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# Bitcoin Gold Testnet Participation Manual

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## How to mine on testnet

To mine Bitcoin Gold in **testnet**, you can join a testnet pool. Please be aware that all the coins mined in testnet **have zero value**, so miners can just view this as an end-to-end functional test for mining setup.

Some of the many pools already testing: <http://pool.gold>  
<http://pool.4miner.me/>  
<http://www.miningspeed.com/list/index.php>

## How to join testnet

To join the public testnet, you need to compile, configure, and run your own Bitcoin Gold full node client.

### Compile

In this section we assume that you are running a Linux or Unix-like operating system. Ubuntu 16.04 is the recommended environment. Bitcoin Gold does support other platforms, like Bitcoin Core, but the steps to compile can vary.

- Clone Bitcoin Gold repository from GitHub

```
git clone https://github.com/BTCGPU/BTCGPU.git
cd BTCGPU
```

- Switch to `testnet1` branch

```
git checkout testnet1
```



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- Build all the dependencies

```
cd depends
make
```

- Return to the main directory and build Bitcoin Gold

```
cd ..
./autogen.sh
./configure --prefix=`pwd`/depends/x86_64-pc-linux-gnu # for Linux
x64
make
```

- You should be able to find `bgoldd` and `bgold-cli` under `./src` directory, if everything goes well.

## Run the full node

- Create the configure file at `\$HOME/.bitcoingold/bitcoin.conf`. It's recommended to replace the `rpcuser` and `rpcpassword` with your own.

```
rpcuser=user
rpcpassword=pass
rpcport=18337
testnet=1
debug=1
```

- Run the Bitcoin Gold client. You can also run it as a daemon by specifying `-daemon` flag.

```
./src/bgoldd
```

- The client itself will not output anything but keep running. A few seconds later you should be able to find debug output at `\$HOME/.bitcoingold/testnet3/debug.log`.
- A testnet full node can take up around 15GB disk space. It can take around 5 hours to fully download and validate the blockchain from scratch.

## Monitoring

- Debug messages can be found from `\$HOME/.bitcoingold/bitcoin.conf`.
- You can control your Bitcoin Gold client through `./src/bgold-cli`.



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- Help of command line flags: ``./src/bgold-cli help``
- Check blockchain status: ``./src/bgold-cli getblocktips``
- Check connected peers: ``./src/bgold-cli getpeerinfo``

## Troubleshooting

- Get the following message while starting the client.

```
crypto/common.h:138: int init_and_check_sodium(): Assertion  
`crypto_sign_verify_detached(sig, message, sizeof(message), pk) != 0' failed.
```

- You are compiling with an old version of libsodium. It's recommended to have a version higher than 1.0.13. Please note that the version that comes with Ubuntu 16.04 isn't compatible with Bitcoin Gold.
- It's highly recommended to build all the dependencies from ``depends`` directory.

## Service integration

### Pool adoption

Because of the PoW change, all the Bitcoin pools are incompatible with Bitcoin Gold. Zcash pools can be used with some tweaks.

Significant changes for integration

- The block header format is mostly compatible with Zcash except:
  - ``nVersion`` is not 4. Instead it's defined by BIP9.
  - The first 4 bytes of ``hashReserved`` (32 low bits) are used to store the block height.
- Other than the block height, the block format is the same as Bitcoin.
- No per-block founder rewards.
- Block subsidy and block interval is the same as Bitcoin rather than Zcash.
- Address format (Bitcoin Gold testnet is same as Bitcoin testnet3)

<http://pool.gold> is a reference implementation of Bitcoin Gold pool. You can find modified pool and miner software at the public repository: <https://github.com/poolgold>



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## Wallet adoption

Significant changes for integration

- P2P network changes: protocol version, network magic, block header format
- Consensus changes: PoW
- SIGHASH\_FORK\_ID replay protection: The way to sign a transaction is changed because of the replay protection. (Will be changed to full BIP143 style SIGHASH for the next testnet reset for enhance hardware wallets experience.)
- Sign message magic: changed to “Bitcoin Gold Sign Message:\n”
- Compact block feature has been disabled temporarily.
- We didn’t introduce the unique address format for testnet.

## Technical details

Bitcoin Gold testnet v1 is based on Bitcoin testnet3. The fork height of BTG testnet is 1210320, which means it forks from the Bitcoin testnet blockchain after block #1210319. There are the consensus parameters used in BTG testnet:

<i>Fork height</i>	1210320
<i>Mined window</i>	200 blocks
<i>Network magic</i>	[E0 47 6D 44]
<i>Address version</i>	P2PKH: 111, P2SH: 196 (Same as Bitcoin testnet)
<i>SIGHASH Fork ID</i>	79

Full technical specifications of Bitcoin Gold can be found [here](#).



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## Scheduled testnet reset

A testnet reset is scheduled for Bitcoin Gold testnet v1 in the next a few days. The testnet blockchain will stop after reaching the scheduled reset time. Instead, we will launch a new testnet (Bitcoin Gold testnet v2) at that time.

A difficulty bomb is introduced for the hard deadline (Nov 8 12:00 UTC), though the testnet reset should happen before it.

Participants should stay tuned as we will announce it on our website and newsletter at a later time.

*Bitcoin Gold team*