set_shared_blockchain_instance(blockchain_instance)  
This method allows us to override default steem instance for all users of SharedInstance.instance.
```

**Parameters** `blockchain_instance` (`Steem`) – Steem instance

```
beem.instance.set_shared_config(config)  
This allows to set a config that will be used when calling shared_steem_instance and allows to define  
the configuration without requiring to actually create an instance
```

```
beem.instance.set_shared_hive_instance(hive_instance)  
This method allows us to override default steem instance for all users of SharedInstance.instance.
```

**Parameters** `hive_instance` (`Hive`) – Hive instance

```
beem.instance.set_shared_steem_instance(steem_instance)  
This method allows us to override default steem instance for all users of SharedInstance.instance.
```

**Parameters** `steem_instance` (`Steem`) – Steem instance

```
beem.instance.shared_blockchain_instance()  
This method will initialize SharedInstance.instance and return it. The purpose of this method is to  
have offer single default steem instance that can be reused by multiple classes.
```

```
from beem.account import Account  
from beem.instance import shared_steem_instance  
  
account = Account("test")  
# is equivalent with  
account = Account("test", blockchain_instance=shared_steem_instance())
```

```
beem.instance.shared_hive_instance()  
This method will initialize SharedInstance.instance and return it. The purpose of this method is to  
have offer single default steem instance that can be reused by multiple classes.
```

```
from beem.account import Account  
from beem.instance import shared_hive_instance  
  
account = Account("test")  
# is equivalent with  
account = Account("test", blockchain_instance=shared_hive_instance())
```

```
beem.instance.shared_steem_instance()  
This method will initialize SharedInstance.instance and return it. The purpose of this method is to  
have offer single default steem instance that can be reused by multiple classes.
```

```
from beem.account import Account  
from beem.instance import shared_steem_instance  
  
account = Account("test")  
# is equivalent with  
account = Account("test", blockchain_instance=shared_steem_instance())
```

## beem.market

**class** `beem.market.Market` (*base=None, quote=None, blockchain\_instance=None, \*\*kwargs*)  
 Bases: dict

This class allows to easily access Markets on the blockchain for trading, etc.

### Parameters

- **blockchain\_instance** (`Steem`) – Steem instance
- **base** (`Asset`) – Base asset
- **quote** (`Asset`) – Quote asset

**Returns** Blockchain Market

**Return type** dictionary with overloaded methods

Instances of this class are dictionaries that come with additional methods (see below) that allow dealing with a market and its corresponding functions.

This class tries to identify **two** assets as provided in the parameters in one of the following forms:

- base and quote are valid assets (according to `beem.asset.Asset`)
- base:quote separated with :
- base/quote separated with /
- base-quote separated with -

---

**Note:** Throughout this library, the quote symbol will be presented first (e.g. STEEM:SBD with STEEM being the quote), while the base only refers to a secondary asset for a trade. This means, if you call `beem.market.Market.sell()` or `beem.market.Market.buy()`, you will sell/buy **only quote** and obtain/pay **only base**.

---

**accountopenorders** (*account=None, raw\_data=False*)

Returns open Orders

### Parameters

- **account** (`Account`) – Account name or instance of Account to show orders for in this market
- **raw\_data** (`bool`) – (optional) returns raw data if set True, or a list of Order() instances if False (defaults to False)

**static btc\_usd\_ticker** (*verbose=False*)

Returns the BTC/USD price from bitfinex, gdax, kraken, okcoin and bitstamp. The mean price is weighted by the exchange volume.

**buy** (*price, amount, expiration=None, killfill=False, account=None, orderid=None, returnOrderId=False*)

Places a buy order in a given market

### Parameters

- **price** (`float`) – price denoted in base/quote
- **amount** (`number`) – Amount of quote to buy
- **expiration** (`number`) – (optional) expiration time of the order in seconds (defaults to 7 days)

- **killfill** (*bool*) – flag that indicates if the order shall be killed if it is not filled (defaults to False)
- **account** (*string*) – Account name that executes that order
- **returnOrderId** (*string*) – If set to “head” or “irreversible” the call will wait for the tx to appear in the head/irreversible block and add the key “orderid” to the tx output

Prices/Rates are denoted in ‘base’, i.e. the SBD\_STEEM market is priced in STEEM per SBD.

**Example:** in the SBD\_STEEM market, a price of 300 means a SBD is worth 300 STEEM

---

**Note:** All prices returned are in the **reversed** orientation as the market. I.e. in the STEEM/SBD market, prices are SBD per STEEM. That way you can multiply prices with *1.05* to get a +5%.

---

**Warning:** Since buy orders are placed as limit-sell orders for the base asset, you may end up obtaining more of the buy asset than you placed the order for. Example:

- You place an order to buy 10 SBD for 100 STEEM/SBD
- This means that you actually place a sell order for 1000 STEEM in order to obtain **at least** 10 SBD
- If an order on the market exists that sells SBD for cheaper, you will end up with more than 10 SBD

**cancel** (*orderNumbers*, *account=None*, *\*\*kwargs*)

Cancels an order you have placed in a given market. Requires only the “orderNumbers”.

**Parameters** **orderNumbers** (*int*, *list*) – A single order number or a list of order numbers

**get\_string** (*separator=':'*)

Return a formatted string that identifies the market, e.g. STEEM:SBD

**Parameters** **separator** (*str*) – The separator of the assets (defaults to :)

**static** **hive\_btc\_ticker** ()

Returns the HIVE/BTC price from bittrex and upbit. The mean price is weighted by the exchange volume.

**hive\_usd\_implied** ()

Returns the current HIVE/USD market price

**market\_history** (*bucket\_seconds=300*, *start\_age=3600*, *end\_age=0*, *raw\_data=False*)

Return the market history (filled orders).

**Parameters**

- **bucket\_seconds** (*int*) – Bucket size in seconds (see *returnMarketHistoryBuckets()*)
- **start\_age** (*int*) – Age (in seconds) of the start of the window (default: 1h/3600)
- **end\_age** (*int*) – Age (in seconds) of the end of the window (default: now/0)
- **raw\_data** (*bool*) – (optional) returns raw data if set True

Example:

```
{  
    'close_sbd': 2493387,  
    ...  
}
```

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```

'close_steem': 7743431,
'high_sbd': 1943872,
'high_steem': 5999610,
'id': '7.1.5252',
'low_sbd': 534928,
'low_steem': 1661266,
'open': '2016-07-08T11:25:00',
'open_sbd': 534928,
'open_steem': 1661266,
'sbd_volume': 9714435,
'seconds': 300,
'steem_volume': 30088443
}

```

**market\_history\_buckets()**

**orderbook** (*limit=25, raw\_data=False*)

Returns the order book for SBD/STEEM market.

**Parameters** *limit* (*int*) – Limit the amount of orders (default: 25)

Sample output (*raw\_data=False*):

```

{
  'asks': [
    380.510 STEEM 460.291 SBD @ 1.209669 SBD/STEEM,
    53.785 STEEM 65.063 SBD @ 1.209687 SBD/STEEM
  ],
  'bids': [
    0.292 STEEM 0.353 SBD @ 1.208904 SBD/STEEM,
    8.498 STEEM 10.262 SBD @ 1.207578 SBD/STEEM
  ],
  'asks_date': [
    datetime.datetime(2018, 4, 30, 21, 7, 24, tzinfo=<UTC>),
    datetime.datetime(2018, 4, 30, 18, 12, 18, tzinfo=<UTC>)
  ],
  'bids_date': [
    datetime.datetime(2018, 4, 30, 21, 1, 21, tzinfo=<UTC>),
    datetime.datetime(2018, 4, 30, 20, 38, 21, tzinfo=<UTC>)
  ]
}

```

Sample output (*raw\_data=True*):

```

{
  'asks': [
    {
      'order_price': {'base': '8.000 STEEM', 'quote': '9.618 SBD
↪'},
      'real_price': '1.202250000000000004',
      'steem': 4565,
      'sbd': 5488,
      'created': '2018-04-30T21:12:45'
    }
  ],
  'bids': [
    {
      'order_price': {'base': '10.000 SBD', 'quote': '8.333 STEEM
↪'},

```

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```
        'real_price': '1.20004800192007677',
        'steem': 8333,
        'sbd': 10000,
        'created': '2018-04-30T20:29:33'
    }
]
```

---

**Note:** Each bid is an instance of class *beem.price.Order* and thus carries the keys *base*, *quote* and *price*. From those you can obtain the actual amounts for sale

---

**recent\_trades** (*limit=25, raw\_data=False*)

Returns the order book for a given market. You may also specify “all” to get the orderbooks of all markets.

**Parameters**

- **limit** (*int*) – Limit the amount of orders (default: 25)
- **raw\_data** (*bool*) – when False, FilledOrder objects will be returned

Sample output (*raw\_data=False*):

```
[
    (2018-04-30 21:00:54+00:00) 0.267 STEEM 0.323 SBD @ 1.209738 SBD/
    ↳STEEM,
    (2018-04-30 20:59:30+00:00) 0.131 STEEM 0.159 SBD @ 1.213740 SBD/
    ↳STEEM,
    (2018-04-30 20:55:45+00:00) 0.093 STEEM 0.113 SBD @ 1.215054 SBD/
    ↳STEEM,
    (2018-04-30 20:55:30+00:00) 26.501 STEEM 32.058 SBD @ 1.209690 SBD/
    ↳STEEM,
    (2018-04-30 20:55:18+00:00) 2.108 STEEM 2.550 SBD @ 1.209677 SBD/
    ↳STEEM,
]
```

Sample output (*raw\_data=True*):

```
[
    {'date': '2018-04-30T21:02:45', 'current_pays': '0.235 SBD', 'open_
    ↳pays': '0.194 STEEM'},
    {'date': '2018-04-30T21:02:03', 'current_pays': '24.494 SBD',
    ↳'open_pays': '20.248 STEEM'},
    {'date': '2018-04-30T20:48:30', 'current_pays': '175.464 STEEM',
    ↳'open_pays': '211.955 SBD'},
    {'date': '2018-04-30T20:48:30', 'current_pays': '0.999 STEEM',
    ↳'open_pays': '1.207 SBD'},
    {'date': '2018-04-30T20:47:54', 'current_pays': '0.273 SBD', 'open_
    ↳pays': '0.225 STEEM'},
]
```

---

**Note:** Each bid is an instance of *beem.price.Order* and thus carries the keys *base*, *quote* and *price*. From those you can obtain the actual amounts for sale

---

**sell** (*price, amount, expiration=None, killfill=False, account=None, orderid=None, re-*  
*turnOrderId=False*)

Places a sell order in a given market

#### Parameters

- **price** (*float*) – price denoted in base/quote
- **amount** (*number*) – Amount of quote to sell
- **expiration** (*number*) – (optional) expiration time of the order in seconds (defaults to 7 days)
- **killfill** (*bool*) – flag that indicates if the order shall be killed if it is not filled (defaults to False)
- **account** (*string*) – Account name that executes that order
- **returnOrderId** (*string*) – If set to “head” or “irreversible” the call will wait for the tx to appear in the head/irreversible block and add the key “orderid” to the tx output

Prices/Rates are denoted in ‘base’, i.e. the SBD\_STEEM market is priced in STEEM per SBD.

**Example:** in the SBD\_STEEM market, a price of 300 means a SBD is worth 300 STEEM

---

**Note:** All prices returned are in the **reversed** orientation as the market. I.e. in the STEEM/SBD market, prices are SBD per STEEM. That way you can multiply prices with *1.05* to get a +5%.

---

**static steem\_btc\_ticker()**

Returns the STEEM/BTC price from bittrex, binance, huobi and upbit. The mean price is weighted by the exchange volume.

**steem\_usd\_implied()**

Returns the current STEEM/USD market price

**ticker** (*raw\_data=False*)

Returns the ticker for all markets.

Output Parameters:

- **latest:** Price of the order last filled
- **lowest\_ask:** Price of the lowest ask
- **highest\_bid:** Price of the highest bid
- **sbd\_volume:** Volume of SBD
- **steem\_volume:** Volume of STEEM
- **percent\_change:** 24h change percentage (in %)

---

**Note:** Market is STEEM:SBD and prices are SBD per STEEM!

---

Sample Output:

```
{
  'highest_bid': 0.30100226633322913,
  'latest': 0.0,
  'lowest_ask': 0.3249636958897082,
  'percent_change': 0.0,
  'sbd_volume': 108329611.0,
```

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```

    'steem_volume': 355094043.0
}

```

**trade\_history** (*start=None, stop=None, interval=None, limit=25, raw\_data=False*)

Returns the trade history for the internal market

This function allows to fetch a fixed number of trades at fixed interval times to reduce the call duration time. E.g. it is possible to receive the trades from the last 7 days, by fetching 100 trades each 6 hours.

When interval is set to None, all trades are received between start and stop. This can take a while.

#### Parameters

- **start** (*datetime*) – Start date
- **stop** (*datetime*) – Stop date
- **interval** (*timedelta*) – Defines the interval
- **limit** (*int*) – Defines how many trades are fetched at each interval point
- **raw\_data** (*bool*) – when True, the raw data are returned

**trades** (*limit=100, start=None, stop=None, raw\_data=False*)

Returns your trade history for a given market.

#### Parameters

- **limit** (*int*) – Limit the amount of orders (default: 100)
- **start** (*datetime*) – start time
- **stop** (*datetime*) – stop time

**volume24h** (*raw\_data=False*)

Returns the 24-hour volume for all markets, plus totals for primary currencies.

Sample output:

```

{
    "STEEM": 361666.63617,
    "SBD": 1087.0
}

```

## beem.memo

**class** beem.memo.**Memo** (*from\_account=None, to\_account=None, blockchain\_instance=None, \*\*kwargs*)

Bases: object

Deals with Memos that are attached to a transfer

#### Parameters

- **from\_account** (*Account*) – Account that has sent the memo
- **to\_account** (*Account*) – Account that has received the memo
- **blockchain\_instance** (*Steem*) – Steem instance

A memo is encrypted with a shared secret derived from a private key of the sender and a public key of the receiver. Due to the underlying mathematics, the same shared secret can be derived by the private key of the



receiver and the public key of the sender. The encrypted message is perturbed by a nonce that is part of the transmitted message.

```
from beem.memo import Memo
m = Memo("holger80", "beem")
m.unlock_wallet("secret")
enc = (m.encrypt("test"))
print(enc)
>> {'message': '
↳ #DTpKcbxWqsETCRfjYGk9feERFa5nVBF8FaHfWPwUjyHBTgNhXGh4mN5TTG41nLhUcHtXfu7Hy3AwLrtWvolERUyAZaJja
↳ ', 'from': 'STM6MQBLaX9Q15CK3prXoWK4C6EqtSL7C4rqqlh6BQjxvfk9tuT3N', 'to':
↳ 'STM6sRudsxWpTZWxnpRkCDVD51RteiJnvJYct5LiZAbVLfM1hJCQC'}
print(m.decrypt(enc))
>> foobar
```

To decrypt a memo, simply use

```
from beem.memo import Memo
m = Memo()
m.unlock_wallet("secret")
print(m.decrypt(op_data["memo"]))
```

if `op_data` being the payload of a transfer operation.

### Memo Keys

In Steem, memos are AES-256 encrypted with a shared secret between sender and receiver. It is derived from the memo private key of the sender and the memo public key of the receiver.

In order for the receiver to decode the memo, the shared secret has to be derived from the receiver's private key and the senders public key.

The memo public key is part of the account and can be retrieved with the `get_account` call:

```
get_account <accountname>
{
  [...]
  "options": {
    "memo_key": "GPH5TPTziKkLexhVKsQKtSpo4bAv5RnB8oXcG4sMHEwCcTf3r7dqE",
    [...]
  },
  [...]
}
```

while the memo private key can be dumped with `dump_private_keys`

### Memo Message

The take the following form:

```
{
  "from": "GPH5mgup8evDqMnT86L7scVebRYDC2fwAWmygPEUL43LjstQegYCC",
  "to": "GPH5Ar4j53kFWuEZQ9XhxbAja4YXMPJ2EnUg5QcrdeMFYUNMMNJbe",
  "nonce": "13043867485137706821",
  "message": "d55524c37320920844ca83bb20c8d008"
}
```

The fields *from* and *to* contain the memo public key of sender and receiver. The *nonce* is a random integer that is used for the seed of the AES encryption of the message.

Encrypting a memo

The high level memo class makes use of the beem wallet to obtain keys for the corresponding accounts.

```
from beem.memo import Memo
from beem.account import Account

memoObj = Memo(
    from_account=Account(from_account),
    to_account=Account(to_account)
)
encrypted_memo = memoObj.encrypt(memo)
```

Decoding of a received memo

```
from getpass import getpass
from beem.block import Block
from beem.memo import Memo

# Obtain a transfer from the blockchain
block = Block(23755086)
transaction = block["transactions"][3]
op = transaction["operations"][0]
op_id = op[0]
op_data = op[1]

# block
# transactions
# operation
# operation type
# operation payload

# Instantiate Memo for decoding
memo = Memo()

# Unlock wallet
memo.unlock_wallet(getpass())

# Decode memo
# Raises exception if required keys not available in the wallet
print(memo.decrypt(op_data["transfer"]))
```

**decrypt** (*memo*)

Decrypt a memo

**Parameters** *memo* (*str*) – encrypted memo message

**Returns** encrypted memo

**Return type** str

**decrypt\_binary** (*infile*, *outfile*, *buffer\_size*=2048)

Decrypt a binary file

**Parameters**

- **infile** (*str*) – encrypted binary file
- **outfile** (*str*) – output file name
- **buffer\_size** (*int*) – read buffer size

**Returns** encrypted memo information

**Return type** dict

**encrypt** (*memo*, *bts\_encrypt*=False, *return\_enc\_memo\_only*=False, *nonce*=None)

Encrypt a memo

**Parameters**

- **memo** (*str*) – clear text memo message
- **return\_enc\_memo\_only** (*bool*) – When True, only the encoded memo is returned
- **nonce** (*str*) – when not set, a random string is generated and used

**Returns** encrypted memo

**Return type** dict

**encrypt\_binary** (*infile*, *outfile*, *buffer\_size*=2048, *nonce*=None)

Encrypt a binary file

**Parameters**

- **infile** (*str*) – input file name
- **outfile** (*str*) – output file name
- **buffer\_size** (*int*) – write buffer size
- **nonce** (*str*) – when not set, a random string is generated and used

**extract\_decrypt\_memo\_data** (*memo*)

Returns information about an encrypted memo

**unlock\_wallet** (*\*args*, *\*\*kwargs*)

Unlock the library internal wallet

## beem.message

**class** beem.message.**Message** (*\*args*, *\*\*kwargs*)

Bases: *beem.message.MessageV1*, *beem.message.MessageV2*

**sign** (*\*args*, *\*\*kwargs*)

Sign a message with an account's memo key :param str account: (optional) the account that owns the bet  
(defaults to default\_account)

**Raises ValueError** – If not account for signing is provided

**Returns** the signed message encapsulated in a known format

**supported\_formats** = (<class 'beem.message.MessageV1'>, <class 'beem.message.MessageV2'>)

**valid\_exceptions** = (<class 'beem.exceptions.AccountDoesNotExistsException'>, <class 'beem.exceptions.AccountDoesNotExistsException'>)

**verify** (*\*\*kwargs*)

Verify a message with an account's memo key :param str account: (optional) the account that owns the bet  
(defaults to default\_account)

**Returns** True if the message is verified successfully

:raises InvalidMessageSignature if the signature is not ok

**class** beem.message.**MessageV1** (*message*, *blockchain\_instance*=None, *\*args*, *\*\*kwargs*)

Bases: object

Allow to sign and verify Messages that are sigend with a private key

**MESSAGE\_SPLIT** = ('-----BEGIN HIVE SIGNED MESSAGE-----', '-----BEGIN META-----', '-----BEGIN HIVE SIGNED MESSAGE-----')

**SIGNED\_MESSAGE\_ENCAPSULATED** = '\n{MESSAGE\_SPLIT[0]}\n{message}\n{MESSAGE\_SPLIT[1]}\n{MESSAGE\_SPLIT[2]}\n'

```
SIGNED_MESSAGE_META = '{message}\naccount={meta[account]}\nmemokey={meta[memokey]}\nbl
```

```
sign (account=None, **kwargs)
```

Sign a message with an account's memo key :param str account: (optional) the account that owns the bet  
(defaults to default\_account)

**Raises ValueError** – If not account for signing is provided

**Returns** the signed message encapsulated in a known format

```
verify (**kwargs)
```

Verify a message with an account's memo key :param str account: (optional) the account that owns the bet  
(defaults to default\_account)

**Returns** True if the message is verified successfully

:raises InvalidMessageSignature if the signature is not ok

```
class beem.message.MessageV2 (message, blockchain_instance=None, *args, **kwargs)
```

Bases: object

Allow to sign and verify Messages that are sigend with a private key

```
sign (account=None, **kwargs)
```

Sign a message with an account's memo key :param str account: (optional) the account that owns the bet  
(defaults to default\_account)

**Raises ValueError** – If not account for signing is provided

**Returns** the signed message encapsulated in a known format

```
verify (**kwargs)
```

Verify a message with an account's memo key :param str account: (optional) the account that owns the bet  
(defaults to default\_account)

**Returns** True if the message is verified successfully

:raises InvalidMessageSignature if the signature is not ok

## beem.nodelist

```
class beem.nodelist.NodeList
```

Bases: list

Returns HIVE/STEEM nodes as list

```
from beem.nodelist import NodeList
n = NodeList()
nodes_urls = n.get_nodes()
```

```
get_hive_nodes (testnet=False, not_working=False, wss=True, https=True)
```

Returns hive only nodes as list

### Parameters

- **testnet** (*bool*) – when True, testnet nodes are included

- **not\_working** (*bool*) – When True, all nodes including not working ones will be returned

**get\_node\_answer\_time** (*node\_list=None, verbose=False*)

Pings all nodes and measure the answer time

```
from beem.nodelist import NodeList
nl = NodeList()
nl.update_nodes()
nl.ping_nodes()
```

**get\_nodes** (*hive=False, exclude\_limited=False, dev=False, testnet=False, testnetdev=False, wss=True, https=True, not\_working=False, normal=True, appbase=True*)

Returns nodes as list

#### Parameters

- **hive** (*bool*) – When True, only HIVE nodes will be returned
- **exclude\_limited** (*bool*) – When True, limited nodes are excluded
- **dev** (*bool*) – when True, dev nodes with version 0.19.11 are included
- **testnet** (*bool*) – when True, testnet nodes are included
- **testnetdev** (*bool*) – When True, testnet-dev nodes are included
- **not\_working** (*bool*) – When True, all nodes including not working ones will be returned
- **normal** (*bool*) – deprecated
- **appbase** (*bool*) – deprecated

**get\_steem\_nodes** (*testnet=False, not\_working=False, wss=True, https=True*)

Returns steem only nodes as list

#### Parameters

- **testnet** (*bool*) – when True, testnet nodes are included
- **not\_working** (*bool*) – When True, all nodes including not working ones will be returned

**get\_testnet** (*testnet=True, testnetdev=False*)

Returns testnet nodes

**update** (*node\_list*)

**update\_nodes** (*weights=None, blockchain\_instance=None, \*\*kwargs*)

Reads metadata from fullnodeupdate and recalculates the nodes score

**Parameters weight** (*list, dict*) – can be used to weight the different benchmarks

```
from beem.nodelist import NodeList
nl = NodeList()
weights = [0, 0.1, 0.2, 1]
nl.update_nodes(weights)
weights = {'block': 0.1, 'history': 0.1, 'apicall': 1, 'config': 1}
nl.update_nodes(weights)
```

`beem.nodelist.node_answer_time` (*node*)

## beem.notify

**class** beem.notify.**Notify** (*on\_block=None, only\_block\_id=False, blockchain\_instance=None, keep\_alive=25, \*\*kwargs*)

Bases: `events.events.Events`

Notifications on Blockchain events.

This modules allows you to be notified of events taking place on the blockchain.

### Parameters

- **on\_block** (*fn*) – Callback that will be called for each block received
- **blockchain\_instance** (`Steem`) – Steem instance

### Example

```
from pprint import pprint
from beem.notify import Notify

notify = Notify(
    on_block=print,
)
notify.listen()
```

**close()**

Cleanly close the Notify instance

**listen()**

This call initiates the listening/notification process. It behaves similar to `run_forever()`.

**process\_block** (*message*)

**reset\_subscriptions** (*accounts=[]*)

Change the subscriptions of a running Notify instance

## beem.price

**class** beem.price.**FilledOrder** (*order, blockchain\_instance=None, \*\*kwargs*)

Bases: `beem.price.Price`

This class inherits `beem.price.Price` but has the `base` and `quote` Amounts not only be used to represent the price (as a ratio of base and quote) but instead has those amounts represent the amounts of an actually filled order!

**Parameters** **blockchain\_instance** (`Steem`) – Steem instance

---

**Note:** Instances of this class come with an additional `date` key that shows when the order has been filled!

---

**json()**

**class** beem.price.**Order** (*base, quote=None, blockchain\_instance=None, \*\*kwargs*)

Bases: `beem.price.Price`

This class inherits `beem.price.Price` but has the `base` and `quote` Amounts not only be used to represent the price (as a ratio of base and quote) but instead has those amounts represent the amounts of an actual order!

**Parameters** **blockchain\_instance** (`Steem`) – Steem instance

---

**Note:** If an order is marked as deleted, it will carry the 'deleted' key which is set to `True` and all other data be `None`.

---

```
class beem.price.Price (price=None,      base=None,      quote=None,      base_asset=None,
                        blockchain_instance=None, **kwargs)
```

Bases: dict

This class deals with all sorts of prices of any pair of assets to simplify dealing with the tuple:

```
(quote, base)
```

each being an instance of `beem.amount.Amount`. The amount themselves define the price.

---

**Note:** The price (floating) is derived as `base/quote`

---

### Parameters

- **args** (*list*) – Allows to deal with different representations of a price
- **base** (*Asset*) – Base asset
- **quote** (*Asset*) – Quote asset
- **blockchain\_instance** (*Steem*) – Steem instance

**Returns** All data required to represent a price

**Return type** dictionary

Way to obtain a proper instance:

- args is a str with a price and two assets
- args can be a floating number and base and quote being instances of `beem.asset.Asset`
- args can be a floating number and base and quote being instances of str
- args can be dict with keys price, base, and quote (*graphene balances*)
- args can be dict with keys base and quote
- args can be dict with key receives (filled orders)
- args being a list of [quote, base] both being instances of `beem.amount.Amount`
- args being a list of [quote, base] both being instances of str (amount symbol)
- base and quote being instances of `beem.asset.Amount`

This allows instantiations like:

- `Price("0.315 SBD/STEEM")`
- `Price(0.315, base="SBD", quote="STEEM")`
- `Price(0.315, base=Asset("SBD"), quote=Asset("STEEM"))`
- `Price({"base": {"amount": 1, "asset_id": "SBD"}, "quote": {"amount": 10, "asset_id": "SBD"}})`
- `Price(quote="10 STEEM", base="1 SBD")`
- `Price("10 STEEM", "1 SBD")`

- `Price(Amount("10 STEEM"), Amount("1 SBD"))`
- `Price(1.0, "SBD/STEEM")`

Instances of this class can be used in regular mathematical expressions (+-\*/%) such as:

```
>>> from beem.price import Price
>>> from beem import Steem
>>> stm = Steem("https://api.steemit.com")
>>> Price("0.3314 SBD/STEEM", blockchain_instance=stm) * 2
0.662804 SBD/STEEM
>>> Price(0.3314, "SBD", "STEEM", blockchain_instance=stm)
0.331402 SBD/STEEM
```

#### **as\_base** (*base*)

Returns the price instance so that the base asset is base.

---

**Note:** This makes a copy of the object!

---

```
>>> from beem.price import Price
>>> from beem import Steem
>>> stm = Steem("https://api.steemit.com")
>>> Price("0.3314 SBD/STEEM", blockchain_instance=stm).as_base("STEEM")
3.017483 STEEM/SBD
```

#### **as\_quote** (*quote*)

Returns the price instance so that the quote asset is quote.

---

**Note:** This makes a copy of the object!

---

```
>>> from beem.price import Price
>>> from beem import Steem
>>> stm = Steem("https://api.steemit.com")
>>> Price("0.3314 SBD/STEEM", blockchain_instance=stm).as_quote("SBD")
3.017483 STEEM/SBD
```

**copy** () → a shallow copy of D

#### **invert** ()

Invert the price (e.g. go from SBD/STEEM into STEEM/SBD)

```
>>> from beem.price import Price
>>> from beem import Steem
>>> stm = Steem("https://api.steemit.com")
>>> Price("0.3314 SBD/STEEM", blockchain_instance=stm).invert()
3.017483 STEEM/SBD
```

#### **json** ()

#### **market**

Open the corresponding market

**Returns** Instance of `beem.market.Market` for the corresponding pair of assets.

#### **symbols** ()

`beem.price.check_asset` (*other, self, stm*)



**beem.rc**

```
class beem.rc.RC (blockchain_instance=None, **kwargs)
```

Bases: object

```
account_create_dict (account_create_dict)
```

Calc RC costs for account create

```
account_update_dict (account_update_dict)
```

Calc RC costs for account update

```
claim_account (tx_size=300)
```

Claim account

```
comment (tx_size=1000, permink_length=10, parent_permink_length=10)
```

Calc RC for a comment

```
comment_dict (comment_dict)
```

Calc RC costs for a comment dict object

Example for calculating RC costs

```
from beem.rc import RC
comment_dict = {
    "permink": "test", "author": "holger80",
    "body": "test", "parent_permink": "",
    "parent_author": "", "title": "test",
    "json_metadata": {"foo": "bar"}
}

rc = RC()
print (rc.comment_from_dict (comment_dict))
```

```
create_claimed_account_dict (create_claimed_account_dict)
```

Calc RC costs for claimed account create

```
custom_json (tx_size=444, follow_id=False)
```

```
custom_json_dict (custom_json_dict)
```

Calc RC costs for a custom\_json

Example for calculating RC costs

```
from beem.rc import RC
from collections import OrderedDict
custom_json_dict = {
    "json": [
        "reblog", OrderedDict([("account", "xeroc"), (
↪ "author", "chainsquad"),
        ("permink", "streemian-
↪ com-to-open-its-doors-and-offer-a-20-discount")
    ]),
    "required_auths": [],
    "required_posting_auths": ["xeroc"],
    "id": "follow"
}

rc = RC()
print (rc.comment (custom_json_dict))
```

**get\_authority\_byte\_count** (*auth*)

**get\_resource\_count** (*tx\_size*, *execution\_time\_count*, *state\_bytes\_count=0*,  
*new\_account\_op\_count=0*, *market\_op\_count=0*)

Creates the resource\_count dictionary based on tx\_size, state\_bytes\_count, new\_account\_op\_count and market\_op\_count

**get\_tx\_size** (*op*)

Returns the tx size of an operation

**transfer** (*tx\_size=290*, *market\_op\_count=1*)

Calc RC of a transfer

**transfer\_dict** (*transfer\_dict*)

Calc RC costs for a transfer dict object

Example for calculating RC costs

```
from beem.rc import RC
from beem.amount import Amount
transfer_dict = {
    "from": "foo", "to": "baar",
    "amount": Amount("111.110 STEEM"),
    "memo": "Fooo"
}

rc = RC()
print(rc.comment(transfer_dict))
```

**vote** (*tx\_size=210*)

Calc RC for a vote

**vote\_dict** (*vote\_dict*)

Calc RC costs for a vote

Example for calculating RC costs

```
from beem.rc import RC
vote_dict = {
    "voter": "foobara", "author": "foobarc",
    "permlink": "foobard", "weight": 1000
}

rc = RC()
print(rc.comment(vote_dict))
```

## beem.snapshot

**class** beem.snapshot.AccountSnapshot (*account*, *account\_history=[]*,  
*blockchain\_instance=None*, *\*\*kwargs*)

Bases: list

This class allows to easily access Account history

### Parameters

- **account\_name** (*str*) – Name of the account
- **blockchain\_instance** (*Steem*) – Steem instance

**build** (*only\_ops=[]*, *exclude\_ops=[]*, *enable\_rewards=False*, *enable\_out\_votes=False*, *enable\_in\_votes=False*)

Builds the account history based on all account operations

#### Parameters

- **only\_ops** (*array*) – Limit generator by these operations (*optional*)
- **exclude\_ops** (*array*) – Exclude these operations from generator (*optional*)

**build\_curation\_arrays** (*end\_date=None*, *sum\_days=7*)

Build curation arrays

**build\_rep\_arrays** ()

Build reputation arrays

**build\_sp\_arrays** ()

Builds the own\_sp and eff\_sp array

**build\_vp\_arrays** ()

Build vote power arrays

**get\_account\_history** (*start=None*, *stop=None*, *use\_block\_num=True*)

Uses account history to fetch all related ops

#### Parameters

- **start** (*int*, *datetime*) – start number/date of transactions to return (*optional*)
- **stop** (*int*, *datetime*) – stop number/date of transactions to return (*optional*)
- **use\_block\_num** (*bool*) – if true, start and stop are block numbers, otherwise virtual OP count numbers.

**get\_data** (*timestamp=None*, *index=0*)

Returns snapshot for given timestamp

**get\_ops** (*start=None*, *stop=None*, *use\_block\_num=True*, *only\_ops=[]*, *exclude\_ops=[]*)

Returns ops in the given range

**parse\_op** (*op*, *only\_ops=[]*, *enable\_rewards=False*, *enable\_out\_votes=False*, *enable\_in\_votes=False*)

Parse account history operation

**reset** ()

Resets the arrays not the stored account history

**search** (*search\_str*, *start=None*, *stop=None*, *use\_block\_num=True*)

Returns ops in the given range

**update** (*timestamp*, *own*, *delegated\_in=None*, *delegated\_out=None*, *steem=0*, *sbd=0*)

Updates the internal state arrays

#### Parameters

- **timestamp** (*datetime*) – datetime of the update
- **own** (*amount.Amount*, *float*) – vests
- **delegated\_in** (*dict*) – Incoming delegation
- **delegated\_out** (*dict*) – Outgoing delegation
- **steem** (*amount.Amount*, *float*) – steem
- **sbd** (*amount.Amount*, *float*) – sbd

**update\_in\_vote** (*timestamp*, *weight*, *op*)

**update\_out\_vote** (*timestamp, weight*)

**update\_rewards** (*timestamp, curation\_reward, author\_vests, author\_steem, author\_sbd*)

## beem.steem

```
class beem.steem.Steem(node="", rpcuser=None, rpcpassword=None, debug=False,  
                      data_refresh_time_seconds=900, **kwargs)
```

Bases: `beem.blockchaininstance.BlockChainInstance`

Connect to the Steem network.

### Parameters

- **node** (*str*) – Node to connect to (*optional*)
- **rpcuser** (*str*) – RPC user (*optional*)
- **rpcpassword** (*str*) – RPC password (*optional*)
- **nobroadcast** (*bool*) – Do **not** broadcast a transaction! (*optional*)
- **unsigned** (*bool*) – Do **not** sign a transaction! (*optional*)
- **debug** (*bool*) – Enable Debugging (*optional*)
- **keys** (*array, dict, string*) – Predefine the wif keys to shortcut the wallet database (*optional*)
- **wif** (*array, dict, string*) – Predefine the wif keys to shortcut the wallet database (*optional*)
- **offline** (*bool*) – Boolean to prevent connecting to network (defaults to `False`) (*optional*)
- **expiration** (*int*) – Delay in seconds until transactions are supposed to expire (*optional*) (default is 30)
- **blocking** (*str*) – Wait for broadcasted transactions to be included in a block and return full transaction (can be “head” or “irreversible”)
- **bundle** (*bool*) – Do not broadcast transactions right away, but allow to bundle operations. It is not possible to send out more than one vote operation and more than one comment operation in a single broadcast (*optional*)
- **appbase** (*bool*) – Use the new appbase rpc protocol on nodes with version 0.19.4 or higher. The settings has no effect on nodes with version of 0.19.3 or lower.
- **num\_retries** (*int*) – Set the maximum number of reconnects to the nodes before NumRetriesReached is raised. Disabled for -1. (default is -1)
- **num\_retries\_call** (*int*) – Repeat num\_retries\_call times a rpc call on node error (default is 5)
- **timeout** (*int*) – Timeout setting for https nodes (default is 60)
- **use\_sc2** (*bool*) – When True, a steemconnect object is created. Can be used for broadcast posting op or creating hot\_links (default is False)
- **steemconnect** (`SteemConnect`) – A SteemConnect object can be set manually, set use\_sc2 to True
- **custom\_chains** (*dict*) – custom chain which should be added to the known chains

Three wallet operation modes are possible:

- **Wallet Database:** Here, the steemlibs load the keys from the locally stored wallet SQLite database (see `storage.py`). To use this mode, simply call `Steem()` without the `keys` parameter
- **Providing Keys:** Here, you can provide the keys for your accounts manually. All you need to do is add the wif keys for the accounts you want to use as a simple array using the `keys` parameter to `Steem()`.
- **Force keys:** This more is for advanced users and requires that you know what you are doing. Here, the `keys` parameter is a dictionary that overwrite the `active`, `owner`, `posting` or `memo` keys for any account. This mode is only used for *foreign* signatures!

If no node is provided, it will connect to default nodes of <http://geo.steem.pl>. Default settings can be changed with:

```
steem = Steem(<host>)
```

where `<host>` starts with `https://`, `ws://` or `wss://`.

The purpose of this class it to simplify interaction with Steem.

The idea is to have a class that allows to do this:

```
>>> from beem import Steem
>>> steem = Steem()
>>> print(steem.get_blockchain_version())
```

This class also deals with edits, votes and reading content.

Example for adding a custom chain:

```
from beem import Steem
stm = Steem(node=["https://mytstnet.com"], custom_chains={"MYTESTNET":
    {'chain_assets': [{ 'asset': 'SBD', 'id': 0, 'precision': 3, 'symbol': 'SBD'},
                      { 'asset': 'STEEM', 'id': 1, 'precision': 3, 'symbol': 'STEEM'
→ }],
                      { 'asset': 'VESTS', 'id': 2, 'precision': 6, 'symbol': 'VESTS
→ }],
    'chain_id': '79276aea5d4877d9a25892eaa01b0adf019d3e5cb12a97478df3298ccdd01674
→ ',
    'min_version': '0.0.0',
    'prefix': 'MTN'}
    })
```

### chain\_params

**get\_network** (*use\_stored\_data=True, config=None*)

Identify the network

**Parameters** *use\_stored\_data* (*bool*) – if True, stored data will be returned. If stored data are empty or old, `refresh_data()` is used.

**Returns** Network parameters

**Return type** dictionary

**get\_sbd\_per\_rshares** (*not\_broadcasted\_vote\_rshares=0, use\_stored\_data=True*)

Returns the current rshares to SBD ratio

**get\_steem\_per\_mvest** (*time\_stamp=None, use\_stored\_data=True*)

Returns the MVEST to STEEM ratio

**Parameters** `time_stamp` (*int*) – (optional) if set, return an estimated STEEM per MVEST ratio for the given time stamp. If unset the current ratio is returned (default). (can also be a datetime object)

**get\_token\_per\_mvest** (*time\_stamp=None, use\_stored\_data=True*)

Returns the MVEST to TOKEN ratio

**Parameters** `time_stamp` (*int*) – (optional) if set, return an estimated TOKEN per MVEST ratio for the given time stamp. If unset the current ratio is returned (default). (can also be a datetime object)

**hardfork**

**is\_steem**

**rshares\_to\_sbd** (*rshares, not\_broadcasted\_vote=False, use\_stored\_data=True*)

Calculates the current SBD value of a vote

**rshares\_to\_token\_backed\_dollar** (*rshares, not\_broadcasted\_vote=False, use\_stored\_data=True*)

Calculates the current HBD value of a vote

**rshares\_to\_vote\_pct** (*rshares, post\_rshares=0, steem\_power=None, vests=None, voting\_power=10000, use\_stored\_data=True*)

Obtain the voting percentage for a desired rshares value for a given Steem Power or vesting shares and voting\_power Give either steem\_power or vests, not both. When the output is greater than 10000 or less than -10000, the given absolute rshares are too high

Returns the required voting percentage (100% = 10000)

#### Parameters

- **rshares** (*number*) – desired rshares value
- **steem\_power** (*number*) – Steem Power
- **vests** (*number*) – vesting shares
- **voting\_power** (*int*) – voting power (100% = 10000)

**sbd\_symbol**

get the current chains symbol for SBD (e.g. “TBD” on testnet)

**sbd\_to\_rshares** (*sbd, not\_broadcasted\_vote=False, use\_stored\_data=True*)

Obtain the r-shares from SBD

#### Parameters

- **sbd** (*str, int, amount.Amount*) – SBD
- **not\_broadcasted\_vote** (*bool*) – not\_broadcasted or already broadcasted vote (True = not\_broadcasted vote). Only impactful for very high amounts of SBD. Slight modification to the value calculation, as the not\_broadcasted vote rshares decreases the reward pool.

**sbd\_to\_vote\_pct** (*sbd, post\_rshares=0, steem\_power=None, vests=None, voting\_power=10000, not\_broadcasted\_vote=True, use\_stored\_data=True*)

Obtain the voting percentage for a desired SBD value for a given Steem Power or vesting shares and voting power Give either Steem Power or vests, not both. When the output is greater than 10000 or smaller than -10000, the SBD value is too high.

Returns the required voting percentage (100% = 10000)

#### Parameters

- **sbd** (*str, int, amount.Amount*) – desired SBD value

- **steem\_power** (*number*) – Steem Power
- **vests** (*number*) – vesting shares
- **not\_broadcasted\_vote** (*bool*) – not\_broadcasted or already broadcasted vote (True = not\_broadcasted vote). Only impactful for very high amounts of SBD. Slight modification to the value calculation, as the not\_broadcasted vote rshares decreases the reward pool.

**sp\_to\_rshares** (*steem\_power*, *post\_rshares*=0, *voting\_power*=10000, *vote\_pct*=10000, *use\_stored\_data*=True)  
Obtain the r-shares from Steem power

#### Parameters

- **steem\_power** (*number*) – Steem Power
- **post\_rshares** (*int*) – rshares of post which is voted
- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)

**sp\_to\_sbd** (*sp*, *post\_rshares*=0, *voting\_power*=10000, *vote\_pct*=10000, *not\_broadcasted\_vote*=True, *use\_stored\_data*=True)  
Obtain the resulting SBD vote value from Steem power

#### Parameters

- **steem\_power** (*number*) – Steem Power
- **post\_rshares** (*int*) – rshares of post which is voted
- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)
- **not\_broadcasted\_vote** (*bool*) – not\_broadcasted or already broadcasted vote (True = not\_broadcasted vote).

Only impactful for very big votes. Slight modification to the value calculation, as the not\_broadcasted vote rshares decreases the reward pool.

**sp\_to\_vests** (*sp*, *timestamp*=None, *use\_stored\_data*=True)  
Converts SP to vests

#### Parameters

- **sp** (*float*) – Steem power to convert
- **timestamp** (*datetime*) – (Optional) Can be used to calculate the conversion rate from the past

**steem\_symbol**  
get the current chains symbol for STEEM (e.g. “TESTS” on testnet)

**token\_power\_to\_token\_backed\_dollar** (*token\_power*, *post\_rshares*=0, *voting\_power*=10000, *vote\_pct*=10000, *not\_broadcasted\_vote*=True, *use\_stored\_data*=True)  
Obtain the resulting Token backed dollar vote value from Token power

#### Parameters

- **hive\_power** (*number*) – Token Power
- **post\_rshares** (*int*) – rshares of post which is voted

- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)
- **not\_broadcasted\_vote** (*bool*) – not\_broadcasted or already broadcasted vote (True = not\_broadcasted vote).

Only impactful for very big votes. Slight modification to the value calculation, as the not\_broadcasted vote rshares decreases the reward pool.

**token\_power\_to\_vests** (*token\_power*, *timestamp=None*, *use\_stored\_data=True*)  
Converts TokenPower to vests

#### Parameters

- **token\_power** (*float*) – Token power to convert
- **timestamp** (*datetime*) – (Optional) Can be used to calculate the conversion rate from the past

**vests\_symbol**  
get the current chains symbol for VESTS

**vests\_to\_rshares** (*vests*, *post\_rshares=0*, *voting\_power=10000*, *vote\_pct=10000*, *subtract\_dust\_threshold=True*, *use\_stored\_data=True*)  
Obtain the r-shares from vests

#### Parameters

- **vests** (*number*) – vesting shares
- **post\_rshares** (*int*) – rshares of post which is voted
- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)

**vests\_to\_sbd** (*vests*, *post\_rshares=0*, *voting\_power=10000*, *vote\_pct=10000*, *not\_broadcasted\_vote=True*, *use\_stored\_data=True*)  
Obtain the resulting SBD vote value from vests

#### Parameters

- **vests** (*number*) – vesting shares
- **post\_rshares** (*int*) – rshares of post which is voted
- **voting\_power** (*int*) – voting power (100% = 10000)
- **vote\_pct** (*int*) – voting percentage (100% = 10000)
- **not\_broadcasted\_vote** (*bool*) – not\_broadcasted or already broadcasted vote (True = not\_broadcasted vote).

Only impactful for very big votes. Slight modification to the value calculation, as the not\_broadcasted vote rshares decreases the reward pool.

**vests\_to\_sp** (*vests*, *timestamp=None*, *use\_stored\_data=True*)  
Converts vests to SP

#### Parameters

- **vests/float vests** (*amount.Amount*) – Vests to convert
- **timestamp** (*int*) – (Optional) Can be used to calculate the conversion rate from the past



**vests\_to\_token\_power** (*vests, timestamp=None, use\_stored\_data=True*)  
 Converts vests to TokenPower

#### Parameters

- **vests/float vests** (*amount.Amount*) – Vests to convert
- **timestamp** (*int*) – (Optional) Can be used to calculate the conversion rate from the past

### beem.steemconnect

**class** beem.steemconnect.**SteemConnect** (*blockchain\_instance=None, \*args, \*\*kwargs*)  
 Bases: object

**Parameters scope** (*str*) – comma separated string with scopes login,offline,vote,comment,delete\_comment,comment\_options,custom\_json,claim\_reward\_balance

```
# Run the login_app in examples and login with a account
from beem import Steem
from beem.steemconnect import SteemConnect
from beem.comment import Comment
sc2 = SteemConnect(client_id="beem.app")
steem = Steem(steemconnect=sc2)
steem.wallet.unlock("supersecret-passphrase")
post = Comment("author/permlink", blockchain_instance=steem)
post.upvote(voter="test") # replace "test" with your account
```

Examples for creating steemconnect v2 urls for broadcasting in browser:

```
from beem import Steem
from beem.account import Account
from beem.steemconnect import SteemConnect
from pprint import pprint
steem = Steem(nobroadcast=True, unsigned=True)
sc2 = SteemConnect(blockchain_instance=steem)
acc = Account("test", blockchain_instance=steem)
pprint(sc2.url_from_tx(acc.transfer("test1", 1, "STEEM", "test")))
```

```
'https://steemconnect.com/sign/transfer?from=test&to=test1&amount=1.000+STEEM&memo=test'
```

```
from beem import Steem
from beem.transactionbuilder import TransactionBuilder
from beembase import operations
from beem.steemconnect import SteemConnect
from pprint import pprint
stm = Steem(nobroadcast=True, unsigned=True)
sc2 = SteemConnect(blockchain_instance=stm)
tx = TransactionBuilder(blockchain_instance=stm)
op = operations.Transfer(**{"from": 'test',
                           "to": 'test1',
                           "amount": '1.000 STEEM',
                           "memo": 'test'})
tx.appendOps(op)
pprint(sc2.url_from_tx(tx.json()))
```

```
'https://steemconnect.com/sign/transfer?from=test&to=test1&amount=1.000+STEEM&memo=test'
```

**addToken** (*name*, *token*)

**broadcast** (*operations*, *username=None*)

Broadcast an operation

Sample operations:

```
[
  [
    'vote', {
      'voter': 'gandalf',
      'author': 'gtg',
      'permlink': 'steem-pressure-4-need-for-speed',
      'weight': 10000
    }
  ]
]
```

**changePassphrase** (*new\_pwd*)

Change the passphrase for the wallet database

**create** (*pwd*)

Alias for `newWallet()`

**Parameters** *pwd* (*str*) – Passphrase for the created wallet

**create\_hot\_sign\_url** (*operation*, *params*, *redirect\_uri=None*)

Creates a link for broadcasting an operation

**Parameters**

- **operation** (*str*) – operation name (e.g.: vote)
- **params** (*dict*) – operation dict params
- **redirect\_uri** (*str*) – Redirects to this uri, when set

**created** ()

Do we have a wallet database already?

**getPublicNames** ()

Return all installed public token

**getTokenForAccountName** (*name*)

Obtain the private token for a given public name

**Parameters** *name* (*str*) – Public name

**get\_access\_token** (*code*)

**get\_login\_url** (*redirect\_uri*, *\*\*kwargs*)

Returns a login url for receiving token from steemconnect

**headers**

**is\_encrypted** ()

Is the key store encrypted?

**lock** ()

Lock the wallet database

**locked()**

Is the wallet database locked?

**me** (*username=None*)

Calls the me function from steemconnect

```
from beem.steemconnect import SteemConnect
sc2 = SteemConnect()
sc2.steem.wallet.unlock("supersecret-passphrase")
sc2.me(username="test")
```

**newWallet** (*pwd*)

Create a new wallet database

**Parameters** *pwd* (*str*) – Passphrase for the created wallet

**refresh\_access\_token** (*code, scope*)

**removeTokenFromPublicName** (*name*)

Remove a token from the wallet database

**Parameters** *name* (*str*) – token to be removed

**revoke\_token** (*access\_token*)

**setToken** (*loadtoken*)

This method is strictly only for in memory token that are passed to Wallet/Steem with the `token` argument

**set\_access\_token** (*access\_token*)

Is needed for `broadcast()` and `me()`

**set\_username** (*username, permission='posting'*)

Set a username for the next `broadcast()` or `me()` operation. The necessary token is fetched from the wallet

**unlock** (*pwd*)

Unlock the wallet database

**unlocked()**

Is the wallet database unlocked?

**update\_user\_metadata** (*metadata*)

**url\_from\_tx** (*tx, redirect\_uri=None*)

Creates a link for broadcasting an operation

**Parameters**

- **tx** (*dict*) – includes the operation, which should be broadcast
- **redirect\_uri** (*str*) – Redirects to this uri, when set

## beem.storage

`beem.storage.generate_config_store` (*config, blockchain='hive'*)

`beem.storage.get_default_config_store` (*\*args, \*\*kwargs*)

`beem.storage.get_default_key_store` (*config, \*args, \*\*kwargs*)

**beem.transactionbuilder**

```
class beem.transactionbuilder.TransactionBuilder (tx={}, use_condenser_api=True,  
                                                  blockchain_instance=None,  
                                                  **kwargs)
```

Bases: dict

This class simplifies the creation of transactions by adding operations and signers. To build your own transactions and sign them

**Parameters**

- **tx** (*dict*) – transaction (Optional). If not set, the new transaction is created.
- **expiration** (*int*) – Delay in seconds until transactions are supposed to expire (*optional*) (default is 30)
- **steem\_instance** (*Steem*) – If not set, shared\_blockchain\_instance() is used

```
from beem.transactionbuilder import TransactionBuilder  
from beembase.operations import Transfer  
from beem import Steem  
wif = "5KQwrPbwdL6PhXujxW37FSSQZlJiwsST4cqQzDeyXtP79zkvFD3"  
stm = Steem(nobroadcast=True, keys={'active': wif})  
tx = TransactionBuilder(steem_instance=stm)  
transfer = {"from": "test", "to": "test1", "amount": "1 STEEM", "memo": ""}  
tx.appendOps(Transfer(transfer))  
tx.appendSigner("test", "active") # or tx.appendWif(wif)  
signed_tx = tx.sign()  
broadcast_tx = tx.broadcast()
```

**addSigningInformation** (*account, permission, reconstruct\_tx=False*)

This is a private method that adds side information to a unsigned/partial transaction in order to simplify later signing (e.g. for multisig or coldstorage)

Not needed when “appendWif” was already or is going to be used

FIXME: Does not work with owner keys!

**Parameters** **reconstruct\_tx** (*bool*) – when set to False and tx is already constructed, it will not be reconstructed and already added signatures remain

**appendMissingSignatures** ()

Store which accounts/keys are supposed to sign the transaction

This method is used for an offline-signer!

**appendOps** (*ops, append\_to=None*)

Append op(s) to the transaction builder

**Parameters** **ops** (*list*) – One or a list of operations

**appendSigner** (*account, permission*)

Try to obtain the wif key from the wallet by telling which account and permission is supposed to sign the transaction. It is possible to add more than one signer.

**appendWif** (*wif*)

Add a wif that should be used for signing of the transaction.

**Parameters** **wif** (*string*) – One wif key to use for signing a transaction.

**broadcast** (*max\_block\_age=-1, trx\_id=True*)

Broadcast a transaction to the steem network. Returns the signed transaction and clears itself after broadcast.

Clears itself when broadcast was not successfully.

#### Parameters

- **max\_block\_age** (*int*) – parameter only used for appbase ready nodes
- **trx\_id** (*bool*) – When True, `trx_id` is return

**clear** ()

Clear the transaction builder and start from scratch

**clearWifs** ()

Clear all stored wifs

**constructTx** (*ref\_block\_num=None, ref\_block\_prefix=None*)

Construct the actual transaction and store it in the class's dict store

**get\_block\_params** (*use\_head\_block=False*)

Auxiliary method to obtain `ref_block_num` and `ref_block_prefix`. Requires a connection to a node!

**get\_parent** ()

TransactionBuilders don't have parents, they are their own parent

**get\_potential\_signatures** ()

Returns public key from signature

**get\_required\_signatures** (*available\_keys=[]*)

Returns public key from signature

**get\_transaction\_hex** ()

Returns a hex value of the transaction

**is\_empty** ()

Check if ops is empty

**json** (*with\_prefix=False*)

Show the transaction as plain json

**list\_operations** ()

List all ops

**searchPath** (*account, perm*)

**setPath** (*path*)

**set\_expiration** (*p*)

Set expiration date

**sign** (*reconstruct\_tx=True*)

Sign a provided transaction with the provided key(s) One or many wif keys to use for signing a transaction. The wif keys can be provided by "appendWif" or the signer can be defined "appendSigner". The wif keys from all signer that are defined by "appendSigner will be loaded from the wallet.

**Parameters reconstruct\_tx** (*bool*) – when set to False and tx is already constructed, it will not be reconstructed and already added signatures remain

**verify\_authority** ()

Verify the authority of the signed transaction

**beem.utils**

`beem.utils.addTzInfo(t, timezone='UTC')`

Returns a datetime object with tzinfo added

`beem.utils.assets_from_string(text)`

Correctly split a string containing an asset pair.

Splits the string into two assets with the separator being on of the following: :, /, or -.

`beem.utils.construct_authorperm(*args)`

Create a post identifier from comment/post object or arguments. Examples:

```
>>> from beem.utils import construct_authorperm
>>> print(construct_authorperm('username', 'permalink'))
@username/permlink
>>> print(construct_authorperm({'author': 'username', 'permalink':
↪ 'permalink'}))
@username/permlink
```

`beem.utils.construct_authorpermvoter(*args)`

Create a vote identifier from vote object or arguments. Examples:

```
>>> from beem.utils import construct_authorpermvoter
>>> print(construct_authorpermvoter('username', 'permalink', 'voter'))
@username/permlink|voter
>>> print(construct_authorpermvoter({'author': 'username', 'permalink':
↪ 'permalink', 'voter': 'voter'}))
@username/permlink|voter
```

`beem.utils.derive_beneficiaries(beneficiaries)`

`beem.utils.derive_permalink(title, parent_permalink=None, parent_author=None, max_permalink_length=256, with_suffix=True)`

Derive a permalink from a comment title (for root level comments) or the parent permalink and optionally the parent author (for replies).

`beem.utils.derive_tags(tags)`

`beem.utils.findall_patch_hunks(body=None)`

`beem.utils.formatTime(t)`

Properly Format Time for permlinks

`beem.utils.formatTimeFromNow(secs=0)`

Properly Format Time that is *x* seconds in the future

**Parameters** *secs* (*int*) – Seconds to go in the future (*x*>0) or the past (*x*<0)

**Returns** Properly formatted time for Graphene (%Y-%m-%dT%H:%M:%S)

**Return type** str

`beem.utils.formatTimeString(t)`

Properly Format Time for permlinks

`beem.utils.formatTimedelta(td)`

Format timedelta to String

`beem.utils.formatToTimeStamp(t)`

Returns a timestamp integer

**Parameters** *t* (*datetime*) – datetime object

**Returns** Timestamp as integer

`beem.utils.load_dirty_json(dirty_json)`

`beem.utils.make_patch(a, b, n=3)`

`beem.utils.parse_time(block_time)`

Take a string representation of time from the blockchain, and parse it into datetime object.

`beem.utils.remove_from_dict(obj, keys=[], keep_keys=True)`

Prune a class or dictionary of all but keys (keep\_keys=True). Prune a class or dictionary of specified keys.(keep\_keys=False).

`beem.utils.reputation_to_score(rep)`

Converts the account reputation value into the reputation score

`beem.utils.resolve_authorperm(identifier)`

Correctly split a string containing an authorperm.

Splits the string into author and permliink with the following separator: /.

Examples:

```
>>> from beem.utils import resolve_authorperm
>>> author, permliink = resolve_authorperm('https://d.tube/#!/v/pottlund/
↳m5cqkd1a')
>>> author, permliink = resolve_authorperm("https://steemit.com/witness-
↳category/@gtg/24lfrm-gtg-witness-log")
>>> author, permliink = resolve_authorperm("@gtg/24lfrm-gtg-witness-log")
>>> author, permliink = resolve_authorperm("https://busy.org/@gtg/24lfrm-
↳gtg-witness-log")
```

`beem.utils.resolve_authorpermvoter(identifier)`

Correctly split a string containing an authorpermvoter.

Splits the string into author and permliink with the following separator: / and |.

`beem.utils.resolve_root_identifier(url)`

`beem.utils.sanitize_permliink(permliink)`

`beem.utils.seperate_yaml_dict_from_body(content)`

## beem.vote

**class** `beem.vote.AccountVotes` (*account*, *start=None*, *stop=None*, *raw\_data=False*, *lazy=False*, *full=False*, *blockchain\_instance=None*, *\*\*kwargs*)

Bases: `beem.vote.VotesObject`

Obtain a list of votes for an account Lists the last 100+ votes on the given account.

### Parameters

- **account** (*str*) – Account name
- **steem\_instance** (*Steem*) – Steem() instance to use when accesing a RPC

**class** `beem.vote.ActiveVotes` (*authorperm*, *lazy=False*, *full=False*, *blockchain\_instance=None*, *\*\*kwargs*)

Bases: `beem.vote.VotesObject`

Obtain a list of votes for a post

### Parameters

- **authorperm** (*str*) – authorperm link
- **steem\_instance** (*Steem*) – Steem() instance to use when accessing a RPC

**class** beem.vote.Vote (*voter, authorperm=None, full=False, lazy=False, blockchain\_instance=None, \*\*kwargs*)

Bases: *beem.blockchainobject.BlockchainObject*

Read data about a Vote in the chain

#### Parameters

- **authorperm** (*str*) – perm link to post/comment
- **steem\_instance** (*Steem*) – Steem() instance to use when accessing a RPC

```
>>> from beem.vote import Vote
>>> from beem import Steem
>>> stm = Steem()
>>> v = Vote("@gtg/steem-pressure-4-need-for-speed|gandalf", steem_instance=stm)
```

**authorperm**

**hbd**

**json()**

**percent**

**refresh()**

**rep**

**reputation**

**rshares**

**sbd**

**time**

**token\_backed\_dollar**

**type\_id = 11**

**votee**

**voter**

**weight**

**class** beem.vote.VotesObject

Bases: *list*

**get\_list** (*var='voter', voter=None, votee=None, start=None, stop=None, start\_percent=None, stop\_percent=None, sort\_key='time', reverse=True*)

**get\_sorted\_list** (*sort\_key='time', reverse=True*)

**printAsTable** (*voter=None, votee=None, start=None, stop=None, start\_percent=None, stop\_percent=None, sort\_key='time', reverse=True, allow\_refresh=True, return\_str=False, \*\*kwargs*)

**print\_stats** (*return\_str=False, \*\*kwargs*)



## beem.wallet

**class** beem.wallet.Wallet (blockchain\_instance=None, \*args, \*\*kwargs)

Bases: object

The wallet is meant to maintain access to private keys for your accounts. It either uses manually provided private keys or uses a SQLite database managed by storage.py.

### Parameters

- **rpc** (SteemNodeRPC) – RPC connection to a Steem node
- **keys** (array, dict, str) – Predefine the wif keys to shortcut the wallet database

Three wallet operation modes are possible:

- **Wallet Database:** Here, beem loads the keys from the locally stored wallet SQLite database (see storage.py). To use this mode, simply call `beem.steem.Steem` without the `keys` parameter
- **Providing Keys:** Here, you can provide the keys for your accounts manually. All you need to do is add the wif keys for the accounts you want to use as a simple array using the `keys` parameter to `beem.steem.Steem`.
- **Force keys:** This more is for advanced users and requires that you know what you are doing. Here, the `keys` parameter is a dictionary that overwrite the `active`, `owner`, `posting` or `memo` keys for any account. This mode is only used for *foreign* signatures!

A new wallet can be created by using:

```
from beem import Steem
steem = Steem()
steem.wallet.wipe(True)
steem.wallet.create("supersecret-passphrase")
```

This will raise `beem.exceptions.WalletExists` if you already have a wallet installed.

The wallet can be unlocked for signing using

```
from beem import Steem
steem = Steem()
steem.wallet.unlock("supersecret-passphrase")
```

A private key can be added by using the `addPrivateKey()` method that is available **after** unlocking the wallet with the correct passphrase:

```
from beem import Steem
steem = Steem()
steem.wallet.unlock("supersecret-passphrase")
steem.wallet.addPrivateKey("5xxxxxxxxxxxxxxxxxxxxxx")
```

**Note:** The private key has to be either in hexadecimal or in wallet import format (wif) (starting with a 5).

**addPrivateKey** (wif)

Add a private key to the wallet database

**Parameters** **wif** (str) – Private key

**changePassphrase** (new\_pwd)

Change the passphrase for the wallet database

**create** (*pwd*)

Alias for `newWallet()`

**Parameters** **pwd** (*str*) – Passphrase for the created wallet

**created** ()

Do we have a wallet database already?

**getAccount** (*pub*)

Get the account data for a public key (first account found for this public key)

**Parameters** **pub** (*str*) – Public key

**getAccountFromPrivateKey** (*wif*)

Obtain account name from private key

**getAccountFromPublicKey** (*pub*)

Obtain the first account name from public key

**Parameters** **pub** (*str*) – Public key

Note: this returns only the first account with the given key. To get all accounts associated with a given public key, use `getAccountsFromPublicKey()`.

**getAccounts** ()

Return all accounts installed in the wallet database

**getAccountsFromPublicKey** (*pub*)

Obtain all account names associated with a public key

**Parameters** **pub** (*str*) – Public key

**getActiveKeyForAccount** (*name*)

Obtain owner Active Key for an account from the wallet database

**getActiveKeysForAccount** (*name*)

Obtain list of all owner Active Keys for an account from the wallet database

**getAllAccounts** (*pub*)

Get the account data for a public key (all accounts found for this public key)

**Parameters** **pub** (*str*) – Public key

**getKeyForAccount** (*name*, *key\_type*)

Obtain *key\_type* Private Key for an account from the wallet database

**Parameters**

- **name** (*str*) – Account name
- **key\_type** (*str*) – key type, has to be one of “owner”, “active”, “posting” or “memo”

**getKeyType** (*account*, *pub*)

Get key type

**Parameters**

- **account** (*Account*, *dict*) – Account data
- **pub** (*str*) – Public key

**getKeysForAccount** (*name*, *key\_type*)

Obtain a List of *key\_type* Private Keys for an account from the wallet database

**Parameters**

- **name** (*str*) – Account name

- **key\_type** (*str*) – key type, has to be one of “owner”, “active”, “posting” or “memo”

**getMemoKeyForAccount** (*name*)

Obtain owner Memo Key for an account from the wallet database

**getOwnerKeyForAccount** (*name*)

Obtain owner Private Key for an account from the wallet database

**getOwnerKeysForAccount** (*name*)

Obtain list of all owner Private Keys for an account from the wallet database

**getPostingKeyForAccount** (*name*)

Obtain owner Posting Key for an account from the wallet database

**getPostingKeysForAccount** (*name*)

Obtain list of all owner Posting Keys for an account from the wallet database

**getPrivateKeyForPublicKey** (*pub*)

Obtain the private key for a given public key

**Parameters** *pub* (*str*) – Public Key

**getPublicKeys** (*current=False*)

Return all installed public keys :param bool current: If true, returns only keys for currently connected blockchain

**is\_encrypted** ()

Is the key store encrypted?

**lock** ()

Lock the wallet database

**locked** ()

Is the wallet database locked?

**newWallet** (*pwd*)

Create a new wallet database

**Parameters** *pwd* (*str*) – Passphrase for the created wallet

**prefix**

**privatekey** (*key*)

**publickey\_from\_wif** (*wif*)

**removeAccount** (*account*)

Remove all keys associated with a given account

**Parameters** *account* (*str*) – name of account to be removed

**removePrivateKeyFromPublicKey** (*pub*)

Remove a key from the wallet database

**Parameters** *pub* (*str*) – Public key

**rpc**

**setKeys** (*loadkeys*)

This method is strictly only for in memory keys that are passed to Wallet with the *keys* argument

**unlock** (*pwd*)

Unlock the wallet database

**unlocked()**  
Is the wallet database unlocked?

**wipe** (*sure=False*)

## beem.witness

**class** beem.witness.**GetWitnesses** (*name\_list*, *batch\_limit=100*, *lazy=False*, *full=True*,  
*blockchain\_instance=None*, *\*\*kwargs*)

Bases: *beem.witness.WitnessesObject*

Obtain a list of witnesses

### Parameters

- **name\_list** (*list*) – list of witnesses to fetch
- **batch\_limit** (*int*) – (optional) maximum number of witnesses to fetch per call, defaults to 100
- **steem\_instance** (*Steem*) – Steem() instance to use when accessing a RPCcreator = Witness(creator, steem\_instance=self)

```
from beem.witness import GetWitnesses
w = GetWitnesses(["gtg", "jesta"])
print(w[0].json())
print(w[1].json())
```

**class** beem.witness.**ListWitnesses** (*from\_account=""*, *limit=100*, *lazy=False*, *full=False*,  
*blockchain\_instance=None*, *\*\*kwargs*)

Bases: *beem.witness.WitnessesObject*

List witnesses ranked by name

### Parameters

- **from\_account** (*str*) – Witness name from which the lists starts (default = "")
- **limit** (*int*) – Limits the number of shown witnesses (default = 100)
- **steem\_instance** (*Steem*) – Steem instance to use when accesing a RPC

```
>>> from beem.witness import ListWitnesses
>>> ListWitnesses(from_account="gtg", limit=100)
<ListWitnesses gtg>
```

**class** beem.witness.**Witness** (*owner*, *full=False*, *lazy=False*, *blockchain\_instance=None*,  
*\*\*kwargs*)

Bases: *beem.blockchainobject.BlockchainObject*

Read data about a witness in the chain

### Parameters

- **account\_name** (*str*) – Name of the witness
- **steem\_instance** (*Steem*) – Steem instance to use when accesing a RPC

```
>>> from beem.witness import Witness
>>> Witness("gtg")
<Witness gtg>
```

**account**

**feed\_publish** (*base*, *quote=None*, *account=None*)

Publish a feed price as a witness.

#### Parameters

- **base** (*float*) – USD Price of STEEM in SBD (implied price)
- **quote** (*float*) – (optional) Quote Price. Should be 1.000 (default), unless we are adjusting the feed to support the peg.
- **account** (*str*) – (optional) the source account for the transfer if not self["owner"]

**is\_active**

**json**()

**refresh**()

**type\_id** = 3

**update** (*signing\_key*, *url*, *props*, *account=None*)

Update witness

#### Parameters

- **signing\_key** (*str*) – Signing key
- **url** (*str*) – URL
- **props** (*dict*) – Properties
- **account** (*str*) – (optional) witness account name

Properties::

```
{
    "account_creation_fee": x,
    "maximum_block_size": x,
    "sbd_interest_rate": x,
}
```

**class** beem.witness.**Witnesses** (*lazy=False*, *full=True*, *blockchain\_instance=None*, *\*\*kwargs*)

Bases: *beem.witness.WitnessesObject*

Obtain a list of **active** witnesses and the current schedule

**Parameters** **steem\_instance** (*Steem*) – Steem instance to use when accessing a RPC

```
>>> from beem.witness import Witnesses
>>> Witnesses()
<Witnesses >
```

**refresh**()

**class** beem.witness.**WitnessesObject**

Bases: *list*

**get\_votes\_sum**()

**printAsTable** (*sort\_key='votes'*, *reverse=True*, *return\_str=False*, *\*\*kwargs*)

**class** beem.witness.**WitnessesRankedByVote** (*from\_account=""*, *limit=100*, *lazy=False*, *full=False*, *blockchain\_instance=None*, *\*\*kwargs*)

Bases: *beem.witness.WitnessesObject*

Obtain a list of witnesses ranked by Vote

#### Parameters

- **from\_account** (*str*) – Witness name from which the lists starts (default = “”)
- **limit** (*int*) – Limits the number of shown witnesses (default = 100)
- **steem\_instance** (*Steem*) – Steem instance to use when accessing a RPC

```
>>> from beem.witness import WitnessesRankedByVote
>>> WitnessesRankedByVote(limit=100)
<WitnessesRankedByVote >
```

```
class beem.witness.WitnessesVotedByAccount (account, lazy=False, full=True,
                                             blockchain_instance=None, **kwargs)
Bases: beem.witness.WitnessesObject
```

Obtain a list of witnesses which have been voted by an account

#### Parameters

- **account** (*str*) – Account name
- **steem\_instance** (*Steem*) – Steem instance to use when accessing a RPC

```
>>> from beem.witness import WitnessesVotedByAccount
>>> WitnessesVotedByAccount("gtg")
<WitnessesVotedByAccount gtg>
```

## 3.7.2 beemapi Modules

### beemapi.exceptions

**exception** beemapi.exceptions.**ApiNotSupported**

Bases: *beemapi.exceptions.RPCError*

**exception** beemapi.exceptions.**CallRetriesReached**

Bases: *Exception*

CallRetriesReached Exception. Only for internal use

**exception** beemapi.exceptions.**FollowApiNotEnabled**

Bases: *beemapi.exceptions.RPCError*

**exception** beemapi.exceptions.**InvalidEndpointUrl**

Bases: *Exception*

**exception** beemapi.exceptions.**MissingRequiredActiveAuthority**

Bases: *beemapi.exceptions.RPCError*

**exception** beemapi.exceptions.**NoAccessApi**

Bases: *beemapi.exceptions.RPCError*

**exception** beemapi.exceptions.**NoApiWithName**

Bases: *beemapi.exceptions.RPCError*

**exception** beemapi.exceptions.**NoMethodWithName**

Bases: *beemapi.exceptions.RPCError*

**exception** `beemapi.exceptions.NumRetriesReached`

Bases: `Exception`

`NumRetriesReached` Exception.

**exception** `beemapi.exceptions.RPCConnection`

Bases: `Exception`

`RPCConnection` Exception.

**exception** `beemapi.exceptions.RPCError`

Bases: `Exception`

`RPCError` Exception.

**exception** `beemapi.exceptions.RPCErrorDoRetry`

Bases: `Exception`

`RPCErrorDoRetry` Exception.

**exception** `beemapi.exceptions.TimeoutException`

Bases: `Exception`

**exception** `beemapi.exceptions.UnauthorizedError`

Bases: `Exception`

`UnauthorizedError` Exception.

**exception** `beemapi.exceptions.UnhandledRPCError`

Bases: `beemapi.exceptions.RPCError`

**exception** `beemapi.exceptions.UnknownTransaction`

Bases: `Exception`

**exception** `beemapi.exceptions.UnkownKey`

Bases: `beemapi.exceptions.RPCError`

**exception** `beemapi.exceptions.UnnecessarySignatureDetected`

Bases: `Exception`

**exception** `beemapi.exceptions.VotedBeforeWaitTimeReached`

Bases: `Exception`

**exception** `beemapi.exceptions.WorkingNodeMissing`

Bases: `Exception`

`beemapi.exceptions.decodeRPCErrorMsg(e)`

Helper function to decode the raised Exception and give it a python Exception class

## **beemapi.graphenerpc**

---

**Note:** This is a low level class that can be used in combination with `GrapheneClient`

---

This class allows to call API methods exposed by the witness node via websockets. It does **not** support notifications and is not run asynchronously.

`graphenewsrpc`.

**class** `beemapi.graphenerpc.GrapheneRPC(urls, user=None, password=None, **kwargs)`

Bases: `object`

This class allows to call API methods synchronously, without callbacks.

It logs warnings and errors.

#### Parameters

- **urls** (*str*) – Either a single Websocket/Http URL, or a list of URLs
- **user** (*str*) – Username for Authentication
- **password** (*str*) – Password for Authentication
- **num\_retries** (*int*) – Try x times to num\_retries to a node on disconnect, -1 for indefinitely (default is 100)
- **num\_retries\_call** (*int*) – Repeat num\_retries\_call times a rpc call on node error (default is 5)
- **timeout** (*int*) – Timeout setting for https nodes (default is 60)
- **autoconnect** (*bool*) – When set to false, connection is performed on the first rpc call (default is True)
- **use\_condenser** (*bool*) – Use the old condenser\_api rpc protocol on nodes with version 0.19.4 or higher. The settings has no effect on nodes with version of 0.19.3 or lower.
- **custom\_chains** (*dict*) – custom chain which should be added to the known chains

Available APIs:

- database
- network\_node
- network\_broadcast

Usage:

```
from beemapi.graphenerpc import GrapheneRPC
ws = GrapheneRPC("wss://steemd.pevo.science", "", "")
print(ws.get_account_count())

ws = GrapheneRPC("https://api.steemit.com", "", "")
print(ws.get_account_count())
```

---

**Note:** This class allows to call methods available via websocket. If you want to use the notification subsystem, please use `GrapheneWebsocket` instead.

---

**error\_cnt**

**error\_cnt\_call**

**get\_network** (*props=None*)

Identify the connected network. This call returns a dictionary with keys `chain_id`, `core_symbol` and `prefix`

**get\_request\_id** ()

Get request id.

**get\_use\_appbase** ()

Returns True if appbase ready and appbase calls are set

**is\_appbase\_ready** ()

Check if node is appbase ready

**next** ()

Switches to the next node url



```

num_retries
num_retries_call
request_send(payload)
rpcclose()
    Close Websocket
rpconnect(next_url=True)
    Connect to next url in a loop.
rpcexec(payload)
    Execute a call by sending the payload.

    Parameters payload (json) – Payload data
    Raises
        • ValueError – if the server does not respond in proper JSON format
        • RPCEError – if the server returns an error
rpclogin(user, password)
    Login into Websocket
version_string_to_int(network_version)
ws_send(payload)

class beemapi.graphenerpc.SessionInstance
    Bases: object
    Singleton for the Session Instance
    instance = None

beemapi.graphenerpc.create_ws_instance(use_ssl=True, enable_multithread=True)
    Get websocket instance

beemapi.graphenerpc.set_session_instance(instance)
    Set session instance

beemapi.graphenerpc.shared_session_instance()
    Get session instance

```

## beemapi.node

```

class beemapi.node.Node(url)
    Bases: object

class beemapi.node.Nodes(urls, num_retries, num_retries_call)
    Bases: list
    Stores Node URLs and error counts

    disable_node()
        Disable current node

    error_cnt
    error_cnt_call
    export_working_nodes()

```

**increase\_error\_cnt** ()  
Increase node error count for current node

**increase\_error\_cnt\_call** ()  
Increase call error count for current node

**next** ()

**node**

**num\_retries\_call\_reached**

**reset\_error\_cnt** ()  
Set node error count for current node to zero

**reset\_error\_cnt\_call** ()  
Set call error count for current node to zero

**set\_node\_urls** (*urls*)

**sleep\_and\_check\_retries** (*errorMsg=None, sleep=True, call\_retry=False, showMsg=True*)  
Sleep and check if num\_retries is reached

**url**

**working\_nodes\_count**

## beemapi.noderpc

**class** beemapi.noderpc.NodeRPC (*\*args, \*\*kwargs*)

Bases: [\*beemapi.graphenerpc.GrapheneRPC\*](#)

This class allows to call API methods exposed by the witness node via websockets / rpc-json.

### Parameters

- **urls** (*str*) – Either a single Websocket/Http URL, or a list of URLs
- **user** (*str*) – Username for Authentication
- **password** (*str*) – Password for Authentication
- **num\_retries** (*int*) – Try x times to num\_retries to a node on disconnect, -1 for indefinitely
- **num\_retries\_call** (*int*) – Repeat num\_retries\_call times a rpc call on node error (default is 5)
- **timeout** (*int*) – Timeout setting for https nodes (default is 60)
- **use\_condenser** (*bool*) – Use the old condenser\_api rpc protocol on nodes with version 0.19.4 or higher. The settings has no effect on nodes with version of 0.19.3 or lower.

**get\_account** (*name, \*\*kwargs*)

Get full account details from account name

**Parameters** **name** (*str*) – Account name

**rpcexec** (*payload*)

Execute a call by sending the payload. It makes use of the GrapheneRPC library. In here, we mostly deal with Steem specific error handling

**Parameters** **payload** (*json*) – Payload data

**Raises**

- **ValueError** – if the server does not respond in proper JSON format
- **RPCError** – if the server returns an error

**set\_next\_node\_on\_empty\_reply** (*next\_node\_on\_empty\_reply=True*)

Switch to next node on empty reply for the next rpc call

## beemapi.websocket

This class allows subscribe to push notifications from the Steem node.

```
from pprint import pprint
from beemapi.websocket import NodeWebsocket

ws = NodeWebsocket (
    "wss://gtg.steem.house:8090",
    accounts=["test"],
    on_block=print,
)

ws.run_forever()
```

```
class beemapi.websocket.NodeWebsocket (urls, user="", password="", only_block_id=False,
                                         on_block=None, keep_alive=25, num_retries=-1,
                                         timeout=60, *args, **kwargs)
```

Create a websocket connection and request push notifications

### Parameters

- **urls** (*str*) – Either a single Websocket URL, or a list of URLs
- **user** (*str*) – Username for Authentication
- **password** (*str*) – Password for Authentication
- **keep\_alive** (*int*) – seconds between a ping to the backend (defaults to 25seconds)

After instantiating this class, you can add event slots for:

- **on\_block**

which will be called accordingly with the notification message received from the Steem node:

```
ws = NodeWebsocket (
    "wss://gtg.steem.house:8090",
)
ws.on_block += print
ws.run_forever()
```

**\_\_NodeWebsocket\_\_set\_subscriptions** ()

set subscriptions ot on\_block function

**\_\_events\_\_** = ['on\_block']

**\_\_getattr\_\_** (*name*)

Map all methods to RPC calls and pass through the arguments

**\_\_init\_\_** (*urls, user="", password="", only\_block\_id=False, on\_block=None, keep\_alive=25, num\_retries=-1, timeout=60, \*args, \*\*kwargs*)

Initialize self. See help(type(self)) for accurate signature.

**\_\_module\_\_** = 'beemapi.websocket'

**`_ping()`**  
Send keep\_alive request

**`cancel_subscriptions()`**  
cancel\_all\_subscriptions removed from api

**`close()`**  
Closes the websocket connection and waits for the ping thread to close

**`get_request_id()`**  
Generates next request id

**`on_close(ws)`**  
Called when websocket connection is closed

**`on_error(ws, error)`**  
Called on websocket errors

**`on_message(ws, reply, *args)`**  
This method is called by the websocket connection on every message that is received. If we receive a notice, we hand over post-processing and signalling of events to `process_notice`.

**`on_open(ws)`**  
This method will be called once the websocket connection is established. It will

- login,
- register to the database api, and
- subscribe to the objects defined if there is a callback/slot available for callbacks

**`process_block(data)`**  
This method is called on notices that need processing. Here, we call the `on_block` slot.

**`reset_subscriptions(accounts=[])`**  
Reset subscriptions

**`rpcexec(payload)`**  
Execute a call by sending the payload.

**Parameters** `payload(json)` – Payload data

**Raises**

- **`ValueError`** – if the server does not respond in proper JSON format
- **`RPCEError`** – if the server returns an error

**`run_forever()`**  
This method is used to run the websocket app continuously. It will execute callbacks as defined and try to stay connected with the provided APIs

**`stop()`**  
Stop running Websocket

### 3.7.3 beembase Modules

#### beembase.memo

`beembase.memo.decode_memo(priv, message)`  
Decode a message with a shared secret between Alice and Bob

**Parameters**

- **priv** (*PrivateKey*) – Private Key (of Bob)
- **message** (*base58encoded*) – Encrypted Memo message

**Returns** Decrypted message

**Return type** str

**Raises** **ValueError** – if message cannot be decoded as valid UTF-8 string

`beembase.memo.decode_memo_bts(priv, pub, nonce, message)`

Decode a message with a shared secret between Alice and Bob

**Parameters**

- **priv** (*PrivateKey*) – Private Key (of Bob)
- **pub** (*PublicKey*) – Public Key (of Alice)
- **nonce** (*int*) – Nonce used for Encryption
- **message** (*bytes*) – Encrypted Memo message

**Returns** Decrypted message

**Return type** str

**Raises** **ValueError** – if message cannot be decoded as valid UTF-8 string

`beembase.memo.encode_memo(priv, pub, nonce, message, **kwargs)`

Encode a message with a shared secret between Alice and Bob

**Parameters**

- **priv** (*PrivateKey*) – Private Key (of Alice)
- **pub** (*PublicKey*) – Public Key (of Bob)
- **nonce** (*int*) – Random nonce
- **message** (*str*) – Memo message

**Returns** Encrypted message

**Return type** hex

`beembase.memo.encode_memo_bts(priv, pub, nonce, message)`

Encode a message with a shared secret between Alice and Bob

**Parameters**

- **priv** (*PrivateKey*) – Private Key (of Alice)
- **pub** (*PublicKey*) – Public Key (of Bob)
- **nonce** (*int*) – Random nonce
- **message** (*str*) – Memo message

**Returns** Encrypted message

**Return type** hex

`beembase.memo.extract_memo_data(message)`

Returns the stored pubkey keys, nonce, checksum and encrypted message of a memo

`beembase.memo.get_shared_secret(priv, pub)`

Derive the share secret between `priv` and `pub` :param *Base58* priv: Private Key :param *Base58* pub: Public Key :return: Shared secret :rtype: hex The shared secret is generated such that:

```
Pub(Alice) * Priv(Bob) = Pub(Bob) * Priv(Alice)
```

`beembase.memo.init_aes(shared_secret, nonce)`

Initialize AES instance :param hex shared\_secret: Shared Secret to use as encryption key :param int nonce: Random nonce

`beembase.memo.init_aes_bts(shared_secret, nonce)`

Initialize AES instance :param hex shared\_secret: Shared Secret to use as encryption key :param int nonce: Random nonce :return: AES instance :rtype: AES

## beembase.objects

**class** `beembase.objects.Amount(d, prefix='STM', replace_hive_by_steem=True)`

Bases: `object`

**class** `beembase.objects.Beneficiaries(*args, **kwargs)`

Bases: `beemgraphenebase.objects.GrapheneObject`

**class** `beembase.objects.Beneficiary(*args, **kwargs)`

Bases: `beemgraphenebase.objects.GrapheneObject`

**class** `beembase.objects.CommentOptionExtensions(o)`

Bases: `beemgraphenebase.types.Static_variant`

Serialize Comment Payout Beneficiaries.

**Parameters** `beneficiaries(list)` – A `static_variant` containing beneficiaries.

Example:

```
[0,
  {'beneficiaries': [
    {'account': 'furon', 'weight': 10000}
  ]}
]
```

**class** `beembase.objects.ExchangeRate(*args, **kwargs)`

Bases: `beemgraphenebase.objects.GrapheneObject`

**class** `beembase.objects.Extension(d)`

Bases: `beemgraphenebase.types.Array`

**class** `beembase.objects.Memo(*args, **kwargs)`

Bases: `beemgraphenebase.objects.GrapheneObject`

**class** `beembase.objects.Operation(*args, **kwargs)`

Bases: `beemgraphenebase.objects.Operation`

**getOperationNameForId(i)**

Convert an operation id into the corresponding string

**json()**

**operations()**

**class** `beembase.objects.Permission(*args, **kwargs)`

Bases: `beemgraphenebase.objects.GrapheneObject`

**class** `beembase.objects.Price(*args, **kwargs)`

Bases: `beemgraphenebase.objects.GrapheneObject`

```

class beembase.objects.SocialActionCommentCreate(*args, **kwargs)
    Bases: beemgraphenebase.objects.GrapheneObject

class beembase.objects.SocialActionCommentDelete(*args, **kwargs)
    Bases: beemgraphenebase.objects.GrapheneObject

class beembase.objects.SocialActionCommentUpdate(*args, **kwargs)
    Bases: beemgraphenebase.objects.GrapheneObject

class beembase.objects.SocialActionVariant(o)
    Bases: beemgraphenebase.types.Static_variant

class beembase.objects.WitnessProps(*args, **kwargs)
    Bases: beemgraphenebase.objects.GrapheneObject

```

### beembase.objecttypes

```

beembase.objecttypes.object_type = {'account': 2, 'account_history': 18, 'block_summary': 19}
    Object types for object ids

```

### beembase.operationids

```

beembase.operationids.getOperationNameForId(i)
    Convert an operation id into the corresponding string

beembase.operationids.ops = ['vote', 'comment', 'transfer', 'transfer_to_vesting', 'withdraw']
    Operation ids

```

### beembase.operations

```

beembase.operationids.getOperationNameForId(i)
    Convert an operation id into the corresponding string

beembase.operationids.ops = ['vote', 'comment', 'transfer', 'transfer_to_vesting', 'withdraw']
    Operation ids

```

### beembase.signedtransactions

```

class beembase.signedtransactions.Signed_Transaction(*args, **kwargs)
    Bases: beemgraphenebase.signedtransactions.Signed_Transaction

```

Create a signed transaction and offer method to create the signature

#### Parameters

- **refNum** (*num*) – parameter ref\_block\_num (see *beembase.transactions.getBlockParams()*)
- **refPrefix** (*num*) – parameter ref\_block\_prefix (see *beembase.transactions.getBlockParams()*)
- **expiration** (*str*) – expiration date
- **operations** (*array*) – array of operations
- **custom\_chains** (*dict*) – custom chain which should be added to the known chains

**add\_custom\_chains** (*custom\_chain*)

**getKnownChains** ()

**getOperationKlass** ()

**sign** (*wifkeys*, *chain*='STEEM')

Sign the transaction with the provided private keys.

**Parameters**

- **wifkeys** (*array*) – Array of wif keys
- **chain** (*str*) – identifier for the chain

**verify** (*pubkeys*=[], *chain*='STEEM', *recover\_parameter*=False)

Returned pubkeys have to be checked if they are existing

## beembase.ledgertransactions

**class** beembase.ledgertransactions.**Ledger\_Transaction** (\*args, \*\*kwargs)

Bases: *beemgraphenebase.unsignedtransactions.Unsigned\_Transaction*

Create an unsigned transaction and offer method to send it to a ledger device for signing

**Parameters**

- **ref\_block\_num** (*num*) –
- **ref\_block\_prefix** (*num*) –
- **expiration** (*str*) – expiration date
- **operations** (*array*) – array of operations
- **custom\_chains** (*dict*) – custom chain which should be added to the known chains

**add\_custom\_chains** (*custom\_chain*)

**getKnownChains** ()

**getOperationKlass** ()

**get\_pubkey** (*path*="48'/13'/0'/0'/0'", *request\_screen\_approval*=False, *prefix*='STM')

**sign** (*path*="48'/13'/0'/0'/0'", *chain*='STEEM')

## 3.7.4 beemgraphenebase Modules

### beemgraphenebase.account

**class** beemgraphenebase.account.**Address** (*address*, *prefix*=None)

Bases: *beemgraphenebase.prefix.Prefix*

Address class

This class serves as an address representation for Public Keys.

**Parameters**

- **address** (*str*) – Base58 encoded address (defaults to None)
- **prefix** (*str*) – Network prefix (defaults to STM)

Example:



```
Address("STMFN9r6VYzBK8EKtMewfNbfiGCr56pHDBFi")
```

**classmethod derivesha256address** (*pubkey*, *compressed=True*, *prefix=None*)

Derive address using RIPEMD160 (SHA256 (x) )

**classmethod derivesha512address** (*pubkey*, *compressed=True*, *prefix=None*)

Derive address using RIPEMD160 (SHA512 (x) )

**classmethod from\_pubkey** (*pubkey*, *compressed=True*, *version=56*, *prefix=None*)

Load an address provided by the public key. Version: 56 => PTS

**class** beemgraphenebase.account.**BitcoinAddress** (*address*, *prefix=None*)

Bases: *beemgraphenebase.account.Address*

**classmethod from\_pubkey** (*pubkey*, *compressed=False*, *version=56*, *prefix=None*)

Load an address provided by the public key. Version: 56 => PTS

**class** beemgraphenebase.account.**BitcoinPublicKey** (*pk*, *prefix=None*)

Bases: *beemgraphenebase.account.PublicKey*

**address**

Obtain a GrapheneAddress from a public key

**class** beemgraphenebase.account.**BrainKey** (*brainkey=None*, *sequence=0*, *prefix=None*)

Bases: *beemgraphenebase.prefix.Prefix*

Brainkey implementation similar to the graphene-ui web-wallet.

**Parameters**

- **brainkey** (*str*) – Brain Key
- **sequence** (*int*) – Sequence number for consecutive keys

Keys in Graphene are derived from a seed brain key which is a string of 16 words out of a predefined dictionary with 49744 words. It is a simple single-chain key derivation scheme that is not compatible with BIP44 but easy to use.

Given the brain key, a private key is derived as:

```
privkey = SHA256(SHA512(brainkey + " " + sequence))
```

Incrementing the sequence number yields a new key that can be regenerated given the brain key.

**get\_blind\_private** ()

Derive private key from the brain key (and no sequence number)

**get\_brainkey** ()

Return brain key of this instance

**get\_private** ()

Derive private key from the brain key and the current sequence number

**get\_private\_key** ()

**get\_public** ()

**get\_public\_key** ()

**next\_sequence** ()

Increment the sequence number by 1

**normalize** (*brainkey*)

Correct formatting with single whitespace syntax and no trailing space

**suggest** (*word\_count=16*)

Suggest a new random brain key. Randomness is provided by the operating system using `os.urandom()`.

**class** `beemgraphenebase.account.GrapheneAddress` (*address, prefix=None*)

Bases: `beemgraphenebase.account.Address`

Graphene Addresses are different. Hence we have a different class

**classmethod** **from\_pubkey** (*pubkey, compressed=True, version=56, prefix=None*)

Load an address provided by the public key. Version: 56 => PTS

**class** `beemgraphenebase.account.Mnemonic`

Bases: `object`

BIP39 mnemonic implementation

**check** (*mnemonic*)

Checks the mnemonic word list is valid :param list mnemonic: mnemonic word list with length of 12, 15, 18, 21, 24 :returns: True, when valid

**check\_word** (*word*)

**expand** (*mnemonic*)

Expands all words given in a list

**expand\_word** (*prefix*)

Expands a word when sufficient chars are given

**Parameters** **prefix** (*str*) – first chars of a valid dict word

**generate** (*strength=128*)

Generates a word list based on the given strength

**Parameters** **strength** (*int*) – initial entropy strength, must be one of [128, 160, 192, 224, 256]

**classmethod** **normalize\_string** (*txt*)

Normalizes strings

**to\_entropy** (*words*)

**to\_mnemonic** (*data*)

**classmethod** **to\_seed** (*mnemonic, passphrase=""*)

Returns a seed based on bip39

**Parameters**

- **mnemonic** (*str*) – string containing a valid mnemonic word list
- **passphrase** (*str*) – optional, passphrase can be set to modify the returned seed.

**class** `beemgraphenebase.account.MnemonicKey` (*word\_list=None, passphrase="", account\_sequence=0, key\_sequence=0, prefix=None*)

Bases: `beemgraphenebase.prefix.Prefix`

This class derives a private key from a BIP39 mnemonic implementation

**generate\_mnemonic** (*passphrase="", strength=256*)

**get\_path** ()

**get\_private** ()

Derive private key from the account\_sequence, the role and the key\_sequence

```

get_private_key()
get_public()
get_public_key()
next_account_sequence()
    Increment the account sequence number by 1
next_sequence()
    Increment the key sequence number by 1
set_mnemonic(word_list, passphrase="")
set_path(path)
set_path_BIP32(path)
set_path_BIP44(account_sequence=0, chain_sequence=0, key_sequence=0, hard-
    ened_address=True)
set_path_BIP48(network_index=13, role='owner', account_sequence=0, key_sequence=0)
class beemgraphenebase.account.PasswordKey(account, password, role='active', pre-
    fix=None)
    Bases: beemgraphenebase.prefix.Prefix

    This class derives a private key given the account name, the role and a password. It leverages the technology of
    Brainkeys and allows people to have a secure private key by providing a passphrase only.

    get_private()
        Derive private key from the account, the role and the password
    get_private_key()
    get_public()
    get_public_key()
    normalize(seed)
        Correct formatting with single whitespace syntax and no trailing space

class beemgraphenebase.account.PrivateKey(wif=None, prefix=None)
    Bases: beemgraphenebase.prefix.Prefix

    Derives the compressed and uncompressed public keys and constructs two instances of PublicKey:

    Parameters
        • wif (str) – Base58check-encoded wif key
        • prefix (str) – Network prefix (defaults to STM)

    Example:

```

```
PrivateKey("5HqUkGuo62BfcJU5vNhTXKJRXuUi9QSE6jp8C3uBJ2BVHtB8WSd")
```

```

    Compressed vs. Uncompressed:
        • PrivateKey("w-i-f").pubkey: Instance of PublicKey using compressed key.
        • PrivateKey("w-i-f").pubkey.address: Instance of Address using compressed key.
        • PrivateKey("w-i-f").uncompressed: Instance of PublicKey using uncompressed key.
        • PrivateKey("w-i-f").uncompressed.address: Instance of Address using uncompressed
            key.

```

**address**

**bitcoin**

**child** (*offset256*)

Derive new private key from this key and a sha256 “offset”

**compressed**

**derive\_from\_seed** (*offset*)

Derive private key using “generate\_from\_seed” method. Here, the key itself serves as a *seed*, and *offset* is expected to be a sha256 digest.

**derive\_private\_key** (*sequence*)

Derive new private key from this private key and an arbitrary sequence number

**get\_public\_key** ()

Legacy: Returns the pubkey

**get\_secret** ()

Get sha256 digest of the wif key.

**pubkey**

**uncompressed**

**class** beemgraphenebase.account.**PublicKey** (*pk, prefix=None*)

Bases: beemgraphenebase.prefix.Prefix

This class deals with Public Keys and inherits Address.

#### Parameters

- **pk** (*str*) – Base58 encoded public key
- **prefix** (*str*) – Network prefix (defaults to STM)

Example:

```
PublicKey("STM6UtYWWs3rkZGV8JA86qrgkG6tyFksgECefKE1MiH4HkLD8PFGL")
```

---

**Note:** By default, graphene-based networks deal with **compressed** public keys. If an **uncompressed** key is required, the method `unCompressed()` can be used:

```
PublicKey("xxxxx").unCompressed()
```

---

**add** (*digest256*)

Derive new public key from this key and a sha256 “digest”

**address**

Obtain a GrapheneAddress from a public key

**child** (*offset256*)

Derive new public key from this key and a sha256 “offset”

**compressed** ()

Derive compressed public key

**compressed\_key**

**classmethod from\_privkey** (*privkey, prefix=None*)

Derive uncompressed public key

**get\_public\_key()**  
Returns the pubkey

**point()**  
Return the point for the public key

**pubkey**

**unCompressed()**  
Alias for self.uncompressed() - LEGACY

**uncompressed()**  
Derive uncompressed key

beemgraphenebase.account.**binary\_search**(a, x, lo=0, hi=None)

## beemgraphenebase.aes

**class** beemgraphenebase.aes.**AESCipher**(key)  
Bases: object

A classical AES Cipher. Can use any size of data and any size of password thanks to padding. Also ensure the coherence and the type of the data with a unicode to byte converter.

**decrypt**(enc)

**encrypt**(raw)

**static str\_to\_bytes**(data)

## beemgraphenebase.base58

**class** beemgraphenebase.base58.**Base58**(data, prefix=None)  
Bases: beemgraphenebase.prefix.Prefix

Base58 base class

This class serves as an abstraction layer to deal with base58 encoded strings and their corresponding hex and binary representation throughout the library.

### Parameters

- **data**(hex, wif, bip38 encrypted wif, base58 string) – Data to initialize object, e.g. pubkey data, address data, ...
- **prefix**(str) – Prefix to use for Address/PubKey strings (defaults to GPH)

**Returns** Base58 object initialized with data

**Return type** *Base58*

**Raises** **ValueError** – if data cannot be decoded

- **bytes**(Base58): Returns the raw data
- **str**(Base58): Returns the readable Base58CheckEncoded data.
- **repr**(Base58): Gives the hex representation of the data.
- **format**(Base58, \_format): Formats the instance according to \_format
  - "btc": prefixed with 0x80. Yields a valid btc address
  - "wif": prefixed with 0x00. Yields a valid wif key

- "bts": prefixed with BTS
- etc.

```
beemgraphenebase.base58.b58decode (v)
beemgraphenebase.base58.b58encode (v)
beemgraphenebase.base58.base58CheckDecode (s, skip_first_bytes=True)
beemgraphenebase.base58.base58CheckEncode (version, payload)
beemgraphenebase.base58.base58decode (base58_str)
beemgraphenebase.base58.base58encode (hexstring)
beemgraphenebase.base58.doublesha256 (s)
beemgraphenebase.base58.gphBase58CheckDecode (s)
beemgraphenebase.base58.gphBase58CheckEncode (s)
beemgraphenebase.base58.ripemd160 (s)
```

### beemgraphenebase.bip32

```
class beemgraphenebase.bip32.BIP32Key (secret, chain, depth, index, fpr, public=False, test-
                                         net=False)
```

Bases: object

**Address** ()

Return compressed public key address

**CKDpriv** (i)

Create a child key of index 'i'.

If the most significant bit of 'i' is set, then select from the hardened key set, otherwise, select a regular child key.

Returns a BIP32Key constructed with the child key parameters, or None if i index would result in an invalid key.

**CKDpub** (i)

Create a publicly derived child key of index 'i'.

If the most significant bit of 'i' is set, this is an error.

Returns a BIP32Key constructed with the child key parameters, or None if index would result in invalid key.

**ChainCode** ()

Return chain code as string

**ChildKey** (i)

Create and return a child key of this one at index 'i'.

The index 'i' should be summed with BIP32\_HARDEN to indicate to use the private derivation algorithm.

**ExtendedKey** (private=True, encoded=True)

Return extended private or public key as string, optionally base58 encoded

**Fingerprint** ()

Return key fingerprint as string

**Identifier()**  
Return key identifier as string

**P2WPKHoP2SHAddress()**  
Return P2WPKH over P2SH segwit address

**PrivateKey()**  
Return private key as string

**PublicKey()**  
Return compressed public key encoding

**SetPublic()**  
Convert a private BIP32Key into a public one

**WalletImportFormat()**  
Returns private key encoded for wallet import

**dump()**  
Dump key fields mimicking the BIP0032 test vector format

**static fromEntropy(entropy, public=False, testnet=False)**  
Create a BIP32Key using supplied entropy >= MIN\_ENTROPY\_LEN

**static fromExtendedKey(xkey, public=False)**  
Create a BIP32Key by importing from extended private or public key string  
If public is True, return a public-only key regardless of input type.

**hmac(data)**  
Calculate the HMAC-SHA512 of input data using the chain code as key.  
Returns a tuple of the left and right halves of the HMAC

beemgraphenebase.bip32.int\_to\_hex(x)

beemgraphenebase.bip32.parse\_path(nstr, as\_bytes=False)

beemgraphenebase.bip32.test()

## beemgraphenebase.bip38

**exception beemgraphenebase.bip38.SaltException**

Bases: Exception

beemgraphenebase.bip38.decrypt(encrypted\_privkey, passphrase)

BIP0038 non-ec-multiply decryption. Returns WIF privkey.

### Parameters

- **encrypted\_privkey** (*Base58*) – Private key
- **passphrase** (*str*) – UTF-8 encoded passphrase for decryption

**Returns** BIP0038 non-ec-multiply decrypted key

**Return type** *Base58*

**Raises** *SaltException* – if checksum verification failed (e.g. wrong password)

beemgraphenebase.bip38.encrypt(privkey, passphrase)

BIP0038 non-ec-multiply encryption. Returns BIP0038 encrypted privkey.

### Parameters

- **privkey** (*Base58*) – Private key
- **passphrase** (*str*) – UTF-8 encoded passphrase for encryption

**Returns** BIP0038 non-ec-multiply encrypted wif key

**Return type** *Base58*

## beemgraphenebase.ecdsasig

beemgraphenebase.ecdsasig.**compressedPubkey** (*pk*)

beemgraphenebase.ecdsasig.**recoverPubkeyParameter** (*message, digest, signature, pubkey*)

Use to derive a number that allows to easily recover the public key from the signature

beemgraphenebase.ecdsasig.**recover\_public\_key** (*digest, signature, i, message=None*)

Recover the public key from the the signature

beemgraphenebase.ecdsasig.**sign\_message** (*message, wif, hashfn=<built-in function openssl\_sha256>*)

Sign a digest with a wif key

**Parameters** **wif** (*str*) – Private key in

beemgraphenebase.ecdsasig.**tweakaddPubkey** (*pk, digest256, SECP256K1\_MODULE='cryptography'*)

beemgraphenebase.ecdsasig.**verify\_message** (*message, signature, hashfn=<built-in function openssl\_sha256>, recover\_parameter=None*)

## beemgraphenebase.objects

**class** beemgraphenebase.objects.**GrapheneObject** (*data=None*)

Bases: object

Core abstraction class

This class is used for any JSON reflected object in Graphene.

- **instance.\_\_json\_\_()**: encodes data into json format
- **bytes(instance)**: encodes data into wire format
- **str(instances)**: dumps json object as string

**json()**

**toJson()**

**class** beemgraphenebase.objects.**Operation** (*op*)

Bases: object

**getOperationNameForId** (*i*)

Convert an operation id into the corresponding string

**operations()**

beemgraphenebase.objects.**isArgsThisClass** (*self, args*)

## beemgraphenebase.objecttypes

beemgraphenebase.objecttypes.**object\_type** = {'OBJECT\_TYPE\_COUNT': 3, 'account': 2, 'base': 1}

Object types for object ids



## beemgraphenebase.operations

```
beemgraphenebase.operationids.operations = {'demooperation': 0}
```

Operation ids

## beemgraphenebase.signedtransactions

**class** beemgraphenebase.signedtransactions.**Signed\_Transaction** (\*args, \*\*kwargs)  
 Bases: *beemgraphenebase.objects.GrapheneObject*

Create a signed transaction and offer method to create the signature

### Parameters

- **ref\_block\_num** (*num*) – reference block number
- **ref\_block\_prefix** (*num*) –
- **expiration** (*str*) – expiration date
- **operations** (*array*) – array of operations

**derSigToHexSig** (*s*)

Format DER to HEX signature

**deriveDigest** (*chain*)

**getChainParams** (*chain*)

**getKnownChains** ()

**getOperationKlass** ()

**id**

The transaction id of this transaction

**sign** (*wifkeys*, *chain=None*)

Sign the transaction with the provided private keys.

### Parameters

- **wifkeys** (*array*) – Array of wif keys
- **chain** (*str*) – identifier for the chain

**verify** (*pubkeys=[]*, *chain=None*, *recover\_parameter=False*)

Returned pubkeys have to be checked if they are existing

## beemgraphenebase.unsignedtransactions

**class** beemgraphenebase.unsignedtransactions.**GrapheneObjectASN1** (*data=None*)

Bases: *object*

Core abstraction class

This class is used for any JSON reflected object in Graphene.

- **instance.\_\_json\_\_** (): encodes data into json format
- **bytes** (*instance*): encodes data into wire format
- **str** (*instances*): dumps json object as string

**json** ()

`toJson()`

**class** `beemgraphenebase.unsignedtransactions.Unsigned_Transaction` (\*args, \*\*kwargs)

Bases: `beemgraphenebase.unsignedtransactions.GrapheneObjectASN1`

Create an unsigned transaction with ASN1 encoder for using it with ledger

#### Parameters

- **ref\_block\_num** (*num*) –
- **ref\_block\_prefix** (*num*) –
- **expiration** (*str*) – expiration date
- **operations** (*array*) – array of operations

**build\_apdu** (*path*="48'/13'/0'/0'/0'", *chain*=None)

**build\_apdu\_pubkey** (*path*="48'/13'/0'/0'/0'", *request\_screen\_approval*=False)

**build\_path** (*role*, *account\_index*, *key\_index*)

**derSigToHexSig** (*s*)

Format DER to HEX signature

**deriveDigest** (*chain*)

**getChainParams** (*chain*)

**getKnownChains** ()

**getOperationKlass** ()

**id**

The transaction id of this transaction

## 3.7.5 beemstorage Modules

### beemstorage.base

**class** `beemstorage.base.InRamConfigurationStore` (\*args, \*\*kwargs)

Bases: `beemstorage.ram.InRamStore`, `beemstorage.interfaces.ConfigInterface`

A simple example that stores configuration in RAM.

Internally, this works by simply inheriting `beemstorage.ram.InRamStore`. The interface is defined in `beemstorage.interfaces.ConfigInterface`.

**class** `beemstorage.base.InRamEncryptedKeyStore` (\*args, \*\*kwargs)

Bases: `beemstorage.ram.InRamStore`, `beemstorage.base.KeyEncryption`

An in-RAM Store that stores keys **encrypted** in RAM.

Internally, this works by simply inheriting `beemstorage.ram.InRamStore`. The interface is defined in `beemstorage.interfaces.KeyInterface`.

---

**Note:** This module also inherits `beemstorage.masterpassword.MasterPassword` which offers additional methods and deals with encrypting the keys.

---

---

**class** `beemstorage.base.InRamEncryptedTokenStore (*args, **kwargs)`  
 Bases: `beemstorage.ram.InRamStore`, `beemstorage.base.TokenEncryption`

An in-RAM Store that stores token **encrypted** in RAM.

Internally, this works by simply inheriting `beemstorage.ram.InRamStore`. The interface is defined in `beemstorage.interfaces.TokenInterface`.

---

**Note:** This module also inherits `beemstorage.masterpassword.MasterPassword` which offers additional methods and deals with encrypting the keys.

---

**class** `beemstorage.base.InRamPlainKeyStore (*args, **kwargs)`  
 Bases: `beemstorage.ram.InRamStore`, `beemstorage.interfaces.KeyInterface`

A simple in-RAM Store that stores keys unencrypted in RAM

Internally, this works by simply inheriting `beemstorage.ram.InRamStore`. The interface is defined in `beemstorage.interfaces.KeyInterface`.

**add** (*wif*, *pub*)

**Add a new public/private key pair (correspondence has to be checked elsewhere!)**

**Parameters**

- **pub** (*str*) – Public key
- **wif** (*str*) – Private key

**delete** (*pub*)

Delete a key from the store

**getPrivateKeyForPublicKey** (*pub*)

**Returns the (possibly encrypted) private key that** corresponds to a public key

**Parameters** **pub** (*str*) – Public key

The encryption scheme is BIP38

**getPublicKeys** ()

Returns the public keys stored in the database

**class** `beemstorage.base.InRamPlainTokenStore (*args, **kwargs)`  
 Bases: `beemstorage.ram.InRamStore`, `beemstorage.interfaces.TokenInterface`

A simple in-RAM Store that stores token unencrypted in RAM

Internally, this works by simply inheriting `beemstorage.ram.InRamStore`. The interface is defined in `beemstorage.interfaces.TokenInterface`.

**add** (*token*, *name*)

**Add a new public/private key pair (correspondence has to be checked elsewhere!)**

**Parameters**

- **pub** (*str*) – Public key
- **wif** (*str*) – Private key

**delete** (*name*)

Delete a key from the store

**getPrivateKeyForPublicKey** (*pub*)

Returns the (possibly encrypted) private key that corresponds to a public key

Parameters **pub** (*str*) – Public key

The encryption scheme is BIP38

**getPublicNames** ()

**class** beemstorage.base.**KeyEncryption** (\*args, \*\*kwargs)

Bases: *beemstorage.masterpassword.MasterPassword*, *beemstorage.interfaces.EncryptedKeyInterface*

This is an interface class that provides the methods required for EncryptedKeyInterface and links them to the MasterPassword-provided functionality, accordingly.

**add** (*wif*, *pub*)

Add a new public/private key pair (correspondence has to be checked elsewhere!)

Parameters

- **pub** (*str*) – Public key
- **wif** (*str*) – Private key

**getPrivateKeyForPublicKey** (*pub*)

Returns the (possibly encrypted) private key that corresponds to a public key

Parameters **pub** (*str*) – Public key

The encryption scheme is BIP38

**getPublicKeys** ()

Returns the public keys stored in the database

**is\_encrypted** ()

Returns True/False to indicate required use of unlock

**class** beemstorage.base.**SqliteConfigurationStore** (\*args, \*\*kwargs)

Bases: *beemstorage.sqlite.SQLiteStore*, *beemstorage.interfaces.ConfigInterface*

This is the configuration storage that stores key/value pairs in the *config* table of the SQLite3 database.

Internally, this works by simply inheriting *beemstorage.sqlite.SQLiteStore*. The interface is defined in *beemstorage.interfaces.ConfigInterface*.

**class** beemstorage.base.**SqliteEncryptedKeyStore** (\*args, \*\*kwargs)

Bases: *beemstorage.sqlite.SQLiteStore*, *beemstorage.base.KeyEncryption*

This is the key storage that stores the public key and the **encrypted** private key in the *keys* table in the SQLite3 database.

Internally, this works by simply inheriting *beemstorage.ram.InRamStore*. The interface is defined in *beemstorage.interfaces.KeyInterface*.

---

**Note:** This module also inherits *beemstorage.masterpassword.MasterPassword* which offers additional methods and deals with encrypting the keys.

---

**class** *beemstorage.base.SqliteEncryptedTokenStore* (\*args, \*\*kwargs)

Bases: *beemstorage.sqlite.SQLiteStore*, *beemstorage.base.TokenEncryption*

This is the key storage that stores the account name and the **encrypted** token in the *token* table in the SQLite3 database.

Internally, this works by simply inheriting *beemstorage.ram.InRamStore*. The interface is defined in *beemstorage.interfaces.TokenInterface*.

---

**Note:** This module also inherits *beemstorage.masterpassword.MasterPassword* which offers additional methods and deals with encrypting the token.

---

**class** *beemstorage.base.SqlitePlainKeyStore* (\*args, \*\*kwargs)

Bases: *beemstorage.sqlite.SQLiteStore*, *beemstorage.interfaces.KeyInterface*

This is the key storage that stores the public key and the **unencrypted** private key in the *keys* table in the SQLite3 database.

Internally, this works by simply inheriting *beemstorage.ram.InRamStore*. The interface is defined in *beemstorage.interfaces.KeyInterface*.

**add** (*wif*, *pub*)

**Add a new public/private key pair (correspondence has to be checked elsewhere!)**

**Parameters**

- **pub** (*str*) – Public key
- **wif** (*str*) – Private key

**delete** (*pub*)

Delete a key from the store

**Parameters** **value** (*str*) – Value

**getPrivateKeyForPublicKey** (*pub*)

**Returns the (possibly encrypted) private key that** corresponds to a public key

**Parameters** **pub** (*str*) – Public key

The encryption scheme is BIP38

**getPublicKeys** ()

Returns the public keys stored in the database

**is\_encrypted** ()

Returns False, as we are not encrypted here

**class** *beemstorage.base.SqlitePlainTokenStore* (\*args, \*\*kwargs)

Bases: *beemstorage.sqlite.SQLiteStore*, *beemstorage.interfaces.TokenInterface*

This is the token storage that stores the public key and the **unencrypted** private key in the *tokens* table in the SQLite3 database.

Internally, this works by simply inheriting `beemstorage.ram.InRamStore`. The interface is defined in `beemstorage.interfaces.TokenInterface`.

**add** (*token*, *name*)

**Add a new public/private key pair (correspondence has to be checked elsewhere!)**

**Parameters**

- **pub** (*str*) – Public key
- **wif** (*str*) – Private key

**delete** (*name*)

Delete a key from the store

**Parameters** **value** (*str*) – Value

**getPrivateKeyForPublicKey** (*name*)

**Returns the (possibly encrypted) private key that** corresponds to a public key

**Parameters** **pub** (*str*) – Public key

The encryption scheme is BIP38

**getPublicNames** ()

**is\_encrypted** ()

Returns False, as we are not encrypted here

**updateToken** (*name*, *token*)

**class** `beemstorage.base.TokenEncryption` (\*args, \*\*kwargs)

Bases: `beemstorage.masterpassword.MasterPassword`, `beemstorage.interfaces.EncryptedTokenInterface`

This is an interface class that provides the methods required for EncryptedTokenInterface and links them to the MasterPassword-provided functionality, accordingly.

**add** (*token*, *name*)

**Add a new public/private key pair (correspondence has to be checked elsewhere!)**

**Parameters**

- **pub** (*str*) – Public key
- **wif** (*str*) – Private key

**getPrivateKeyForPublicKey** (*name*)

**Returns the (possibly encrypted) private key that** corresponds to a public key

**Parameters** **pub** (*str*) – Public key

The encryption scheme is BIP38

**getPublicNames** ()

**is\_encrypted** ()

Returns True/False to indicate required use of unlock

**updateToken** (*name*, *token*)

## beemstorage.exceptions

**exception** beemstorage.exceptions.**KeyAlreadyInStoreException**

Bases: `Exception`

The key of a key/value pair is already in the store

**exception** beemstorage.exceptions.**WalletLocked**

Bases: `Exception`

**exception** beemstorage.exceptions.**WrongMasterPasswordException**

Bases: `Exception`

The password provided could not properly unlock the wallet

## beemstorage.interfaces

**class** beemstorage.interfaces.**ConfigInterface** (\*args, \*\*kwargs)

Bases: `beemstorage.interfaces.StoreInterface`

The BaseKeyStore defines the interface for key storage

---

**Note:** This class inherits `beemstorage.interfaces.StoreInterface` and defines **no** additional configuration-specific methods.

---

**class** beemstorage.interfaces.**EncryptedKeyInterface** (\*args, \*\*kwargs)

Bases: `beemstorage.interfaces.KeyInterface`

The EncryptedKeyInterface extends KeyInterface to work with encrypted keys

**is\_encrypted** ()

Returns True/False to indicate required use of unlock

**lock** ()

Lock the wallet again

**locked** ()

is the wallet locked?

**unlock** (password)

Tries to unlock the wallet if required

**Parameters** **password** (*str*) – Plain password

**class** beemstorage.interfaces.**EncryptedTokenInterface** (\*args, \*\*kwargs)

Bases: `beemstorage.interfaces.TokenInterface`

The EncryptedKeyInterface extends KeyInterface to work with encrypted tokens

**is\_encrypted** ()

Returns True/False to indicate required use of unlock

**lock** ()

Lock the wallet again

**locked** ()

is the wallet locked?

**unlock** (password)

Tries to unlock the wallet if required

Parameters **password** (*str*) – Plain password

**class** beemstorage.interfaces.**KeyInterface** (\*args, \*\*kwargs)

Bases: *beemstorage.interfaces.StoreInterface*

The KeyInterface defines the interface for key storage.

---

**Note:** This class inherits *beemstorage.interfaces.StoreInterface* and defines additional key-specific methods.

---

**add** (*wif*, *pub*=None)

Add a new public/private key pair (correspondence has to be checked elsewhere!)

Parameters

- **pub** (*str*) – Public key
- **wif** (*str*) – Private key

**delete** (*pub*)

Delete a pubkey/privatekey pair from the store

Parameters **pub** (*str*) – Public key

**getPrivateKeyForPublicKey** (*pub*)

Returns the (possibly encrypted) private key that corresponds to a public key

Parameters **pub** (*str*) – Public key

The encryption scheme is BIP38

**getPublicKeys** ()

Returns the public keys stored in the database

**is\_encrypted** ()

Returns True/False to indicate required use of unlock

**class** beemstorage.interfaces.**StoreInterface** (\*args, \*\*kwargs)

Bases: dict

The store interface is the most general store that we can have.

It inherits dict and thus behaves like a dictionary. As such any key/value store can be used as store with or even without an adaptor.

---

**Note:** This class defines `defaults` that are used to return reasonable defaults for the library.

---

**Warning:** If you are trying to obtain a value for a key that does **not** exist in the store, the library will **NOT** raise but return a `None` value. This represents the biggest difference to a regular `dict` class.

Methods that need to be implemented:

- `def setdefault(cls, key, value)`
- `def __init__(self, *args, **kwargs)`



- `def __setitem__(self, key, value)`
- `def __getitem__(self, key)`
- `def __iter__(self)`
- `def __len__(self)`
- `def __contains__(self, key)`

---

**Note:** Configuration and Key classes are subclasses of this to allow storing keys separate from configuration.

---

**defaults** = {}

**delete** (*key*)

Delete a key from the store

**get** (*key, default=None*)

Return the key if exists or a default value

**items** ()

Returns all items off the store as tuples

**classmethod setdefault** (*key, value*)

Allows to define default values

**wipe** ()

Wipe the store

**class** `beemstorage.interfaces.TokenInterface` (\*args, \*\*kwargs)

Bases: `beemstorage.interfaces.StoreInterface`

The TokenInterface defines the interface for token storage.

---

**Note:** This class inherits `beemstorage.interfaces.StoreInterface` and defines additional key-specific methods.

---

**add** (*wif, pub=None*)

**Add a new public/private key pair (correspondence has to be checked elsewhere!)**

**Parameters**

- **pub** (*str*) – Public key
- **wif** (*str*) – Private key

**delete** (*pub*)

Delete a pubkey/privatekey pair from the store

**Parameters** **pub** (*str*) – Public key

**getPrivateKeyForPublicKey** (*pub*)

**Returns the (possibly encrypted) private key that** corresponds to a public key

**Parameters** **pub** (*str*) – Public key

The encryption scheme is BIP38

**getPublicKeys()**  
Returns the public keys stored in the database

**is\_encrypted()**  
Returns True/False to indicate required use of unlock

### beemstorage.masterpassword

**class** beemstorage.masterpassword.**MasterPassword**(*config=None, \*\*kwargs*)  
Bases: object

The keys are encrypted with a Masterpassword that is stored in the configurationStore. It has a checksum to verify correctness of the password The encrypted private keys in *keys* are encrypted with a random **masterkey/masterpassword** that is stored in the configuration encrypted by the user-provided password.

**Parameters** **config** (*ConfigStore*) – Configuration store to get access to the encrypted master password

**changePassword** (*newpassword*)

**change\_password** (*newpassword*)  
Change the password that allows to decrypt the master key

**decrypt** (*wif*)  
Decrypt the content according to BIP38

**Parameters** **wif** (*str*) – Encrypted key

**decrypt\_text** (*enctxt*)  
Decrypt the content according to BIP38

**Parameters** **wif** (*str*) – Encrypted key

**deriveChecksum** (*s*)  
Derive the checksum

**encrypt** (*wif*)  
Encrypt the content according to BIP38

**Parameters** **wif** (*str*) – Unencrypted key

**encrypt\_text** (*txt*)  
Encrypt the content according to BIP38

**Parameters** **wif** (*str*) – Unencrypted key

**has\_masterpassword** ()  
Tells us if the config store knows an encrypted masterpassword

**lock** ()  
Lock the store so that we can no longer decrypt the content of the store

**locked** ()  
Is the store locked. E.g. Is a valid password known that can be used to decrypt the master key?

**masterkey**  
Contains the **decrypted** master key

**unlock** (*password*)  
The password is used to encrypt this masterpassword. To decrypt the keys stored in the keys database, one must use BIP38, decrypt the masterpassword from the configuration store with the user password, and use the decrypted masterpassword to decrypt the BIP38 encrypted private keys from the keys storage!

**Parameters** `password` (*str*) – Password to use for en-/de-cryption

**unlocked** ()

Is the store unlocked so that I can decrypt the content?

**wipe\_masterpassword** ()

Removes the encrypted masterpassword from config storage

## beemstorage.ram

**class** `beemstorage.ram.InRamStore` (*\*args, \*\*kwargs*)

Bases: `beemstorage.interfaces.StoreInterface`

The `InRamStore` inherits `beemstorage.interfaces.StoreInterface` and extends it by two further calls for `wipe` and `delete`.

The store is syntactically equivalent to a regular dictionary.

**Warning:** If you are trying to obtain a value for a key that does **not** exist in the store, the library will **NOT** raise but return a `None` value. This represents the biggest difference to a regular `dict` class.

**delete** (*key*)

Delete a key from the store

**wipe** ()

Wipe the store

## beemstorage.sqlite

**class** `beemstorage.sqlite.SQLiteCommon`

Bases: `object`

This class abstracts away common `sqlite3` operations.

This class should not be used directly.

When inheriting from this class, the following instance members must be defined:

- `sqlite_file`: Path to the SQLite Database file

**sql\_execute** (*query, lastid=False*)

**sql\_fetchall** (*query*)

**sql\_fetchone** (*query*)

**class** `beemstorage.sqlite.SQLiteFile` (*\*args, \*\*kwargs*)

Bases: `object`

This class ensures that the user's data is stored in its OS preprotected user directory:

**OSX:**

- `~/Library/Application Support/<AppName>`

**Windows:**

- `C:\Documents and Settings<User>\Application Data\Local Settings<AppAuthor>\<AppName>`
- `C:\Documents and Settings<User>\Application Data<AppAuthor>\<AppName>`

**Linux:**

- `~/.local/share/<AppName>`

Furthermore, it offers an interface to generated backups in the *backups/* directory every now and then.

---

**Note:** The file name can be overwritten when providing a keyword argument `profile`.

---

**clean\_data** (*backupdir*='backups')

Delete files older than 70 days

**recover\_with\_latest\_backup** (*backupdir*='backups')

Replace database with latest backup

**refreshBackup** ()

Make a new backup

**sqlite3\_backup** (*backupdir*)

Create timestamped database copy

**sqlite3\_copy** (*src*, *dst*)

Copy sql file from src to dst

**sqlite\_file** = **None**

Ensure that the directory in which the data is stored exists

**class** beemstorage.sqlite.SQLiteStore (\*args, \*\*kwargs)

Bases: `beemstorage.sqlite.SQLiteFile`, `beemstorage.sqlite.SQLiteCommon`,  
`beemstorage.interfaces.StoreInterface`

The SQLiteStore deals with the sqlite3 part of storing data into a database file.

---

**Note:** This module is limited to two columns and merely stores key/value pairs into the sqlite database

---

On first launch, the database file as well as the tables are created automatically.

When inheriting from this class, the following three class members must be defined:

- `__tablename__`: Name of the table
- `__key__`: Name of the key column
- `__value__`: Name of the value column

**create** ()

Create the new table in the SQLite database

**delete** (*key*)

Delete a key from the store

**Parameters** **value** (*str*) – Value

**exists** ()

Check if the database table exists

**get** (*key*, *default=None*)

Return the key if exists or a default value

**Parameters**

- **value** (*str*) – Value

- **default** (*str*) – Default value if key not present

**items** ()

returns all items off the store as tuples

**keys** () → a set-like object providing a view on D's keys

**wipe** ()

Wipe the store

## 3.8 Contributing to beem

We welcome your contributions to our project.

### 3.8.1 Repository

The repository of beem is currently located at:

<https://github.com/holgern/beem>

### 3.8.2 Flow

This project makes heavy use of [git flow](#). If you are not familiar with it, then the most important thing for your to understand is that:

pull requests need to be made against the develop branch

### 3.8.3 How to Contribute

0. Familiarize yourself with [contributing on github](#)
1. Fork or branch from the master.
2. Create commits following the commit style
3. Start a pull request to the master branch
4. Wait for a @holger80 or another member to review

### 3.8.4 Issues

Feel free to submit issues and enhancement requests.

### 3.8.5 Contributing

Please refer to each project's style guidelines and guidelines for submitting patches and additions. In general, we follow the “fork-and-pull” Git workflow.

1. **Fork** the repo on GitHub
2. **Clone** the project to your own machine
3. **Commit** changes to your own branch

4. **Push** your work back up to your fork
5. Submit a **Pull request** so that we can review your changes

---

**Note:** Be sure to merge the latest from “upstream” before making a pull request!

---

### 3.8.6 Copyright and Licensing

This library is open sources under the MIT license. We require your to release your code under that license as well.

## 3.9 Support and Questions

Help and discussion channel for beem can be found here:

- <https://discord.gg/4HM592V>

## 3.10 Indices and Tables

- [genindex](#)
- [modindex](#)

## CHAPTER 4

---

### Indices and tables

---

- `genindex`
- `modindex`
- `search`





### b

- `beem.account`, 77
- `beem.amount`, 100
- `beem.asciichart`, 101
- `beem.asset`, 103
- `beem.block`, 103
- `beem.blockchain`, 105
- `beem.blockchaininstance`, 112
- `beem.blockchainobject`, 111
- `beem.comment`, 125
- `beem.conveyor`, 130
- `beem.discussions`, 132
- `beem.exceptions`, 139
- `beem.hive`, 141
- `beem.hivesigner`, 146
- `beem.imageuploader`, 149
- `beem.instance`, 149
- `beem.market`, 151
- `beem.memo`, 156
- `beem.message`, 159
- `beem.nodelist`, 160
- `beem.notify`, 162
- `beem.price`, 162
- `beem.rc`, 165
- `beem.snapshot`, 166
- `beem.steem`, 168
- `beem.steemconnect`, 173
- `beem.storage`, 175
- `beem.transactionbuilder`, 176
- `beem.utils`, 178
- `beem.vote`, 179
- `beem.wallet`, 181
- `beem.witness`, 184
- `beemapi.exceptions`, 186
- `beemapi.graphenerpc`, 187
- `beemapi.node`, 189
- `beemapi.noderpc`, 190
- `beembase.ledgertransactions`, 196
- `beembase.memo`, 192
- `beembase.objects`, 194
- `beembase.objecttypes`, 195
- `beembase.operationids`, 195
- `beembase.signedtransactions`, 195
- `beemgraphenebase.account`, 196
- `beemgraphenebase.aes`, 201
- `beemgraphenebase.base58`, 201
- `beemgraphenebase.bip32`, 202
- `beemgraphenebase.bip38`, 203
- `beemgraphenebase.ecdsasig`, 204
- `beemgraphenebase.objects`, 204
- `beemgraphenebase.objecttypes`, 204
- `beemgraphenebase.operationids`, 205
- `beemgraphenebase.signedtransactions`, 205
- `beemgraphenebase.unsignedtransactions`, 205
- `beemstorage.base`, 206
- `beemstorage.exceptions`, 211
- `beemstorage.interfaces`, 211
- `beemstorage.masterpassword`, 214
- `beemstorage.ram`, 215
- `beemstorage.sqlite`, 215



## Symbols

- account\_creation\_fee
  - <account\_creation\_fee>
  - beempy-witnesscreate command line option, [58](#)
  - beempy-witnessproperties command line option, [60](#)
  - beempy-witnessupdate command line option, [61](#)
- account\_subsidy\_budget
  - <account\_subsidy\_budget>
  - beempy-witnessproperties command line option, [60](#)
- account\_subsidy\_decay
  - <account\_subsidy\_decay>
  - beempy-witnessproperties command line option, [60](#)
- active <active>
  - beempy-changekeys command line option, [24](#)
  - beempy-newaccount command line option, [42](#)
- ascii
  - beempy-orderbook command line option, [44](#)
  - beempy-pricehistory command line option, [48](#)
  - beempy-tradehistory command line option, [53](#)
- auto\_vest
  - beempy-powerdownroute command line option, [47](#)
- chart
  - beempy-orderbook command line option, [44](#)
- claim\_all\_sbd
  - beempy-claimreward command line option, [26](#)
- claim\_all\_steem
  - beempy-claimreward command line option, [26](#)
- claim\_all\_vests
  - beempy-claimreward command line option, [26](#)
- confirm
  - beempy-delkey command line option, [31](#)
  - beempy-deltoken command line option, [32](#)
- direction <direction>
  - beempy-votes command line option, [57](#)
- export <export>
  - beempy-post command line option, [46](#)
- fee <fee>
  - beempy-claimaccount command line option, [25](#)
- hbd\_interest\_rate <hbd\_interest\_rate>
  - beempy-witnessupdate command line option, [61](#)
- hours <hours>
  - beempy-tradehistory command line option, [53](#)
- key <key>
  - beempy-updatememokey command line option, [54](#)
- limit <limit>
  - beempy-witnesses command line option, [59](#)
- maximum\_block\_size
  - <maximum\_block\_size>
  - beempy-witnesscreate command line option, [58](#)
  - beempy-witnessproperties command line option, [60](#)
  - beempy-witnessupdate command line option, [61](#)
- memo <memo>
  - beempy-changekeys command line option, [24](#)

```
    beempy-newaccount command line
      option,42
-new_signing_key <new_signing_key>
    beempy-witnessproperties command
      line option,60
-only-https
    beempy-updatenodes command line
      option,55
-only-wss
    beempy-updatenodes command line
      option,55
-order <order>
    beempy-history command line option,
      37
-orderid <orderid>
    beempy-buy command line option,23
    beempy-sell command line option,50
-owner <owner>
    beempy-changekeys command line
      option,24
    beempy-newaccount command line
      option,42
-path <path>
    beempy command line option,20
-payout <payout>
    beempy-curation command line
      option,28
-percentage <percentage>
    beempy-powerdownroute command line
      option,47
-permission <permission>
    beempy-allow command line option,21
-posting <posting>
    beempy-changekeys command line
      option,24
    beempy-newaccount command line
      option,42
-results
    beempy-nextnode command line
      option,42
-reward_sbd <reward_sbd>
    beempy-claimreward command line
      option,25
-reward_steem <reward_steem>
    beempy-claimreward command line
      option,25
-reward_vests <reward_vests>
    beempy-claimreward command line
      option,25
-roles <roles>
    beempy-importaccount command line
      option,38
-sbd_interest_rate <sbd_interest_rate>
    beempy-witnesscreate command line
      option,58
    beempy-witnessproperties command
      line option,60
    beempy-witnessupdate command line
      option,61
-show-date
    beempy-orderbook command line
      option,44
-signing_key <signing_key>
    beempy-witnessupdate command line
      option,61
-strength <strength>
    beempy-keygen command line option,
      39
-support-peg
    beempy-witnessfeed command line
      option,59
-unsafe-import-key <unsafe_import_key>
    beempy-addkey command line option,
      20
    beempy-parsewif command line
      option,44
-unsafe-import-token
    <unsafe_import_token>
    beempy-addtoken command line
      option,21
-url
    beempy-currentnode command line
      option,29
-url <url>
    beempy-witnesscreate command line
      option,58
    beempy-witnessproperties command
      line option,60
    beempy-witnessupdate command line
      option,61
-version
    beempy command line option,20
    beempy-currentnode command line
      option,29
-what <what>
    beempy-follow command line option,
      36
    beempy-mute command line option,41
-wipe
    beempy-createwallet command line
      option,27
-witness <witness>
    beempy-witnessupdate command line
      option,61
-a, -account <account>
    beempy-allow command line option,21
    beempy-approvewitness command line
      option,22
```

- beem-py-buy command line option, [23](#)
- beem-py-cancel command line option, [23](#)
- beem-py-changerecovery command line option, [24](#)
- beem-py-convert command line option, [26](#)
- beem-py-createpost command line option, [27](#)
- beem-py-curation command line option, [28](#)
- beem-py-customjson command line option, [29](#)
- beem-py-decrypt command line option, [29](#)
- beem-py-delegate command line option, [30](#)
- beem-py-delete command line option, [30](#)
- beem-py-delpost command line option, [31](#)
- beem-py-delpost command line option, [32](#)
- beem-py-disallow command line option, [32](#)
- beem-py-disapprovewitness command line option, [33](#)
- beem-py-download command line option, [33](#)
- beem-py-downvote command line option, [34](#)
- beem-py-draw command line option, [34](#)
- beem-py-encrypt command line option, [35](#)
- beem-py-follow command line option, [36](#)
- beem-py-followlist command line option, [37](#)
- beem-py-keygen command line option, [39](#)
- beem-py-message command line option, [40](#)
- beem-py-mute command line option, [41](#)
- beem-py-newaccount command line option, [42](#)
- beem-py-post command line option, [46](#)
- beem-py-powerdown command line option, [47](#)
- beem-py-powerdownroute command line option, [47](#)
- beem-py-powerup command line option, [48](#)
- beem-py-reblog command line option, [49](#)
- beem-py-reply command line option, [49](#)
- beem-py-sell command line option, [50](#)
- beem-py-setprofile command line option, [51](#)
- beem-py-setproxy command line option, [52](#)
- beem-py-transfer command line option, [53](#)
- beem-py-unfollow command line option, [54](#)
- beem-py-updatememokey command line option, [54](#)
- beem-py-uploadimage command line option, [55](#)
- beem-py-upvote command line option, [55](#)
- a, -all
  - beem-notifications command line option, [43](#)
- a, -author
  - beem-pending command line option, [45](#)
  - beem-rewards command line option, [50](#)
- a, -ledger-approval
  - beem-listkeys command line option, [40](#)
- a, -max-account-index <max\_account\_index>
  - beem-listaccounts command line option, [39](#)
- b, -base <base>
  - beem-witnessfeed command line option, [59](#)
- b, -beneficiaries <beneficiaries>
  - beem-createpost command line option, [27](#)
  - beem-post command line option, [46](#)
- b, -binary
  - beem-decrypt command line option, [30](#)
  - beem-encrypt command line option, [35](#)
- b, -block <block>
  - beem-draw command line option, [34](#)
- b, -reblogs
  - beem-notifications command line option, [43](#)
- c, -comment
  - beem-pending command line option, [44](#)
  - beem-rewards command line option, [50](#)
- c, -community <community>

beempy-createpost command line option, [27](#)  
beempy-post command line option, [46](#)  
-c, -create-claimed-account  
beempy-newaccount command line option, [42](#)  
-c, -create-password  
beempy-keygen command line option, [39](#)  
-d, -days <days>  
beempy-curation command line option, [28](#)  
beempy-pending command line option, [45](#)  
beempy-rewards command line option, [50](#)  
beempy-tradehistory command line option, [53](#)  
beempy-votes command line option, [57](#)  
-d, -draws <draws>  
beempy-draw command line option, [34](#)  
-d, -no-broadcast  
beempy command line option, [19](#)  
-d, -percent-hive-dollars  
    <percent\_hive\_dollars>  
beempy-createpost command line option, [27](#)  
beempy-post command line option, [46](#)  
-d, -percent-steem-dollars  
    <percent\_steem\_dollars>  
beempy-createpost command line option, [27](#)  
beempy-post command line option, [46](#)  
-e, -exclude-ops <exclude\_ops>  
beempy-history command line option, [37](#)  
-e, -expires <expires>  
beempy command line option, [20](#)  
-e, -export <export>  
beempy-allow command line option, [21](#)  
beempy-approvewitness command line option, [22](#)  
beempy-beneficiaries command line option, [22](#)  
beempy-buy command line option, [23](#)  
beempy-cancel command line option, [23](#)  
beempy-changekeys command line option, [24](#)  
beempy-changerecovery command line option, [24](#)  
beempy-claimaccount command line option, [25](#)  
beempy-claimreward command line option, [26](#)  
beempy-convert command line option, [26](#)  
beempy-curation command line option, [28](#)  
beempy-customjson command line option, [29](#)  
beempy-delegate command line option, [30](#)  
beempy-delete command line option, [30](#)  
beempy-delpofile command line option, [31](#)  
beempy-delproxy command line option, [32](#)  
beempy-disallow command line option, [32](#)  
beempy-disapprovewitness command line option, [33](#)  
beempy-download command line option, [33](#)  
beempy-downvote command line option, [34](#)  
beempy-follow command line option, [36](#)  
beempy-keygen command line option, [39](#)  
beempy-mute command line option, [41](#)  
beempy-newaccount command line option, [42](#)  
beempy-powerdown command line option, [47](#)  
beempy-powerdownroute command line option, [47](#)  
beempy-powerup command line option, [48](#)  
beempy-reply command line option, [49](#)  
beempy-sell command line option, [50](#)  
beempy-setprofile command line option, [51](#)  
beempy-setproxy command line option, [52](#)  
beempy-transfer command line option, [53](#)  
beempy-unfollow command line option, [54](#)  
beempy-updatememokey command line option, [54](#)  
beempy-upvote command line option, [55](#)  
beempy-votes command line option, [57](#)  
beempy-witnesscreate command line option, [58](#)  
beempy-witnessdisable command line

option, [58](#)  
 beempy-witnessenable command line option, [59](#)  
 beempy-witnessupdate command line option, [61](#)  
 -e, -no-patch-on-edit  
     beempy-post command line option, [46](#)  
 -e, -permlink  
     beempy-pending command line option, [45](#)  
     beempy-rewards command line option, [50](#)  
 -e, -steem  
     beempy-updatenodes command line option, [55](#)  
 -f, -file <file>  
     beempy-broadcast command line option, [23](#)  
 -f, -follows  
     beempy-notifications command line option, [43](#)  
 -f, -from <\_from>  
     beempy-pending command line option, [45](#)  
 -g, -tags <tags>  
     beempy-createpost command line option, [27](#)  
     beempy-post command line option, [46](#)  
 -h, -hashtype <hashtype>  
     beempy-draw command line option, [34](#)  
 -h, -height <height>  
     beempy-orderbook command line option, [44](#)  
     beempy-pricehistory command line option, [48](#)  
     beempy-tradehistory command line option, [53](#)  
 -h, -hive  
     beempy command line option, [20](#)  
     beempy-updatenodes command line option, [55](#)  
 -i, -file <file>  
     beempy-sign command line option, [52](#)  
 -i, -import-password  
     beempy-keygen command line option, [39](#)  
 -i, -import-pub <import\_pub>  
     beempy-changekeys command line option, [24](#)  
     beempy-newaccount command line option, [42](#)  
 -i, -incoming  
     beempy-votes command line option, [57](#)  
 -i, -info  
     beempy-decrypt command line option, [29](#)  
 -i, -sbd-to-steem  
     beempy-ticker command line option, [52](#)  
     beempy-tradehistory command line option, [53](#)  
 -j, -json-file <json\_file>  
     beempy-history command line option, [37](#)  
 -k, -account-keys  
     beempy-keygen command line option, [39](#)  
 -k, -keys <keys>  
     beempy command line option, [20](#)  
 -l, -create-link  
     beempy command line option, [19](#)  
 -l, -import-word-list  
     beempy-keygen command line option, [39](#)  
 -l, -length <length>  
     beempy-curation command line option, [28](#)  
     beempy-pending command line option, [45](#)  
     beempy-rewards command line option, [50](#)  
 -l, -limit <limit>  
     beempy-followlist command line option, [37](#)  
     beempy-notifications command line option, [43](#)  
     beempy-orderbook command line option, [44](#)  
     beempy-tradehistory command line option, [53](#)  
 -l, -lock  
     beempy-walletinfo command line option, [57](#)  
 -m, -limit <limit>  
     beempy-curation command line option, [28](#)  
 -m, -mark\_as\_read  
     beempy-notifications command line option, [43](#)  
 -m, -markdown  
     beempy-draw command line option, [34](#)  
 -m, -max-accepted-payout  
     <max\_accepted\_payout>  
     beempy-createpost command line option, [27](#)  
     beempy-post command line option, [46](#)  
 -m, -path <path>  
     beempy-keygen command line option,

39

-n, -image-name <image\_name>  
beem-py-uploadimage command line option, 55

-n, -network <network>  
beem-py-keygen command line option, 39

-n, -no-parse-body  
beem-py-createpost command line option, 27  
beem-py-post command line option, 46

-n, -node <node>  
beem-py command line option, 19

-n, -number <number>  
beem-py-claimaccount command line option, 25  
beem-py-history command line option, 37

-o, -offline  
beem-py command line option, 19

-o, -only-ops <only\_ops>  
beem-py-history command line option, 37

-o, -outfile <outfile>  
beem-py-sign command line option, 52

-o, -outgoing  
beem-py-votes command line option, 57

-o, -output <output>  
beem-py-decrypt command line option, 29  
beem-py-encrypt command line option, 35

-p, -no-wallet  
beem-py command line option, 19

-p, -pair <pair>  
beem-py-setprofile command line option, 51

-p, -participants <participants>  
beem-py-draw command line option, 34

-p, -passphrase  
beem-py-keygen command line option, 39

-p, -path <path>  
beem-py-listkeys command line option, 40

-p, -permission <permission>  
beem-py-disallow command line option, 32

-p, -permlink  
beem-py-curation command line option, 28

-p, -permlink <permlink>  
beem-py-post command line option, 46

-p, -post  
beem-py-pending command line option, 44  
beem-py-rewards command line option, 50

-q, -quote <quote>  
beem-py-witnessfeed command line option, 59

-r, -remove  
beem-py-pingnode command line option, 45

-r, -replies  
beem-py-notifications command line option, 43

-r, -reply <reply>  
beem-py-draw command line option, 34

-r, -reply-identifier  
<reply\_identifier>  
beem-py-post command line option, 46

-r, -role <role>  
beem-py-keygen command line option, 39  
beem-py-listaccounts command line option, 39

-s, -max-sequence <max\_sequence>  
beem-py-listaccounts command line option, 40

-s, -only-sum  
beem-py-pending command line option, 44  
beem-py-rewards command line option, 50

-s, -reverse  
beem-py-notifications command line option, 43

-s, -save  
beem-py-download command line option, 33

-s, -separator <separator>  
beem-py-draw command line option, 34

-s, -sequence <sequence>  
beem-py-keygen command line option, 39

-s, -short  
beem-py-curation command line option, 28

-s, -show  
beem-py-updatenodes command line option, 55

-s, -signing-account <signing\_account>  
beem-py-featureflags command line option, 35  
beem-py-userdata command line option, 56

-s, -sort



```

    beempy-pingnode command line
        option,45
-s, -steem
    beempy command line option,20
-t, -active
    beempy-customjson command line
        option,29
-t, -mentions
    beempy-notifications command line
        option,43
-t, -test
    beempy-updatenodes command line
        option,55
-t, -text
    beempy-decrypt command line option,
        29
    beempy-encrypt command line option,
        35
-t, -threshold <threshold>
    beempy-allow command line option,21
    beempy-disallow command line
        option,32
-t, -title
    beempy-curation command line
        option,28
    beempy-pending command line option,
        45
    beempy-rewards command line option,
        50
-t, -title <title>
    beempy-createpost command line
        option,27
    beempy-post command line option,46
    beempy-reply command line option,49
-t, -to <to>
    beempy-powerup command line option,
        48
-t, -token
    beempy command line option,20
-t, -trx <trx>
    beempy-verify command line option,
        56
-t, -trx-id <trx_id>
    beempy-draw command line option,34
-u, -canonical-url <canonical_url>
    beempy-post command line option,46
-u, -export-pub <export_pub>
    beempy-keygen command line option,
        39
-u, -unlock
    beempy-walletinfo command line
        option,57
-u, -use-api
    beempy-verify command line option,
        56
    -u, -use-ledger
        beempy command line option,20
    -v, -curation
        beempy-pending command line option,
            45
        beempy-rewards command line option,
            50
    -v, -min-vote <min_vote>
        beempy-curation command line
            option,28
    -v, -verbose <verbose>
        beempy command line option,20
    -v, -verify
        beempy-message command line option,
            40
    -v, -virtual-ops
        beempy-history command line option,
            37
    -v, -votes
        beempy-notifications command line
            option,43
    -w, -max-vote <max_vote>
        beempy-curation command line
            option,28
    -w, -weight <weight>
        beempy-allow command line option,21
        beempy-downvote command line
            option,34
        beempy-upvote command line option,
            55
    -w, -width <width>
        beempy-orderbook command line
            option,44
        beempy-pricehistory command line
            option,48
        beempy-tradehistory command line
            option,53
    -w, -wif <wif>
        beempy-keygen command line option,
            39
        beempy-newaccount command line
            option,42
    -w, -without-replacement
        beempy-draw command line option,34
    -x, -min-performance <min_performance>
        beempy-curation command line
            option,28
    -x, -unsigned
        beempy command line option,19
    -y, -max-performance <max_performance>
        beempy-curation command line
            option,28
    _NodeWebsocket__set_subscriptions()

```

`(beemapi.websocket.NodeWebsocket method), 191`  
`__events__ (beemapi.websocket.NodeWebsocket attribute), 191`  
`__getattr__() (beemapi.websocket.NodeWebsocket method), 191`  
`__init__() (beemapi.websocket.NodeWebsocket method), 191`  
`__module__ (beemapi.websocket.NodeWebsocket attribute), 191`  
`_ping() (beemapi.websocket.NodeWebsocket method), 191`

## A

`abort() (beem.blockchain.Pool method), 110`

### ACCOUNT

`beem-py-balance command line option, 22`  
`beem-py-changekeys command line option, 24`  
`beem-py-claimreward command line option, 26`  
`beem-py-featureflags command line option, 35`  
`beem-py-follower command line option, 36`  
`beem-py-following command line option, 36`  
`beem-py-history command line option, 37`  
`beem-py-importaccount command line option, 38`  
`beem-py-interest command line option, 38`  
`beem-py-muter command line option, 41`  
`beem-py-muting command line option, 41`  
`beem-py-notifications command line option, 43`  
`beem-py-openorders command line option, 43`  
`beem-py-permissions command line option, 45`  
`beem-py-power command line option, 47`  
`beem-py-userdata command line option, 56`  
`beem-py-votes command line option, 57`  
`beem-py-witnesses command line option, 59`  
`account (beem.witness.Witness attribute), 184`  
`Account (class in beem.account), 77`  
`account_create_dict() (beem.rc.RC method), 165`

`account_update_dict() (beem.rc.RC method), 165`

`AccountDoesNotExistsException, 139`

`AccountExistsException, 139`

### ACCOUNTNAME

`beem-py-newaccount command line option, 42`

`accountopenorders() (beem.market.Market method), 151`

### ACCOUNTS

`beem-py-pending command line option, 45`

`beem-py-rewards command line option, 50`

`Accounts (class in beem.account), 99`

`AccountSnapshot (class in beem.snapshot), 166`

`AccountsObject (class in beem.account), 100`

`AccountVotes (class in beem.vote), 179`

`ActiveVotes (class in beem.vote), 179`

`adapt_on_series() (beem.asciichart.AsciiChart method), 101`

`add() (beemgraphenebase.account.PublicKey method), 200`

`add() (beemstorage.base.InRamPlainKeyStore method), 207`

`add() (beemstorage.base.InRamPlainTokenStore method), 207`

`add() (beemstorage.base.KeyEncryption method), 208`

`add() (beemstorage.base.SqlitePlainKeyStore method), 209`

`add() (beemstorage.base.SqlitePlainTokenStore method), 210`

`add() (beemstorage.base.TokenEncryption method), 210`

`add() (beemstorage.interfaces.KeyInterface method), 212`

`add() (beemstorage.interfaces.TokenInterface method), 213`

`add_axis() (beem.asciichart.AsciiChart method), 102`

`add_curve() (beem.asciichart.AsciiChart method), 102`

`add_custom_chains() (beem-base.ledgertransactions.Ledger_Transaction method), 196`

`add_custom_chains() (beem-base.signedtransactions.Signed_Transaction method), 195`

`addPrivateKey() (beem.wallet.Wallet method), 181`

`address (beemgraphenebase.account.BitcoinPublicKey attribute), 197`

`address (beemgraphenebase.account.PrivateKey attribute), 199`

`address (beemgraphenebase.account.PublicKey attribute), 200`

- Address (class in *beemgraphenebase.account*), 196  
 Address () (*beemgraphenebase.bip32.BIP32Key* method), 202  
 addSigningInformation () (*beem.transactionbuilder.TransactionBuilder* method), 176  
 addToken () (*beem.hivesigner.HiveSigner* method), 147  
 addToken () (*beem.steemconnect.SteemConnect* method), 174  
 addTzInfo () (in module *beem.utils*), 178  
 AESCipher (class in *beemgraphenebase.aes*), 201  
 alive () (*beem.blockchain.Pool* method), 110  
 allow () (*beem.account.Account* method), 78  
 AMOUNT  
   beempy-buy command line option, 23  
   beempy-convert command line option, 26  
   beempy-delegate command line option, 30  
   beempy-powerdown command line option, 47  
   beempy-powerup command line option, 48  
   beempy-sell command line option, 51  
   beempy-transfer command line option, 53  
 amount (*beem.amount.Amount* attribute), 101  
 Amount (class in *beem.amount*), 100  
 Amount (class in *beembase.objects*), 194  
 amount\_decimal (*beem.amount.Amount* attribute), 101  
 ApiNotSupported, 186  
 appendMissingSignatures () (*beem.transactionbuilder.TransactionBuilder* method), 176  
 appendOps () (*beem.transactionbuilder.TransactionBuilder* method), 176  
 appendSigner () (*beem.transactionbuilder.TransactionBuilder* method), 176  
 appendWif () (*beem.transactionbuilder.TransactionBuilder* method), 176  
 approveWitness () (*beem.account.Account* method), 78  
 as\_base () (*beem.price.Price* method), 164  
 as\_quote () (*beem.price.Price* method), 164  
 AsciiChart (class in *beem.asciichart*), 101  
 ASSET  
   beempy-buy command line option, 23  
   beempy-sell command line option, 51  
   beempy-transfer command line option, 53  
 asset (*beem.amount.Amount* attribute), 101  
 asset (*beem.asset.Asset* attribute), 103  
 Asset (class in *beem.asset*), 103  
 AssetDoesNotExistsException, 139  
 assets\_from\_string () (in module *beem.utils*), 178  
 author (*beem.comment.Comment* attribute), 125  
 AUTHORPERM  
   beempy-beneficiaries command line option, 22  
   beempy-curation command line option, 28  
   beempy-reply command line option, 49  
 authorperm (*beem.comment.Comment* attribute), 125  
 authorperm (*beem.vote.Vote* attribute), 180  
 available\_balances (*beem.account.Account* attribute), 78  
 awaitTxConfirmation () (*beem.blockchain.Blockchain* method), 105
- ## B
- b58decode () (in module *beemgraphenebase.base58*), 202  
 b58encode () (in module *beemgraphenebase.base58*), 202  
 backed\_token\_symbol (*beem.blockchaininstance.BlockChainInstance* attribute), 113  
 balances (*beem.account.Account* attribute), 78  
 Base58 (class in *beemgraphenebase.base58*), 201  
 base58CheckDecode () (in module *beemgraphenebase.base58*), 202  
 base58CheckEncode () (in module *beemgraphenebase.base58*), 202  
 base58decode () (in module *beemgraphenebase.base58*), 202  
 base58encode () (in module *beemgraphenebase.base58*), 202  
 BatchedCallsNotSupported, 139  
 beem.account (module), 77  
 beem.amount (module), 100  
 beem.asciichart (module), 101  
 beem.asset (module), 103  
 beem.block (module), 103  
 beem.blockchain (module), 105  
 beem.blockchaininstance (module), 112  
 beem.blockchainobject (module), 111  
 beem.comment (module), 125  
 beem.conveyor (module), 130  
 beem.discussions (module), 132  
 beem.exceptions (module), 139  
 beem.hive (module), 141  
 beem.hivesigner (module), 146  
 beem.imageuploader (module), 149  
 beem.instance (module), 149  
 beem.market (module), 151

beem.memo (*module*), 156  
beem.message (*module*), 159  
beem.nodelist (*module*), 160  
beem.notify (*module*), 162  
beem.price (*module*), 162  
beem.rc (*module*), 165  
beem.snapshot (*module*), 166  
beem.steem (*module*), 168  
beem.steemconnect (*module*), 173  
beem.storage (*module*), 175  
beem.transactionbuilder (*module*), 176  
beem.utils (*module*), 178  
beem.vote (*module*), 179  
beem.wallet (*module*), 181  
beem.witness (*module*), 184  
beemapi.exceptions (*module*), 186  
beemapi.graphenerpc (*module*), 187  
beemapi.node (*module*), 189  
beemapi.noderpc (*module*), 190  
beembase.ledgertransactions (*module*), 196  
beembase.memo (*module*), 192  
beembase.objects (*module*), 194  
beembase.objecttypes (*module*), 195  
beembase.operationids (*module*), 195  
beembase.signedtransactions (*module*), 195  
beemgraphenebase.account (*module*), 196  
beemgraphenebase.aes (*module*), 201  
beemgraphenebase.base58 (*module*), 201  
beemgraphenebase.bip32 (*module*), 202  
beemgraphenebase.bip38 (*module*), 203  
beemgraphenebase.ecdsasig (*module*), 204  
beemgraphenebase.objects (*module*), 204  
beemgraphenebase.objecttypes (*module*), 204  
beemgraphenebase.operationids (*module*), 205  
beemgraphenebase.signedtransactions (*module*), 205  
beemgraphenebase.unsignedtransactions (*module*), 205  
beempy command line option  
  -path <path>, 20  
  -version, 20  
  -d, -no-broadcast, 19  
  -e, -expires <expires>, 20  
  -h, -hive, 20  
  -k, -keys <keys>, 20  
  -l, -create-link, 19  
  -n, -node <node>, 19  
  -o, -offline, 19  
  -p, -no-wallet, 19  
  -s, -steem, 20  
  -t, -token, 20  
  -u, -use-ledger, 20  
  -v, -verbose <verbose>, 20  
  -x, -unsigned, 19  
beempy-addkey command line option  
  -unsafe-import-key  
    <unsafe\_import\_key>, 20  
beempy-addtoken command line option  
  -unsafe-import-token  
    <unsafe\_import\_token>, 21  
  NAME, 21  
beempy-allow command line option  
  -permission <permission>, 21  
  -a, -account <account>, 21  
  -e, -export <export>, 21  
  -t, -threshold <threshold>, 21  
  -w, -weight <weight>, 21  
  FOREIGN\_ACCOUNT, 21  
beempy-approvewitness command line option  
  -a, -account <account>, 22  
  -e, -export <export>, 22  
  WITNESS, 22  
beempy-balance command line option  
  ACCOUNT, 22  
beempy-beneficiaries command line option  
  -e, -export <export>, 22  
  AUTHORPERM, 22  
  BENEFICIARIES, 22  
beempy-broadcast command line option  
  -f, -file <file>, 23  
beempy-buy command line option  
  -orderid <orderid>, 23  
  -a, -account <account>, 23  
  -e, -export <export>, 23  
  AMOUNT, 23  
  ASSET, 23  
  PRICE, 23  
beempy-cancel command line option  
  -a, -account <account>, 23  
  -e, -export <export>, 23  
  ORDERID, 24  
beempy-changekeys command line option  
  -active <active>, 24  
  -memo <memo>, 24  
  -owner <owner>, 24  
  -posting <posting>, 24  
  -e, -export <export>, 24  
  -i, -import-pub <import\_pub>, 24  
  ACCOUNT, 24  
beempy-changerecovery command line option  
  -a, -account <account>, 24  
  -e, -export <export>, 24  
  NEW\_RECOVERY\_ACCOUNT, 25

beem-claimaccount command line option

- fee <fee>, 25
- e, -export <export>, 25
- n, -number <number>, 25
- CREATOR, 25

beem-claimreward command line option

- claim\_all\_sbd, 26
- claim\_all\_steem, 26
- claim\_all\_vests, 26
- reward\_sbd <reward\_sbd>, 25
- reward\_steem <reward\_steem>, 25
- reward\_vests <reward\_vests>, 25
- e, -export <export>, 26
- ACCOUNT, 26

beem-convert command line option

- a, -account <account>, 26
- e, -export <export>, 26
- AMOUNT, 26

beem-createpost command line option

- a, -account <account>, 27
- b, -beneficiaries <beneficiaries>, 27
- c, -community <community>, 27
- d, -percent-hive-dollars <percent\_hive\_dollars>, 27
- d, -percent-steem-dollars <percent\_steem\_dollars>, 27
- g, -tags <tags>, 27
- m, -max-accepted-payout <max\_accepted\_payout>, 27
- n, -no-parse-body, 27
- t, -title <title>, 27
- MARKDOWN\_FILE, 27

beem-createwallet command line option

- wipe, 27

beem-curation command line option

- payout <payout>, 28
- a, -account <account>, 28
- d, -days <days>, 28
- e, -export <export>, 28
- l, -length <length>, 28
- m, -limit <limit>, 28
- p, -permlink, 28
- s, -short, 28
- t, -title, 28
- v, -min-vote <min\_vote>, 28
- w, -max-vote <max\_vote>, 28
- x, -min-performance <min\_performance>, 28
- y, -max-performance <max\_performance>, 28
- AUTHORPERM, 28

beem-currentnode command line option

- url, 29
- version, 29

beem-customjson command line option

- a, -account <account>, 29
- e, -export <export>, 29
- t, -active, 29
- JSON\_DATA, 29
- JSONID, 29

beem-decrypt command line option

- a, -account <account>, 29
- b, -binary, 30
- i, -info, 29
- o, -output <output>, 29
- t, -text, 29
- MEMO, 30

beem-delegate command line option

- a, -account <account>, 30
- e, -export <export>, 30
- AMOUNT, 30
- TO\_ACCOUNT, 30

beem-delete command line option

- a, -account <account>, 30
- e, -export <export>, 30
- POST, 31

beem-delkey command line option

- confirm, 31
- PUB, 31

beem-delprofile command line option

- a, -account <account>, 31
- e, -export <export>, 31
- VARIABLE, 31

beem-delproxy command line option

- a, -account <account>, 32
- e, -export <export>, 32

beem-deltoken command line option

- confirm, 32
- NAME, 32

beem-disallow command line option

- a, -account <account>, 32
- e, -export <export>, 32
- p, -permission <permission>, 32
- t, -threshold <threshold>, 32
- FOREIGN\_ACCOUNT, 32

beem-disapprovewitness command line option

- a, -account <account>, 33
- e, -export <export>, 33
- WITNESS, 33

beem-download command line option

- a, -account <account>, 33
- e, -export <export>, 33
- s, -save, 33
- PERMLINK, 33

beem-py-downvote command line option

-a, -account <account>, 34  
-e, -export <export>, 34  
-w, -weight <weight>, 34  
POST, 34

beem-py-draw command line option

-a, -account <account>, 34  
-b, -block <block>, 34  
-d, -draws <draws>, 34  
-h, -hashtype <hashtype>, 34  
-m, -markdown, 34  
-p, -participants <participants>, 34  
-r, -reply <reply>, 34  
-s, -separator <separator>, 34  
-t, -trx-id <trx\_id>, 34  
-w, -without-replacement, 34

beem-py-encrypt command line option

-a, -account <account>, 35  
-b, -binary, 35  
-o, -output <output>, 35  
-t, -text, 35  
MEMO, 35  
RECEIVER, 35

beem-py-featureflags command line option

-s, -signing-account  
    <signing\_account>, 35  
ACCOUNT, 35

beem-py-follow command line option

-what <what>, 36  
-a, -account <account>, 36  
-e, -export <export>, 36  
FOLLOW, 36

beem-py-follower command line option

ACCOUNT, 36

beem-py-following command line option

ACCOUNT, 36

beem-py-followlist command line option

-a, -account <account>, 37  
-l, -limit <limit>, 37  
FOLLOW\_TYPE, 37

beem-py-history command line option

-order <order>, 37  
-e, -exclude-ops <exclude\_ops>, 37  
-j, -json-file <json\_file>, 37  
-n, -number <number>, 37  
-o, -only-ops <only\_ops>, 37  
-v, -virtual-ops, 37  
ACCOUNT, 37

beem-py-importaccount command line option

-roles <roles>, 38  
ACCOUNT, 38

beem-py-info command line option

OBJECTS, 38

beem-py-interest command line option  
ACCOUNT, 38

beem-py-keygen command line option

-strength <strength>, 39  
-a, -account <account>, 39  
-c, -create-password, 39  
-e, -export <export>, 39  
-i, -import-password, 39  
-k, -account-keys, 39  
-l, -import-word-list, 39  
-m, -path <path>, 39  
-n, -network <network>, 39  
-p, -passphrase, 39  
-r, -role <role>, 39  
-s, -sequence <sequence>, 39  
-u, -export-pub <export\_pub>, 39  
-w, -wif <wif>, 39

beem-py-listaccounts command line option

-a, -max-account-index  
    <max\_account\_index>, 39  
-r, -role <role>, 39  
-s, -max-sequence <max\_sequence>, 40

beem-py-listkeys command line option

-a, -ledger-approval, 40  
-p, -path <path>, 40

beem-py-message command line option

-a, -account <account>, 40  
-v, -verify, 40  
MESSAGE\_FILE, 40

beem-py-mute command line option

-what <what>, 41  
-a, -account <account>, 41  
-e, -export <export>, 41  
MUTE, 41

beem-py-muter command line option

ACCOUNT, 41

beem-py-muting command line option

ACCOUNT, 41

beem-py-newaccount command line option

-active <active>, 42  
-memo <memo>, 42  
-owner <owner>, 42  
-posting <posting>, 42  
-a, -account <account>, 42  
-c, -create-claimed-account, 42  
-e, -export <export>, 42  
-i, -import-pub <import\_pub>, 42  
-w, -wif <wif>, 42

ACCOUNTNAME, 42

beem-py-nextnode command line option

-results, 42

beempy-notifications command line option

-a, -all, 43  
 -b, -reblogs, 43  
 -f, -follows, 43  
 -l, -limit <limit>, 43  
 -m, -mark\_as\_read, 43  
 -r, -replies, 43  
 -s, -reverse, 43  
 -t, -mentions, 43  
 -v, -votes, 43  
 ACCOUNT, 43

beempy-openorders command line option  
 ACCOUNT, 43

beempy-orderbook command line option

-ascii, 44  
 -chart, 44  
 -show-date, 44  
 -h, -height <height>, 44  
 -l, -limit <limit>, 44  
 -w, -width <width>, 44

beempy-parsewif command line option

-unsafe-import-key  
     <unsafe\_import\_key>, 44

beempy-pending command line option

-a, -author, 45  
 -c, -comment, 44  
 -d, -days <days>, 45  
 -e, -permalink, 45  
 -f, -from <\_from>, 45  
 -l, -length <length>, 45  
 -p, -post, 44  
 -s, -only-sum, 44  
 -t, -title, 45  
 -v, -curation, 45  
 ACCOUNTS, 45

beempy-permissions command line option  
 ACCOUNT, 45

beempy-pingnode command line option

-r, -remove, 45  
 -s, -sort, 45

beempy-post command line option

-export <export>, 46  
 -a, -account <account>, 46  
 -b, -beneficiaries <beneficiaries>, 46  
 -c, -community <community>, 46  
 -d, -percent-hive-dollars  
     <percent\_hive\_dollars>, 46  
 -d, -percent-steem-dollars  
     <percent\_steem\_dollars>, 46  
 -e, -no-patch-on-edit, 46  
 -g, -tags <tags>, 46

-m, -max-accepted-payout  
     <max\_accepted\_payout>, 46  
 -n, -no-parse-body, 46  
 -p, -permalink <permalink>, 46  
 -r, -reply-identifier  
     <reply\_identifier>, 46  
 -t, -title <title>, 46  
 -u, -canonical-url <canonical\_url>, 46

MARKDOWN\_FILE, 46

beempy-power command line option  
 ACCOUNT, 47

beempy-powerdown command line option

-a, -account <account>, 47  
 -e, -export <export>, 47  
 AMOUNT, 47

beempy-powerdownroute command line option

-auto\_vest, 47  
 -percentage <percentage>, 47  
 -a, -account <account>, 47  
 -e, -export <export>, 47  
 TO, 48

beempy-powerup command line option

-a, -account <account>, 48  
 -e, -export <export>, 48  
 -t, -to <to>, 48  
 AMOUNT, 48

beempy-pricehistory command line option

-ascii, 48  
 -h, -height <height>, 48  
 -w, -width <width>, 48

beempy-reblog command line option

-a, -account <account>, 49  
 IDENTIFIER, 49

beempy-reply command line option

-a, -account <account>, 49  
 -e, -export <export>, 49  
 -t, -title <title>, 49  
 AUTHORPERM, 49  
 BODY, 49

beempy-rewards command line option

-a, -author, 50  
 -c, -comment, 50  
 -d, -days <days>, 50  
 -e, -permalink, 50  
 -l, -length <length>, 50  
 -p, -post, 50  
 -s, -only-sum, 50  
 -t, -title, 50  
 -v, -curation, 50  
 ACCOUNTS, 50

beempy-sell command line option



-orderid <orderid>, 50  
-a, -account <account>, 50  
-e, -export <export>, 50  
AMOUNT, 51  
ASSET, 51  
PRICE, 51  
beempy-set command line option  
KEY, 51  
VALUE, 51  
beempy-setprofile command line option  
-a, -account <account>, 51  
-e, -export <export>, 51  
-p, -pair <pair>, 51  
VALUE, 51  
VARIABLE, 51  
beempy-setproxy command line option  
-a, -account <account>, 52  
-e, -export <export>, 52  
PROXY, 52  
beempy-sign command line option  
-i, -file <file>, 52  
-o, -outfile <outfile>, 52  
beempy-ticker command line option  
-i, -sbd-to-steem, 52  
beempy-tradehistory command line  
option  
-ascii, 53  
-hours <hours>, 53  
-d, -days <days>, 53  
-h, -height <height>, 53  
-i, -sbd-to-steem, 53  
-l, -limit <limit>, 53  
-w, -width <width>, 53  
beempy-transfer command line option  
-a, -account <account>, 53  
-e, -export <export>, 53  
AMOUNT, 53  
ASSET, 53  
MEMO, 53  
TO, 53  
beempy-unfollow command line option  
-a, -account <account>, 54  
-e, -export <export>, 54  
UNFOLLOW, 54  
beempy-updatememokey command line  
option  
-key <key>, 54  
-a, -account <account>, 54  
-e, -export <export>, 54  
beempy-updatenodes command line option  
-only-https, 55  
-only-wss, 55  
-e, -steem, 55  
-h, -hive, 55  
-s, -show, 55  
-t, -test, 55  
beempy-uploadimage command line option  
-a, -account <account>, 55  
-n, -image-name <image\_name>, 55  
IMAGE, 55  
beempy-upvote command line option  
-a, -account <account>, 55  
-e, -export <export>, 55  
-w, -weight <weight>, 55  
POST, 56  
beempy-userdata command line option  
-s, -signing-account  
    <signing\_account>, 56  
ACCOUNT, 56  
beempy-verify command line option  
-t, -trx <trx>, 56  
-u, -use-api, 56  
BLOCKNUMBER, 56  
beempy-votes command line option  
-direction <direction>, 57  
-d, -days <days>, 57  
-e, -export <export>, 57  
-i, -incoming, 57  
-o, -outgoing, 57  
ACCOUNT, 57  
beempy-walletinfo command line option  
-l, -lock, 57  
-u, -unlock, 57  
beempy-witness command line option  
WITNESS, 58  
beempy-witnesscreate command line  
option  
-account\_creation\_fee  
    <account\_creation\_fee>, 58  
-maximum\_block\_size  
    <maximum\_block\_size>, 58  
-sbd\_interest\_rate  
    <sbd\_interest\_rate>, 58  
-url <url>, 58  
-e, -export <export>, 58  
PUB\_SIGNING\_KEY, 58  
WITNESS, 58  
beempy-witnessdisable command line  
option  
-e, -export <export>, 58  
WITNESS, 58  
beempy-witnessenable command line  
option  
-e, -export <export>, 59  
SIGNING\_KEY, 59  
WITNESS, 59  
beempy-witnesses command line option  
-limit <limit>, 59



- ACCOUNT, 59
- beem-py-witnessfeed command line option
- support-peg, 59
  - b, -base <base>, 59
  - q, -quote <quote>, 59
  - WIF, 60
  - WITNESS, 60
- beem-py-witnessproperties command line option
- account\_creation\_fee <account\_creation\_fee>, 60
  - account\_subsidy\_budget <account\_subsidy\_budget>, 60
  - account\_subsidy\_decay <account\_subsidy\_decay>, 60
  - maximum\_block\_size <maximum\_block\_size>, 60
  - new\_signing\_key <new\_signing\_key>, 60
  - sbd\_interest\_rate <sbd\_interest\_rate>, 60
  - url <url>, 60
  - WIF, 60
  - WITNESS, 60
- beem-py-witnessupdate command line option
- account\_creation\_fee <account\_creation\_fee>, 61
  - hbd\_interest\_rate <hbd\_interest\_rate>, 61
  - maximum\_block\_size <maximum\_block\_size>, 61
  - sbd\_interest\_rate <sbd\_interest\_rate>, 61
  - signing\_key <signing\_key>, 61
  - url <url>, 61
  - witness <witness>, 61
  - e, -export <export>, 61
- beemstorage.base (module), 206
- beemstorage.exceptions (module), 211
- beemstorage.interfaces (module), 211
- beemstorage.masterpassword (module), 214
- beemstorage.ram (module), 215
- beemstorage.sqlite (module), 215
- BENEFICIARIES
- beem-py-beneficiaries command line option, 22
- Beneficiaries (class in beembase.objects), 194
- Beneficiary (class in beembase.objects), 194
- binary\_search() (in module beem-graphenebase.account), 201
- BIP32Key (class in beemgraphenebase.bip32), 202
- bitcoin (beemgraphenebase.account.PrivateKey attribute), 200
- BitcoinAddress (class in beem-graphenebase.account), 197
- BitcoinPublicKey (class in beem-graphenebase.account), 197
- Block (class in beem.block), 103
- block\_num (beem.block.Block attribute), 104
- block\_num (beem.block.BlockHeader attribute), 104
- block\_time() (beem.blockchain.Blockchain method), 106
- block\_timestamp() (beem.blockchain.Blockchain method), 106
- Blockchain (class in beem.blockchain), 105
- BlockChainInstance (class in beem.blockchaininstance), 112
- BlockchainObject (class in beem.blockchainobject), 111
- BlockDoesNotExistException, 140
- BlockHeader (class in beem.block), 104
- BLOCKNUMBER
- beem-py-verify command line option, 56
- blocks() (beem.blockchain.Blockchain method), 106
- BlockWaitTimeExceeded, 140
- blog\_history() (beem.account.Account method), 78
- BODY
- beem-py-reply command line option, 49
- body (beem.comment.Comment attribute), 125
- BrainKey (class in beemgraphenebase.account), 197
- broadcast() (beem.blockchaininstance.BlockChainInstance method), 113
- broadcast() (beem.hivesigner.HiveSigner method), 147
- broadcast() (beem.steemconnect.SteemConnect method), 174
- broadcast() (beem.transactionbuilder.TransactionBuilder method), 176
- btc\_usd\_ticker() (beem.market.Market static method), 151
- build() (beem.snapshot.AccountSnapshot method), 166
- build\_apdu() (beem-graphenebase.unsignedtransactions.Unsigned\_Transaction method), 206
- build\_apdu\_pubkey() (beem-graphenebase.unsignedtransactions.Unsigned\_Transaction method), 206
- build\_curation\_arrays() (beem.snapshot.AccountSnapshot method), 167
- build\_path() (beem-graphenebase.unsignedtransactions.Unsigned\_Transaction method), 206
- build\_rep\_arrays() (beem.snapshot.AccountSnapshot method), 167

- 167  
 build\_sp\_arrays() (beem.snapshot.AccountSnapshot method), 167  
 build\_vp\_arrays() (beem.snapshot.AccountSnapshot method), 167  
 buy() (beem.market.Market method), 151
- ## C
- cache() (beem.blockchainobject.BlockchainObject method), 111  
 CallRetriesReached, 186  
 cancel() (beem.market.Market method), 152  
 cancel\_subscriptions() (beemapi.websocket.NodeWebsocket method), 192  
 cancel\_transfer\_from\_savings() (beem.account.Account method), 79  
 category (beem.comment.Comment attribute), 125  
 chain\_params (beem.blockchaininstance.BlockChainInstance attribute), 114  
 chain\_params (beem.hive.Hive attribute), 143  
 chain\_params (beem.steem.Steem attribute), 169  
 ChainCode() (beemgraphenebase.bip32.BIP32Key method), 202  
 change\_password() (beemstorage.masterpassword.MasterPassword method), 214  
 change\_recovery\_account() (beem.account.Account method), 79  
 changePassphrase() (beem.hivesigner.HiveSigner method), 147  
 changePassphrase() (beem.steemconnect.SteemConnect method), 174  
 changePassphrase() (beem.wallet.Wallet method), 181  
 changePassword() (beemstorage.masterpassword.MasterPassword method), 214  
 check() (beemgraphenebase.account.Mnemonic method), 198  
 check\_asset() (in module beem.amount), 101  
 check\_asset() (in module beem.price), 164  
 check\_word() (beemgraphenebase.account.Mnemonic method), 198  
 child() (beemgraphenebase.account.PrivateKey method), 200  
 child() (beemgraphenebase.account.PublicKey method), 200  
 ChildKey() (beemgraphenebase.bip32.BIP32Key method), 202  
 CKDpriv() (beemgraphenebase.bip32.BIP32Key method), 202  
 CKDpub() (beemgraphenebase.bip32.BIP32Key method), 202  
 claim\_account() (beem.blockchaininstance.BlockChainInstance method), 114  
 claim\_account() (beem.rc.RC method), 165  
 claim\_reward\_balance() (beem.account.Account method), 79  
 clean\_data() (beemstorage.sqlite.SQLiteFile method), 216  
 clear() (beem.blockchaininstance.BlockChainInstance method), 114  
 clear() (beem.transactionbuilder.TransactionBuilder method), 177  
 clear\_cache() (beem.blockchainobject.BlockchainObject static method), 111  
 clear\_cache() (in module beem.instance), 150  
 clear\_cache\_from\_expired\_items() (beem.blockchainobject.BlockchainObject method), 111  
 clear\_data() (beem.asciichart.AsciiChart method), 102  
 clear\_data() (beem.blockchaininstance.BlockChainInstance method), 114  
 clear\_expired\_items() (beem.blockchainobject.ObjectCache method), 112  
 clearWifs() (beem.transactionbuilder.TransactionBuilder method), 177  
 close() (beem.notify.Notify method), 162  
 close() (beemapi.websocket.NodeWebsocket method), 192  
 Comment (class in beem.comment), 125  
 comment() (beem.rc.RC method), 165  
 comment\_dict() (beem.rc.RC method), 165  
 Comment\_discussions\_by\_payout (class in beem.discussions), 132  
 comment\_history() (beem.account.Account method), 80  
 comment\_options() (beem.blockchaininstance.BlockChainInstance method), 114  
 CommentOptionExtensions (class in beem-base.objects), 194  
 compressed (beemgraphenebase.account.PrivateKey attribute), 200  
 compressed() (beemgraphenebase.account.PublicKey method), 200  
 compressed\_key (beemgraphenebase.account.PublicKey attribute), 200  
 compressedPubkey() (in module beem-

- graphenebase.ecdsasig*), 204
- config* (*beem.instance.SharedInstance* attribute), 149
- ConfigInterface* (class in *beemstorage.interfaces*), 211
- connect* () (*beem.blockchaininstance.BlockChainInstance* method), 114
- construct\_authorperm* () (in module *beem.utils*), 178
- construct\_authorpermvoter* () (in module *beem.utils*), 178
- constructTx* () (*beem.transactionbuilder.TransactionBuilder* method), 177
- ContentDoesNotExistsException*, 140
- convert* () (*beem.account.Account* method), 80
- Conveyor* (class in *beem.conveyor*), 130
- copy* () (*beem.amount.Amount* method), 101
- copy* () (*beem.price.Price* method), 164
- create* () (*beem.hivesigner.HiveSigner* method), 147
- create* () (*beem.steemconnect.SteemConnect* method), 174
- create* () (*beem.wallet.Wallet* method), 181
- create* () (*beemstorage.sqlite.SQLiteStore* method), 216
- create\_account* () (*beem.blockchaininstance.BlockChainInstance* method), 114
- create\_claimed\_account* () (*beem.blockchaininstance.BlockChainInstance* method), 115
- create\_claimed\_account\_dict* () (*beem.rc.RC* method), 165
- create\_hot\_sign\_url* () (*beem.hivesigner.HiveSigner* method), 148
- create\_hot\_sign\_url* () (*beem.steemconnect.SteemConnect* method), 174
- create\_ws\_instance* () (in module *beemapi.graphenerpc*), 189
- created* () (*beem.hivesigner.HiveSigner* method), 148
- created* () (*beem.steemconnect.SteemConnect* method), 174
- created* () (*beem.wallet.Wallet* method), 182
- CREATOR*
- beem-py-claimaccount* command line option, 25
- curation\_penalty\_compensation\_SBD* () (*beem.comment.Comment* method), 125
- curation\_stats* () (*beem.account.Account* method), 80
- custom\_json* () (*beem.blockchaininstance.BlockChainInstance* method), 116
- custom\_json* () (*beem.rc.RC* method), 165
- custom\_json\_dict* () (*beem.rc.RC* method), 165
- ## D
- decode\_memo* () (in module *beembase.memo*), 192
- decode\_memo\_bts* () (in module *beembase.memo*), 193
- decodeRPCErrorMsg* () (in module *beemapi.exceptions*), 187
- decrypt* () (*beem.memo.Memo* method), 158
- decrypt* () (*beemgraphenebase.aes.AESCipher* method), 201
- decrypt* () (*beemstorage.masterpassword.MasterPassword* method), 214
- decrypt* () (in module *beemgraphenebase.bip38*), 203
- decrypt\_binary* () (*beem.memo.Memo* method), 158
- decrypt\_text* () (*beemstorage.masterpassword.MasterPassword* method), 214
- default\_handler* () (in module *beem.blockchain*), 111
- defaults* (*beemstorage.interfaces.StoreInterface* attribute), 213
- delegate\_vesting\_shares* () (*beem.account.Account* method), 80
- delete* () (*beem.comment.Comment* method), 125
- delete* () (*beemstorage.base.InRamPlainKeyStore* method), 207
- delete* () (*beemstorage.base.InRamPlainTokenStore* method), 207
- delete* () (*beemstorage.base.SQLitePlainKeyStore* method), 209
- delete* () (*beemstorage.base.SQLitePlainTokenStore* method), 210
- delete* () (*beemstorage.interfaces.KeyInterface* method), 212
- delete* () (*beemstorage.interfaces.StoreInterface* method), 213
- delete* () (*beemstorage.interfaces.TokenInterface* method), 213
- delete* () (*beemstorage.ram.InRamStore* method), 215
- delete* () (*beemstorage.sqlite.SQLiteStore* method), 216
- depth* (*beem.comment.Comment* attribute), 126
- derive\_beneficiaries* () (in module *beem.utils*), 178
- derive\_from\_seed* () (*beemgraphenebase.account.PrivateKey* method), 200
- derive\_permlink* () (in module *beem.utils*), 178
- derive\_private\_key* () (*beemgraphenebase.account.PrivateKey* method), 200
- derive\_tags* () (in module *beem.utils*), 178
- deriveChecksum* () (*beemstorage*

age.masterpassword.MasterPassword method), 214  
 deriveDigest() (beem-graphenebase.signedtransactions.Signed\_Transaction method), 205  
 deriveDigest() (beem-graphenebase.unsignedtransactions.Unsigned\_Transaction method), 206  
 derivesha256address() (beem-graphenebase.account.Address class method), 197  
 derivesha512address() (beem-graphenebase.account.Address class method), 197  
 derSigToHexSig() (beem-graphenebase.signedtransactions.Signed\_Transaction method), 205  
 derSigToHexSig() (beem-graphenebase.unsignedtransactions.Unsigned\_Transaction method), 206  
 disable\_node() (beemapi.node.Nodes method), 189  
 disallow() (beem.account.Account method), 81  
 disapprovewitness() (beem.account.Account method), 81  
 Discussions (class in beem.discussions), 133  
 Discussions\_by\_active (class in beem.discussions), 133  
 Discussions\_by\_author\_before\_date (class in beem.discussions), 133  
 Discussions\_by\_blog (class in beem.discussions), 134  
 Discussions\_by\_cashout (class in beem.discussions), 134  
 Discussions\_by\_children (class in beem.discussions), 135  
 Discussions\_by\_comments (class in beem.discussions), 135  
 Discussions\_by\_created (class in beem.discussions), 136  
 Discussions\_by\_feed (class in beem.discussions), 136  
 Discussions\_by\_hot (class in beem.discussions), 136  
 Discussions\_by\_promoted (class in beem.discussions), 137  
 Discussions\_by\_trending (class in beem.discussions), 137  
 Discussions\_by\_votes (class in beem.discussions), 137  
 done() (beem.blockchain.Pool method), 111  
 doublesha256() (in module beem-graphenebase.base58), 202  
 downvote() (beem.comment.Comment method), 126  
 dump() (beemgraphenebase.bip32.BIP32Key method), 203

## E

encrypt() (beem.comment.Comment method), 126  
 encode\_memo() (in module beembase.memo), 193  
 encode\_memo\_bts() (in module beembase.memo), 193  
 encrypt() (beem.memo.Memo method), 158  
 encrypt() (beemgraphenebase.aes.AESCipher method), 201  
 encrypt() (beemstorage.age.masterpassword.MasterPassword method), 214  
 encrypt() (in module beemgraphenebase.bip38), 203  
 encrypt\_binary() (beem.memo.Memo method), 159  
 encrypt\_text() (beemstorage.age.masterpassword.MasterPassword method), 214  
 EncryptedKeyInterface (class in beemstorage.age.interfaces), 211  
 EncryptedTokenInterface (class in beemstorage.age.interfaces), 211  
 enqueue() (beem.blockchain.Pool method), 111  
 ensure\_full() (beem.account.Account method), 81  
 error\_cnt (beemapi.graphenerpc.GrapheneRPC attribute), 188  
 error\_cnt (beemapi.node.Nodes attribute), 189  
 error\_cnt\_call (beemapi.graphenerpc.GrapheneRPC attribute), 188  
 error\_cnt\_call (beemapi.node.Nodes attribute), 189  
 estimate\_curation\_SBD() (beem.comment.Comment method), 126  
 estimate\_virtual\_op\_num() (beem.account.Account method), 81  
 ExchangeRate (class in beembase.objects), 194  
 exists() (beemstorage.sqlite.SQLiteStore method), 216  
 expand() (beemgraphenebase.account.Mnemonic method), 198  
 expand\_word() (beem-graphenebase.account.Mnemonic method), 198  
 export\_working\_nodes() (beemapi.node.Nodes method), 189  
 ExtendedKey() (beemgraphenebase.bip32.BIP32Key method), 202  
 Extension (class in beembase.objects), 194  
 extract\_decrypt\_memo\_data() (beem.memo.Memo method), 159  
 extract\_memo\_data() (in module beem-base.memo), 193

## F

[feed\\_history\(\)](#) (*beem.account.Account method*), [82](#)  
[feed\\_publish\(\)](#) (*beem.witness.Witness method*), [184](#)  
[FilledOrder](#) (*class in beem.price*), [162](#)  
[finalizeOp\(\)](#) (*beem.blockchaininstance.BlockChainInstance method*), [117](#)  
[find\\_change\\_recovery\\_account\\_requests\(\)](#) (*beem.blockchain.Blockchain method*), [106](#)  
[find\\_rc\\_accounts\(\)](#) (*beem.blockchain.Blockchain method*), [106](#)  
[findall\\_patch\\_hunks\(\)](#) (*in module beem.utils*), [178](#)  
[Fingerprint\(\)](#) (*beemgraphenebase.bip32.BIP32Key method*), [202](#)  
**FOLLOW**  
     beem-py-follow command line option, [36](#)  
[follow\(\)](#) (*beem.account.Account method*), [82](#)  
**FOLLOW\_TYPE**  
     beem-py-followlist command line option, [37](#)  
[FollowApiNotEnabled](#), [186](#)  
**FOREIGN\_ACCOUNT**  
     beem-py-allow command line option, [21](#)  
     beem-py-disallow command line option, [32](#)  
[formatTime\(\)](#) (*in module beem.utils*), [178](#)  
[formatTimedelta\(\)](#) (*in module beem.utils*), [178](#)  
[formatTimeFromNow\(\)](#) (*in module beem.utils*), [178](#)  
[formatTimeString\(\)](#) (*in module beem.utils*), [178](#)  
[formatToTimeStamp\(\)](#) (*in module beem.utils*), [178](#)  
[from\\_privkey\(\)](#) (*beem-graphenebase.account.PublicKey class method*), [200](#)  
[from\\_pubkey\(\)](#) (*beemgraphenebase.account.Address class method*), [197](#)  
[from\\_pubkey\(\)](#) (*beem-graphenebase.account.BitcoinAddress class method*), [197](#)  
[from\\_pubkey\(\)](#) (*beem-graphenebase.account.GrapheneAddress class method*), [198](#)  
[fromEntropy\(\)](#) (*beemgraphenebase.bip32.BIP32Key static method*), [203](#)  
[fromExtendedKey\(\)](#) (*beem-graphenebase.bip32.BIP32Key static method*), [203](#)

## G

[generate\(\)](#) (*beemgraphenebase.account.Mnemonic method*), [198](#)  
[generate\\_config\\_store\(\)](#) (*in module beem.storage*), [175](#)

[generate\\_mnemonic\(\)](#) (*beem-graphenebase.account.MnemonicKey method*), [198](#)  
[get\(\)](#) (*beem.blockchainobject.ObjectCache method*), [112](#)  
[get\(\)](#) (*beemstorage.interfaces.StoreInterface method*), [213](#)  
[get\(\)](#) (*beemstorage.sqlite.SQLiteStore method*), [216](#)  
[get\\_access\\_token\(\)](#) (*beem.hivesigner.HiveSigner method*), [148](#)  
[get\\_access\\_token\(\)](#) (*beem.steemconnect.SteemConnect method*), [174](#)  
[get\\_account\(\)](#) (*beemapi.noderpc.NodeRPC method*), [190](#)  
[get\\_account\\_bandwidth\(\)](#) (*beem.account.Account method*), [83](#)  
[get\\_account\\_count\(\)](#) (*beem.blockchain.Blockchain method*), [107](#)  
[get\\_account\\_history\(\)](#) (*beem.account.Account method*), [83](#)  
[get\\_account\\_history\(\)](#) (*beem.snapshot.AccountSnapshot method*), [167](#)  
[get\\_account\\_posts\(\)](#) (*beem.account.Account method*), [83](#)  
[get\\_account\\_reputations\(\)](#) (*beem.blockchain.Blockchain method*), [107](#)  
[get\\_account\\_votes\(\)](#) (*beem.account.Account method*), [83](#)  
[get\\_all\\_accounts\(\)](#) (*beem.blockchain.Blockchain method*), [107](#)  
[get\\_all\\_replies\(\)](#) (*beem.comment.Comment method*), [126](#)  
[get\\_api\\_methods\(\)](#) (*beem.blockchaininstance.BlockChainInstance method*), [117](#)  
[get\\_apis\(\)](#) (*beem.blockchaininstance.BlockChainInstance method*), [117](#)  
[get\\_author\\_rewards\(\)](#) (*beem.comment.Comment method*), [126](#)  
[get\\_authority\\_byte\\_count\(\)](#) (*beem.rc.RC method*), [165](#)  
[get\\_balance\(\)](#) (*beem.account.Account method*), [83](#)  
[get\\_balances\(\)](#) (*beem.account.Account method*), [84](#)  
[get\\_bandwidth\(\)](#) (*beem.account.Account method*), [84](#)  
[get\\_beneficiaries\\_pct\(\)](#) (*beem.comment.Comment method*), [126](#)  
[get\\_blind\\_private\(\)](#) (*beem-graphenebase.account.BrainKey method*), [197](#)  
[get\\_block\\_interval\(\)](#) (*beem.blockchaininstance.BlockChainInstance*



*method*), 117

`get_block_params()` (*beem.transactionbuilder.TransactionBuilder method*), 177

`get_blockchain_name()` (*beem.blockchaininstance.BlockChainInstance method*), 118

`get_blockchain_version()` (*beem.blockchaininstance.BlockChainInstance method*), 118

`get_blog()` (*beem.account.Account method*), 84

`get_blog_authors()` (*beem.account.Account method*), 85

`get_blog_entries()` (*beem.account.Account method*), 85

`get_brainkey()` (*beem-graphenebase.account.BrainKey method*), 197

`get_cache_auto_clean()` (*beem.blockchainobject.BlockchainObject method*), 111

`get_cache_expiration()` (*beem.blockchainobject.BlockchainObject method*), 111

`get_chain_properties()` (*beem.blockchaininstance.BlockChainInstance method*), 118

`get_config()` (*beem.blockchaininstance.BlockChainInstance method*), 118

`get_conversion_requests()` (*beem.account.Account method*), 86

`get_creator()` (*beem.account.Account method*), 86

`get_curation_penalty()` (*beem.comment.Comment method*), 126

`get_curation_reward()` (*beem.account.Account method*), 86

`get_curation_rewards()` (*beem.comment.Comment method*), 127

`get_current_block()` (*beem.blockchain.Blockchain method*), 107

`get_current_block_num()` (*beem.blockchain.Blockchain method*), 107

`get_current_median_history()` (*beem.blockchaininstance.BlockChainInstance method*), 118

`get_data()` (*beem.snapshot.AccountSnapshot method*), 167

`get_default_config_store()` (in module *beem.storage*), 175

`get_default_key_store()` (in module *beem.storage*), 175

`get_default_nodes()` (*beem.blockchaininstance.BlockChainInstance method*), 118

`get_discussions()` (*beem.discussions.Discussions method*), 133

`get_downvote_manabar()` (*beem.account.Account method*), 86

`get_downvoting_power()` (*beem.account.Account method*), 86

`get_dust_threshold()` (*beem.blockchaininstance.BlockChainInstance method*), 118

`get_dynamic_global_properties()` (*beem.blockchaininstance.BlockChainInstance method*), 118

`get_effective_vesting_shares()` (*beem.account.Account method*), 86

`get_escrow()` (*beem.account.Account method*), 86

`get_estimated_block_num()` (*beem.blockchain.Blockchain method*), 107

`get_expiring_vesting_delegations()` (*beem.account.Account method*), 87

`get_feature_flag()` (*beem.conveyor.Conveyor method*), 130

`get_feature_flags()` (*beem.conveyor.Conveyor method*), 130

`get_feed()` (*beem.account.Account method*), 87

`get_feed_entries()` (*beem.account.Account method*), 87

`get_feed_history()` (*beem.blockchaininstance.BlockChainInstance method*), 118

`get_follow_count()` (*beem.account.Account method*), 88

`get_follow_list()` (*beem.account.Account method*), 88

`get_followers()` (*beem.account.Account method*), 88

`get_following()` (*beem.account.Account method*), 88

`get_hardfork_properties()` (*beem.blockchaininstance.BlockChainInstance method*), 118

`get_hbd_per_rshares()` (*beem.hive.Hive method*), 143

`get_hive_nodes()` (*beem.nodelist.NodeList method*), 160

`get_hive_per_mvest()` (*beem.hive.Hive method*), 143

`get_list()` (*beem.vote.VotesObject method*), 180

`get_login_url()` (*beem.hivesigner.HiveSigner method*), 148

`get_login_url()` (*beem.steemconnect.SteemConnect method*), 174

`get_manabar()` (*beem.account.Account method*), 88

`get_manabar_recharge_time()` (*beem.account.Account method*), 88

`get_manabar_recharge_time_str()` (*beem.account.Account method*), 88  
`get_manabar_recharge_timedelta()` (*beem.account.Account method*), 88  
`get_median_price()` (*beem.blockchaininstance.BlockChainInstance method*), 118  
`get_muters()` (*beem.account.Account method*), 88  
`get_mutings()` (*beem.account.Account method*), 89  
`get_network()` (*beem.blockchaininstance.BlockChainInstance method*), 118  
`get_network()` (*beem.hive.Hive method*), 143  
`get_network()` (*beem.steem.Steem method*), 169  
`get_network()` (*beemapi.graphenerpc.GrapheneRPC method*), 188  
`get_node_answer_time()` (*beem.nodelist.NodeList method*), 161  
`get_nodes()` (*beem.nodelist.NodeList method*), 161  
`get_notifications()` (*beem.account.Account method*), 89  
`get_ops()` (*beem.snapshot.AccountSnapshot method*), 167  
`get_owner_history()` (*beem.account.Account method*), 89  
`get_parent()` (*beem.comment.Comment method*), 127  
`get_parent()` (*beem.transactionbuilder.TransactionBuilder method*), 177  
`get_path()` (*beemgraphenebase.account.MnemonicKey method*), 198  
`get_potential_signatures()` (*beem.transactionbuilder.TransactionBuilder method*), 177  
`get_private()` (*beemgraphenebase.account.BrainKey method*), 197  
`get_private()` (*beemgraphenebase.account.MnemonicKey method*), 198  
`get_private()` (*beemgraphenebase.account.PasswordKey method*), 199  
`get_private_key()` (*beemgraphenebase.account.BrainKey method*), 197  
`get_private_key()` (*beemgraphenebase.account.MnemonicKey method*), 198  
`get_private_key()` (*beemgraphenebase.account.PasswordKey method*), 199  
`get_pubkey()` (*beembase.ledgertransactions.Ledger\_Transaction method*), 196  
`get_public()` (*beemgraphenebase.account.BrainKey method*), 197  
`get_public()` (*beemgraphenebase.account.MnemonicKey method*), 199  
`get_public()` (*beemgraphenebase.account.PasswordKey method*), 199  
`get_public_key()` (*beemgraphenebase.account.BrainKey method*), 197  
`get_public_key()` (*beemgraphenebase.account.MnemonicKey method*), 199  
`get_public_key()` (*beemgraphenebase.account.PasswordKey method*), 199  
`get_public_key()` (*beemgraphenebase.account.PrivateKey method*), 200  
`get_public_key()` (*beemgraphenebase.account.PublicKey method*), 200  
`get_rc()` (*beem.account.Account method*), 89  
`get_rc_cost()` (*beem.blockchaininstance.BlockChainInstance method*), 119  
`get_rc_manabar()` (*beem.account.Account method*), 89  
`get_reblogged_by()` (*beem.comment.Comment method*), 127  
`get_recharge_time()` (*beem.account.Account method*), 89  
`get_recharge_time_str()` (*beem.account.Account method*), 89  
`get_recharge_timedelta()` (*beem.account.Account method*), 89  
`get_recovery_request()` (*beem.account.Account method*), 90  
`get_replace_hive_by_steem()` (*beem.blockchaininstance.BlockChainInstance method*), 119  
`get_replies()` (*beem.comment.Comment method*), 127  
`get_reputation()` (*beem.account.Account method*), 90  
`get_request_id()` (*beemapi.graphenerpc.GrapheneRPC method*), 188  
`get_request_id()` (*beemapi.websocket.NodeWebsocket method*), 192  
`get_required_signatures()` (*beem.transactionbuilder.TransactionBuilder method*), 177  
`get_reserve_ratio()` (*beem.blockchaininstance.BlockChainInstance*

*method*), 119

`get_resource_count()` (*beem.rc.RC method*), 166

`get_resource_params()`  
(*beem.blockchaininstance.BlockChainInstance method*), 119

`get_resource_pool()`  
(*beem.blockchaininstance.BlockChainInstance method*), 119

`get_reward_funds()`  
(*beem.blockchaininstance.BlockChainInstance method*), 119

`get_rewards()` (*beem.comment.Comment method*), 127

`get_savings_withdrawals()`  
(*beem.account.Account method*), 90

`get_sbd_per_rshares()` (*beem.steem.Steem method*), 169

`get_secret()` (*beem-graphenebase.account.PrivateKey method*), 200

`get_shared_secret()` (*in module beem-base.memo*), 193

`get_similar_account_names()`  
(*beem.account.Account method*), 90

`get_similar_account_names()`  
(*beem.blockchain.Blockchain method*), 108

`get_sorted_list()` (*beem.vote.VotesObject method*), 180

`get_steem_nodes()` (*beem.nodelist.NodeList method*), 161

`get_steem_per_mvest()` (*beem.steem.Steem method*), 169

`get_steem_power()` (*beem.account.Account method*), 91

`get_string()` (*beem.market.Market method*), 152

`get_tags_used_by_author()`  
(*beem.account.Account method*), 91

`get_testnet()` (*beem.nodelist.NodeList method*), 161

`get_token_per_mvest()`  
(*beem.blockchaininstance.BlockChainInstance method*), 119

`get_token_per_mvest()` (*beem.hive.Hive method*), 143

`get_token_per_mvest()` (*beem.steem.Steem method*), 170

`get_token_power()` (*beem.account.Account method*), 91

`get_transaction()` (*beem.blockchain.Blockchain method*), 108

`get_transaction_hex()`  
(*beem.blockchain.Blockchain method*), 108

`get_transaction_hex()`  
(*beem.transactionbuilder.TransactionBuilder method*), 177

`get_tx_size()` (*beem.rc.RC method*), 166

`get_use_appbase()`  
(*beemapi.graphenerpc.GrapheneRPC method*), 188

`get_user_data()` (*beem.conveyor.Conveyor method*), 131

`get_vesting_delegations()`  
(*beem.account.Account method*), 91

`get_vests()` (*beem.account.Account method*), 91

`get_vote()` (*beem.account.Account method*), 91

`get_vote_pct_for_SBD()` (*beem.account.Account method*), 91

`get_vote_pct_for_vote_value()`  
(*beem.account.Account method*), 91

`get_vote_with_curation()`  
(*beem.comment.Comment method*), 128

`get_votes()` (*beem.comment.Comment method*), 128

`get_votes_sum()` (*beem.witness.WitnessesObject method*), 185

`get_voting_power()` (*beem.account.Account method*), 92

`get_voting_value()` (*beem.account.Account method*), 92

`get_voting_value_SBD()` (*beem.account.Account method*), 92

`get_withdraw_routes()` (*beem.account.Account method*), 92

`get_witness_schedule()`  
(*beem.blockchaininstance.BlockChainInstance method*), 119

`getAccount()` (*beem.wallet.Wallet method*), 182

`getAccountFromPrivateKey()`  
(*beem.wallet.Wallet method*), 182

`getAccountFromPublicKey()`  
(*beem.wallet.Wallet method*), 182

`getAccounts()` (*beem.wallet.Wallet method*), 182

`getAccountsFromPublicKey()`  
(*beem.wallet.Wallet method*), 182

`getActiveKeyForAccount()` (*beem.wallet.Wallet method*), 182

`getActiveKeysForAccount()`  
(*beem.wallet.Wallet method*), 182

`getAllAccounts()` (*beem.wallet.Wallet method*), 182

`getcache()` (*beem.blockchainobject.BlockchainObject method*), 111

`getChainParams()` (*beem-graphenebase.signedtransactions.Signed\_Transaction method*), 205

`getChainParams()` (*beem-graphenebase.unsignedtransactions.Unsigned\_Transaction method*), 206

`getKeyForAccount()` (*beem.wallet.Wallet method*),



- 182
- `getKeysForAccount()` (*beem.wallet.Wallet method*), 182
- `getKeyType()` (*beem.wallet.Wallet method*), 182
- `getKnownChains()` (*beem-base.ledgertransactions.Ledger\_Transaction method*), 196
- `getKnownChains()` (*beem-base.signedtransactions.Signed\_Transaction method*), 195
- `getKnownChains()` (*beem-graphenebase.signedtransactions.Signed\_Transaction method*), 205
- `getKnownChains()` (*beem-graphenebase.unsignedtransactions.Unsigned\_Transaction method*), 206
- `getMemoKeyForAccount()` (*beem.wallet.Wallet method*), 183
- `getOperationClass()` (*beem-base.ledgertransactions.Ledger\_Transaction method*), 196
- `getOperationClass()` (*beem-base.signedtransactions.Signed\_Transaction method*), 196
- `getOperationClass()` (*beem-graphenebase.signedtransactions.Signed\_Transaction method*), 205
- `getOperationClass()` (*beem-graphenebase.unsignedtransactions.Unsigned\_Transaction method*), 206
- `getOperationNameForId()` (*beem-base.objects.Operation method*), 194
- `getOperationNameForId()` (*beem-graphenebase.objects.Operation method*), 204
- `getOperationNameForId()` (*in module beem-base.operationids*), 195
- `getOwnerKeyForAccount()` (*beem.wallet.Wallet method*), 183
- `getOwnerKeysForAccount()` (*beem.wallet.Wallet method*), 183
- `getPostingKeyForAccount()` (*beem.wallet.Wallet method*), 183
- `getPostingKeysForAccount()` (*beem.wallet.Wallet method*), 183
- `getPrivateKeyForPublicKey()` (*beem.wallet.Wallet method*), 183
- `getPrivateKeyForPublicKey()` (*beemstorage-base.InRamPlainKeyStore method*), 207
- `getPrivateKeyForPublicKey()` (*beemstorage-base.InRamPlainTokenStore method*), 208
- `getPrivateKeyForPublicKey()` (*beemstorage-base.KeyEncryption method*), 208
- `getPrivateKeyForPublicKey()` (*beemstorage-base.SQLitePlainKeyStore method*), 209
- `getPrivateKeyForPublicKey()` (*beemstorage-base.SQLitePlainTokenStore method*), 210
- `getPrivateKeyForPublicKey()` (*beemstorage-base.TokenEncryption method*), 210
- `getPrivateKeyForPublicKey()` (*beemstorage-interfaces.KeyInterface method*), 212
- `getPrivateKeyForPublicKey()` (*beemstorage-interfaces.TokenInterface method*), 213
- `getPublicKeys()` (*beem.wallet.Wallet method*), 183
- `getPublicKeys()` (*beemstorage-base.InRamPlainKeyStore method*), 207
- `getPublicKeys()` (*beemstorage-base.KeyEncryption method*), 208
- `getPublicKeys()` (*beemstorage-base.SQLitePlainKeyStore method*), 209
- `getPublicKeys()` (*beemstorage-interfaces.KeyInterface method*), 212
- `getPublicKeys()` (*beemstorage-interfaces.TokenInterface method*), 213
- `getPublicNames()` (*beem.hivesigner.HiveSigner method*), 148
- `getPublicNames()` (*beem.steemconnect.SteemConnect method*), 174
- `getPublicNames()` (*beemstorage-base.InRamPlainTokenStore method*), 208
- `getPublicNames()` (*beemstorage-base.SQLitePlainTokenStore method*), 210
- `getPublicNames()` (*beemstorage-base.TokenEncryption method*), 210
- `getSimilarAccountNames()` (*beem.account.Account method*), 83
- `getTokenForAccountName()` (*beem.hivesigner.HiveSigner method*), 148
- `getTokenForAccountName()` (*beem.steemconnect.SteemConnect method*), 174
- `GetWitnesses` (*class in beem.witness*), 184
- `gphBase58CheckDecode()` (*in module beem-graphenebase.base58*), 202
- `gphBase58CheckEncode()` (*in module beem-graphenebase.base58*), 202
- `GrapheneAddress` (*class in beem-graphenebase.account*), 198
- `GrapheneObject` (*class in beem-graphenebase.objects*), 204
- `GrapheneObjectASN1` (*class in beem-graphenebase.unsignedtransactions*), 205
- `GrapheneRPC` (*class in beemapi.graphenerpc*), 187

## H

- `hardfork` (*beem.blockchaininstance.BlockChainInstance* attribute), 119
- `hardfork` (*beem.hive.Hive* attribute), 143
- `hardfork` (*beem.steem.Steem* attribute), 170
- `has_masterpassword()` (*beemstorage.masterpassword.MasterPassword* method), 214
- `has_voted()` (*beem.account.Account* method), 92
- `hash_op()` (*beem.blockchain.Blockchain* static method), 108
- `hbd` (*beem.vote.Vote* attribute), 180
- `hbd_symbol` (*beem.hive.Hive* attribute), 143
- `hbd_to_rshares()` (*beem.hive.Hive* method), 143
- `hbd_to_vote_pct()` (*beem.hive.Hive* method), 143
- `headers` (*beem.hivesigner.HiveSigner* attribute), 148
- `headers` (*beem.steemconnect.SteemConnect* attribute), 174
- `healthcheck()` (*beem.conveyor.Conveyor* method), 131
- `history()` (*beem.account.Account* method), 92
- `history_reverse()` (*beem.account.Account* method), 93
- `Hive` (class in *beem.hive*), 141
- `hive_btc_ticker()` (*beem.market.Market* static method), 152
- `hive_symbol` (*beem.hive.Hive* attribute), 144
- `hive_usd_implied()` (*beem.market.Market* method), 152
- `HiveSigner` (class in *beem.hivesigner*), 146
- `hmac()` (*beemgraphenebase.bip32.BIP32Key* method), 203
- `hp_to_hbd()` (*beem.hive.Hive* method), 144
- `hp_to_rshares()` (*beem.hive.Hive* method), 144
- `hp_to_vests()` (*beem.hive.Hive* method), 144
- I**
- `id` (*beem.comment.Comment* attribute), 128
- `id` (*beemgraphenebase.signedtransactions.Signed\_Transaction* attribute), 205
- `id` (*beemgraphenebase.unsignedtransactions.Unsigned\_Transaction* attribute), 206
- IDENTIFIER**
  - `beempy-reblog` command line option, 49
- `Identifier()` (*beemgraphenebase.bip32.BIP32Key* method), 202
- `idle()` (*beem.blockchain.Pool* method), 111
- IMAGE**
  - `beempy-uploadimage` command line option, 55
- `ImageUploader` (class in *beem.imageuploader*), 149
- `increase_error_cnt()` (*beemapi.node.Nodes* method), 189
- `increase_error_cnt_call()` (*beemapi.node.Nodes* method), 190
- `info()` (*beem.blockchaininstance.BlockChainInstance* method), 119
- `init_aes()` (in module *beembase.memo*), 194
- `init_aes_bts()` (in module *beembase.memo*), 194
- `InRamConfigurationStore` (class in *beemstorage.base*), 206
- `InRamEncryptedKeyStore` (class in *beemstorage.base*), 206
- `InRamEncryptedTokenStore` (class in *beemstorage.base*), 206
- `InRamPlainKeyStore` (class in *beemstorage.base*), 207
- `InRamPlainTokenStore` (class in *beemstorage.base*), 207
- `InRamStore` (class in *beemstorage.ram*), 215
- `instance` (*beem.instance.SharedInstance* attribute), 149
- `instance` (*beemapi.graphenerpc.SessionInstance* attribute), 189
- `InsufficientAuthorityError`, 140
- `int_to_hex()` (in module *beemgraphenebase.bip32*), 203
- `interest()` (*beem.account.Account* method), 94
- `InvalidAssetException`, 140
- `InvalidEndpointUrl`, 186
- `InvalidMemoKeyException`, 140
- `InvalidMessageSignature`, 140
- `InvalidWifError`, 140
- `invert()` (*beem.price.Price* method), 164
- `is_active` (*beem.witness.Witness* attribute), 185
- `is_appbase_ready()` (*beemapi.graphenerpc.GrapheneRPC* method), 188
- `is_comment()` (*beem.comment.Comment* method), 128
- `is_connected()` (*beem.blockchaininstance.BlockChainInstance* method), 119
- `is_empty()` (*beem.transactionbuilder.TransactionBuilder* method), 177
- `is_encrypted()` (*beem.hivesigner.HiveSigner* method), 148
- `is_encrypted()` (*beem.steemconnect.SteemConnect* method), 174
- `is_encrypted()` (*beem.wallet.Wallet* method), 183
- `is_encrypted()` (*beemstorage.base.KeyEncryption* method), 208
- `is_encrypted()` (*beemstorage.base.SQLitePlainKeyStore* method), 209
- `is_encrypted()` (*beemstorage.base.SQLitePlainTokenStore* method), 210
- `is_encrypted()` (*beemstorage* attribute), 189

- age.base.TokenEncryption* method), 210
  - is\_encrypted()* (*beemstorage.interfaces.EncryptedKeyInterface* method), 211
  - is\_encrypted()* (*beemstorage.interfaces.EncryptedTokenInterface* method), 211
  - is\_encrypted()* (*beemstorage.interfaces.KeyInterface* method), 212
  - is\_encrypted()* (*beemstorage.interfaces.TokenInterface* method), 214
  - is\_fully\_loaded* (*beem.account.Account* attribute), 94
  - is\_hive* (*beem.blockchaininstance.BlockChainInstance* attribute), 119
  - is\_hive* (*beem.hive.Hive* attribute), 144
  - is\_irreversible\_mode()* (*beem.blockchain.Blockchain* method), 108
  - is\_main\_post()* (*beem.comment.Comment* method), 128
  - is\_pending()* (*beem.comment.Comment* method), 128
  - is\_steem* (*beem.blockchaininstance.BlockChainInstance* attribute), 119
  - is\_steem* (*beem.steem.Steem* attribute), 170
  - is\_transaction\_existing()* (*beem.blockchain.Blockchain* method), 108
  - isArgsThisClass()* (in module *beem-graphenebase.objects*), 204
  - iscached()* (*beem.blockchainobject.BlockchainObject* method), 111
  - items()* (*beem.blockchainobject.BlockchainObject* method), 111
  - items()* (*beemstorage.interfaces.StoreInterface* method), 213
  - items()* (*beemstorage.sqlite.SQLiteStore* method), 217
- ## J
- join()* (*beem.blockchain.Pool* method), 111
  - json()* (*beem.account.Account* method), 95
  - json()* (*beem.amount.Amount* method), 101
  - json()* (*beem.block.Block* method), 104
  - json()* (*beem.block.BlockHeader* method), 104
  - json()* (*beem.blockchainobject.BlockchainObject* method), 111
  - json()* (*beem.comment.Comment* method), 128
  - json()* (*beem.price.FilledOrder* method), 162
  - json()* (*beem.price.Price* method), 164
  - json()* (*beem.transactionbuilder.TransactionBuilder* method), 177
  - json()* (*beem.vote.Vote* method), 180
  - json()* (*beem.witness.Witness* method), 185
  - json()* (*beembase.objects.Operation* method), 194
  - json()* (*beemgraphenebase.objects.GrapheneObject* method), 204
  - json()* (*beemgraphenebase.unsignedtransactions.GrapheneObjectASN1* method), 205
  - JSON\_DATA
    - beempy-customjson command line option, 29
  - json\_metadata* (*beem.account.Account* attribute), 95
  - json\_metadata* (*beem.comment.Comment* attribute), 128
  - json\_operations* (*beem.block.Block* attribute), 104
  - json\_transactions* (*beem.block.Block* attribute), 104
  - JSONID
    - beempy-customjson command line option, 29
- ## K
- KEY
    - beempy-set command line option, 51
  - KeyAlreadyInStoreException*, 211
  - KeyEncryption* (class in *beemstorage.base*), 208
  - KeyInterface* (class in *beemstorage.interfaces*), 212
  - keys()* (*beemstorage.sqlite.SQLiteStore* method), 217
- ## L
- Ledger\_Transaction* (class in *beem-base.ledgertransactions*), 196
  - list\_all\_subscriptions()* (*beem.account.Account* method), 95
  - list\_change\_recovery\_account\_requests()* (*beem.blockchain.Blockchain* method), 108
  - list\_drafts()* (*beem.conveyor.Conveyor* method), 131
  - list\_operations()* (*beem.transactionbuilder.TransactionBuilder* method), 177
  - listen()* (*beem.notify.Notify* method), 162
  - ListWitnesses* (class in *beem.witness*), 184
  - load\_dirty\_json()* (in module *beem.utils*), 179
  - lock()* (*beem.hivesigner.HiveSigner* method), 148
  - lock()* (*beem.steemconnect.SteemConnect* method), 174
  - lock()* (*beem.wallet.Wallet* method), 183
  - lock()* (*beemstorage.interfaces.EncryptedKeyInterface* method), 211
  - lock()* (*beemstorage.interfaces.EncryptedTokenInterface* method), 211
  - lock()* (*beemstorage.masterpassword.MasterPassword* method), 214
  - locked()* (*beem.hivesigner.HiveSigner* method), 148
  - locked()* (*beem.steemconnect.SteemConnect* method), 174
  - locked()* (*beem.wallet.Wallet* method), 183

- locked() (beemstorage.interfaces.EncryptedKeyInterface method), 211
- locked() (beemstorage.interfaces.EncryptedTokenInterface method), 211
- locked() (beemstorage.masterpassword.MasterPassword method), 214
- ## M
- make\_patch() (in module beem.utils), 179
- mark\_notifications\_as\_read() (beem.account.Account method), 95
- MARKDOWN\_FILE
- beem-createtime command line option, 27
  - beem-post command line option, 46
- market (beem.price.Price attribute), 164
- Market (class in beem.market), 151
- market\_history() (beem.market.Market method), 152
- market\_history\_buckets() (beem.market.Market method), 153
- masterkey (beemstorage.masterpassword.MasterPassword attribute), 214
- MasterPassword (class in beemstorage.masterpassword), 214
- me() (beem.hivesigner.HiveSigner method), 148
- me() (beem.steemconnect.SteemConnect method), 175
- MEMO
- beem-decrypt command line option, 30
  - beem-encrypt command line option, 35
  - beem-transfer command line option, 53
- Memo (class in beem.memo), 156
- Memo (class in beembase.objects), 194
- Message (class in beem.message), 159
- MESSAGE\_FILE
- beem-message command line option, 40
- MESSAGE\_SPLIT (beem.message.MessageV1 attribute), 159
- MessageV1 (class in beem.message), 159
- MessageV2 (class in beem.message), 160
- MissingKeyError, 140
- MissingRequiredActiveAuthority, 186
- Mnemonic (class in beemgraphenebase.account), 198
- MnemonicKey (class in beemgraphenebase.account), 198
- move\_current\_node\_to\_front() (beem.blockchaininstance.BlockChainInstance method), 119
- MUTE
- beem-mute command line option, 41
- mute() (beem.account.Account method), 95
- ## N
- NAME
- beem-addtoken command line option, 21
  - beem-deltoken command line option, 32
- name (beem.account.Account attribute), 95
- new\_chart() (beem.asciichart.AsciiChart method), 102
- NEW\_RECOVERY\_ACCOUNT
- beem-changerecovery command line option, 25
- new\_tx() (beem.blockchaininstance.BlockChainInstance method), 119
- newWallet() (beem.blockchaininstance.BlockChainInstance method), 119
- newWallet() (beem.hivesigner.HiveSigner method), 148
- newWallet() (beem.steemconnect.SteemConnect method), 175
- newWallet() (beem.wallet.Wallet method), 183
- next() (beemapi.graphenerpc.GrapheneRPC method), 188
- next() (beemapi.node.Nodes method), 190
- next\_account\_sequence() (beemgraphenebase.account.MnemonicKey method), 199
- next\_sequence() (beemgraphenebase.account.BrainKey method), 197
- next\_sequence() (beemgraphenebase.account.MnemonicKey method), 199
- NoAccessApi, 186
- NoApiWithName, 186
- node (beemapi.node.Nodes attribute), 190
- Node (class in beemapi.node), 189
- node\_answer\_time() (in module beem.nodelist), 161
- NodeList (class in beem.nodelist), 160
- NodeRPC (class in beemapi.noderpc), 190
- Nodes (class in beemapi.node), 189
- NodeWebsocket (class in beemapi.websocket), 191
- NoMethodWithName, 186
- normalize() (beemgraphenebase.account.BrainKey method), 197

normalize() (beem-graphenebase.account.PasswordKey method), 199

normalize\_string() (beem-graphenebase.account.Mnemonic class method), 198

Notify (class in beem.notify), 162

NoWalletException, 140

NoWriteAccess, 140

num\_retries (beemapi.graphenerpc.GrapheneRPC attribute), 188

num\_retries\_call (beemapi.graphenerpc.GrapheneRPC attribute), 189

num\_retries\_call\_reached (beemapi.node.Nodes attribute), 190

NumRetriesReached, 186

## O

object\_type (in module beembase.objecttypes), 195

object\_type (in module beem-graphenebase.objecttypes), 204

ObjectCache (class in beem.blockchainobject), 112

OBJECTS

- beempy-info command line option, 38

OfflineHasNoRPCException, 140

on\_close() (beemapi.websocket.NodeWebsocket method), 192

on\_error() (beemapi.websocket.NodeWebsocket method), 192

on\_message() (beemapi.websocket.NodeWebsocket method), 192

on\_open() (beemapi.websocket.NodeWebsocket method), 192

Operation (class in beembase.objects), 194

Operation (class in beemgraphenebase.objects), 204

operations (beem.block.Block attribute), 104

operations (in module beem-graphenebase.operationids), 205

operations() (beembase.objects.Operation method), 194

operations() (beemgraphenebase.objects.Operation method), 204

ops (in module beembase.operationids), 195

ops() (beem.blockchain.Blockchain method), 109

ops\_statistics() (beem.block.Block method), 104

ops\_statistics() (beem.blockchain.Blockchain method), 109

Order (class in beem.price), 162

orderbook() (beem.market.Market method), 153

ORDERID

- beempy-cancel command line option, 24

## P

P2WPKHoP2SHAddress() (beem-graphenebase.bip32.BIP32Key method), 203

parent\_author (beem.comment.Comment attribute), 128

parent\_permlink (beem.comment.Comment attribute), 128

parse\_op() (beem.snapshot.AccountSnapshot method), 167

parse\_path() (in module beemgraphenebase.bip32), 203

parse\_time() (in module beem.utils), 179

participation\_rate (beem.blockchain.Blockchain attribute), 109

PasswordKey (class in beemgraphenebase.account), 199

percent (beem.vote.Vote attribute), 180

Permission (class in beembase.objects), 194

PERMLINK

- beempy-download command line option, 33

permlink (beem.comment.Comment attribute), 128

plot() (beem.asciichart.AsciiChart method), 102

point() (beemgraphenebase.account.PublicKey method), 201

Pool (class in beem.blockchain), 110

POST

- beempy-delete command line option, 31
- beempy-downvote command line option, 34
- beempy-upvote command line option, 56

post() (beem.blockchaininstance.BlockChainInstance method), 119

Post\_discussions\_by\_payout (class in beem.discussions), 138

posting\_json\_metadata (beem.account.Account attribute), 95

precision (beem.asset.Asset attribute), 103

prefix (beem.blockchaininstance.BlockChainInstance attribute), 121

prefix (beem.wallet.Wallet attribute), 183

prehash\_message() (beem.conveyor.Conveyor method), 131

PRICE

- beempy-buy command line option, 23
- beempy-sell command line option, 51

Price (class in beem.price), 163

Price (class in beembase.objects), 194

print\_info() (beem.account.Account method), 95

print\_stats() (beem.vote.VotesObject method), 180

print\_summarize\_table()



`(beem.account.AccountsObject method)`, 100  
`printAsTable()` (*beem.account.AccountsObject method*), 100  
`printAsTable()` (*beem.vote.VotesObject method*), 180  
`printAsTable()` (*beem.witness.WitnessesObject method*), 185  
`PrivateKey` (class in *beemgraphenebase.account*), 199  
`privatekey()` (*beem.wallet.Wallet method*), 183  
`PrivateKey()` (*beemgraphenebase.bip32.BIP32Key method*), 203  
`process_block()` (*beem.notify.Notify method*), 162  
`process_block()` (*beemapi.websocket.NodeWebsocket method*), 192  
`profile` (*beem.account.Account attribute*), 95  
`PROXY`  
    *beem*-setproxy command line option, 52  
`PUB`  
    *beem*-delkey command line option, 31  
`PUB_SIGNING_KEY`  
    *beem*-witnesscreate command line option, 58  
`pubkey` (*beemgraphenebase.account.PrivateKey attribute*), 200  
`pubkey` (*beemgraphenebase.account.PublicKey attribute*), 201  
`PublicKey` (class in *beemgraphenebase.account*), 200  
`PublicKey()` (*beemgraphenebase.bip32.BIP32Key method*), 203  
`publickey_from_wif()` (*beem.wallet.Wallet method*), 183

## Q

`quantize()` (in module *beem.amount*), 101  
`Query` (class in *beem.discussions*), 138

## R

`RankedPosts` (class in *beem.comment*), 129  
`RC` (class in *beem.rc*), 165  
`RECEIVER`  
    *beem*-encrypt command line option, 35  
`recent_trades()` (*beem.market.Market method*), 154  
`RecentByPath` (class in *beem.comment*), 129  
`RecentReplies` (class in *beem.comment*), 129  
`recover_public_key()` (in module *beem-graphenebase.ecdsasig*), 204  
`recover_with_latest_backup()` (*beemstorage.sqlite.SQLiteFile method*), 216  
`recoverPubkeyParameter()` (in module *beem-graphenebase.ecdsasig*), 204  
`refresh()` (*beem.account.Account method*), 95  
`refresh()` (*beem.asset.Asset method*), 103  
`refresh()` (*beem.block.Block method*), 104  
`refresh()` (*beem.block.BlockHeader method*), 104  
`refresh()` (*beem.comment.Comment method*), 128  
`refresh()` (*beem.vote.Vote method*), 180  
`refresh()` (*beem.witness.Witness method*), 185  
`refresh()` (*beem.witness.Witnesses method*), 185  
`refresh_access_token()`  
    (*beem.hivesigner.HiveSigner method*), 148  
`refresh_access_token()`  
    (*beem.steemconnect.SteemConnect method*), 175  
`refresh_data()` (*beem.blockchaininstance.BlockChainInstance method*), 121  
`refreshBackup()` (*beemstorage.sqlite.SQLiteFile method*), 216  
`remove_draft()` (*beem.conveyor.Conveyor method*), 132  
`remove_from_dict()` (in module *beem.utils*), 179  
`removeAccount()` (*beem.wallet.Wallet method*), 183  
`removePrivateKeyFromPublicKey()`  
    (*beem.wallet.Wallet method*), 183  
`removeTokenFromPublicKeyName()`  
    (*beem.hivesigner.HiveSigner method*), 148  
`removeTokenFromPublicKeyName()`  
    (*beem.steemconnect.SteemConnect method*), 175  
`rep` (*beem.account.Account attribute*), 95  
`rep` (*beem.vote.Vote attribute*), 180  
`Replies_by_last_update` (class in *beem.discussions*), 139  
`reply()` (*beem.comment.Comment method*), 128  
`reply_history()` (*beem.account.Account method*), 95  
`reputation` (*beem.vote.Vote attribute*), 180  
`reputation_to_score()` (in module *beem.utils*), 179  
`request_send()` (*beemapi.graphenerpc.GrapheneRPC method*), 189  
`reset()` (*beem.snapshot.AccountSnapshot method*), 167  
`reset_error_cnt()` (*beemapi.node.Nodes method*), 190  
`reset_error_cnt_call()` (*beemapi.node.Nodes method*), 190  
`reset_subscriptions()` (*beem.notify.Notify method*), 162  
`reset_subscriptions()`  
    (*beemapi.websocket.NodeWebsocket method*), 192  
`resolve_authorperm()` (in module *beem.utils*),

- 179
- `resolve_authorpermvoter()` (in module *beem.utils*), 179
- `resolve_root_identifier()` (in module *beem.utils*), 179
- `resteem()` (*beem.comment.Comment* method), 128
- `results()` (*beem.blockchain.Pool* method), 111
- `revoke_token()` (*beem.hivesigner.HiveSigner* method), 148
- `revoke_token()` (*beem.steemconnect.SteemConnect* method), 175
- `reward` (*beem.comment.Comment* attribute), 129
- `reward_balances` (*beem.account.Account* attribute), 96
- `ripemd160()` (in module *beemgraphenebase.base58*), 202
- `rpc` (*beem.wallet.Wallet* attribute), 183
- `rpcclose()` (*beemapi.graphenerpc.GrapheneRPC* method), 189
- `rpccconnect()` (*beemapi.graphenerpc.GrapheneRPC* method), 189
- `RPCConnection`, 187
- `RPCConnectionRequired`, 140
- `RPCError`, 187
- `RPCErrorDoRetry`, 187
- `rpcexec()` (*beemapi.graphenerpc.GrapheneRPC* method), 189
- `rpcexec()` (*beemapi.noderpc.NodeRPC* method), 190
- `rpcexec()` (*beemapi.websocket.NodeWebsocket* method), 192
- `rpclogin()` (*beemapi.graphenerpc.GrapheneRPC* method), 189
- `rshares` (*beem.vote.Vote* attribute), 180
- `rshares_to_hbd()` (*beem.hive.Hive* method), 145
- `rshares_to_sbd()` (*beem.steem.Steem* method), 170
- `rshares_to_token_backed_dollar()` (*beem.blockchaininstance.BlockChainInstance* method), 121
- `rshares_to_token_backed_dollar()` (*beem.hive.Hive* method), 145
- `rshares_to_token_backed_dollar()` (*beem.steem.Steem* method), 170
- `rshares_to_vote_pct()` (*beem.hive.Hive* method), 145
- `rshares_to_vote_pct()` (*beem.steem.Steem* method), 170
- `run()` (*beem.blockchain.Pool* method), 111
- `run()` (*beem.blockchain.Worker* method), 111
- `run_forever()` (*beemapi.websocket.NodeWebsocket* method), 192
- `save_draft()` (*beem.conveyor.Conveyor* method), 132
- `saving_balances` (*beem.account.Account* attribute), 96
- `sbd` (*beem.vote.Vote* attribute), 180
- `sbd_symbol` (*beem.steem.Steem* attribute), 170
- `sbd_to_rshares()` (*beem.steem.Steem* method), 170
- `sbd_to_vote_pct()` (*beem.steem.Steem* method), 170
- `search()` (*beem.snapshot.AccountSnapshot* method), 167
- `searchPath()` (*beem.transactionbuilder.TransactionBuilder* method), 177
- `sell()` (*beem.market.Market* method), 154
- `seperate_yaml_dict_from_body()` (in module *beem.utils*), 179
- `SessionInstance` (class in *beemapi.graphenerpc*), 189
- `set_access_token()` (*beem.hivesigner.HiveSigner* method), 149
- `set_access_token()` (*beem.steemconnect.SteemConnect* method), 175
- `set_cache_auto_clean()` (*beem.blockchainobject.BlockchainObject* method), 111
- `set_cache_expiration()` (*beem.blockchainobject.BlockchainObject* method), 111
- `set_default_account()` (*beem.blockchaininstance.BlockChainInstance* method), 121
- `set_default_nodes()` (*beem.blockchaininstance.BlockChainInstance* method), 121
- `set_default_vote_weight()` (*beem.blockchaininstance.BlockChainInstance* method), 121
- `set_expiration()` (*beem.transactionbuilder.TransactionBuilder* method), 177
- `set_mnemonic()` (*beem-graphenebase.account.MnemonicKey* method), 199
- `set_next_node_on_empty_reply()` (*beemapi.noderpc.NodeRPC* method), 191
- `set_node_urls()` (*beemapi.node.Nodes* method), 190
- `set_parameter()` (*beem.asciichart.AsciiChart* method), 102
- `set_password_storage()` (*beem.blockchaininstance.BlockChainInstance* method), 121
- `set_path()` (*beemgraphenebase.account.MnemonicKey* method), 199

## S

- `SaltException`, 203
- `sanitize_permalink()` (in module *beem.utils*), 179

`set_path_BIP32()` (*beem-graphenebase.account.MnemonicKey method*), 199

`set_path_BIP44()` (*beem-graphenebase.account.MnemonicKey method*), 199

`set_path_BIP48()` (*beem-graphenebase.account.MnemonicKey method*), 199

`set_session_instance()` (*in module beemapi.graphenerpc*), 189

`set_shared_blockchain_instance()` (*in module beem.instance*), 150

`set_shared_config()` (*in module beem.instance*), 150

`set_shared_hive_instance()` (*in module beem.instance*), 150

`set_shared_steem_instance()` (*in module beem.instance*), 150

`set_user_data()` (*beem.conveyor.Conveyor method*), 132

`set_username()` (*beem.hivesigner.HiveSigner method*), 149

`set_username()` (*beem.steemconnect.SteemConnect method*), 175

`set_withdraw_vesting_route()` (*beem.account.Account method*), 96

`setdefault()` (*beemstorage.interfaces.StoreInterface class method*), 213

`setKeys()` (*beem.wallet.Wallet method*), 183

`setPath()` (*beem.transactionbuilder.TransactionBuilder method*), 177

`setproxy()` (*beem.account.Account method*), 96

`SetPublic()` (*beemgraphenebase.bip32.BIP32Key method*), 203

`setToken()` (*beem.hivesigner.HiveSigner method*), 148

`setToken()` (*beem.steemconnect.SteemConnect method*), 175

`shared_blockchain_instance()` (*in module beem.instance*), 150

`shared_hive_instance()` (*in module beem.instance*), 150

`shared_session_instance()` (*in module beemapi.graphenerpc*), 189

`shared_steem_instance()` (*in module beem.instance*), 150

`SharedInstance` (*class in beem.instance*), 149

`sign()` (*beem.blockchaininstance.BlockChainInstance method*), 121

`sign()` (*beem.message.Message method*), 159

`sign()` (*beem.message.MessageV1 method*), 160

`sign()` (*beem.message.MessageV2 method*), 160

`sign()` (*beem.transactionbuilder.TransactionBuilder method*), 177

`sign()` (*beembase.ledgertransactions.Ledger\_Transaction method*), 196

`sign()` (*beembase.signedtransactions.Signed\_Transaction method*), 196

`sign()` (*beemgraphenebase.signedtransactions.Signed\_Transaction method*), 205

`sign_message()` (*in module beem-graphenebase.ecdsasig*), 204

`SIGNED_MESSAGE_ENCAPSULATED` (*beem.message.MessageV1 attribute*), 159

`SIGNED_MESSAGE_META` (*beem.message.MessageV1 attribute*), 159

`Signed_Transaction` (*class in beem-base.signedtransactions*), 195

`Signed_Transaction` (*class in beem-graphenebase.signedtransactions*), 205

`SIGNING_KEY` *beempy-witnessenable command line option*, 59

`sleep_and_check_retries()` (*beemapi.node.Nodes method*), 190

`SocialActionCommentCreate` (*class in beem-base.objects*), 194

`SocialActionCommentDelete` (*class in beem-base.objects*), 195

`SocialActionCommentUpdate` (*class in beem-base.objects*), 195

`SocialActionVariant` (*class in beembase.objects*), 195

`sp` (*beem.account.Account attribute*), 96

`sp_to_rshares()` (*beem.steem.Steem method*), 171

`sp_to_sbd()` (*beem.steem.Steem method*), 171

`sp_to_vests()` (*beem.steem.Steem method*), 171

`space_id` (*beem.blockchainobject.BlockchainObject attribute*), 111

`sql_execute()` (*beemstorage.sqlite.SQLiteCommon method*), 215

`sql_fetchall()` (*beemstorage.sqlite.SQLiteCommon method*), 215

`sql_fetchone()` (*beemstorage.sqlite.SQLiteCommon method*), 215

`sqlite3_backup()` (*beemstorage.sqlite.SQLiteFile method*), 216

`sqlite3_copy()` (*beemstorage.sqlite.SQLiteFile method*), 216

`sqlite_file` (*beemstorage.sqlite.SQLiteFile attribute*), 216

`SQLiteCommon` (*class in beemstorage.sqlite*), 215

`SqliteConfigurationStore` (*class in beemstorage.base*), 208

`SqliteEncryptedKeyStore` (*class in beemstorage.base*), 208

`SqliteEncryptedTokenStore` (*class in beemstor-*



*age.base*), 209  
 SQLiteFile (class in *beemstorage.sqlite*), 215  
 SqlitePlainKeyStore (class in *beemstorage.base*), 209  
 SqlitePlainTokenStore (class in *beemstorage.age.base*), 209  
 SQLiteStore (class in *beemstorage.sqlite*), 216  
 Steem (class in *beem.steem*), 168  
 steem\_btc\_ticker() (*beem.market.Market* static method), 155  
 steem\_symbol (*beem.steem.Steem* attribute), 171  
 steem\_usd\_implied() (*beem.market.Market* method), 155  
 SteemConnect (class in *beem.steemconnect*), 173  
 stop() (*beemapi.websocket.NodeWebsocket* method), 192  
 StoreInterface (class in *beemstorage.interfaces*), 212  
 str\_to\_bytes() (*beemgraphenebase.aes.AESCipher* static method), 201  
 stream() (*beem.blockchain.Blockchain* method), 109  
 suggest() (*beemgraphenebase.account.BrainKey* method), 197  
 supported\_formats (*beem.message.Message* attribute), 159  
 switch\_blockchain() (*beem.blockchaininstance.BlockChainInstance* method), 122  
 symbol (*beem.amount.Amount* attribute), 101  
 symbol (*beem.asset.Asset* attribute), 103  
 symbols() (*beem.price.Price* method), 164

## T

test() (in module *beemgraphenebase.bip32*), 203  
 test\_valid\_objectid() (*beem.blockchainobject.BlockchainObject* method), 111  
 testid() (*beem.blockchainobject.BlockchainObject* method), 111  
 ticker() (*beem.market.Market* method), 155  
 time (*beem.vote.Vote* attribute), 180  
 time() (*beem.block.Block* method), 104  
 time() (*beem.block.BlockHeader* method), 105  
 time\_elapsed() (*beem.comment.Comment* method), 129  
 TimeoutException, 187  
 title (*beem.comment.Comment* attribute), 129  
 TO  
     beem-py-powerdownroute command line option, 48  
     beem-py-transfer command line option, 53  
 TO\_ACCOUNT

beem-py-delegate command line option, 30  
 to\_entropy() (*beem-graphenebase.account.Mnemonic* method), 198  
 to\_mnemonic() (*beem-graphenebase.account.Mnemonic* method), 198  
 to\_seed() (*beemgraphenebase.account.Mnemonic* class method), 198  
 toJson() (*beemgraphenebase.objects.GrapheneObject* method), 204  
 toJson() (*beemgraphenebase.unsignedtransactions.GrapheneObjectASN* method), 205  
 token\_backed\_dollar (*beem.vote.Vote* attribute), 180  
 token\_power\_to\_token\_backed\_dollar() (*beem.blockchaininstance.BlockChainInstance* method), 122  
 token\_power\_to\_token\_backed\_dollar() (*beem.hive.Hive* method), 145  
 token\_power\_to\_token\_backed\_dollar() (*beem.steem.Steem* method), 171  
 token\_power\_to\_vests() (*beem.blockchaininstance.BlockChainInstance* method), 122  
 token\_power\_to\_vests() (*beem.hive.Hive* method), 145  
 token\_power\_to\_vests() (*beem.steem.Steem* method), 172  
 token\_symbol (*beem.blockchaininstance.BlockChainInstance* attribute), 122  
 TokenEncryption (class in *beemstorage.base*), 210  
 TokenInterface (class in *beemstorage.interfaces*), 213  
 total\_balances (*beem.account.Account* attribute), 96  
 tp (*beem.account.Account* attribute), 96  
 trade\_history() (*beem.market.Market* method), 156  
 trades() (*beem.market.Market* method), 156  
 TransactionBuilder (class in *beem.transactionbuilder*), 176  
 transactions (*beem.block.Block* attribute), 104  
 transfer() (*beem.account.Account* method), 96  
 transfer() (*beem.rc.RC* method), 166  
 transfer\_dict() (*beem.rc.RC* method), 166  
 transfer\_from\_savings() (*beem.account.Account* method), 97  
 transfer\_to\_savings() (*beem.account.Account* method), 97  
 transfer\_to\_vesting() (*beem.account.Account* method), 97  
 Trending\_tags (class in *beem.discussions*), 139

`tuple()` (*beem.amount.Amount* method), 101  
`tweakaddPubkey()` (in module *beem-graphenebase.ecdsasig*), 204  
`tx()` (*beem.blockchaininstance.BlockChainInstance* method), 122  
`txbuffer` (*beem.blockchaininstance.BlockChainInstance* attribute), 122  
`type_id` (*beem.account.Account* attribute), 97  
`type_id` (*beem.asset.Asset* attribute), 103  
`type_id` (*beem.blockchainobject.BlockchainObject* attribute), 112  
`type_id` (*beem.comment.Comment* attribute), 129  
`type_id` (*beem.vote.Vote* attribute), 180  
`type_id` (*beem.witness.Witness* attribute), 185  
`type_ids` (*beem.blockchainobject.BlockchainObject* attribute), 112

## U

`UnauthorizedError`, 187  
`uncompressed` (*beem-graphenebase.account.PrivateKey* attribute), 200  
`unCompressed()` (*beem-graphenebase.account.PublicKey* method), 201  
`uncompressed()` (*beem-graphenebase.account.PublicKey* method), 201  
`UNFOLLOW`  
    *beem.py-unfollow* command line option, 54  
`unfollow()` (*beem.account.Account* method), 97  
`UnhandledRPCError`, 187  
`UnknownTransaction`, 187  
`UnkownKey`, 187  
`unlock()` (*beem.blockchaininstance.BlockChainInstance* method), 122  
`unlock()` (*beem.hivesigner.HiveSigner* method), 149  
`unlock()` (*beem.steemconnect.SteemConnect* method), 175  
`unlock()` (*beem.wallet.Wallet* method), 183  
`unlock()` (*beemstorage.interfaces.EncryptedKeyInterface* method), 211  
`unlock()` (*beemstorage.interfaces.EncryptedTokenInterface* method), 211  
`unlock()` (*beemstorage.masterpassword.MasterPassword* method), 214  
`unlock_wallet()` (*beem.memo.Memo* method), 159  
`unlocked()` (*beem.hivesigner.HiveSigner* method), 149  
`unlocked()` (*beem.steemconnect.SteemConnect* method), 175  
`unlocked()` (*beem.wallet.Wallet* method), 183  
`unlocked()` (*beemstorage.masterpassword.MasterPassword* method), 215  
`UnnecessarySignatureDetected`, 187  
`Unsigned_Transaction` (class in *beem-graphenebase.unsignedtransactions*), 206  
`update()` (*beem.nodelist.NodeList* method), 161  
`update()` (*beem.snapshot.AccountSnapshot* method), 167  
`update()` (*beem.witness.Witness* method), 185  
`update_account()` (*beem.blockchaininstance.BlockChainInstance* method), 122  
`update_account_jsonmetadata()` (*beem.account.Account* method), 98  
`update_account_keys()` (*beem.account.Account* method), 98  
`update_account_metadata()` (*beem.account.Account* method), 98  
`update_account_profile()` (*beem.account.Account* method), 98  
`update_in_vote()` (*beem.snapshot.AccountSnapshot* method), 167  
`update_memo_key()` (*beem.account.Account* method), 98  
`update_nodes()` (*beem.nodelist.NodeList* method), 161  
`update_out_vote()` (*beem.snapshot.AccountSnapshot* method), 167  
`update_proposal_votes()` (*beem.blockchaininstance.BlockChainInstance* method), 123  
`update_rewards()` (*beem.snapshot.AccountSnapshot* method), 168  
`update_user_metadata()` (*beem.hivesigner.HiveSigner* method), 149  
`update_user_metadata()` (*beem.steemconnect.SteemConnect* method), 175  
`updateToken()` (*beemstorage.base.SQLitePlainTokenStore* method), 210  
`updateToken()` (*beemstorage.base.TokenEncryption* method), 210  
`upload()` (*beem.imageuploader.ImageUploader* method), 149  
`upvote()` (*beem.comment.Comment* method), 129  
`url` (*beemapi.node.Nodes* attribute), 190  
`url_from_tx()` (*beem.hivesigner.HiveSigner* method), 149  
`url_from_tx()` (*beem.steemconnect.SteemConnect*

method), 175

## V

valid\_exceptions (beem.message.Message attribute), 159

### VALUE

beem-py-set command line option, 51

beem-py-setprofile command line option, 51

### VARIABLE

beem-py-delprofile command line option, 31

beem-py-setprofile command line option, 51

verify() (beem.message.Message method), 159

verify() (beem.message.MessageV1 method), 160

verify() (beem.message.MessageV2 method), 160

verify() (beembase.signedtransactions.Signed\_Transaction method), 196

verify() (beemgraphenebase.signedtransactions.Signed\_Transaction method), 205

verify\_account\_authority() (beem.account.Account method), 99

verify\_authority() (beem.transactionbuilder.TransactionBuilder method), 177

verify\_message() (in module beem-graphenebase.ecdsasig), 204

version\_string\_to\_int() (beemapi.graphenerpc.GrapheneRPC method), 189

vest\_token\_symbol (beem.blockchaininstance.BlockChainInstance attribute), 123

VestingBalanceDoesNotExistException, 141

vests\_symbol (beem.hive.Hive attribute), 145

vests\_symbol (beem.steem.Steem attribute), 172

vests\_to\_hbd() (beem.hive.Hive method), 145

vests\_to\_hp() (beem.hive.Hive method), 146

vests\_to\_rshares() (beem.blockchaininstance.BlockChainInstance method), 123

vests\_to\_rshares() (beem.hive.Hive method), 146

vests\_to\_rshares() (beem.steem.Steem method), 172

vests\_to\_sbd() (beem.steem.Steem method), 172

vests\_to\_sp() (beem.steem.Steem method), 172

vests\_to\_token\_power() (beem.blockchaininstance.BlockChainInstance method), 124

vests\_to\_token\_power() (beem.hive.Hive method), 146

vests\_to\_token\_power() (beem.steem.Steem method), 172

virtual\_op\_count() (beem.account.Account method), 99

volume24h() (beem.market.Market method), 156

Vote (class in beem.vote), 180

vote() (beem.blockchaininstance.BlockChainInstance method), 124

vote() (beem.comment.Comment method), 129

vote() (beem.rc.RC method), 166

vote\_dict() (beem.rc.RC method), 166

VotedBeforeWaitTimeReached, 187

VoteDoesNotExistException, 141

votee (beem.vote.Vote attribute), 180

voter (beem.vote.Vote attribute), 180

VotesObject (class in beem.vote), 180

VotingInvalidOnArchivedPost, 141

vote\_weight (beem.account.Account attribute), 99

## W

wait\_for\_and\_get\_block() (beem.blockchain.Blockchain method), 110

Wallet (class in beem.wallet), 181

WalletExists, 141

WalletImportFormat() (beem-graphenebase.bip32.BIP32Key method), 203

WalletLocked, 211

weight (beem.vote.Vote attribute), 180

### WIF

beem-py-witnessfeed command line option, 60

beem-py-witnessproperties command line option, 60

wipe() (beem.wallet.Wallet method), 184

wipe() (beemstorage.interfaces.StoreInterface method), 213

wipe() (beemstorage.ram.InRamStore method), 215

wipe() (beemstorage.sqlite.SQLiteStore method), 217

wipe\_masterpassword() (beemstorage.masterpassword.MasterPassword method), 215

withdraw\_vesting() (beem.account.Account method), 99

### WITNESS

beem-py-approvewitness command line option, 22

beem-py-disapprovewitness command line option, 33

beem-py-witness command line option, 58

beem-py-witnesscreate command line option, 58

beem-py-witnessdisable command line  
option, [58](#)  
beem-py-witnessenable command line  
option, [59](#)  
beem-py-witnessfeed command line  
option, [60](#)  
beem-py-witnessproperties command  
line option, [60](#)  
Witness (*class in beem.witness*), [184](#)  
witness\_set\_properties()  
(*beem.blockchaininstance.BlockChainInstance*  
*method*), [124](#)  
witness\_update() (*beem.blockchaininstance.BlockChainInstance*  
*method*), [124](#)  
WitnessDoesNotExistsException, [141](#)  
Witnesses (*class in beem.witness*), [185](#)  
WitnessesObject (*class in beem.witness*), [185](#)  
WitnessesRankedByVote (*class in beem.witness*),  
[185](#)  
WitnessesVotedByAccount (*class in*  
*beem.witness*), [186](#)  
WitnessProps (*class in beembase.objects*), [195](#)  
Worker (*class in beem.blockchain*), [111](#)  
working\_nodes\_count (*beemapi.node.Nodes*  
*attribute*), [190](#)  
WorkingNodeMissing, [187](#)  
WrongMasterPasswordException, [141](#), [211](#)  
WrongMemoKey, [141](#)  
ws\_send() (*beemapi.graphenerpc.GrapheneRPC*  
*method*), [189](#)