



Masternode Guide #1

Single masternode on Linux VPS
(Ubuntu) + control wallet on local PC
(Windows)

Prerequisites:

- a - A remote server (Virtual Private Server, VPS) which will be our masternode wallet.
- b - A local computer running under Windows 7, 8.1 or 10 which will be our control wallet.
- c - PuTTY, which will be used to setup the server (install the dependencies, the wallet itself, and configure everything) after the initial configuration.
- d - 1001 GBX as collateral (1000 GBX + 1 GBX to cover the transaction fees)

Plan of action:

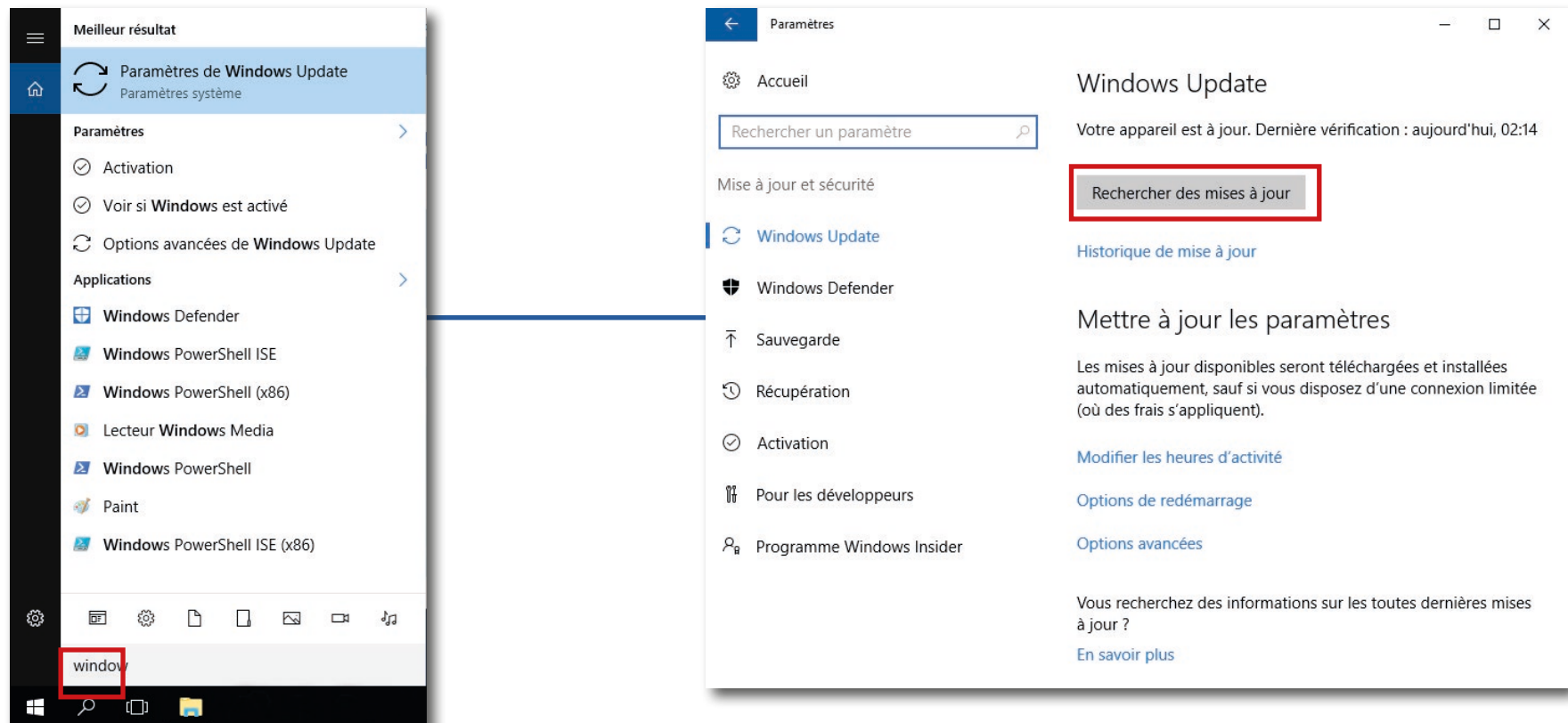
- 1 - Update Windows 10.
- 2 - Buy VPS service and setup Ubuntu on it. You'll need to have one CPU and at least 1GB of RAM on it to be able to compile and run the wallet.
- 3 - Download PuTTY here <http://www.putty.org/>, install it, run it and connect to your server.
- 4 - Login as root, update Ubuntu and install all the dependencies.
- 5 - Compile and install the wallet from sources.
- 6 - Download GoByte Windows Wallet from <http://gobyte.network/> and set up the installation.
- 7 - Setup our masternode and our control wallet :)

* Notes: This guide was written on testnet, a few links on the following screenshots are related to the testnet. The correct links and commands are always in text.

#1

For the purpose of this guide I have used Windows 10. Everything was installed and configured on Windows 10. Other different versions of Windows might require some adjustments which won't be covered in this guide.

First of all, we need to update our Windows installation to make sure we are running a secured system. Install all the available updates.



#2

For the purpose of this guide I have used a VPS provider HETZNER (<https://www.hetzner.com/>)

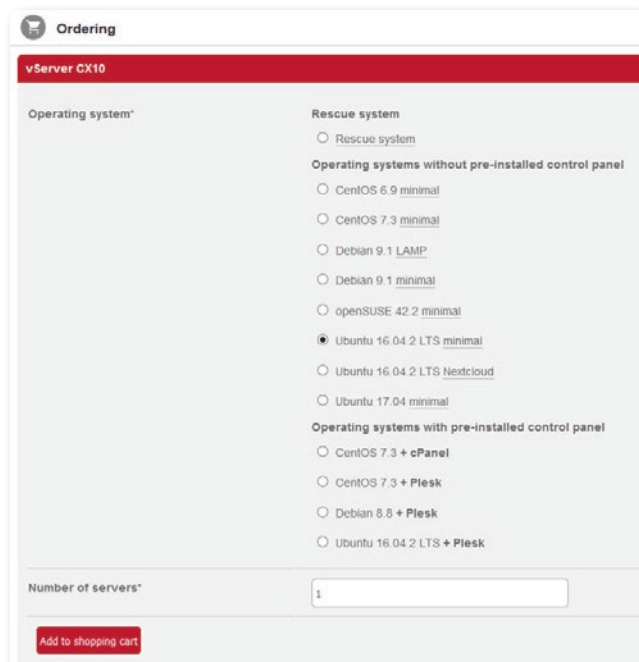
Linux distro under which the wallet was compiled and run is Ubuntu 16.04.

Other different versions of Linux might require some other commands or syntax which won't be covered in this guide.

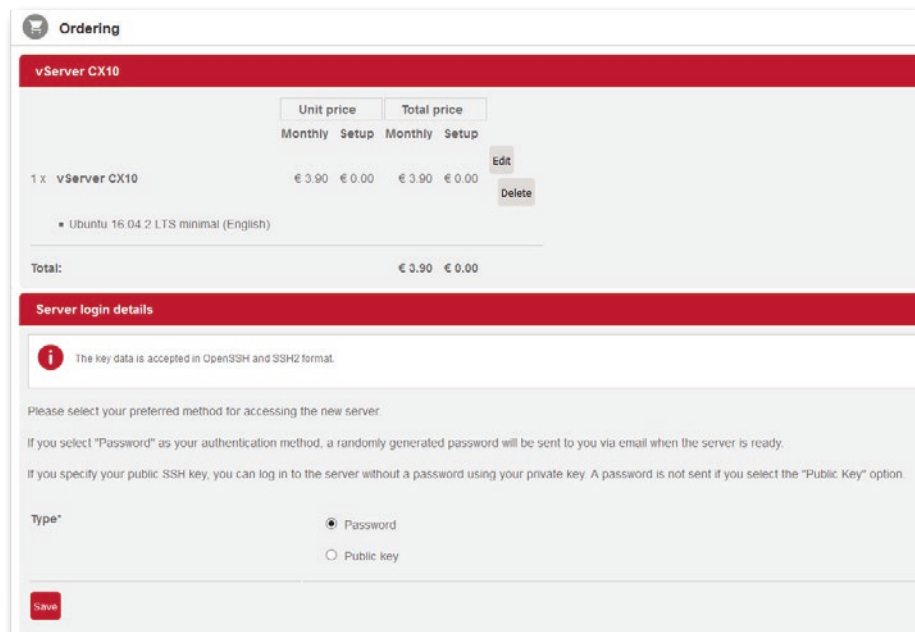
Important: The server configuration is bare minimum 1 CPU and 1 GB of RAM.

This is enough to run the wallet but might not be enough to compile it.

To compile the wallet you need 2GB of ram or if you have a 1GB RAM server you need to create a Swap file of 1GB. Detailed instructions on how to do it are provided further on.



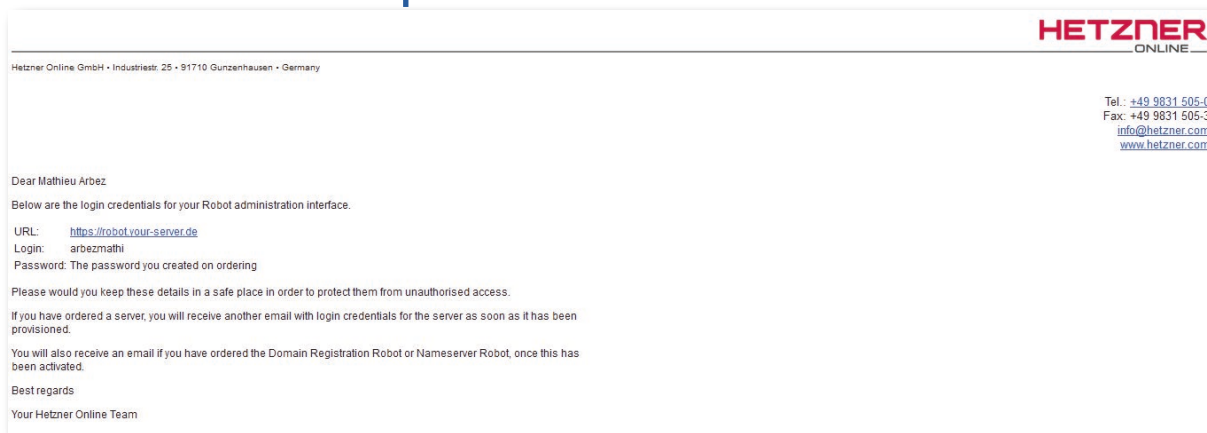
The screenshot shows the 'Ordering' page for a 'vServer CX10'. Under the 'Operating system*' section, 'Ubuntu 16.04.2 LTS minimal' is selected. Other options include 'Rescue system', 'CentOS 6.9 minimal', 'CentOS 7.3 minimal', 'Debian 9.1 LAMP', 'Debian 9.1 minimal', 'openSUSE 42.2 minimal', 'Ubuntu 16.04.2 LTS Nextcloud', 'Ubuntu 17.04 minimal', 'CentOS 7.3 + cPanel', 'CentOS 7.3 + Plesk', 'Debian 8.8 + Plesk', and 'Ubuntu 16.04.2 LTS + Plesk'. At the bottom, 'Number of servers*' is set to 1, and there is an 'Add to shopping cart' button.



The screenshot shows the 'Server login details' section. It includes a table with 'Unit price' and 'Total price' for '1 x vServer CX10' at € 3.90 monthly. Below the table, 'Ubuntu 16.04.2 LTS minimal (English)' is listed. The 'Server login details' section has an information icon and text: 'The key data is accepted in OpenSSH and SSH2 format.' It asks to select a preferred method for accessing the new server. The 'Type*' section has 'Password' selected (radio button) and 'Public key' as an option. A 'Save' button is at the bottom.

Choose the password option here

As soon as your order will be processed, Hetzner will send you an email with your login information along with the static IP of your server.



The image shows a 'Robot login' form. It has two input fields: 'User*' with the value 'arbezmathi' and 'Password*' with a masked password represented by dots. Below the fields is a red 'Login' button.

Robot login

User*

Password*

Login

#3

Download PuTTY here <http://www.putty.org/>, install it then run it. Fill the *Host Name* field with your server's IP. Click on the *open* button to connect and access to the terminal. Use the default port (22). You don't need to change any option. An error message may appears, ignore it.

Login Details

The Linux installation for your server CX10 #732477 (94.130.107.201) is complete. You can now access the server via SSH2 using the following details:

IPv4 Address: 94.130.107.201

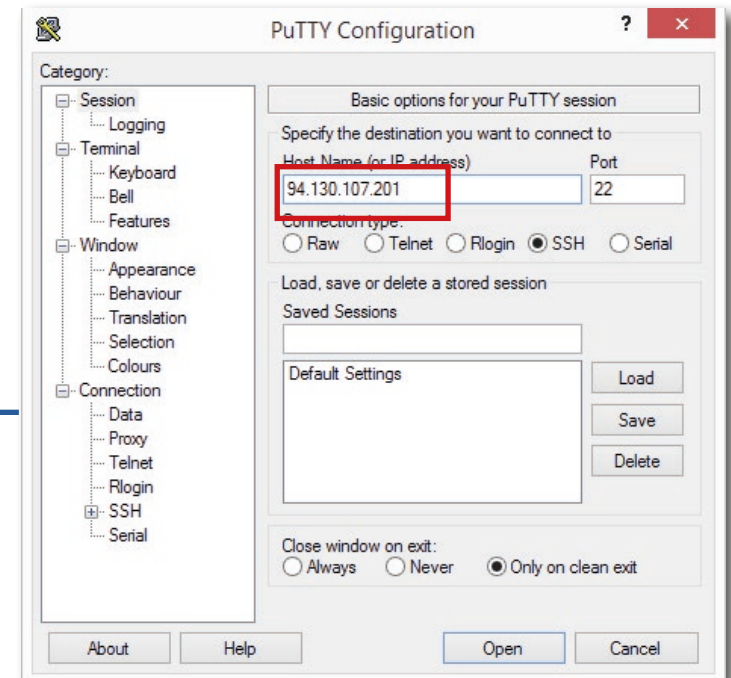
IPv6 Address: 2a01:4f8:c0c:3555::2

Username: root

Password: [REDACTED]

Host key:
3a:e8:2d:eb:a8:bb:a9:ae:f7:f5:8c:b2:38:e2:cf:4d (RSA 2048)
a9:13:5e:ea:6a:5c:d0:b5:d8:54:77:44:f6:74:58:8f (DSA 1024)
58:5a:b2:ae:df:76:ef:96:94:83:2d:21:43:1b:98:ab (ECDSA 256)
e9:e1:33:dd:cb:ec:4c:46:fd:b8:b1:74:76:0f:7f:af (ED25519 256)

For your own security, we advise you to change your login credentials as soon as possible. Please keep your details in a safe place in order to protect them from unauthorised access.



#4

Use login details from your VPS provider to access the server, update Ubuntu then install all necessary libraries to either be able to compile the wallet or run it.

Important: in Linux to copy a text we use buttons Ctrl+Insert and to paste Shift+Insert- [Ctrl+C/V won't work] please use these buttons from now on. Paste into the terminal window following commands and hit Enter to confirm. Commands are in blue font - copy and paste only these into your terminal window.

```
sudo apt-get update & sudo apt-get upgrade
sudo apt-get install build-essential libtool autotools-dev autoconf pkg-config libssl-dev
sudo apt-get install software-properties-common
sudo add-apt-repository ppa:bitcoin/bitcoin
sudo apt-get update
sudo apt-get install libdb4.8-dev libdb4.8++-dev
sudo apt-get install libminiupnpc-dev
sudo apt-get install libevent-dev
```

Login Details

The Linux installation for your server CX10 #732477 (94.130.107.201) is complete. You can now access the server via SSH2 using the following details:

IPv4 Address: 94.130.107.201

IPv6 Address: 2a01:4f8:c0c:3555::2

Username: root

Password: [REDACTED]

Host key:
3a:e8:2d:eb:a8:bb:a9:ae:f7:f5:8c:b2:38:e2:cf:4d (RSA 2048)
a9:13:5e:ea:6a:5c:d0:b5:d8:54:77:44:f6:74:58:8f (DSA 1024)
58:5a:b2:ae:df:76:ef:96:94:83:2d:21:43:1b:98:ab (ECDSA 256)
e9:e1:33:dd:cb:ec:4c:46:fd:b8:b1:74:76:0f:7f:af (ED25519 256)

For your own security, we advise you to change your login credentials as soon as possible. Please keep your details in a safe place in order to protect them from unauthorised access.

```
root@Ubuntu-1604-xenial-64-minimal: ~
login as: root
root@94.130.107.201's password:
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.8.0-58-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage
root@Ubuntu-1604-xenial-64-minimal ~ #
```

```
root@Ubuntu-1604-xenial-64-minimal: ~
login as: root
root@94.130.107.201's password:
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.8.0-58-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage
root@Ubuntu-1604-xenial-64-minimal ~ # apt-get update
Get:1 http://mirror.hetzner.de/ubuntu/packages xenial InRelease [247 kB]
Get:2 http://de.archive.ubuntu.com/ubuntu xenial InRelease [247 kB]
Get:3 http://security.ubuntu.com/ubuntu xenial-security InRelease [102 kB]
Get:4 http://mirror.hetzner.de/ubuntu/packages xenial-backports InRelease [102 kB]
Get:5 http://mirror.hetzner.de/ubuntu/packages xenial-updates InRelease [102 kB]
Get:6 http://mirror.hetzner.de/ubuntu/security xenial-security InRelease [102 kB]
Get:7 http://de.archive.ubuntu.com/ubuntu xenial-updates InRelease [102 kB]
Get:8 http://de.archive.ubuntu.com/ubuntu xenial-backports InRelease [102 kB]
Ign:9 http://mirror.hetzner.de/ubuntu/packages xenial/main amd64 Packages
Ign:10 http://mirror.hetzner.de/ubuntu/packages xenial/main i386 Packages
Ign:11 http://mirror.hetzner.de/ubuntu/packages xenial/main Translation-en
Ign:12 http://mirror.hetzner.de/ubuntu/packages xenial/restricted amd64 Packages
Ign:13 http://mirror.hetzner.de/ubuntu/packages xenial/restricted i386 Packages
Ign:14 http://mirror.hetzner.de/ubuntu/packages xenial/restricted Translation-en
```

These are necessary libraries to either be able to compile the wallet or run it [if you use a precompiled one]

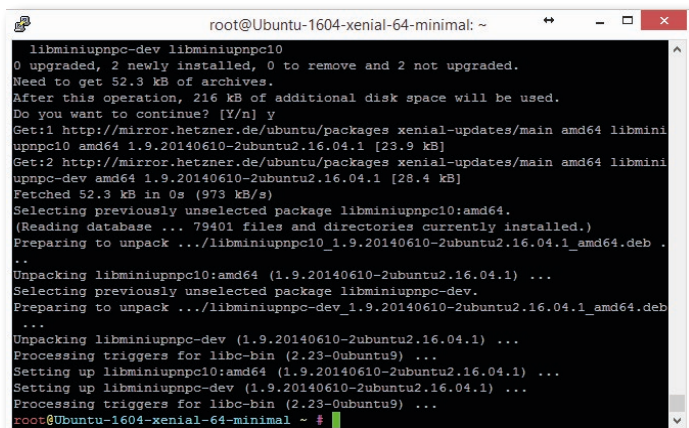
#5

Once we have all dependencies we can download and compile the wallet:

```
sudo apt-get install git
git clone https://github.com/gobytecoin/gobyte
cd gobyte
sudo apt-get install automake
./autogen.sh
./configure
make (this can take awhile and some warning messages will be
shown it's perfectly normal)
```

After compilation:

```
cd src
strip gobyte-tx
strip gobyte-cli
strip gobyted
mv gobyted gobyte-cli gobyte-tx ~/
cd ~/
rm-r gobyte
```



```
root@Ubuntu-1604-xenial-64-minimal: ~
libminiupnpc-dev libminiupnpc10
0 upgraded, 2 newly installed, 0 to remove and 2 not upgraded.
Need to get 52.3 kB of archives.
After this operation, 216 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://mirror.hetzner.de/ubuntu/packages/xenial-updates/main amd64 libminiupnpc10 amd64 1.9.20140610-2ubuntu2.16.04.1 [23.9 kB]
Get:2 http://mirror.hetzner.de/ubuntu/packages/xenial-updates/main amd64 libminiupnpc-dev amd64 1.9.20140610-2ubuntu2.16.04.1 [28.4 kB]
Fetched 52.3 kB in 0s (973 kB/s)
Selecting previously unselected package libminiupnpc10:amd64.
(Reading database ... 79401 files and directories currently installed.)
Preparing to unpack .../libminiupnpc10_1.9.20140610-2ubuntu2.16.04.1_amd64.deb ...
Unpacking libminiupnpc10:amd64 (1.9.20140610-2ubuntu2.16.04.1) ...
Selecting previously unselected package libminiupnpc-dev.
Preparing to unpack .../libminiupnpc-dev_1.9.20140610-2ubuntu2.16.04.1_amd64.deb ...
Unpacking libminiupnpc-dev (1.9.20140610-2ubuntu2.16.04.1) ...
Processing triggers for libc-bin (2.23-0ubuntu9) ...
Setting up libminiupnpc10:amd64 (1.9.20140610-2ubuntu2.16.04.1) ...
Setting up libminiupnpc-dev (1.9.20140610-2ubuntu2.16.04.1) ...
Processing triggers for libc-bin (2.23-0ubuntu9) ...
root@Ubuntu-1604-xenial-64-minimal ~ #
```

If you don't have more than 1GB of RAM on your VPS, please follow these instructions to enable a SWAP file for being compile

Create a Swap file:

When entering these commands you will get no feedback, just enter them one by one, the changes happen.

```
sudo fallocate-l 2G /swapfile  
sudo chmod 600 /swapfile  
sudo mkswap /swapfile  
sudo swapon /swapfile
```

Making Swap file permanent (optional):

We have our swap file enabled, but when we reboot, the server will not automatically enable the file. We can change that by modifying the fstab file.

```
sudo nano /etc/fstab
```

At the bottom of the file, you need to add a line that will tell the operating system to automatically use the file you created:

```
/swapfile none swap sw 0 0
```

Save and exit the text editor.

To exit NANO text editor press Ctrl+X and confirm changes.

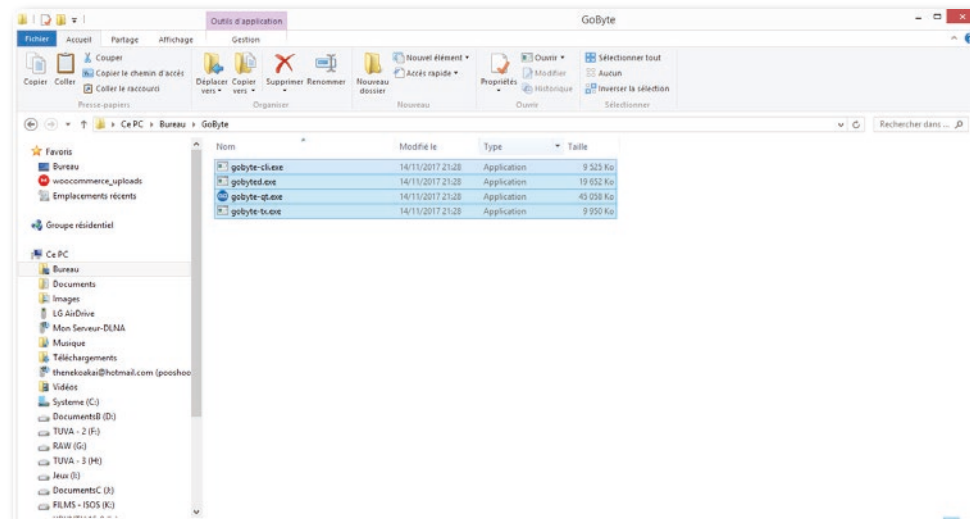
(Optional) You might need to reboot the system if ./autogen.sh command fails to run. Type: reboot and your session will terminate. Reconnect and continue with the guide.

#6

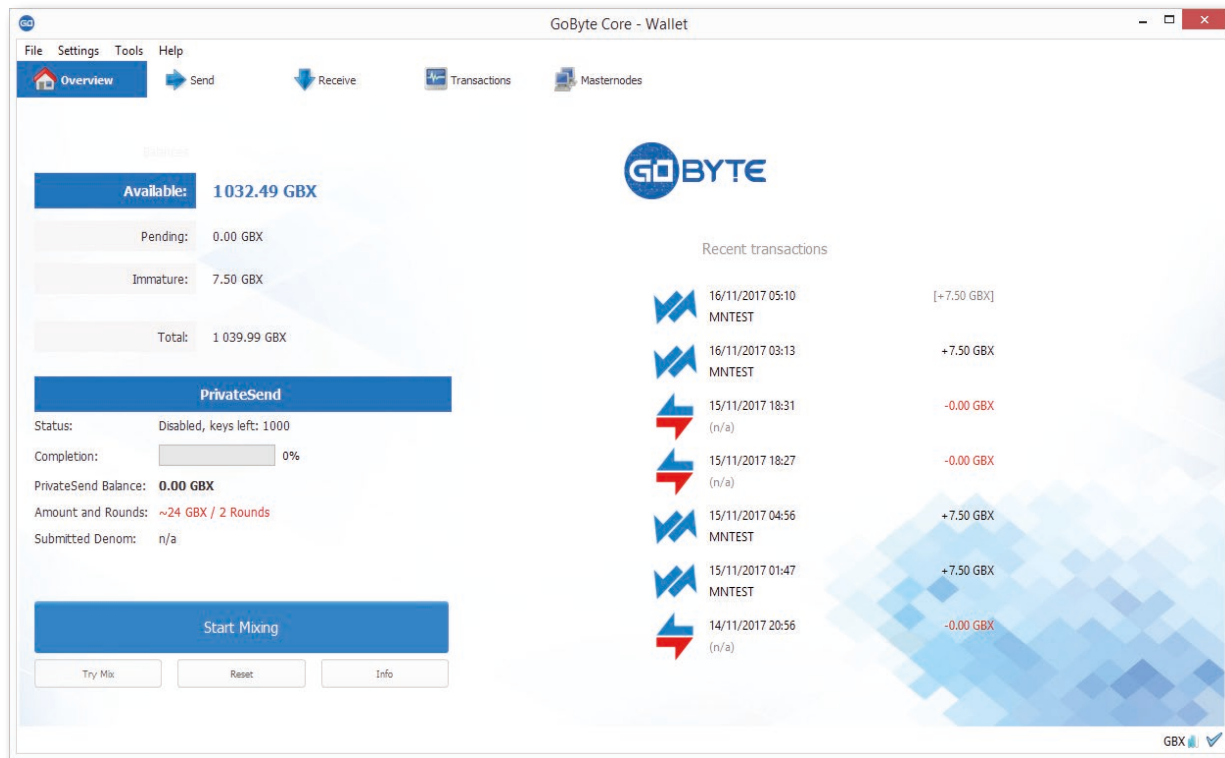
Download GoByte Windows wallet from <http://gobyte.network/>

Create a folder on your windows desktop. Name it GoByte.

Copy gobyted-qt.exe, gobyte-cli.exe, gobyted.exe and gobyte-tx.exe in
`C:\Users\your_username\Desktop\GoByte`



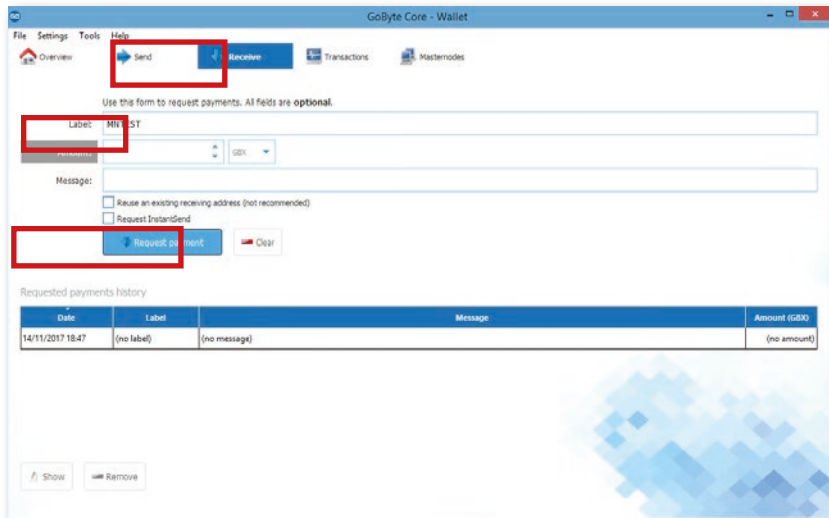
Run the control wallet. Use **gobyte-qt**.
It'll ask for a data directory, use the default settings.
Allow connections through windows firewall when prompted.



This wallet will be our control wallet.

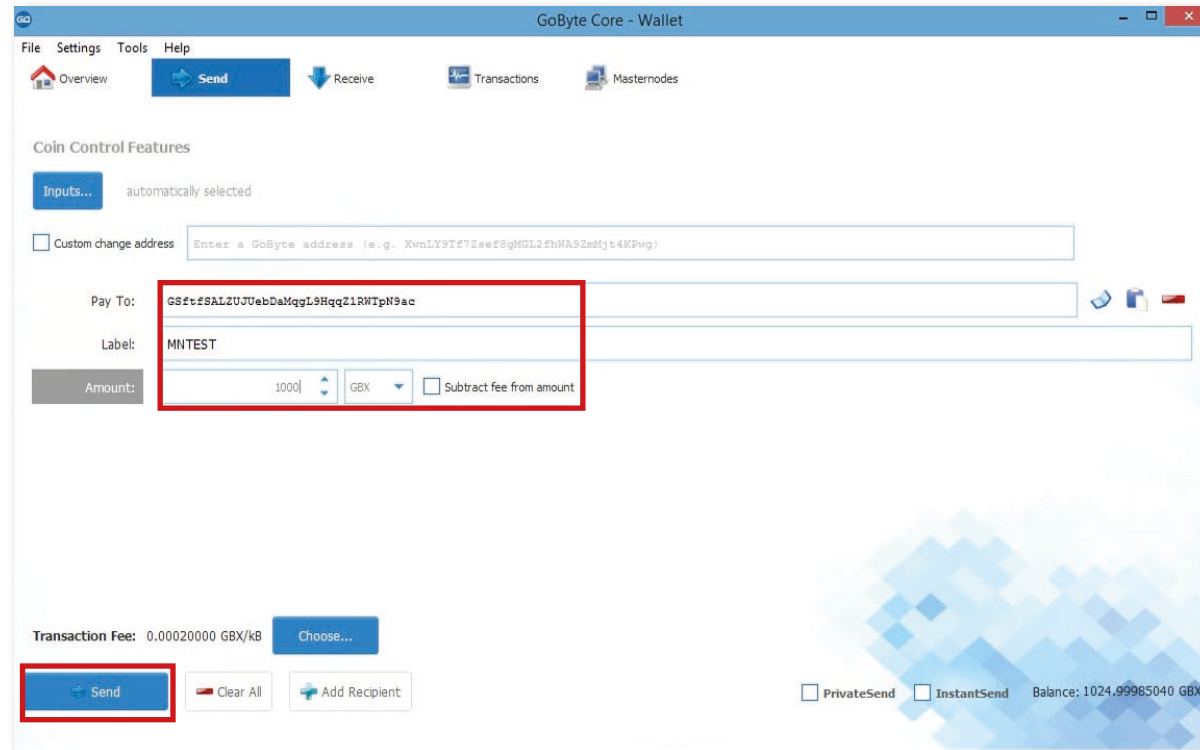
#7

Now we will use the coins we have to fill the control wallet and generate the genkey we need. Go to the receive tab, enter MN1 as label and click on request payment. Copy the address.



Go to the send tab, the address you copied, MN1 as label and 1000 GBX.

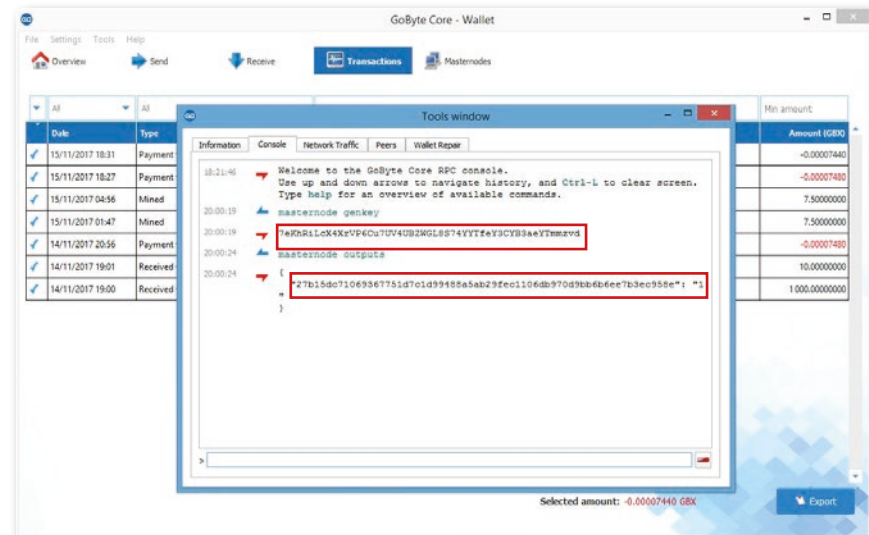
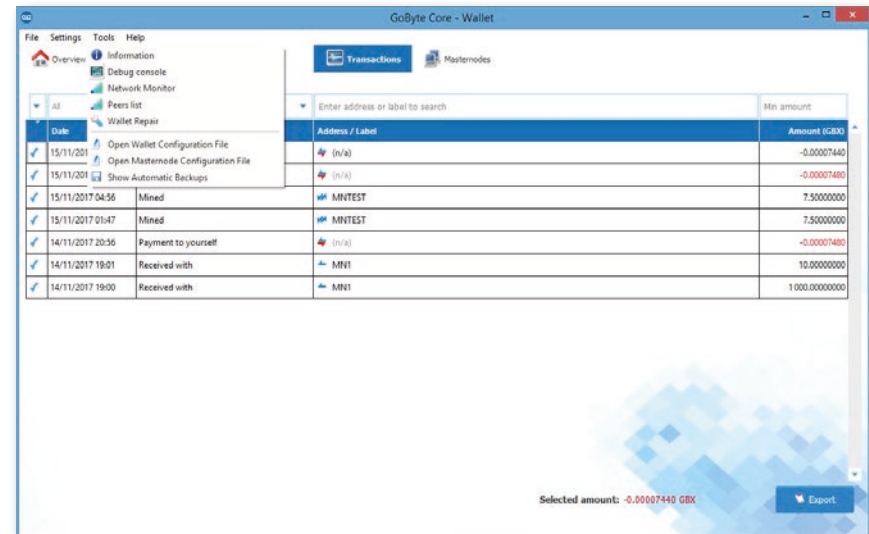
Click Send.



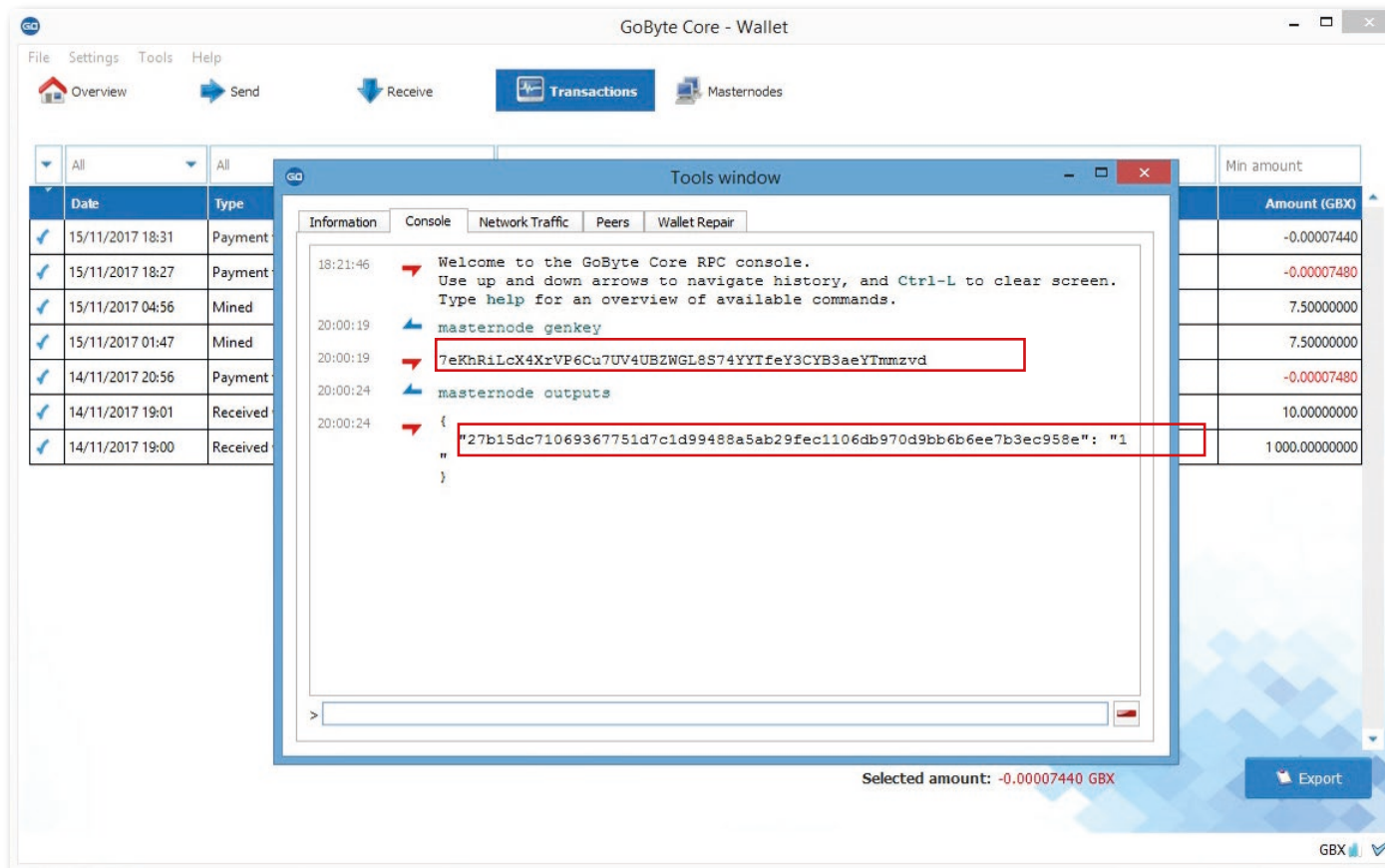
Open notepad and save a temporary .txt file we are going to use for storing the data we will need to configure our masternode. Name it tempMN1.txt

Go to the debug console and execute the commands:
 masternode genkey
 masternode outputs

Copy the private key and outputs in tempMN1.txt



Important! Don't copy paste everything and format your data into tempMN1.txt file like this:
 <IP:PORT> <masternode genkey> <masternode output>

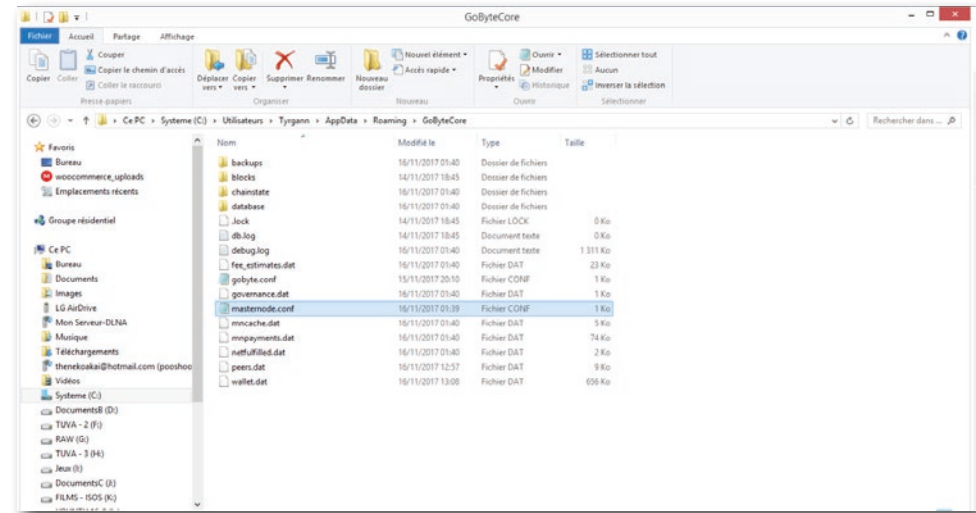


In this example, your tempMN1.txt file should look like this:

```

# Masternode config file
# Format: alias IP:port masternodeprivkey collateral_output_txid collateral_output_index
# Example: mn1 127.0.0.2:19999 93HaYBVUCYjEMeeH1Y4sBGLALQZE1Yc1K64xiqgX37tGBDQL8Xg 2bcd3c84c84f87eaa86e4e56834c92927a07f9e18718810b92e0d0324456a67c 0
MNTEST 82.223.18.239:12455 7eKhRiLcX4XrVP6Cu7UV4UBZWGL8S74YYTfeY3CYB3aeYTmmzvd 27b15dc71069367751d7c1d99488a5ab29fec1106db970d9bb6b6ee7b3ec958e 1
  
```

Go to
`C:\Users\your_username\AppData\Roaming\GoByteCore` and open `masternode.conf`. This file is telling our control wallet how to communicate with our masternode. Copy the content of `tempMN1.txt` into this configuration file. Then save it and close it.



```
masternode.conf - Bloc-notes
Fichier Edition Format Affichage ?
# Masternode config file
# Format: alias IP:port masternodeprivkey collateral_output_txid collateral_output_index
# Example: mn1 127.0.0.2:19999 93HaYBVUCYjEMeeH1Y4sBGLALQZE1Yc1K64xiqgX37tGBDQL8Xg 2bcd3c84c84f87ea86e4e56834c92927a07f9e18718810b92e0d0324456a67c 0
MNTEST 82.223.18.239:12455 7eKhRiLcX4XrVP6Cu7UV4UBZWGL8S74YYTfey3CYB3aeYTMmzvd 27b15dc71069367751d7c1d99488a5ab29fec1106db970d9bb6b6ee7b3ec958e 1
```

Add MN1 before `<VPS_IP_ADDRESS>:12455 <masternode genkey> <masternode output>`
Save and close `masternode.conf`. Close the wallet.

Now we have all the data needed from our control wallet, we need to configure our masternode.

First, we will create a hidden .gobytecore folder and a gobyte.conf file on our VPS. We will need the private key we copied earlier in tempMN1.txt and masternode.conf:

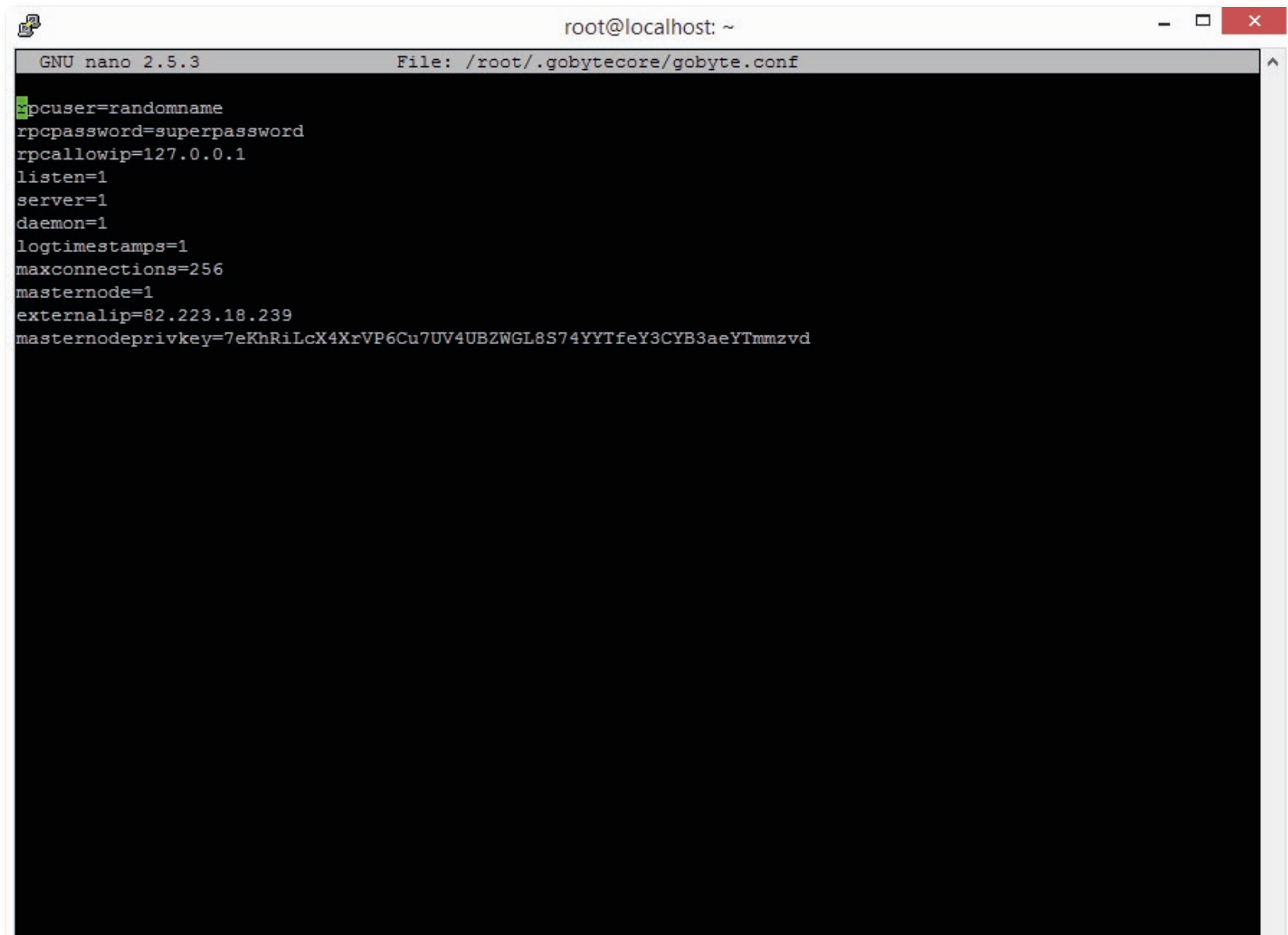
```
cd/root  
mkdir ../root/.gobytecore  
nano /root/.gobytecore/gobyte.conf
```

Simply copy and paste these, changing the appropriate fields then exit nano:

```
rpcuser=YOUR_LONG_AND_RANDOM_USERNAME  
rpcpassword=YOUR_VERY_LONG_AND_RANDOM_PASSWORD  
rpcallowip=127.0.0.1  
listen=1  
server=1  
daemon=1  
logtimestamps=1  
maxconnections=256  
masternode=1  
externalip=YOUR_UNIQUE_VPS_IP_ADDRESS  
masternodeprivkey=YOUR_UNIQUE_PRIVATE_KEY (genkey)
```

Exemple:

```
rpcuser=randomname  
rpcpassword=superpassword  
rpcallowip=127.0.0.1  
listen=1  
server=1  
daemon=1  
logtimestamps=1  
maxconnections=256  
masternode=1  
externalip=82.223.18.239  
masternodeprivkey=8KqvTqddyt3Mn6Nfysstx ...
```



The image shows a terminal window with the title bar "root@localhost: ~". Inside the terminal, the GNU nano 2.5.3 editor is open, editing the file "/root/.gobytecore/gobyte.conf". The configuration file contains the following text:

```
rpcuser=randomname  
rpcpassword=superpassword  
rpcallowip=127.0.0.1  
listen=1  
server=1  
daemon=1  
logtimestamps=1  
maxconnections=256  
masternode=1  
externalip=82.223.18.239  
masternodeprivkey=7eKhRiLcX4XrVP6Cu7UV4UBZWGL8S74YYTfeY3CYB3aeYTmmzvd
```

Your configuration file must look like this.

To add more nodes, just edit the gobyte.conf file.

Now we will create our control wallet gobyte.conf for allowing it to talk with our masternode. Go to

[%appdata%/roaming/GoByteCore](#)

and create a gobyte.conf file. Edit it like this with notepad:

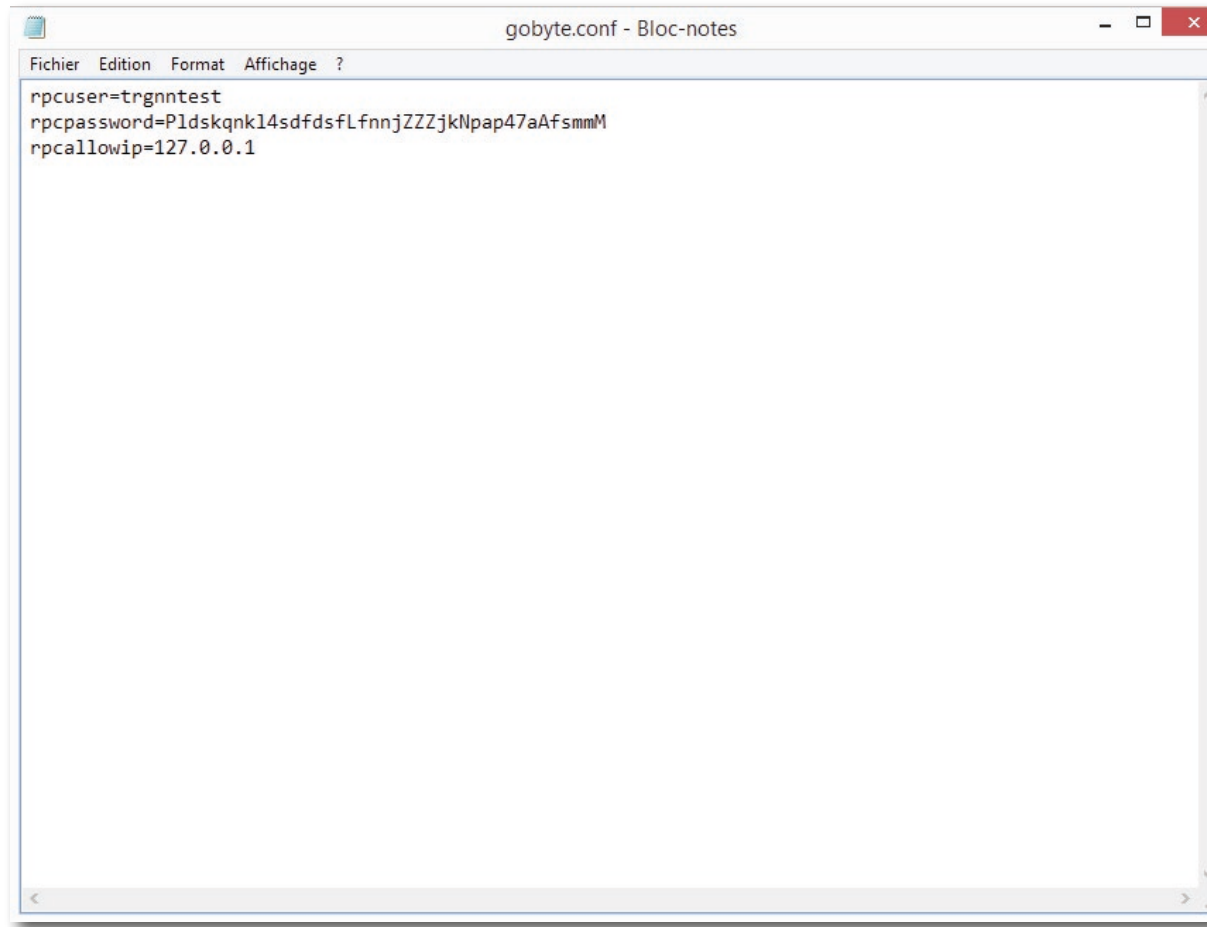
```
rpcuser=YOUR_LONG_AND_RANDOM_USERNAME  
rpcpassword=YOUR_VERY_LONG_AND_RANDOM_PASSWORD  
rpallowip=127.0.0.1
```

Exemple:

```
rpcuser=trgnntest
```

```
rpcpassword=Pldskqnkl4sdfdsfLfnnjZZZjkNpap47aAfsmmM
```

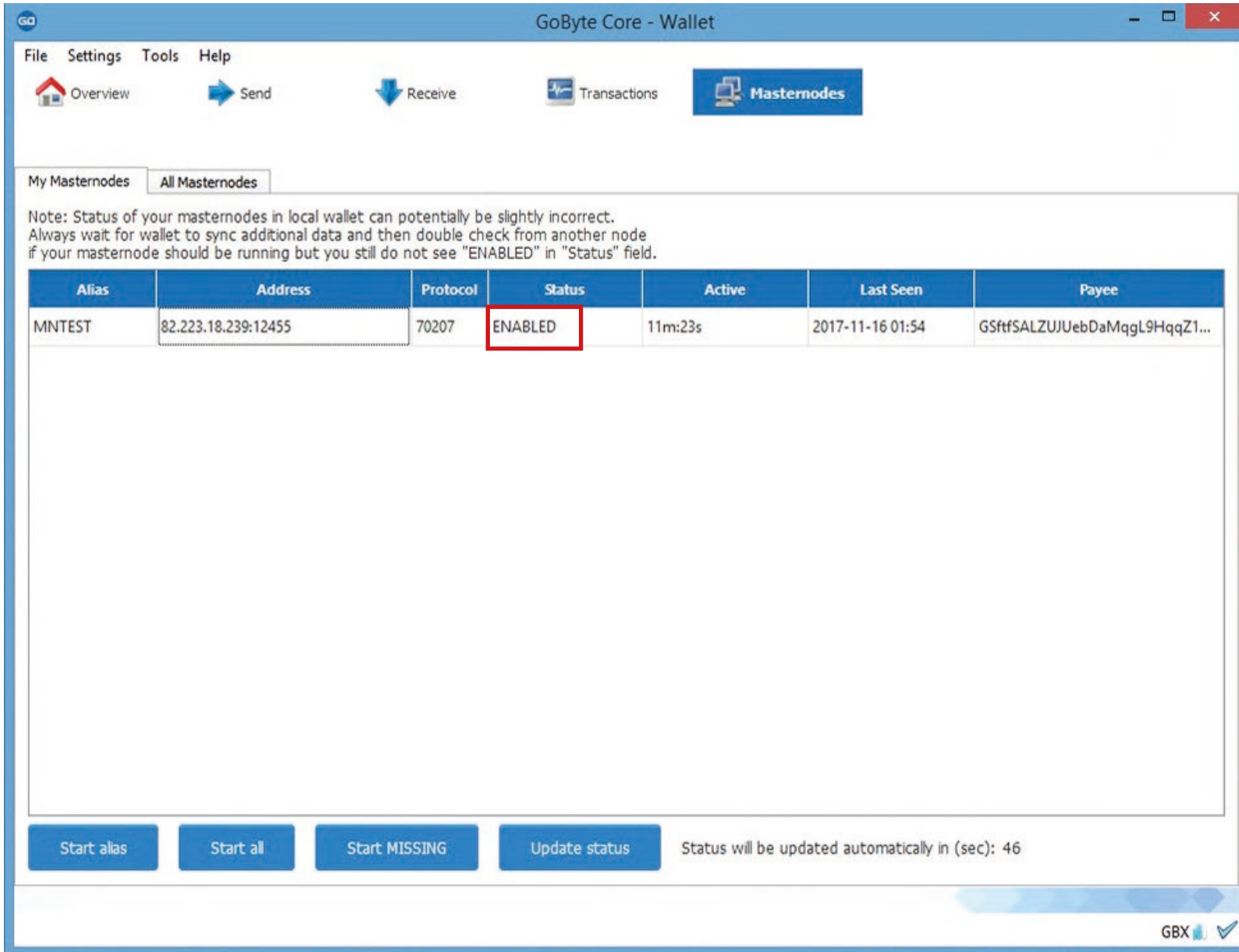
```
rpallowip=127.0.0.1
```



Your configuration file must look like this.

To add more nodes, just edit the gobyte.conf file.

Close our control wallet then reopen it. Go to the masternode tab and click Start all to start our masternode :)



The screenshot shows the 'GoByte Core - Wallet' application window. The 'Masternodes' tab is selected, displaying a table of masternodes. The table has columns: Alias, Address, Protocol, Status, Active, Last Seen, and Payee. One masternode is listed with the alias 'MNTEST', address '82.223.18.239:12455', protocol '70207', and status 'ENABLED'. The 'Status' cell is highlighted with a red border. Below the table, there are buttons for 'Start alias', 'Start all', 'Start MISSING', and 'Update status'. A status message indicates the next update in 46 seconds. The bottom right corner shows the 'GBX' logo and a checkmark.

GoByte Core - Wallet

File Settings Tools Help

Overview Send Receive Transactions Masternodes

My Masternodes All Masternodes

Note: Status of your masternodes in local wallet can potentially be slightly incorrect. Always wait for wallet to sync additional data and then double check from another node if your masternode should be running but you still do not see "ENABLED" in "Status" field.

Alias	Address	Protocol	Status	Active	Last Seen	Payee
MNTEST	82.223.18.239:12455	70207	ENABLED	11m:23s	2017-11-16 01:54	GSftfSALZUJUbDaMqgL9HqqZ1...

Start alias Start all Start MISSING Update status

Status will be updated automatically in (sec): 46

GBX

To get your default unlabelled wallet address just execute `./gobyte-cli getaccountaddress «»`
To get a labelled wallet address just execute `./gobyte-cli getaccountaddress <label>`
To see the list of addresses and their balances just execute `./gobyte-cli listaccounts`
To send GBX to another wallet just execute `./gobyte-cli sendtoaddress <address> <amount of GBX>`
To stop the wallet just execute `./gobyte-cli stop`

Notes: If your masternode isn't reachable, you might need to open your 12455 port on your VPS.
Execute the following commands:

```
iptables-t nat-I OUTPUT-d <your_vps_ip>-p tcp--dport 12455-j REDIRECT--to-ports 12455  
cd..  
/etc/init.d/iptables restart
```

and/or start your masternode through the terminal on your VPS with:
`masternode start-alias <alias name>`

Enjoy your GBX :)