BTCD

BitDevs Meetup

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What is it?

btcd - An alternative, full node Bitcoin implementation in Go by Conformal Systems.

And friends.

Also wallet (btcwallet) and GUI (btcgui).

Why?

- Trouble using bitcoind on OpenBSD.
- Limitations on the json-rpc interface.
- Did not want to build things against the main C++ codebase.
- We really like Go.
- Diversity is good.

Who?

- Conformal Systems
  - Most of team has background with OpenBSD/Bitrig.
  - Security and Privacy Focused.
  - History of Open Source software.
  - Authors of Cyphertite - zero knowledge backup system.
- Me
  - `http://www.netpurgatory.com`
  - Mainly worked on rpc server and json interface for btcd.
  - Mostly working on Coinvoice now.

The Code

`https://github.com/conformal/btcd`

Community

irc.conformal.com:6697
ssl required
channel #btcd

Main Features

- Go
  - Other than btcgui, pure go.
- Open Source (ISC license)
- Modular (Build your own tools!)
  - The Executables
  - The Code
- Portable
  - *BSD
  - Linux
  - Windows
  - OSX
  - Plan 9
- Compatible + Extensions

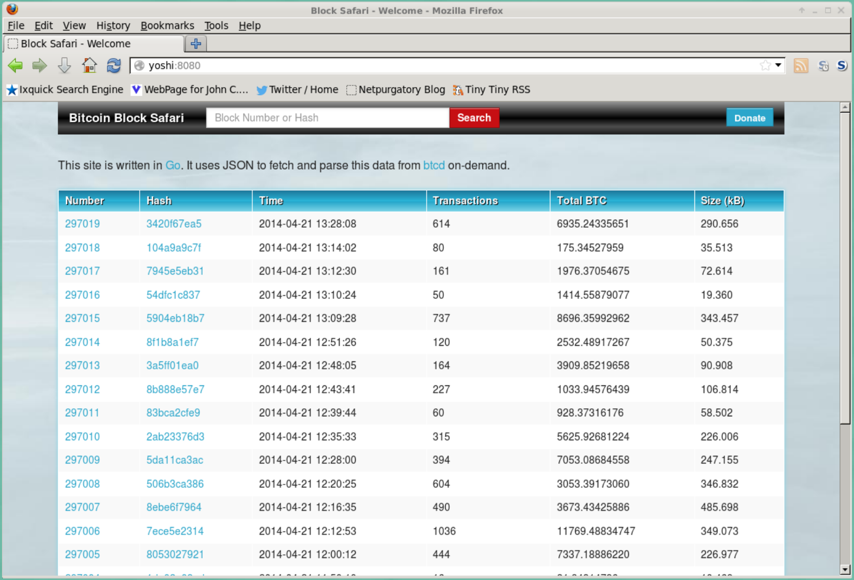
Why we trust btcd:

- Very high rate of unit test coverage.
- Passes all block or regression tests already available to bitcoin community.
- Modular so we can worry about validating piece by piece.
- Been running side by side with bitcoind for months now.

We use it.

- Blocksafari
- Coinvoice
- Other things we aren't ready to talk about yet.

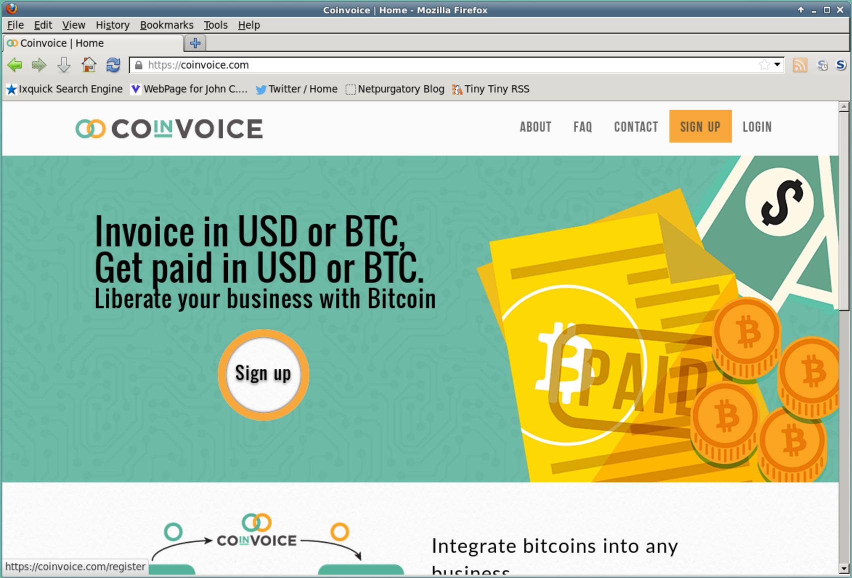
http://blocksafari.com



This site is written in Go. It uses JSON to fetch and parse this data from btcd on-demand.

Number	Hash	Time	Transactions	Total BTC	Size (kB)
297019	3420f67ea5	2014-04-21 13:28:08	614	6935.24335651	290.656
297018	104a9a9c7f	2014-04-21 13:14:02	80	175.34527959	35.513
297017	7945e5eb31	2014-04-21 13:12:30	161	1976.37054675	72.614
297016	54dfc1c837	2014-04-21 13:10:24	50	1414.55879077	19.360
297015	5904eb18b7	2014-04-21 13:09:28	737	8696.35992962	343.457
297014	8f1b8a1ef7	2014-04-21 12:51:26	120	2532.48917267	50.375
297013	3a5ff01ea0	2014-04-21 12:48:05	164	3909.85219658	90.908
297012	8b888e57e7	2014-04-21 12:43:41	227	1033.94576439	106.814
297011	83bca2cfe9	2014-04-21 12:39:44	60	928.37316176	58.502
297010	2ab23376d3	2014-04-21 12:35:33	315	5625.92681224	226.006
297009	5da11ca3ac	2014-04-21 12:28:00	394	7053.08684558	247.155
297008	506b3ca386	2014-04-21 12:20:25	604	3053.39173060	346.832
297007	8ebe6f7964	2014-04-21 12:16:35	490	3673.43425886	485.698
297006	7ece5e2314	2014-04-21 12:12:53	1036	11769.48834747	349.073
297005	8053027921	2014-04-21 12:00:12	444	7337.18886220	226.977

https://coinvoice.com



Invoice in USD or BTC,
Get paid in USD or BTC.
Liberate your business with Bitcoin

Integrate bitcoins into any business

Packages

- btcjson
- btcws
- btcwire
- btcchain
- btcscript
- btcec
- btcdb
- btcutil

Websockets

- Compatible the the json-rpc interface, but that is limited.
- We added a new json interface done over websockets.
- Allows you to interact with a running btcd in more complex ways without modifying or even linking to our code.

Websocket Notifications

- notifyblocks
- notifyreceived
- notifyspent
- notifynewtransactions
- rescan

WS Sample

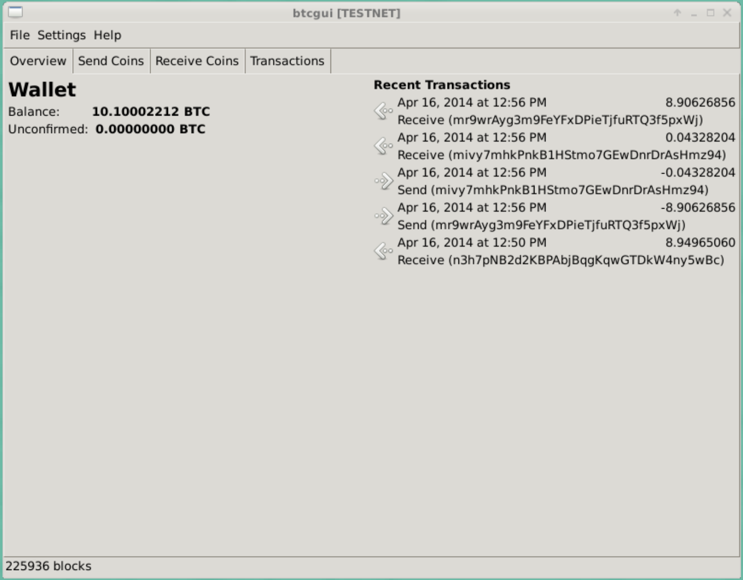
```
addrs := []string{”17XhEvq9Nahdj7Xe1nv6oRe1tEmaHUuynH”}
rescanCmd, _ := btcws.NewRescanCmd(1, 276000, addrs, nil)
sendCmd < − rescanCmd
for {
            reply := < −marshaledReplies
            n, _ := btcjson.ParseMarshaledCmd([]byte(reply));

}
```

Wire Sample

```
pver := btcwire.ProtocolVersion
btcnet := btcwire.MainNet
msg, rawPayload, err := btcwire.ReadMessage(conn, pver, btcnet)
```

btcgui



Wallet

Balance: **10.10002212 BTC**

Unconfirmed: **0.00000000 BTC**

Recent Transactions

Apr 16, 2014 at 12:56 PM 8.90626856
Receive (mr9wrAyg3m9FeYFxDPieTjfuRTQ3f5pxWj)

Apr 16, 2014 at 12:56 PM 0.04328204
Receive (mivy7mhkPnkB1HStmo7GEwDnrDrAsHmz94)

Apr 16, 2014 at 12:56 PM -0.04328204
Send (mivy7mhkPnkB1HStmo7GEwDnrDrAsHmz94)

Apr 16, 2014 at 12:56 PM -8.90626856
Send (mr9wrAyg3m9FeYFxDPieTjfuRTQ3f5pxWj)

Apr 16, 2014 at 12:50 PM 8.94965060
Receive (n3h7pNB2d2KBPAbjBqgKqwGTDkW4ny5wBc)

225936 blocks

Why 3 programs instead of 1?

- Keep blockchain (19G and growing) on big machine.
- Wallet and GUI can go on other machine.
- Share blockchain but not wallet.

Conclusion

Please give btcd a try if you can and let us know what you think on irc or github.

- Still a work in progress, but other than the GUI and a few features still in progress, very far along.