

BIT-ECC: Check transactions using Bitcoin-core wallet

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Purpose: The aim of this document is to instruct the readers how to install bitcoin core wallet in the local machine, how to do transaction using core wallet and how to check that transaction details from Seoul node.

Contents:

1. Run the bitcoin-qt wallet
2. Make a sending transaction
3. Check result from Seoul node

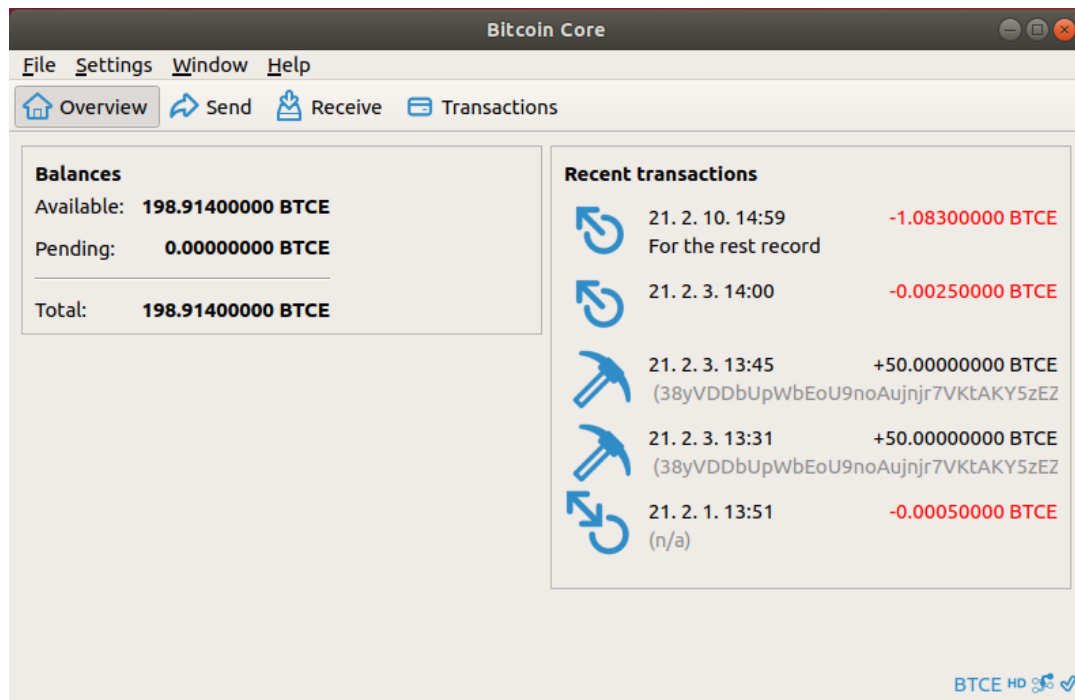
1. Run the bitcoin-qt wallet

As we have already installed the bitcoin qt-wallet during BIT-ECC installation process. So, you can skip the first command. Please check the 'BIT-ECC Environment Setup, Installation and Testing' document for more detail.

1.1 Installation of qt-wallet:

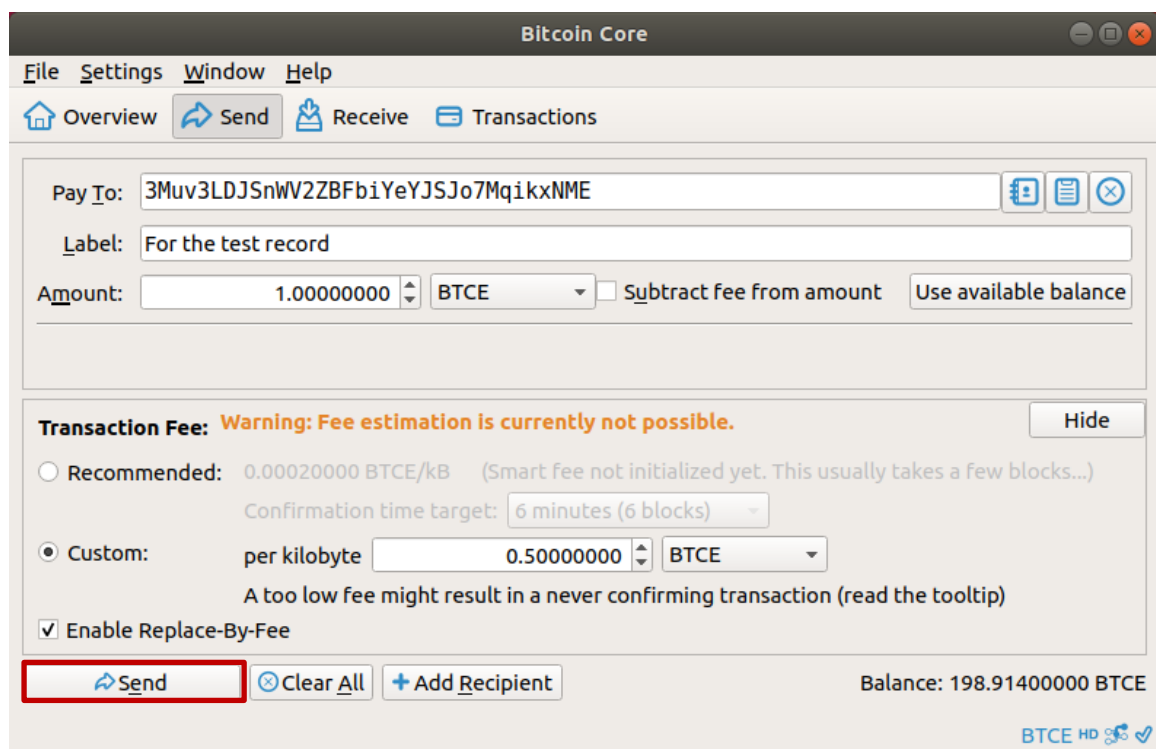
1. `$ sudo apt-get install libqt5gui5 libqt5core5a libqt5dbus5 qttools5-dev qttools5-dev-tools libprotobuf-dev protobuf-compiler libqrencode-dev`
2. `$ bitcoin-qt`

```
hayoung@hayoung-MS-7B46:~/bitcoin_ECC$ bitcoin-qt
nActualTimespan = 1144165      nPoWTargetTimespan = 3600
cur_diff = 4762267601341.054688  ret_diff = 1190566900335.263672
curt_level = 130               curt_expected_num = 4762267601341.054688
new_level = 119                new_expected_num = 1987202416438.138672
```

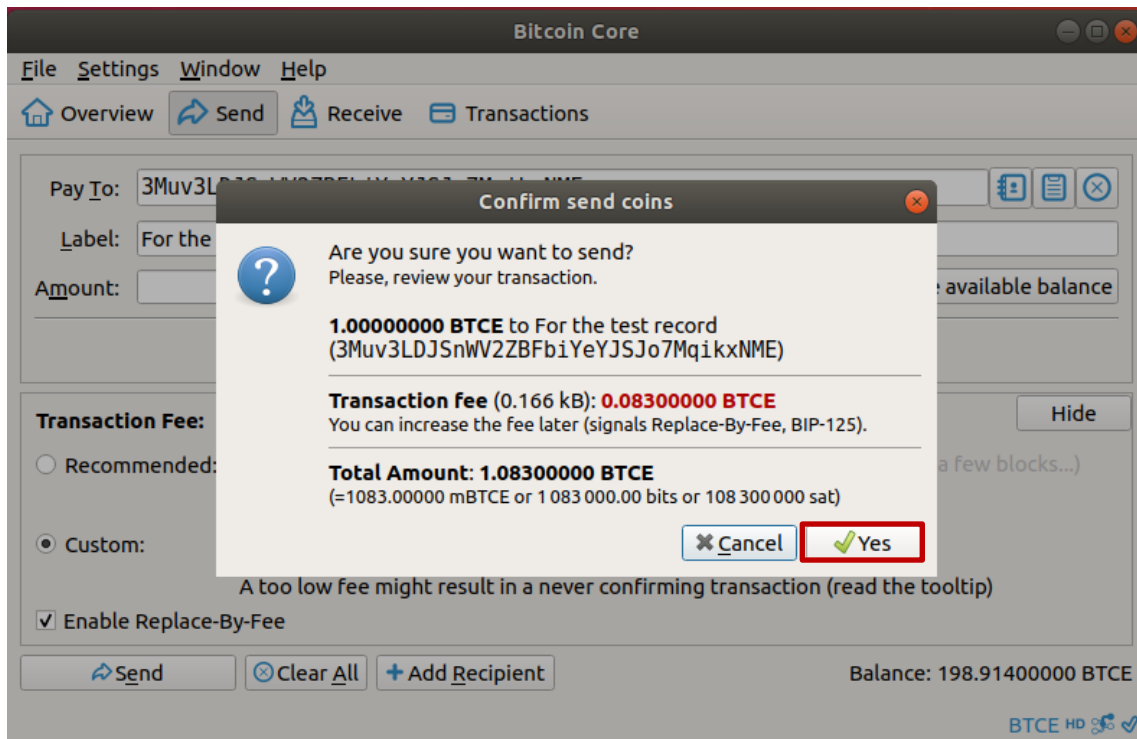


2. Make a sending transaction

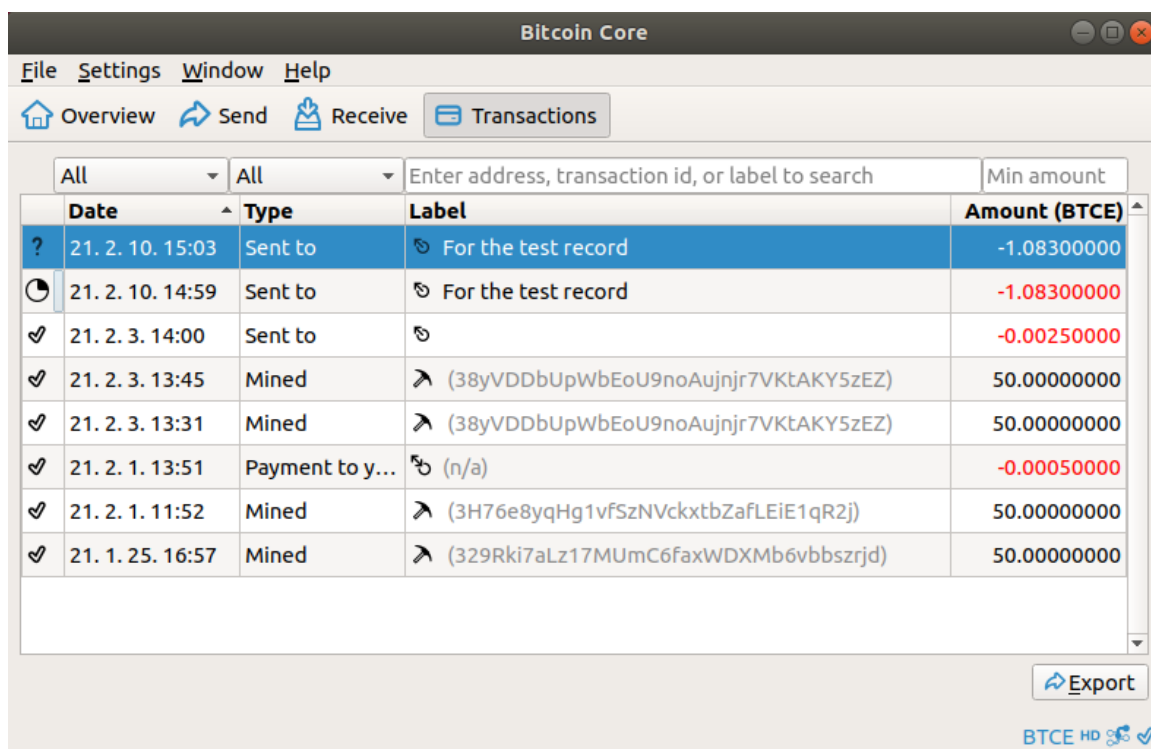
Take one of the public address from the Seoul node where you want to send the bitcoin. One of the addresses of Seoul node is 3Muv3LDJSnWV2ZBFbiYeYJSJo7MqikxNME . Now type that public address inside the 'Pay To' tab. Write any comments under the 'Label' tab and specify the transaction amount under the 'Amount' tab. For transaction fee please check mark the 'Custom' tab and specify the transaction fee. After specifying all the parameters now click on the send button.



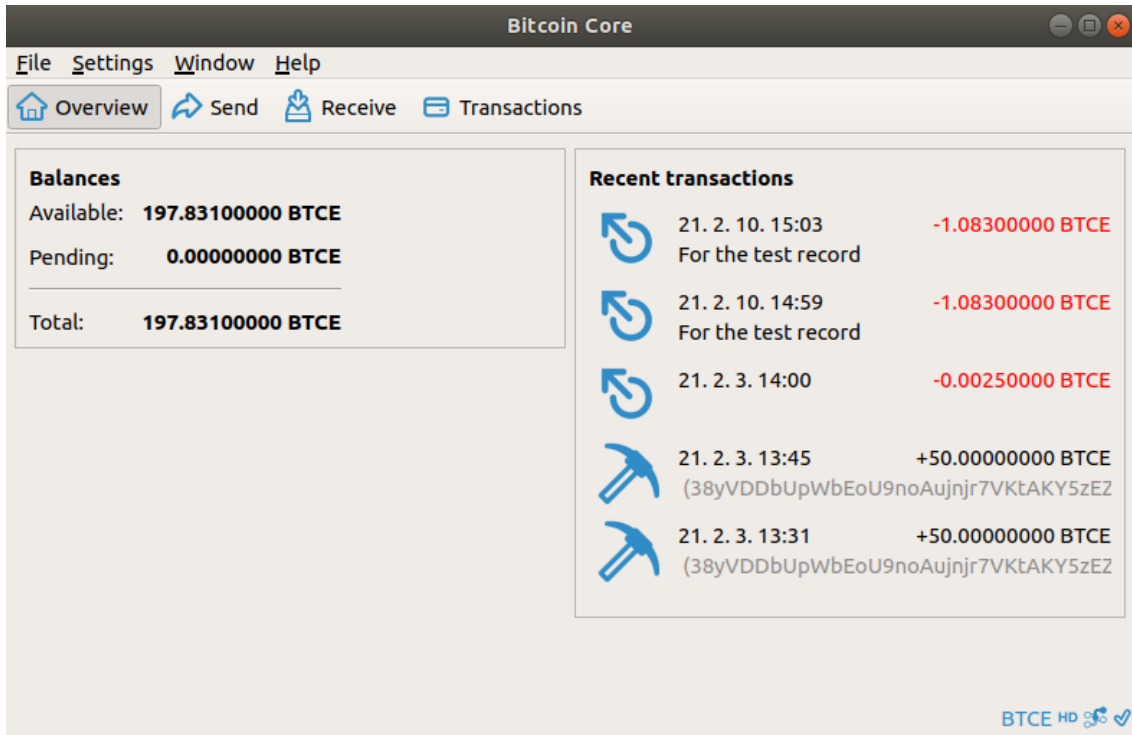
Click 'Yes' to continue the transaction process.



Click the 'Transactions' tab to check the transaction status.



Click on the 'Overview' tab to check the overall balance.



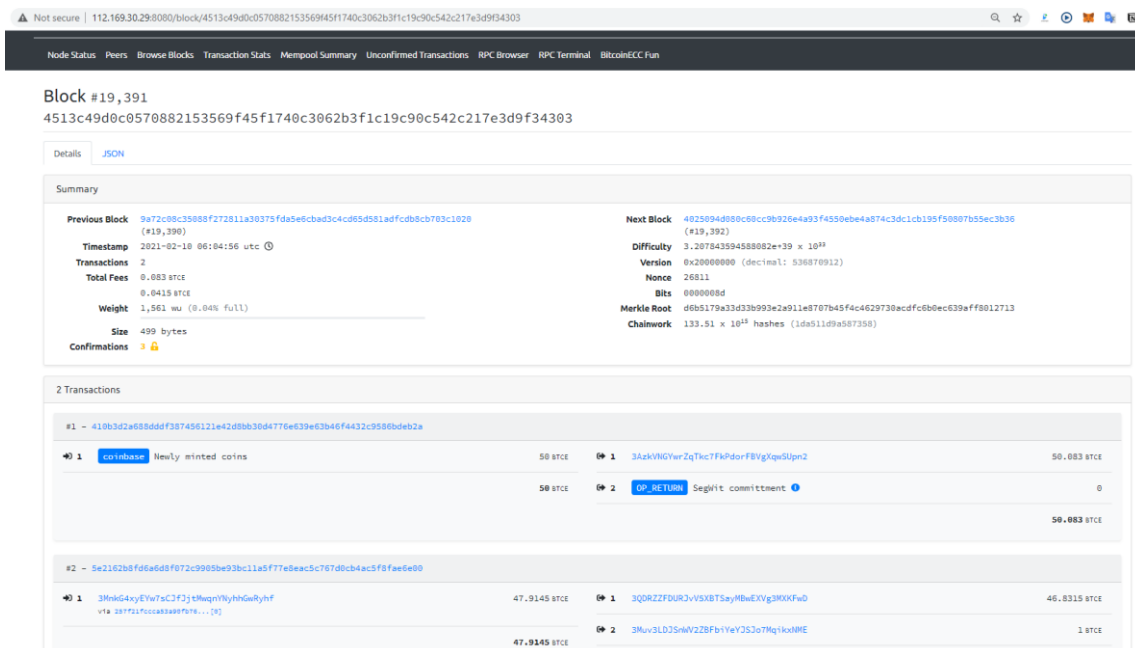
The screenshot shows the Bitcoin Core application window. The 'Overview' tab is selected, displaying the following information:

Balances	
Available:	197.83100000 BTCE
Pending:	0.00000000 BTCE
Total:	197.83100000 BTCE

Recent transactions		
	21. 2. 10. 15:03 For the test record	-1.08300000 BTCE
	21. 2. 10. 14:59 For the test record	-1.08300000 BTCE
	21. 2. 3. 14:00	-0.00250000 BTCE
	21. 2. 3. 13:45 (38yVDDbUpWbEoU9noAujnJr7VKtAKY5zEZ)	+50.00000000 BTCE
	21. 2. 3. 13:31 (38yVDDbUpWbEoU9noAujnJr7VKtAKY5zEZ)	+50.00000000 BTCE

BTCE HD logo is visible in the bottom right corner.

Please check the block information from <http://112.169.30.29:8080/> for more detail.



The screenshot shows the Bitcoin block information page for block #19,391. The page is titled "Block #19,391" and displays the following details:

Block #19,391
4513c49d0c0570882153569f45f1740c3062b3f1c19c90c542c217e3d9f34303

Details: .JSON

Summary

Previous Block	Next Block
9a72c08c35088f272811a30375fda5efcbad3c4c065d581adfcdb8cb703c1020 (#19,390)	4025094d080c60cc9b926e4a93f4350eb4e4874c3dc1cb195f50807b55ec3b36 (#19,392)
Timestamp 2021-02-10 06:04:56 utc	Difficulty 3.20784359458082e+39 x 10 ¹⁸
Transactions 2	Version 0x20000000 (decimal: 536870912)
Total Fees 0.083 BTCE	Nonce 26811
Weight 1,561 wu (0.04% full)	Bits 00000000
Size 499 bytes	Merkle Root d6b5179a33d3b993e2a911e8707b45f4c4029730acd6b0ec639eff8012713
Confirmations 3	Chainwork 133.51 x 10 ¹⁸ hashes (1da511d9a587358)

2 Transactions

TXID	Amount	Label
#1 - 410b3d2a658dddf387456121e42d8bb30d4776e39e63b46f4432c9556bdeb2a	50 BTCE	Newly minted coins
#1 - 3AakVNOYerZqTkc7FkPdorFBVgXqUUpn2	50.083 BTCE	
#2 - 5e2162b0f6a6d8f072c905be93bc11a5f77e8eac5c767d0cb4ac5f9fae6e00	50 BTCE	
#1 - 3Q0RZZF0URJvV5XBTsEyHbEXvg3K00Fw0	46.8315 BTCE	
#2 - 3Muv3LD25nWV2BFBYrY5J5o7Mq1koMRE	1 BTCE	

3. Check result from Seoul node

3.1 Check Listunspent: This command will return the unspent transaction outputs.

```
1. $ bitcoin-cli listunspent 0 99999
    '[{"3Muv3LDJSnWV2ZBFbiYeYJSJo7MqikxNME"}]'
```

```
(base) gist@gist:~$ bitcoin-cli listunspent 0 99999 '["3Muv3LDJSnWV2ZBFbiYeYJSJo7MqikxNME"]'
```

```
{
  "txid": "ba534ad087e4feb40981ffc4136b5ad97512eb0d79a8ca58f19e5930182cfb63",
  "vout": 0,
  "address": "3Muv3LDJSnWV2ZBFbiYeYJSJo7MqikxNME",
  "label": "",
  "redeemScript": "00140d3b0b766b4cfc09de97ddd057e75abed38bff1d",
  "scriptPubKey": "a914ddd303281e4ab07f1cc698118090e4bb7214b44f87",
  "amount": 1.00000000,
  "confirmations": 0,
  "spendable": true,
  "solvable": true,
  "desc": "sh(wpkh([8473db72/0'/0'/5']031f7b2b65f4cbd0f544e3e726c888f9bb818d62e973f9b7b92ca7d1dc2896a11d))#5q809p3a",
  "safe": false
},
```

3.2 Get transaction information: Transaction id is

ba534ad087e4feb40981ffc4136b5ad97512eb0d79a8ca58f19e5930182cfb63

```
1. $ bitcoin-cli gettransaction
    ba534ad087e4feb40981ffc4136b5ad97512eb0d79a8ca58f19e5
    930182cfb63
```

```
(base) gist@gist:~$ bitcoin-cli gettransaction ba534ad087e4feb40981ffc4136b5ad97512eb0d79a8ca58f19e5930182cfb63
{
  "amount": 1.00000000,
  "confirmations": 2,
  "blockhash": "0fba77f95ff1fcaf93749c8b01bd7ed0456c47e06c18fb95499ec0126076ec99",
  "blockindex": 1,
  "blocktime": 1609824376,
  "txid": "ba534ad087e4feb40981ffc4136b5ad97512eb0d79a8ca58f19e5930182cfb63",
  "walletconflicts": [
  ],
  "time": 1609821809,
  "timereceived": 1609821809,
  "bip125-replaceable": "no",
  "details": [
    {
      "address": "3Muv3LDJSnWV2ZBFbiYeYJSJo7MqikxNME",
      "category": "receive",
      "amount": 1.00000000,
      "label": "",
      "vout": 0
    }
  ],
  "hex": "0200000000010199bbcebc33f85a439f252350f51d0b72bed384c584d39bbe1dd2f5bc69654d850100000017160014c30de86b845e6d63538a7860ac1ece93ad4860befdffff0200e1f5050000000017a914ddd303281e4ab07f1cc698118090e4bb7214b44f8750fbf51c0100000017a914ea18e09fc3ebc263814db82d533d7c7c40d0585187024730440220109be65a3cbaa94d325ab3b4effdaa0c21fda5c90770cdb66206a629142c877702206582141827d8d29902fce356b798327925e1ba373b6bf45adc1d58fb7a303c860121032232a0105e785ab93f7240e51d879ae2f9cd94784e12c35179cde474f04d862b6f210000"
}
```

3.3 Check the balance: Check the balance of

3Muv3LDJSnWV2ZBFbiYeYJSJo7MqikxNME

```
1. $ bitcoin-cli getbalance
```

```
(base) gist@gist:~/bitcoin_ECC$ bitcoin-cli getbalance
501.10800332
```

3.4 Generate 3 new blocks:

Generate 3 new blocks for the public address

3Muv3LDJSnWV2ZBFbiYeYJSJo7MqikxNME

1. `$ bitcoin-cli generatetoaddress 3`
3Muv3LDJSnWV2ZBFbiYeYJSJo7MqikxNME

```
(base) gist@gist:~$ bitcoin-cli generatetoaddress 3 3Muv3LDJSnWV2ZBFbiYeYJSJo7MqikxNME
[
  "b99e4fa7e2f6ecfd94d230ca6a86c2bb63e5d257c84d36e6f5a43235e067eb86",
  "48eccc063bcec4a0f41b5449b24a2e7e153fc8ca88851294d4614798a62b429",
  "9a58fd6a12d6fecf7d77736b711d11c7dc7876b9f7f8730b084d11ee8318308d"
]
```

3.5 Check the balance:

Available balance before the transaction.

1. `$ bitcoin-cli getbalance`

```
(base) gist@gist:~/bitcoin_ECC$ bitcoin-cli getbalance
501.10800332
```

Available balance after the transaction. 150 BTC is the reward point for generating 3 new blocks and 1 BTC is from the transaction using bitcoin core wallet.

1. `$ bitcoin-cli getbalance`

```
(base) gist@gist:~$ bitcoin-cli getbalance
652.10800332
```