DIAMOND 3.0 ONION MASTERNODE + ONION CONTROL WALLET ON WINDOWS

Single masternode on Linux VPS + POS control wallet on home PC (Windows) with onion hidden service

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 - 10’001 DMD as collateral (10’000 DMD + 1 DMD 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 - Install and configure Tor on our local computer (Windows).
7 - Install and configure Tor on our VPS (Linux).

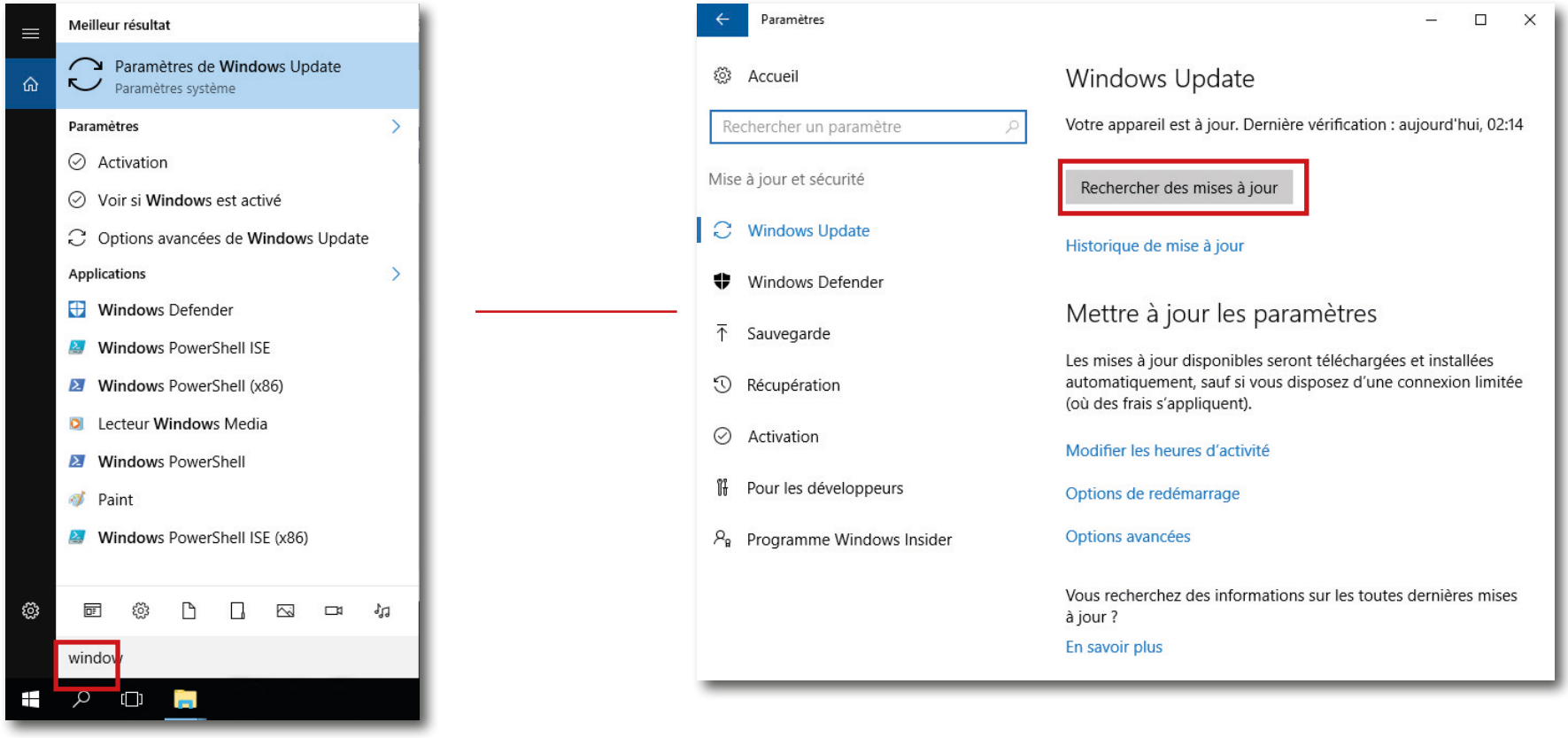
8 - Download DMDv3 Windows wallet from http://bit.diamonds/ and set up the installation.
9 - Setup our masternode and our control wallet :)

* Notes: This guide was writen 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 securized system. Install all the available updates.

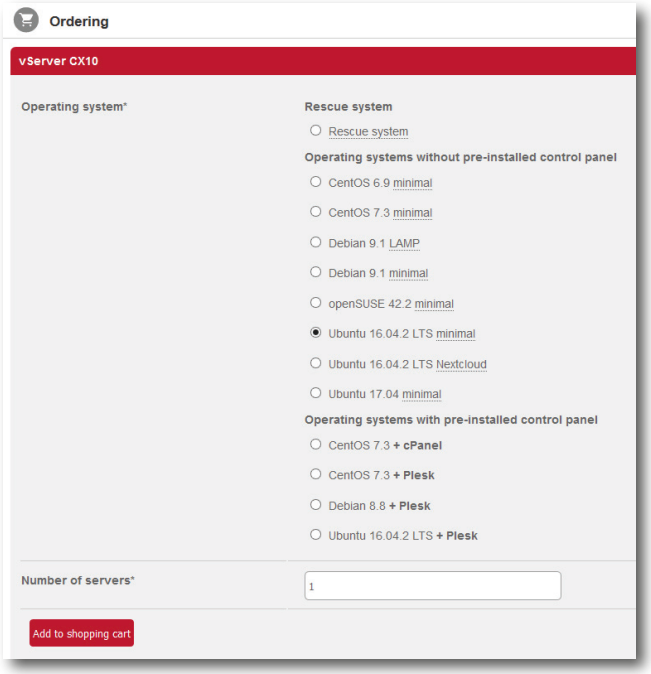


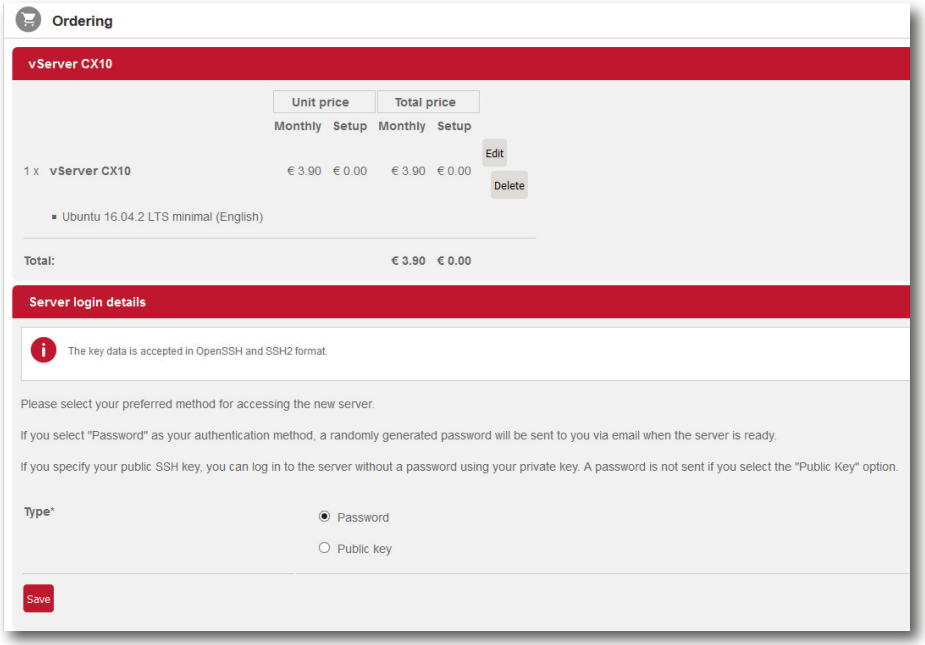
2

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.

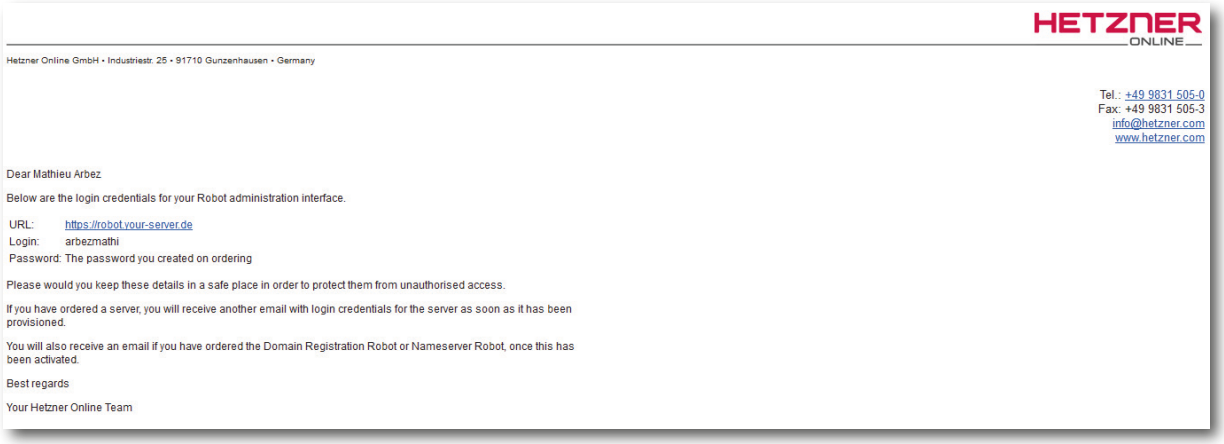
Important: The server configuration is bare minimum 1 CPU and 1 GB of RAM.
This is enough to run the wallet but might not be enough to compile it.
To compile the wallet you need 2GB of ram or if you have a 1GB RAM server you need to create a Swap file of 1GB.
Detailed instructions on how to do it are provided further on.





Choose the password option here

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



HETZNER ONLINE

Hetzner Online GmbH • Industriestr. 25 • 91710 Gunzenhausen • Germany

Tel.: +49 9831 505-0
Fax: +49 9831 505-3
info@hetzner.com
www.hetzner.com

Dear Mathieu Arbez

Below are the login credentials for your Robot administration interface.

URL: https://robot.your-server.de
Login: arbezmathi
Password: The password you created on ordering

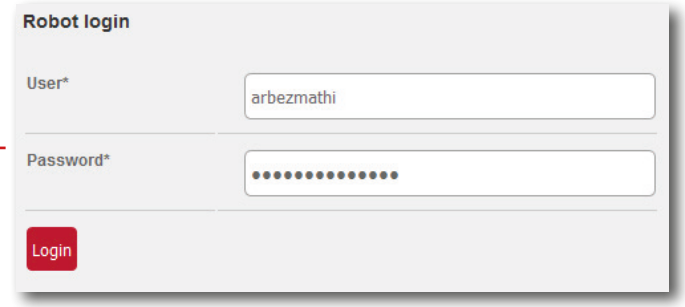
Please would you keep these details in a safe place in order to protect them from unauthorised access.

If you have ordered a server, you will receive another email with login credentials for the server as soon as it has been provisioned.

You will also receive an email if you have ordered the Domain Registration Robot or Nameserver Robot, once this has been activated.

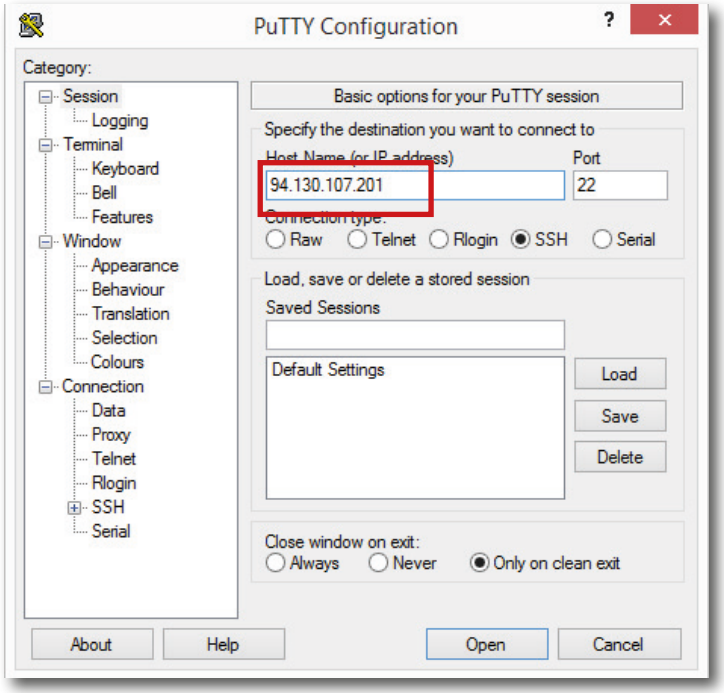
Best regards

Your Hetzner Online Team

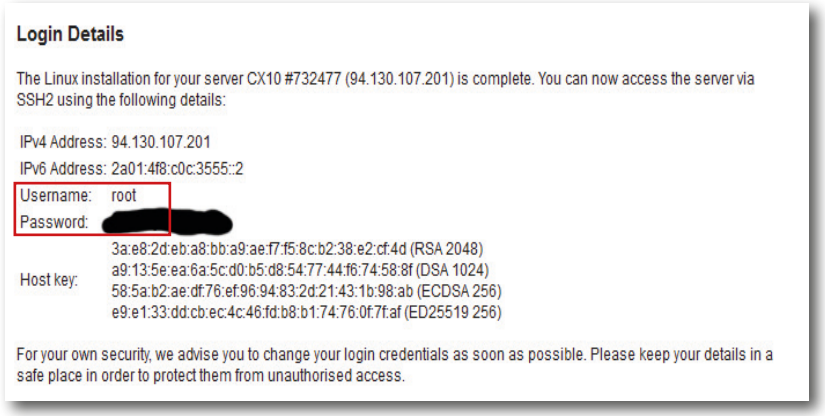


3

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.



4



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]

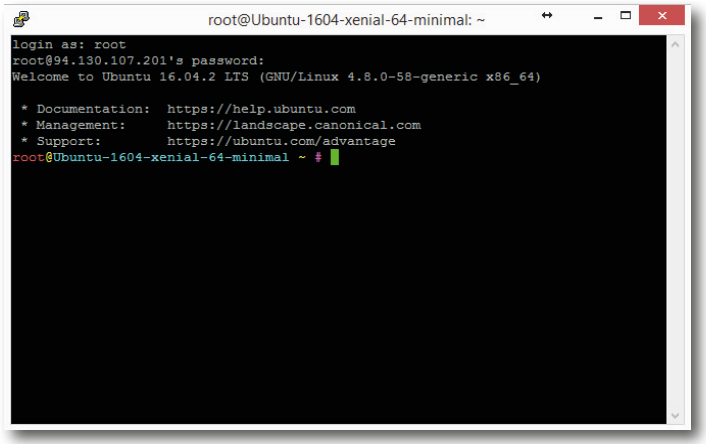
Host key:
3a:e8:2d:eb:a8:bb:a9:ae:f7:f5:8c:b2:38:e2:cf:4d (RSA 2048)
a9:13:5e:ea:6a:5c:d0:b5:d8:54:77:44:f6:74:58:8f (DSA 1024)
58:5a:b2:ae:df:76:ef:96:94:83:2d:21:43:1b:98:ab (ECDSA 256)
e9:e1:33:dd:cb:ec:4c:46:fd:b8:b1:74:76:0f:7f:af (ED25519 256)

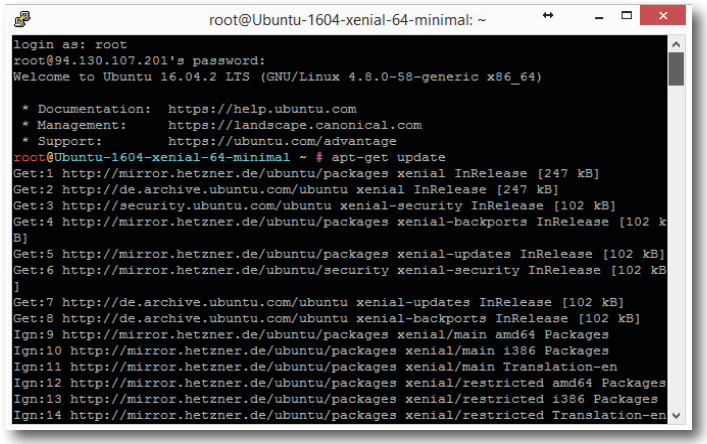
For your own security, we advise you to change your login credentials as soon as possible. Please keep your details in a safe place in order to protect them from unauthorised access.

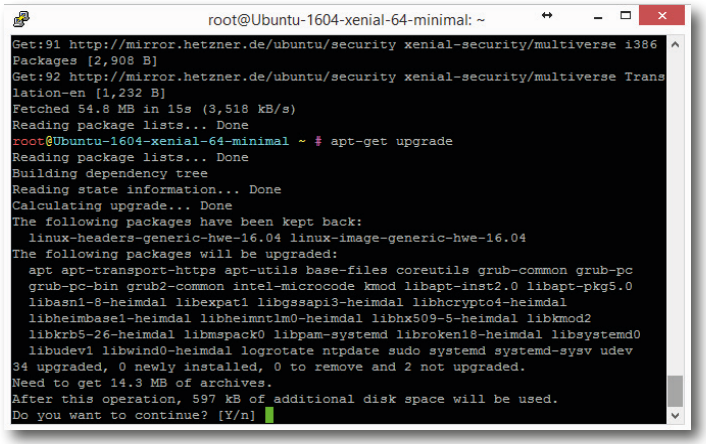
Use login details from your VPS provider to access the server, update Ubuntu then install all necessary libraries to either be able to compile the wallet or run it.

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 libboost-all-dev
sudo apt-get install libminiupnpc-dev
```

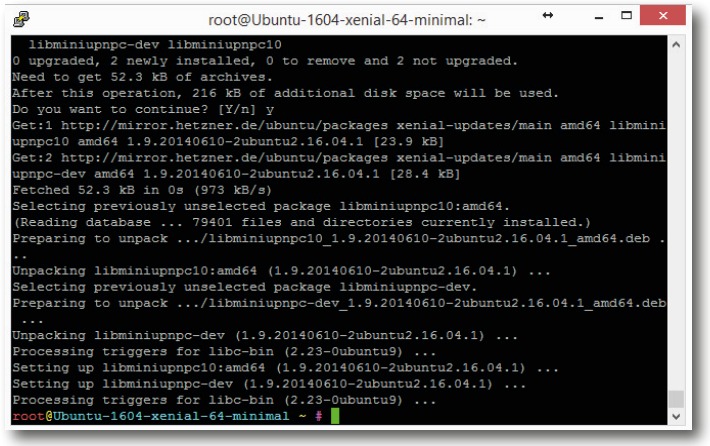






These are necessary libraries to either be able to compile the wallet or run it [if you use a precompiled one]

5

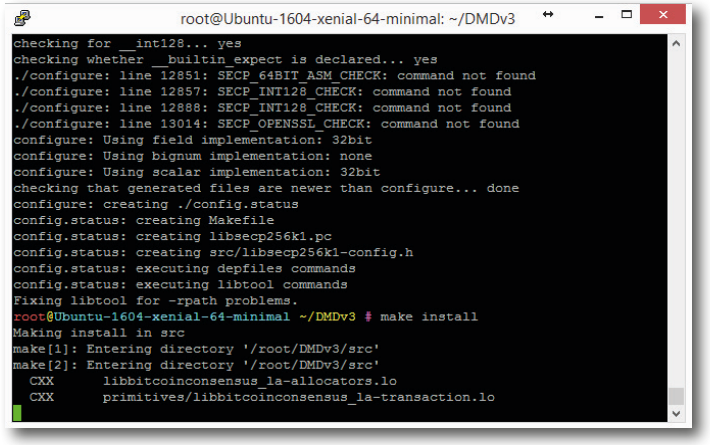


Once we have all dependencies we can download and compile the wallet:

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

After compilation:

cd src
mv diamondd diamond-cli diamond-tx ~/
cd ~/
rm-r Diamond



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 1G /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
```

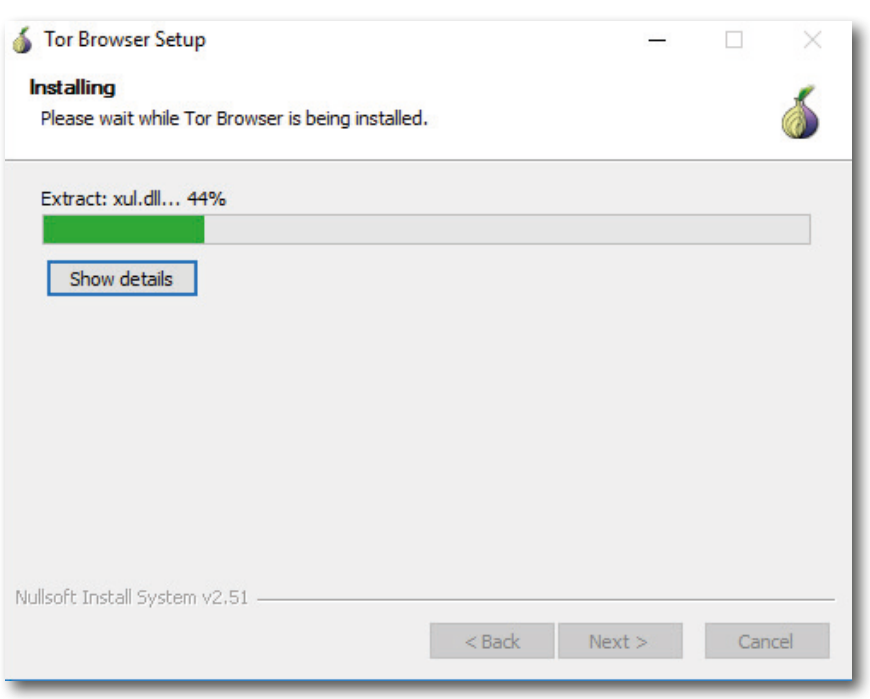
At the bottom of the file, you need to add a line that will tell the operating system to automatically use the file you created:

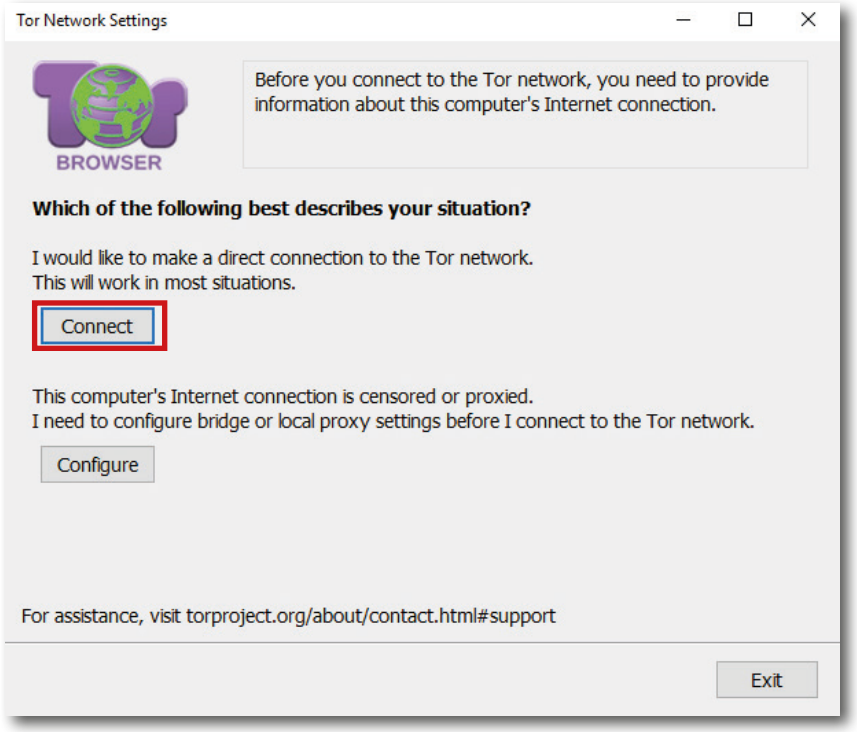
```
/swapfile none    swap    sw 0   0
```

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 Tor here https://www.torproject.org/download/download-easy.html.en and install it on our local computer.
Check Tor installation by connecting to Tor network.

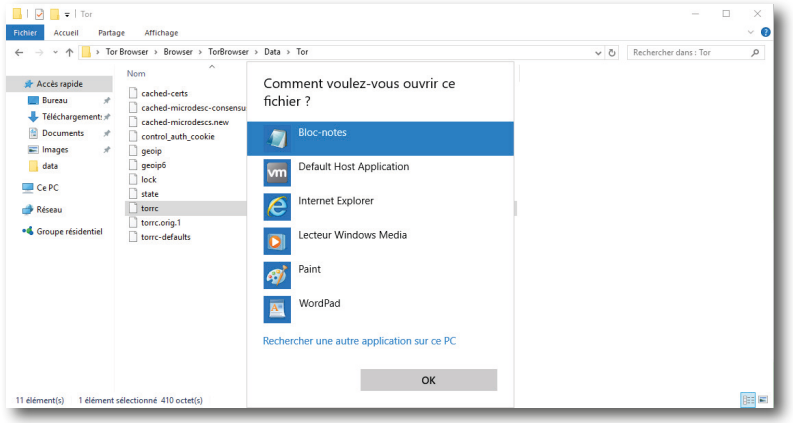


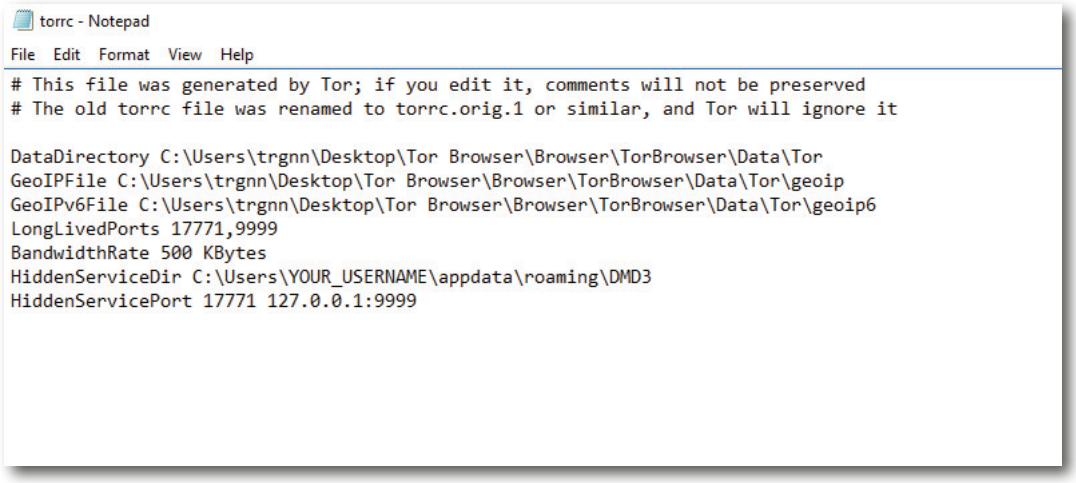


At this point, Windows is updated and Tor is working. Close it. We need now to configure Tor to provide onion hidden services for our control wallet.
Go to C:\Users\your_username\Desktop\ Tor Browser\Browser\TorBrowser\Data\Tor
open torrc with notepad and add:

LongLivedPorts 17771,9999
BandwidthRate 500 KBytes
HiddenServiceDir C:\Users\YOUR_USERNAME\appdata\roaming\DMD3
HiddenServicePort 17771 127.0.0.1:9999

Save and close torrc.





torrc should look like this.

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

Now we're going to configure Tor on our VPS

7

Back on PuTTY! Add the following entry in /etc/apt/sources.list

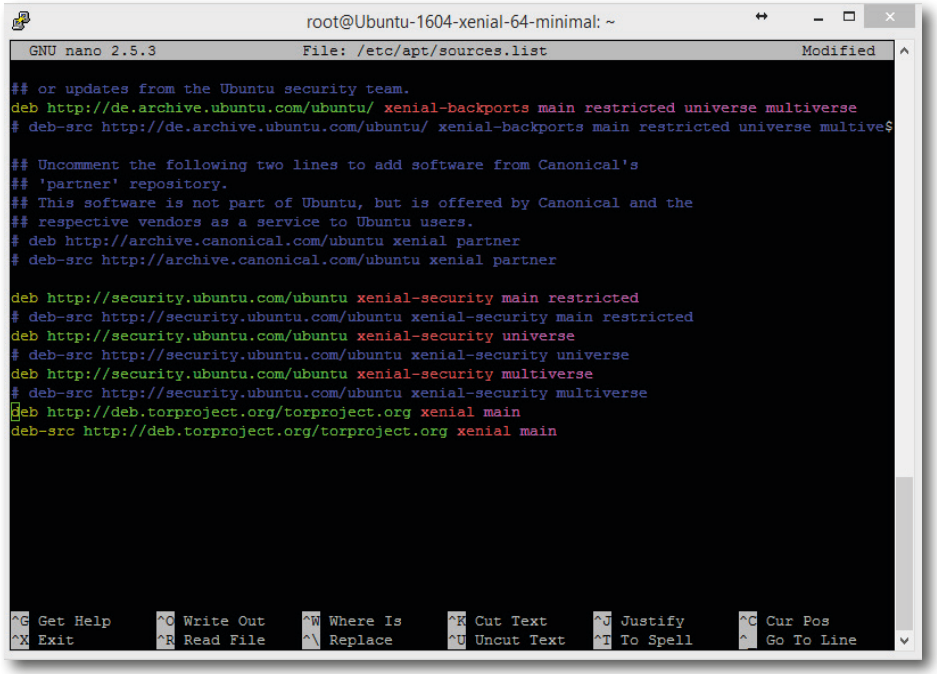
```
deb http://deb.torproject.org/torproject.org xenial main
deb-src http://deb.torproject.org/torproject.org xenial main
```

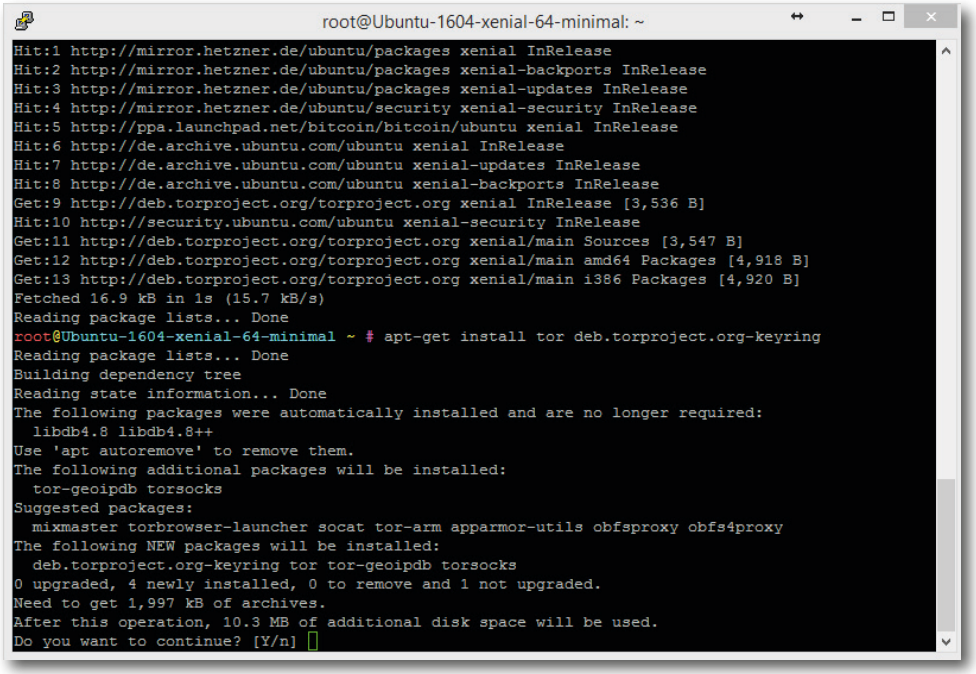
Then add the gpg key used to sign the packages by running the following commands:

```
gpg --keyserver keys.gnupg.net --recv A3C4F0F979CAA22CDBA8F512EE8CBC9E886DDD89
gpg --export A3C4F0F979CAA22CDBA8F512EE8CBC9E886DDD89 | sudo apt-key add -
```

You can now install Tor with the following commands:

```
apt-get update
apt-get install tor deb.torproject.org-keyring
```





Important! Do not use the packages in Ubuntu's unniverse. In the past they have not reliably been updated. That means you could be missing stability and security fixes.

Tor should now work on our local computer and our VPS. We need now to configure Tor to provide onion hidden services for our masternode. Execute the following commands:

```
cd ..
nano /etc/tor/torrc
```

Scroll to the Hidden services section and add the following lines after the last hidden service exemple:

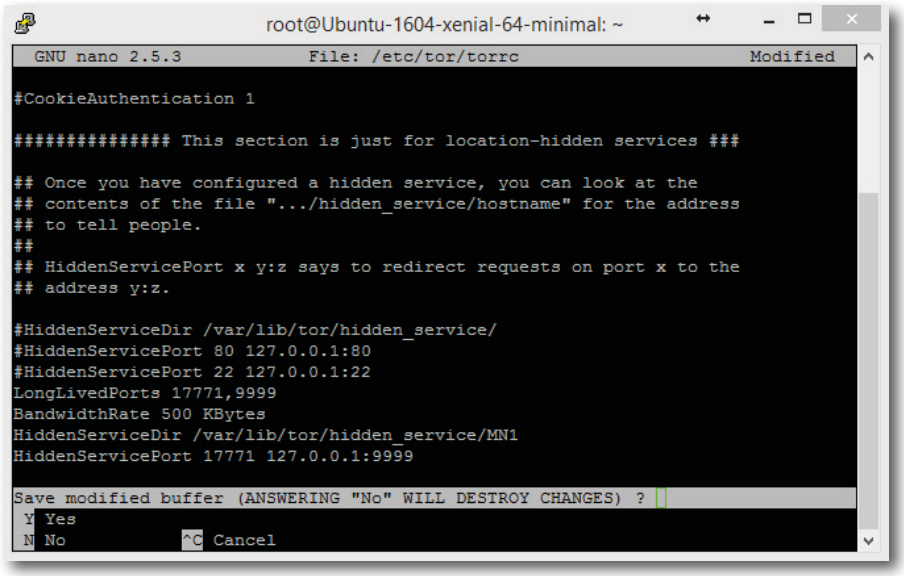
```
LongLivedPorts 17771,9999
BandwidthRate 500 KBytes
HiddenServiceDir /var/lib/tor/hidden_service/MN1
HiddenServicePort 17771 127.0.0.1:9999
```

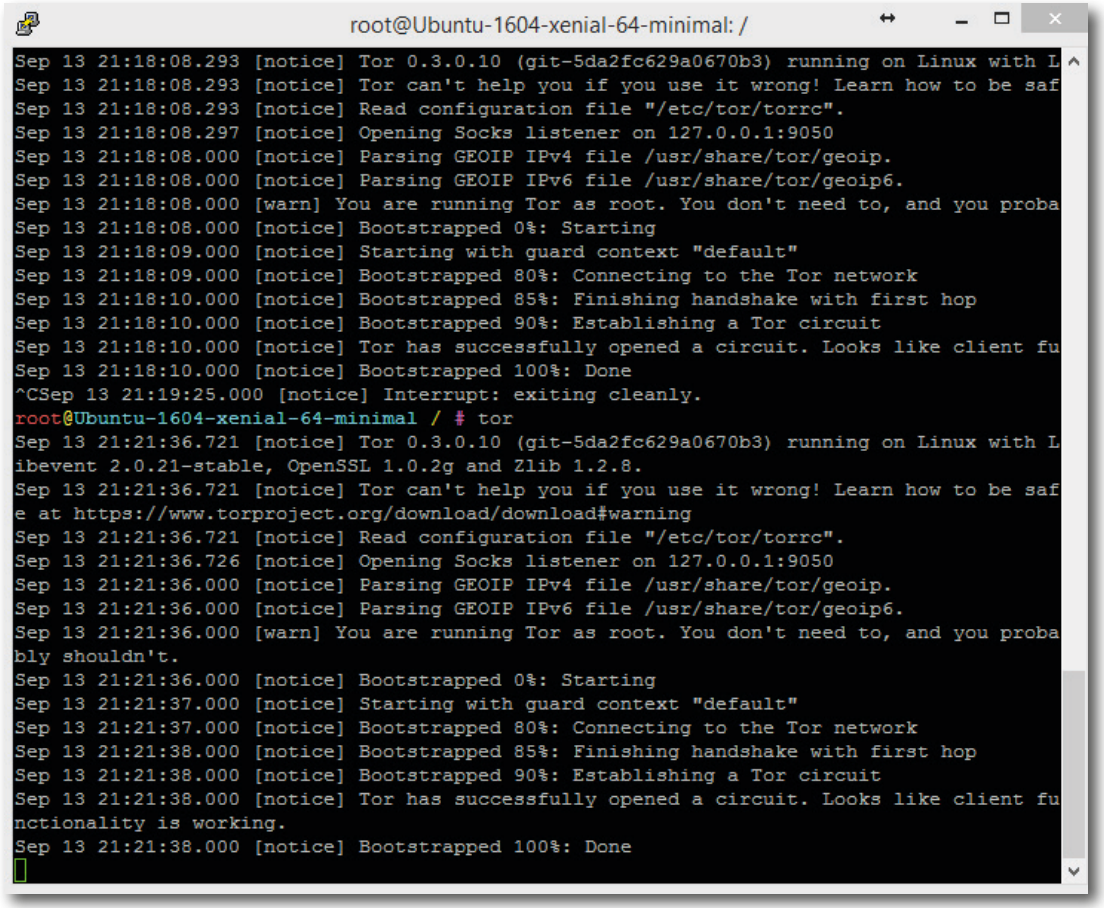
We are now going to create and configure the hidden service directory. Execute the following commands:

```
mkdir /var/lib/tor/hidden_service
mkdir /var/lib/tor/hidden_service/MN1
chmod 700 /var/lib/tor/hidden_service
chmod 700 /var/lib/tor/hidden_service/MN1
```

Save and close torrc.

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

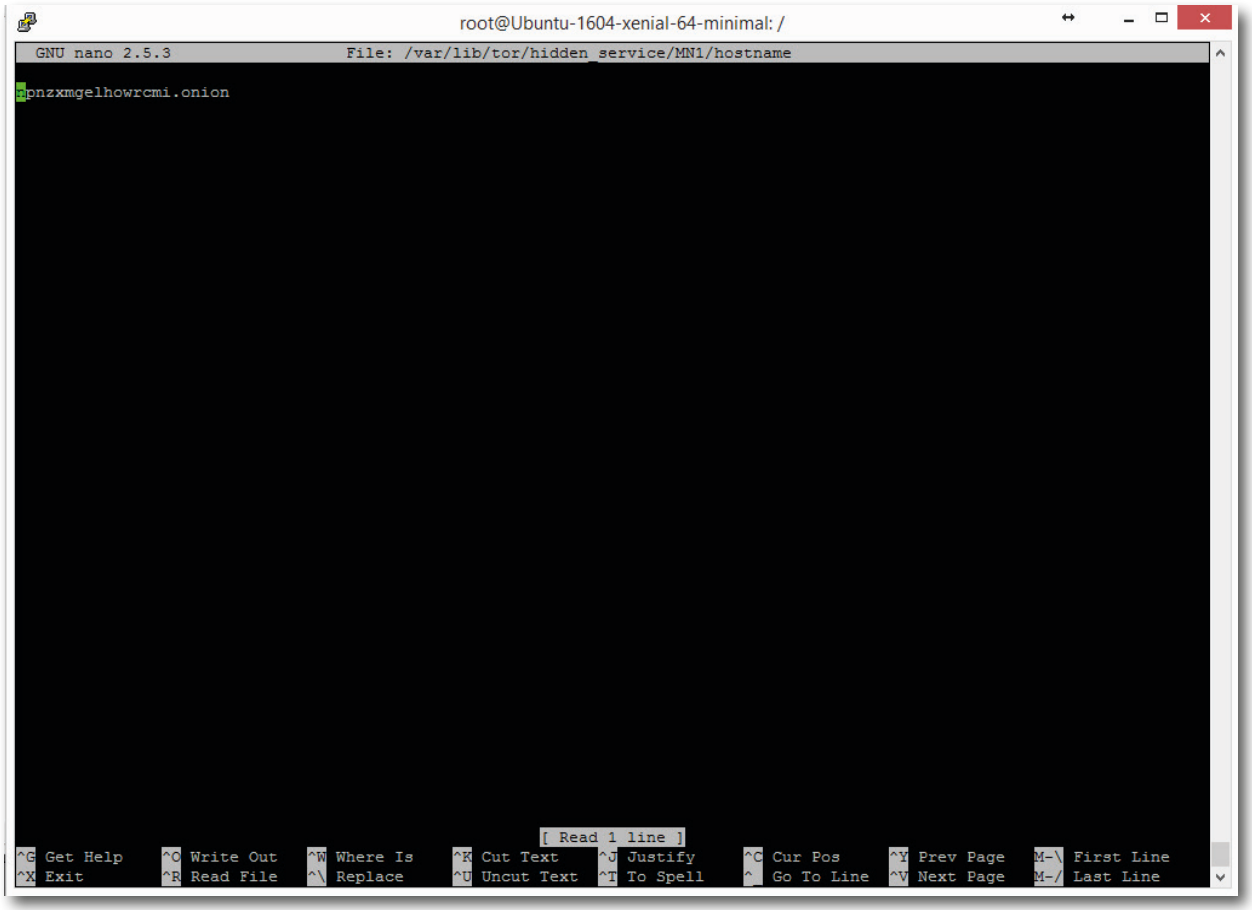




Run Tor just by executing tor & in the terminal. If you get an error message, you probably missconfigured torrc. If the error doesn't come from its configuration, restart from the beginning, you're probably missing something. If everything worked, Tor created a hostname file under
/var/lib/tor/hidden_service/MN1/

Open a new connection through PuTTY (step 3) then open hostname with nano:
cd ..
nano /var/lib/tor/hidden_service/MN1/hostname

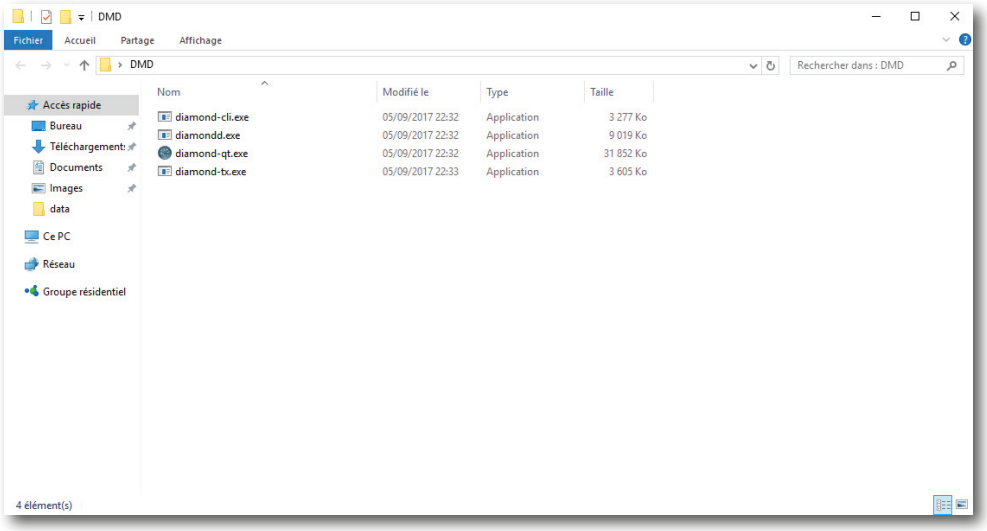
Copy the onion address in tempMN1.txt. We will need it to tell our controll wallet where is our masternode.

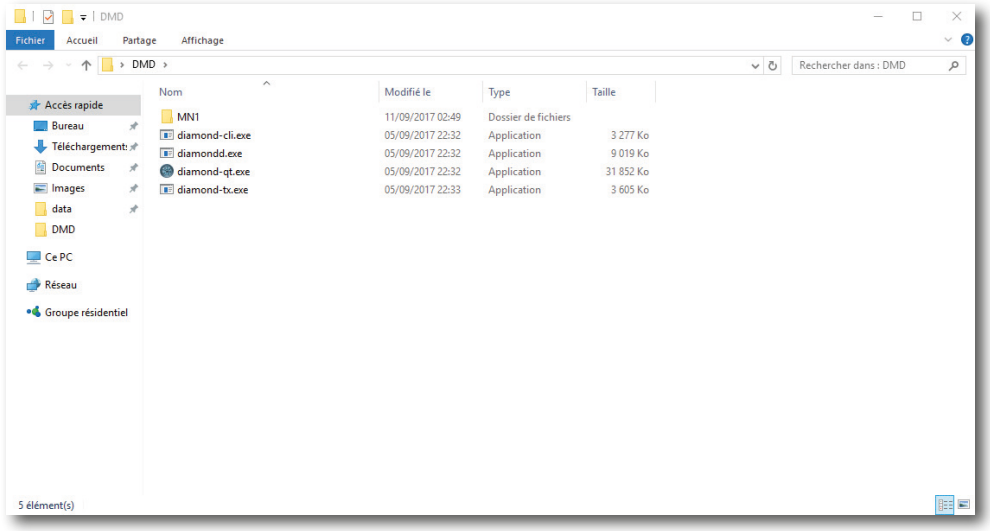

root@Ubuntu-1604-xenial-64-minimal: /
GNU nano 2.5.3 File: /var/lib/tor/hidden_service/MN1/hostname
pnzxmgelhowrcmi.onion
[Read 1 line]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M-\ First Line
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page M-/ Last Line

8

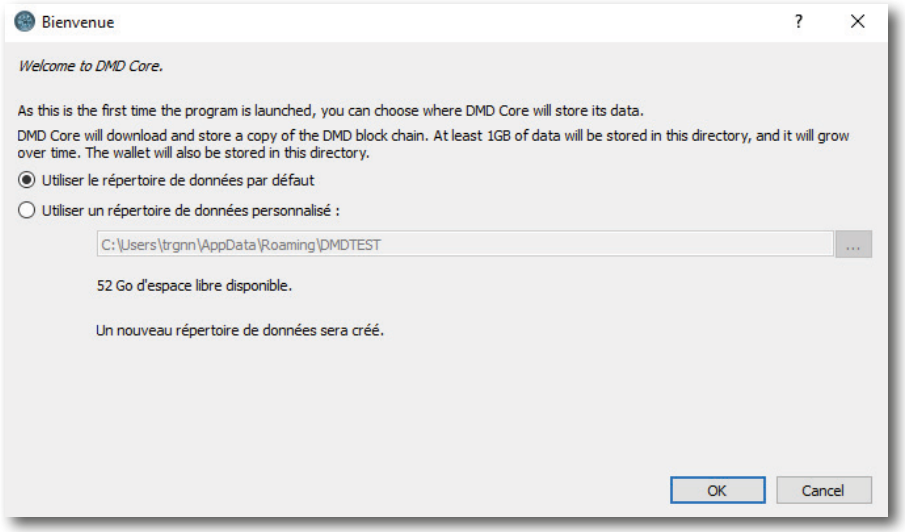
Download DMDv3 Windows wallet from http://bit.diamonds/

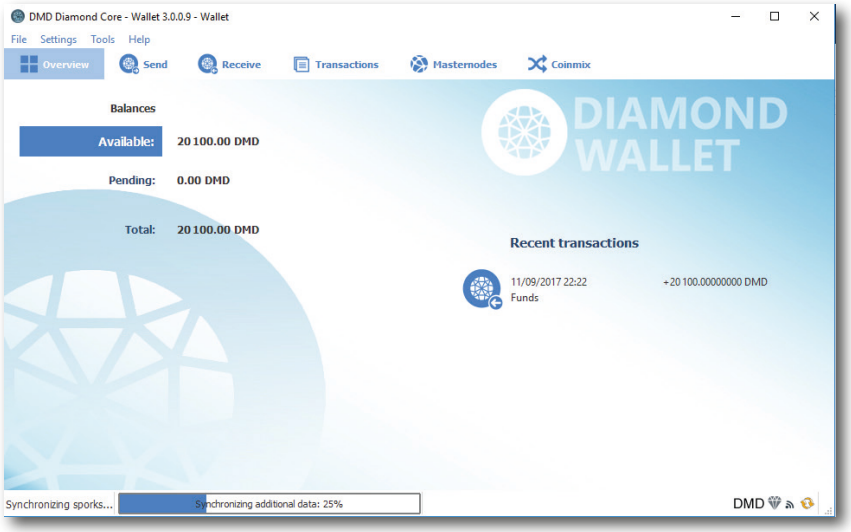
Create a folder on your windows desktop. Name it DMD.
Copy diamond-qt.exe, diamond-cli.exe, diamondd.exe and diamond-tx.exe in
C:\Users\your_username\Desktop\DMD





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

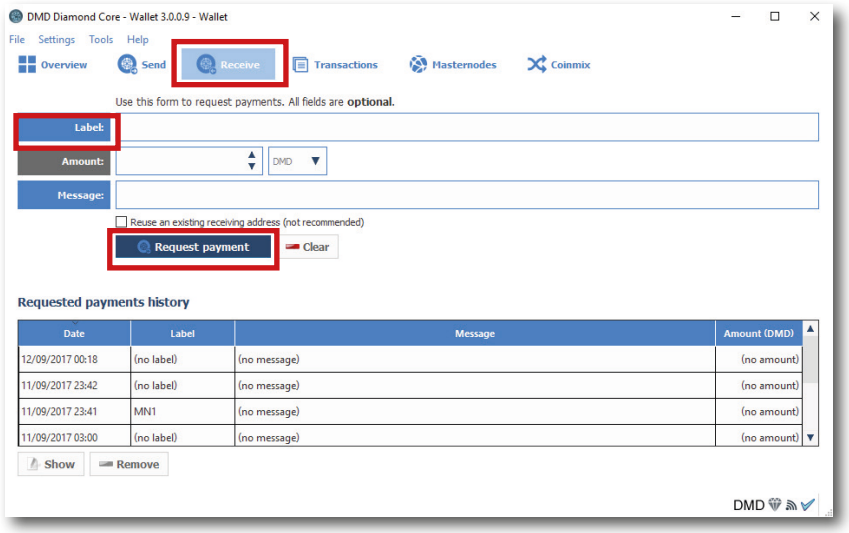




This wallet will be our control wallet.

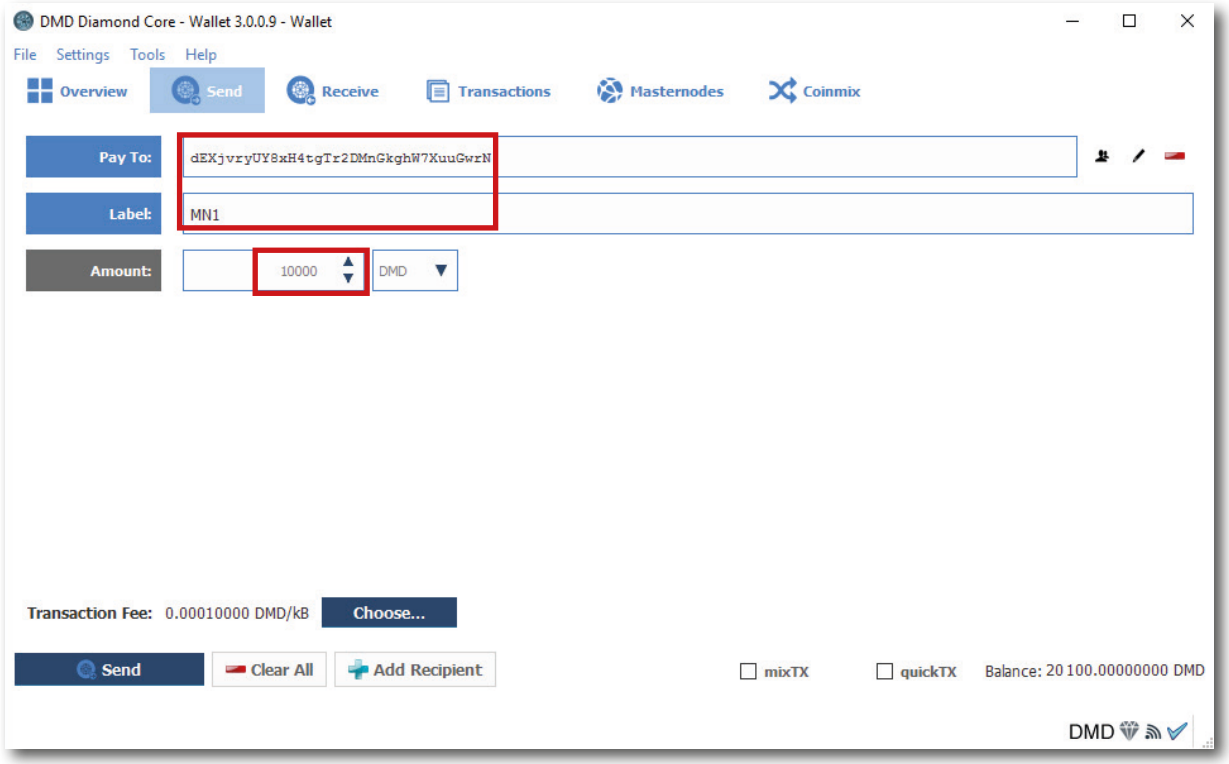
9

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 10’000 DMD.

Click Send.

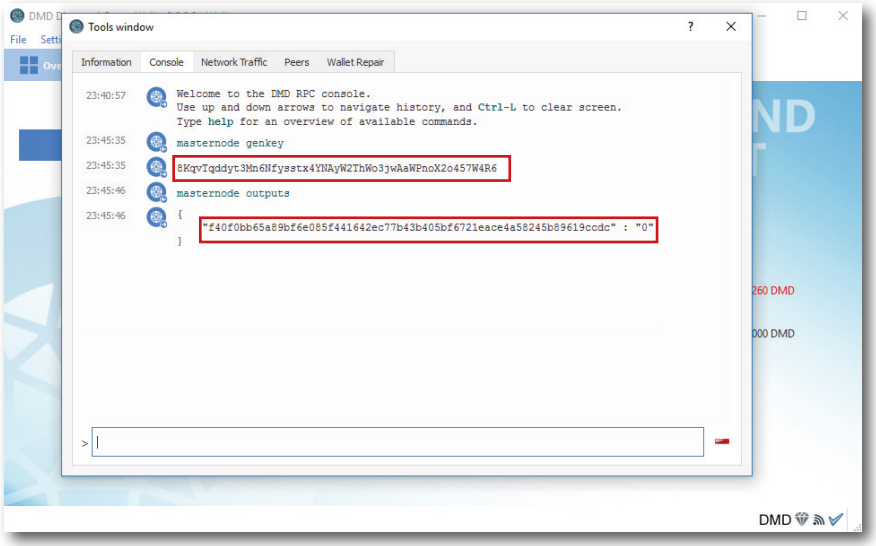


Go to the debug console and execute the commands:

masternode genkey

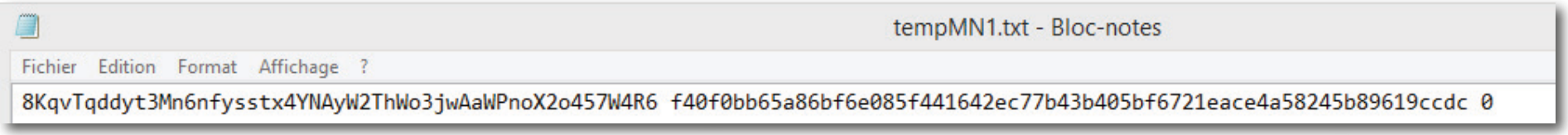
masternode outputs

Copy the private key and outputs in tempMN1.txt

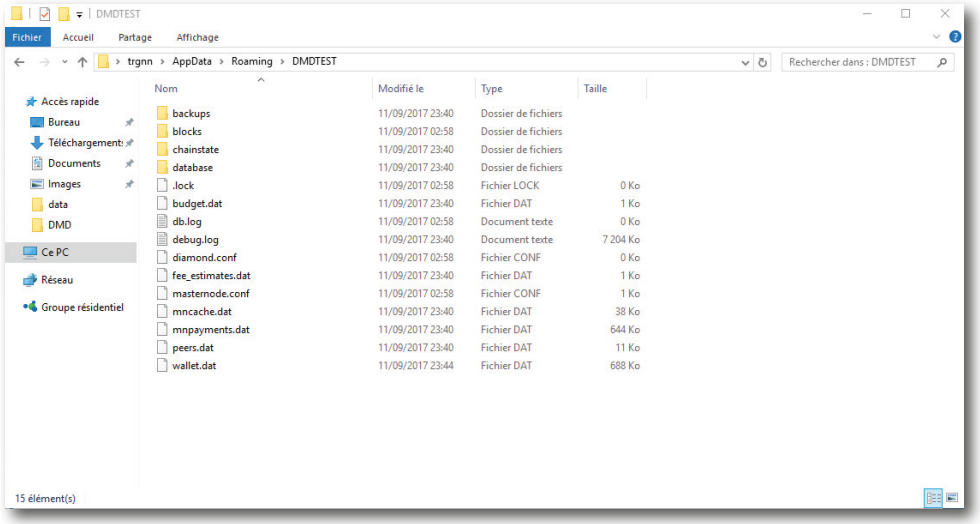


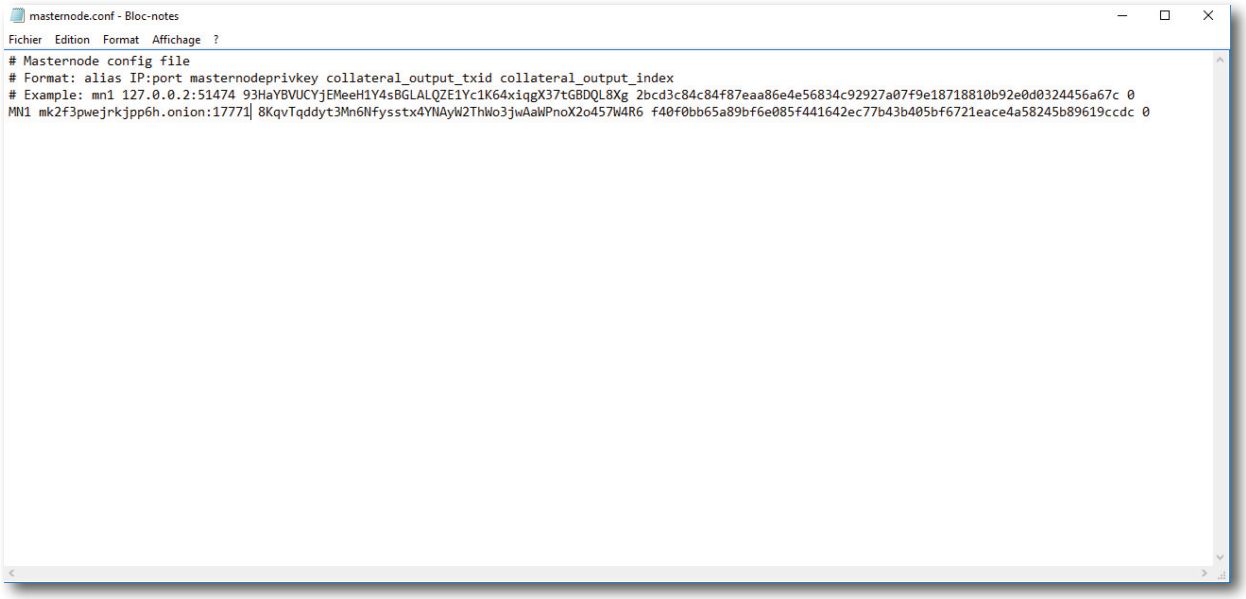
Important! Don’t copy paste everything and format your data into tempMN1.txt file like this:
<onion address> <masternode genkey> <masternode output>

```
masternode genkey
8KqvTqddyt3Mn6Nfysstx4YNAyW2ThWo3jwAaWPnoX2o457W4R6
masternode outputs
{
    "f40f0bb65a89bf6e085f441642ec77b43b405bf6721eace4a58245b89619ccdc" : "0"
}
```



Go to C:\Users\your_username\appdata\Roaming\DMD3 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.





Add MN1 before <onion address>:17771 <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 .diamond folder and a diamond.conf file on our VPS. We will need the private key we copied earlier in tempMN1.txt and masternode.conf:

```
cd/root
mkdir ../root/.diamond
nano /root/.diamond/diamond.conf
```

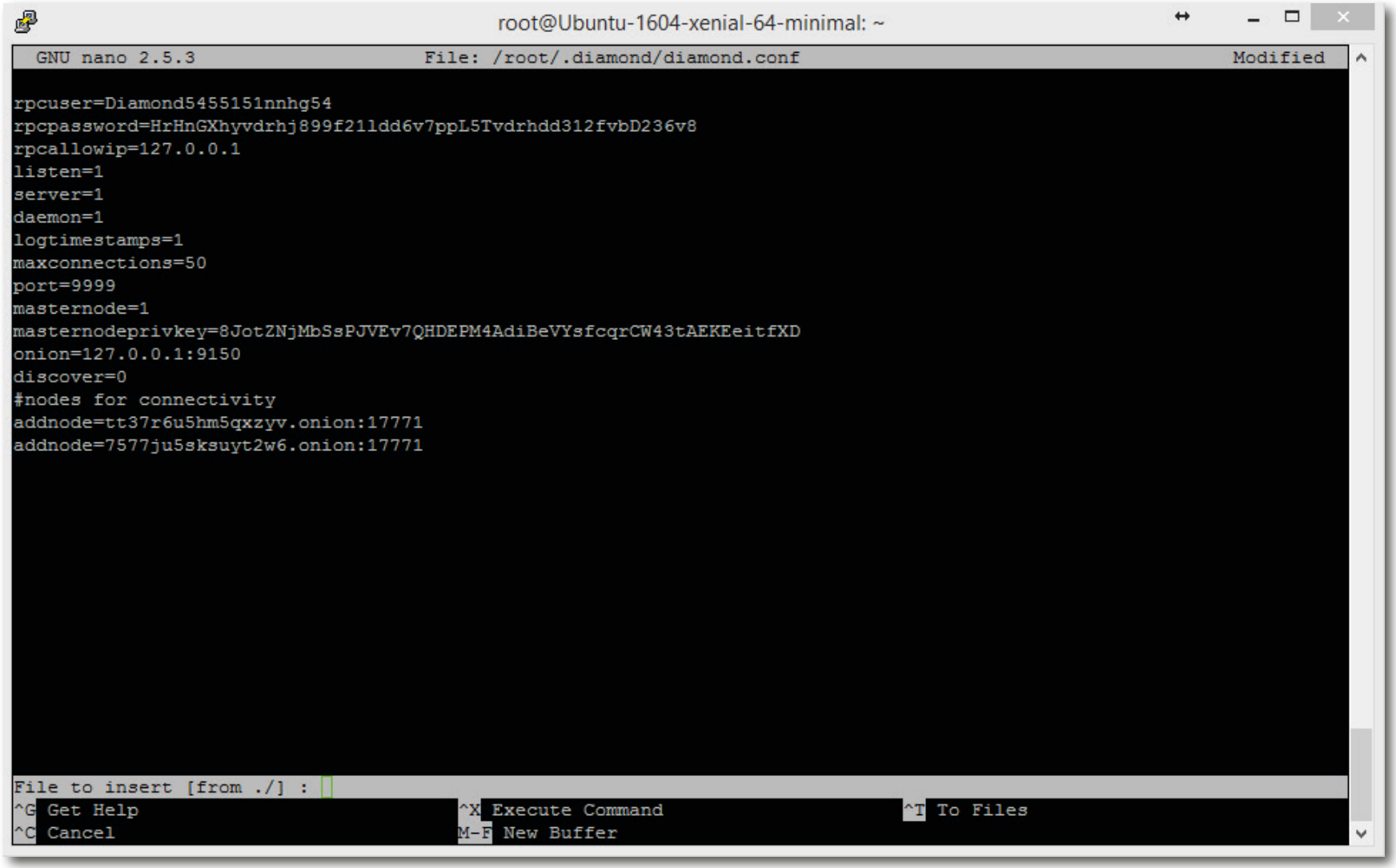
Simply copy and paste these, changing appropriate fields then exit nano:

```
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=50
port=9999
masternode=1
masternodeprivkey=YOUR_UNIQUE_PRIVATE_KEY (genkey)
onion=127.0.0.1:9150
discover=0
#nodes for connectivity
addnode=tt37r6u5hm5qxzyv.onion:17771
addnode=7577ju5sksuyt2w6.onion:17771
```

Exemple:

```
rpcuser=Diamond5455151nnhg54
rpcpassword=HrHnGXhyvdrhj899f21ldd6v7ppL5Tvdrhdd312fvbD
rpcallowip=127.0.0.1
listen=1
server=1
daemon=1
logtimestamps=1
maxconnections=50
port=9999
masternode=1
masternodeprivkey=8KqvTqddyt3Mn6Nfysstx ...
onion=127.0.0.1:9150
discover=0
addnode=tt37r6u5hm5qxzyv.onion:17771
addnode=7577ju5sksuyt2w6.onion:17771
```

* Notes: Those nodes were working on testnet. The suggested onion nodes for mainnet might look different.



Your configuration file must look like this.

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

Now we will create our control wallet diamond.conf for allowing it to talk with our masternode. Go to
%appdata%/roaming/DMD3

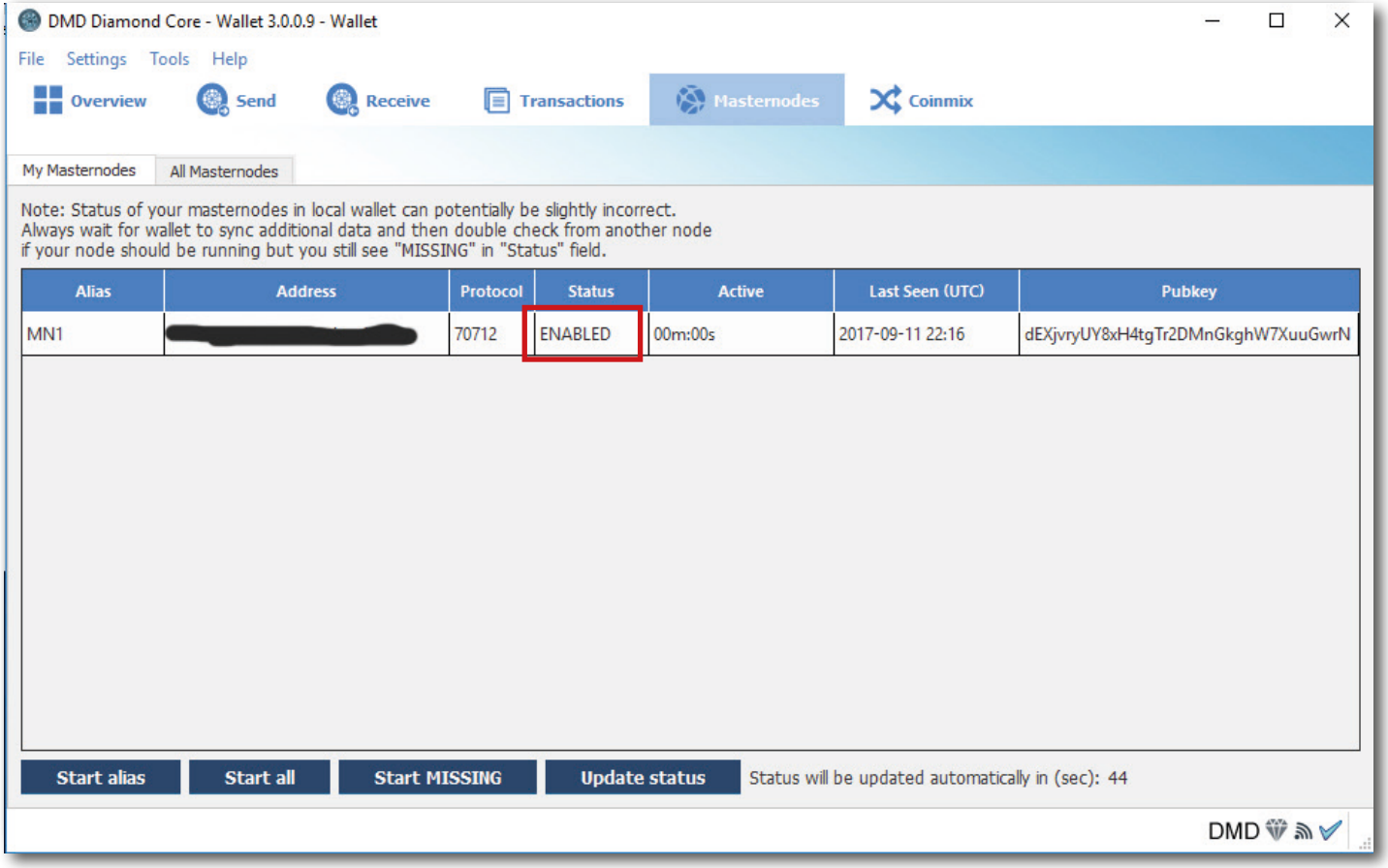
and create a diamon.conf file. Edit it like this with notepad:

```
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=50
port=9999
onion=127.0.0.1:9150
discover=0
#nodes for connectivity
addnode=tt37r6u5hm5qxzyv.onion:17771
addnode=7577ju5sksuyt2w6.onion:17771
```

Exemple:

```
rpcuser=Diamond5455151nnhg54
rpcpassword=HrHnGXhyvdrhj899f21ldd6v7ppL5Tvdrhdd312fvbD
rpcallowip=127.0.0.1
listen=1
server=1
daemon=1
logtimestamps=1
maxconnections=50
port=9999
onion=127.0.0.1:9150
discover=0
addnode=tt37r6u5hm5qxzyv.onion:17771
addnode=7577ju5sksuyt2w6.onion:17771
```

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



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

Notes: If your masternode isn't reachable, you might need to open your 17771 port on your VPS.
Execute the following commands:
iptables-t nat-I OUTPUT-d <your_vps_ip>-p tcp--dport 17771-j REDIRECT--to-ports 17771
cd..
/etc/init.d/iptables restart

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

Happy masternodding :)