

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:

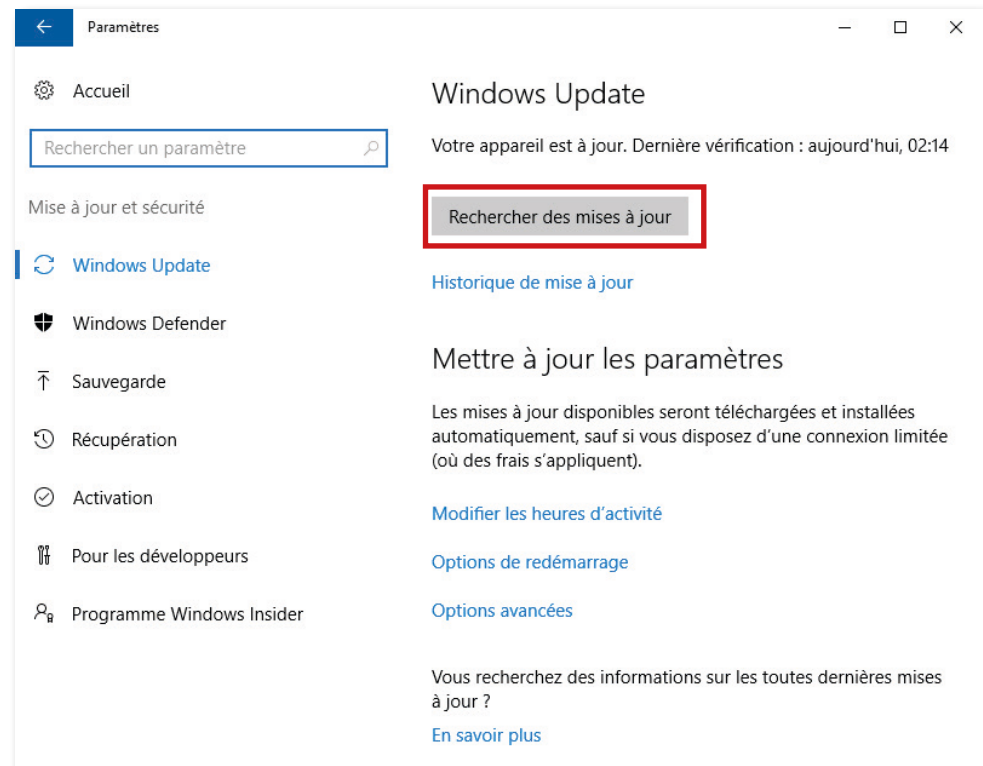
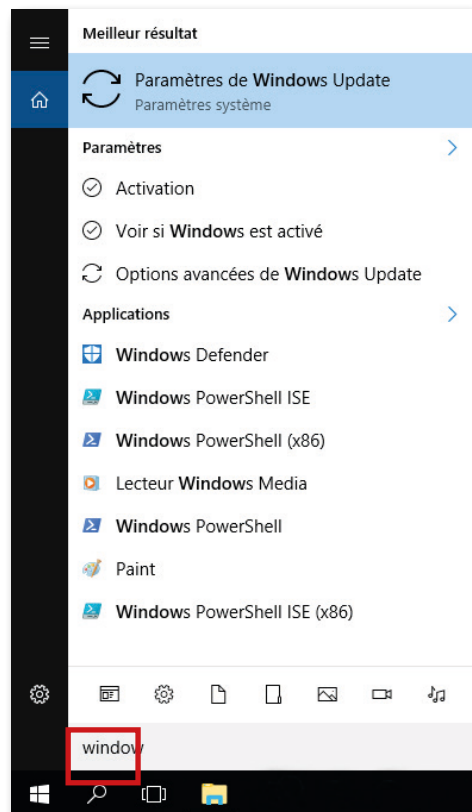
- 1 - Update Windows 10.
- 2 - Buy VPS service and setup Ubuntu on it. You'll need to have one CPU and at least 1GB of RAM on it to be able to compile and run the wallet.
- 3 - Download PuTTY here <http://www.putty.org/>, install it, run it and connect to your server.
- 4 - Login as root, update Ubuntu 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 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 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/>)

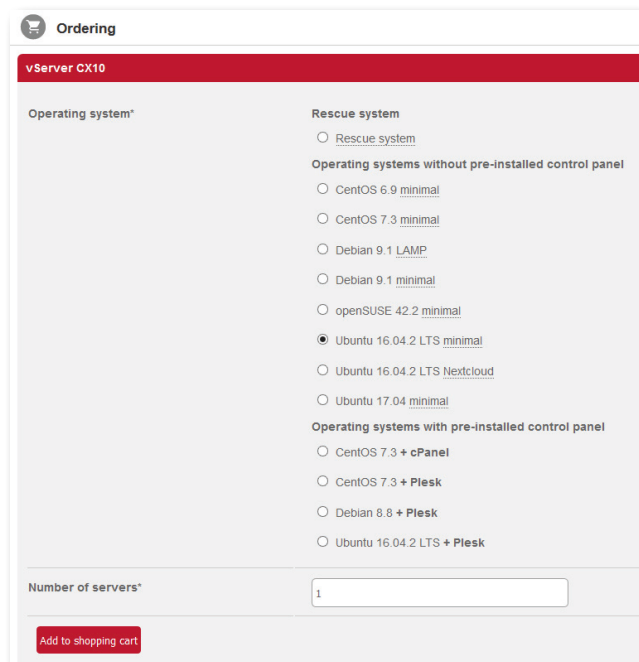
Linux distro under which the wallet was compiled and run is Ubuntu 16.04.

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

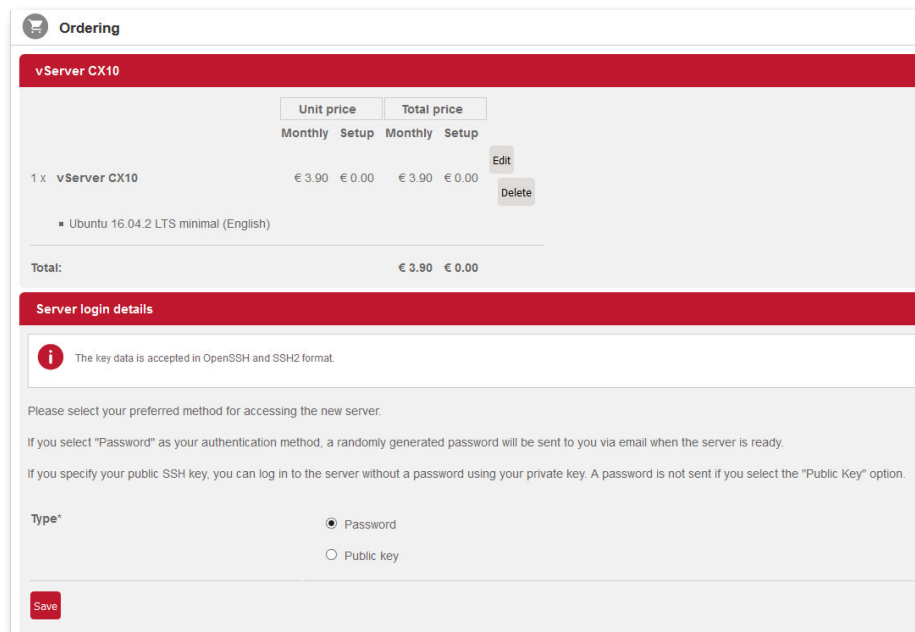
Important: The server configuration is bare minimum 1 CPU and 1 GB of RAM.

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.



The screenshot shows the 'Ordering' page for a 'vServer CX10'. Under the 'Operating system*' section, the 'Rescue system' option is selected. Below it, under 'Operating systems without pre-installed control panel', the 'Ubuntu 16.04.2 LTS minimal' option is selected. At the bottom, the 'Number of servers*' is set to 1. An 'Add to shopping cart' button is visible at the bottom left.



The screenshot shows the 'Server login details' section. It displays a table with the unit and total prices for the selected server. Below the table, there is a section for selecting the preferred method for accessing the new server. The 'Password' option is selected, and the 'Public key' option is also visible. A 'Save' button is at the bottom left.

	Unit price	Total price		
	Monthly	Setup	Monthly	Setup
1 x vServer CX10	€ 3.90	€ 0.00	€ 3.90	€ 0.00
▪ Ubuntu 16.04.2 LTS minimal (English)				
Total:			€ 3.90	€ 0.00

Choose the password option here

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

HETZNER
ONLINE

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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

Robot login

User*

arbezmathi

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

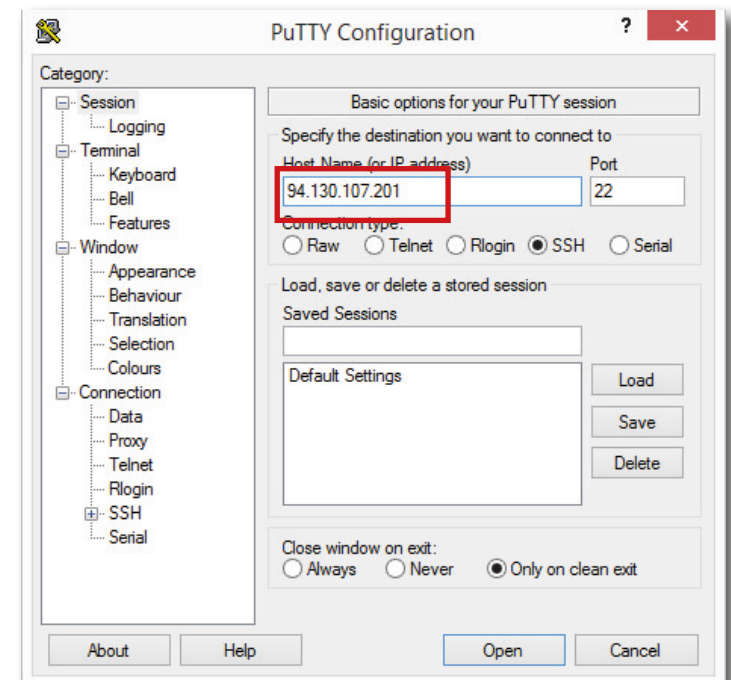
IPv6 Address: 2a01:4f8:c0c:3555::2

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

```
root@Ubuntu-1604-xenial-64-minimal: ~
Get:91 http://mirror.hetzner.de/ubuntu/security xenial-security/multiverse i386 Packages [2,908 B]
Get:92 http://mirror.hetzner.de/ubuntu/security xenial-security/multiverse Translation-en [1,232 B]
Fetched 54.8 MB in 15s (3,518 kB/s)
Reading package lists... Done
root@Ubuntu-1604-xenial-64-minimal ~ # apt-get upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages have been kept back:
  linux-headers-generic-hwe-16.04 linux-image-generic-hwe-16.04
The following packages will be upgraded:
  apt apt-transport-https apt-utils base-files coreutils grub-common grub-pc
  grub-pc-bin grub2-common intel-microcode kmod libapt-inst2.0 libapt-pkg5.0
  libasn1-8-heimdal libexpat1 libgssapi3-heimdal libhcrypto4-heimdal
  libheimbase1-heimdal libheimntlm0-heimdal libhx509-5-heimdal libkmod2
  libkrb5-26-heimdal liblsm0 libpam-systemd libroken18-heimdal libsystemd0
  libudev1 libwind0-heimdal logrotate ntpdate sudo systemd systemd-sysv udev
34 upgraded, 0 newly installed, 0 to remove and 2 not upgraded.
Need to get 14.3 MB of archives.
After this operation, 597 kB of additional disk space will be used.
Do you want to continue? [Y/n]
```

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

5

```
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 ~ #
```

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 perfectly normal)
```

After compilation:

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

```
root@Ubuntu-1604-xenial-64-minimal: ~/DMDv3  
checking for _int128... yes  
checking whether _builtin_expect is declared... yes  
./configure: line 12851: SECP_64BIT_ASM_CHECK: command not found  
./configure: line 12857: SECP_INT128_CHECK: command not found  
./configure: line 12888: SECP_INT128_CHECK: command not found  
./configure: line 13014: SECP_OPENSSL_CHECK: command not found  
configure: Using field implementation: 32bit  
configure: Using bignum implementation: none  
configure: Using scalar implementation: 32bit  
checking that generated files are newer than configure... done  
configure: creating ./config.status  
config.status: creating Makefile  
config.status: creating libsecp256k1.pc  
config.status: creating src/libsecp256k1-config.h  
config.status: executing depfiles commands  
config.status: executing libtool commands  
Fixing libtool for -rpath problems.  
root@Ubuntu-1604-xenial-64-minimal ~/DMDv3 # make install  
Making install in src  
make[1]: Entering directory '/root/DMDv3/src'  
make[2]: Entering directory '/root/DMDv3/src'  
CXX libbitcoinconsensus_la-allocators.lo  
CXX primitives/libbitcoinconsensus_la-transaction.lo
```

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.

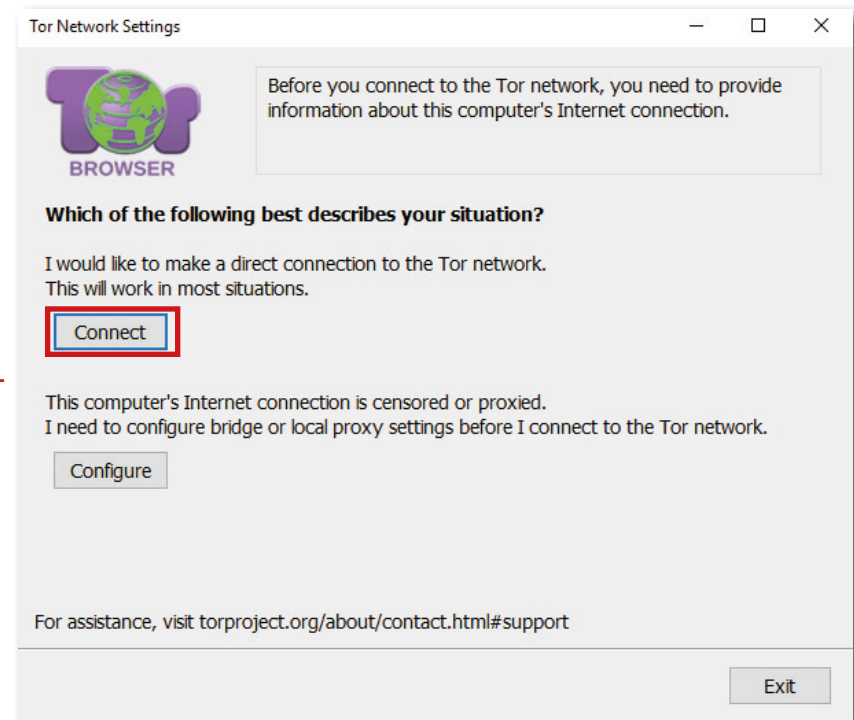
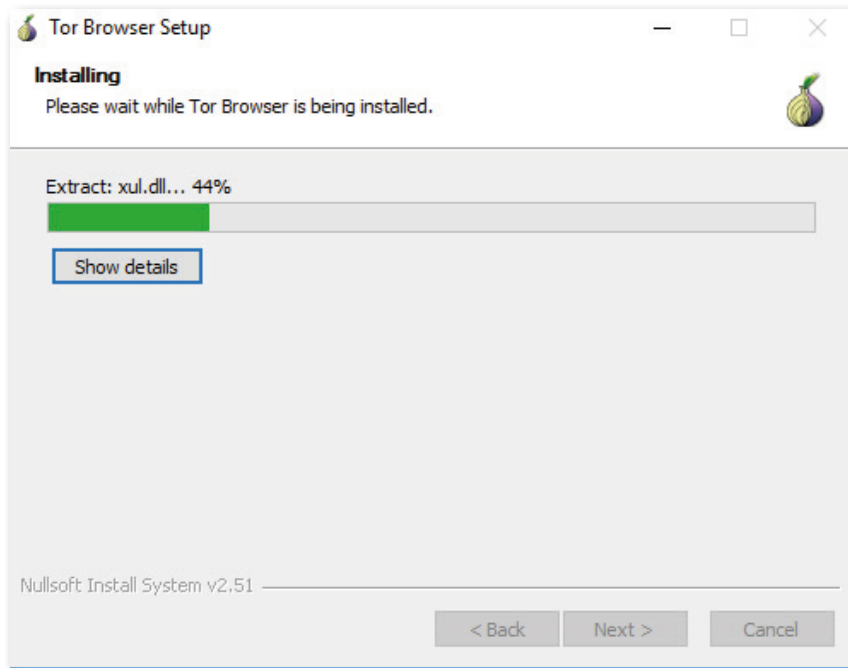
To exit NANO text editor press Ctrl+X and confirm changes.

(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.

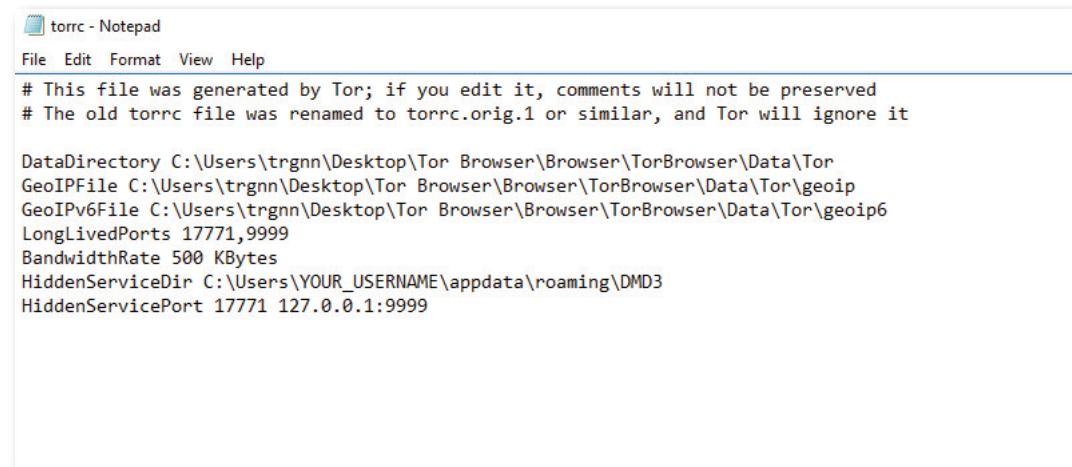
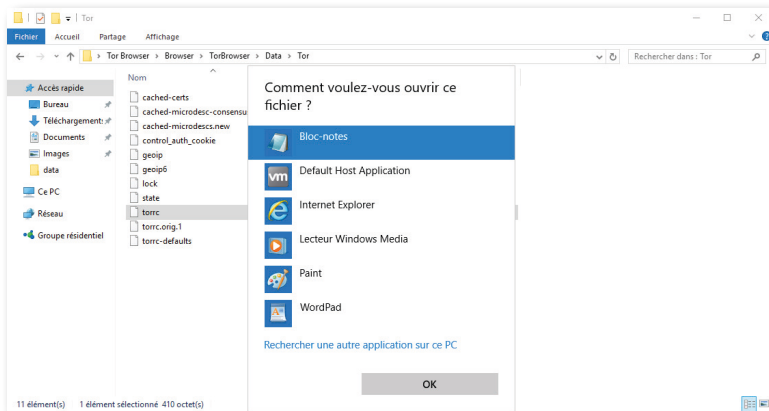


At this point, Windows is updated and Tor is working. Close it. We need now to configure Tor to provide onion hidden services for our control wallet.

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
```

```
root@Ubuntu-1604-xenial-64-minimal: ~
GNU nano 2.5.3 File: /etc/apt/sources.list Modified
## or updates from the Ubuntu security team.
deb http://de.archive.ubuntu.com/ubuntu/ xenial-backports main restricted universe multiverse
# deb-src http://de.archive.ubuntu.com/ubuntu/ xenial-backports main restricted universe multiverse

## Uncomment the following two lines to add software from Canonical's
## 'partner' repository.
## This software is not part of Ubuntu, but is offered by Canonical and the
## respective vendors as a service to Ubuntu users.
# deb http://archive.canonical.com/ubuntu xenial partner
# deb-src http://archive.canonical.com/ubuntu xenial partner

deb http://security.ubuntu.com/ubuntu xenial-security main restricted
# deb-src http://security.ubuntu.com/ubuntu xenial-security main restricted
deb http://security.ubuntu.com/ubuntu xenial-security universe
# deb-src http://security.ubuntu.com/ubuntu xenial-security universe
deb http://security.ubuntu.com/ubuntu xenial-security multiverse
# deb-src http://security.ubuntu.com/ubuntu xenial-security multiverse
deb http://deb.torproject.org/torproject.org xenial main
deb-src http://deb.torproject.org/torproject.org xenial main

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line
```

```
root@Ubuntu-1604-xenial-64-minimal: ~
Hit:1 http://mirror.hetzner.de/ubuntu/packages xenial InRelease
Hit:2 http://mirror.hetzner.de/ubuntu/packages xenial-backports InRelease
Hit:3 http://mirror.hetzner.de/ubuntu/packages xenial-updates InRelease
Hit:4 http://mirror.hetzner.de/ubuntu/security xenial-security InRelease
Hit:5 http://ppa.launchpad.net/bitcoin/bitcoin/ubuntu xenial InRelease
Hit:6 http://de.archive.ubuntu.com/ubuntu xenial InRelease
Hit:7 http://de.archive.ubuntu.com/ubuntu xenial-updates InRelease
Hit:8 http://de.archive.ubuntu.com/ubuntu xenial-backports InRelease
Get:9 http://deb.torproject.org/torproject.org xenial InRelease [3,536 B]
Hit:10 http://security.ubuntu.com/ubuntu xenial-security InRelease
Get:11 http://deb.torproject.org/torproject.org xenial/main Sources [3,547 B]
Get:12 http://deb.torproject.org/torproject.org xenial/main amd64 Packages [4,918 B]
Get:13 http://deb.torproject.org/torproject.org xenial/main i386 Packages [4,920 B]
Fetched 16.9 kB in 1s (15.7 kB/s)
Reading package lists... Done
root@Ubuntu-1604-xenial-64-minimal ~ # apt-get install tor deb.torproject.org-keyring
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libdb4.8 libdb4.8++
Use 'apt autoremove' to remove them.
The following additional packages will be installed:
  tor-geoipdb torsocks
Suggested packages:
  mixmaster torbrowser-launcher socat tor-arm apparmor-utils obfsproxy obfs4proxy
The following NEW packages will be installed:
  deb.torproject.org-keyring tor tor-geoipdb torsocks
0 upgraded, 4 newly installed, 0 to remove and 1 not upgraded.
Need to get 1,997 kB of archives.
After this operation, 10.3 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

Important! Do not use the packages in Ubuntu's universe. 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.


```
root@Ubuntu-1604-xenial-64-minimal: ~
GNU nano 2.5.3 File: /etc/tor/torrc Modified
#CookieAuthentication 1

##### This section is just for location-hidden services ###

## Once you have configured a hidden service, you can look at the
## contents of the file ".../hidden_service/hostname" for the address
## to tell people.
##
## HiddenServicePort x y:z says to redirect requests on port x to the
## address y:z.

#HiddenServiceDir /var/lib/tor/hidden_service/
#HiddenServicePort 80 127.0.0.1:80
#HiddenServicePort 22 127.0.0.1:22
LongLivedPorts 17771,9999
BandwidthRate 500 KBytes
HiddenServiceDir /var/lib/tor/hidden_service/MN1
HiddenServicePort 17771 127.0.0.1:9999

Save modified buffer (ANSWERING "No" WILL DESTROY CHANGES) ?
Y Yes
N No ^C Cancel
```

```
root@Ubuntu-1604-xenial-64-minimal: /
Sep 13 21:18:08.293 [notice] Tor 0.3.0.10 (git-5da2fc629a0670b3) running on Linux with L
Sep 13 21:18:08.293 [notice] Tor can't help you if you use it wrong! Learn how to be saf
Sep 13 21:18:08.293 [notice] Read configuration file "/etc/tor/torrc".
Sep 13 21:18:08.297 [notice] Opening Socks listener on 127.0.0.1:9050
Sep 13 21:18:08.000 [notice] Parsing GEOIP IPv4 file /usr/share/tor/geoip.
Sep 13 21:18:08.000 [notice] Parsing GEOIP IPv6 file /usr/share/tor/geoip6.
Sep 13 21:18:08.000 [warn] You are running Tor as root. You don't need to, and you proba
Sep 13 21:18:08.000 [notice] Bootstrapped 0%: Starting
Sep 13 21:18:09.000 [notice] Starting with guard context "default"
Sep 13 21:18:09.000 [notice] Bootstrapped 80%: Connecting to the Tor network
Sep 13 21:18:10.000 [notice] Bootstrapped 85%: Finishing handshake with first hop
Sep 13 21:18:10.000 [notice] Bootstrapped 90%: Establishing a Tor circuit
Sep 13 21:18:10.000 [notice] Tor has successfully opened a circuit. Looks like client fu
Sep 13 21:18:10.000 [notice] Bootstrapped 100%: Done
^C Sep 13 21:19:25.000 [notice] Interrupt: exiting cleanly.
root@Ubuntu-1604-xenial-64-minimal / # tor
Sep 13 21:21:36.721 [notice] Tor 0.3.0.10 (git-5da2fc629a0670b3) running on Linux with L
Sep 13 21:21:36.721 [notice] Tor can't help you if you use it wrong! Learn how to be saf
Sep 13 21:21:36.721 [notice] Read configuration file "/etc/tor/torrc".
Sep 13 21:21:36.726 [notice] Opening Socks listener on 127.0.0.1:9050
Sep 13 21:21:36.000 [notice] Parsing GEOIP IPv4 file /usr/share/tor/geoip.
Sep 13 21:21:36.000 [notice] Parsing GEOIP IPv6 file /usr/share/tor/geoip6.
Sep 13 21:21:36.000 [warn] You are running Tor as root. You don't need to, and you proba
Sep 13 21:21:36.000 [notice] Bootstrapped 0%: Starting
Sep 13 21:21:37.000 [notice] Starting with guard context "default"
Sep 13 21:21:37.000 [notice] Bootstrapped 80%: Connecting to the Tor network
Sep 13 21:21:38.000 [notice] Bootstrapped 85%: Finishing handshake with first hop
Sep 13 21:21:38.000 [notice] Bootstrapped 90%: Establishing a Tor circuit
Sep 13 21:21:38.000 [notice] Tor has successfully opened a circuit. Looks like client fu
Sep 13 21:21:38.000 [notice] Bootstrapped 100%: Done
```

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
pnzxmgehowrcmi.onion

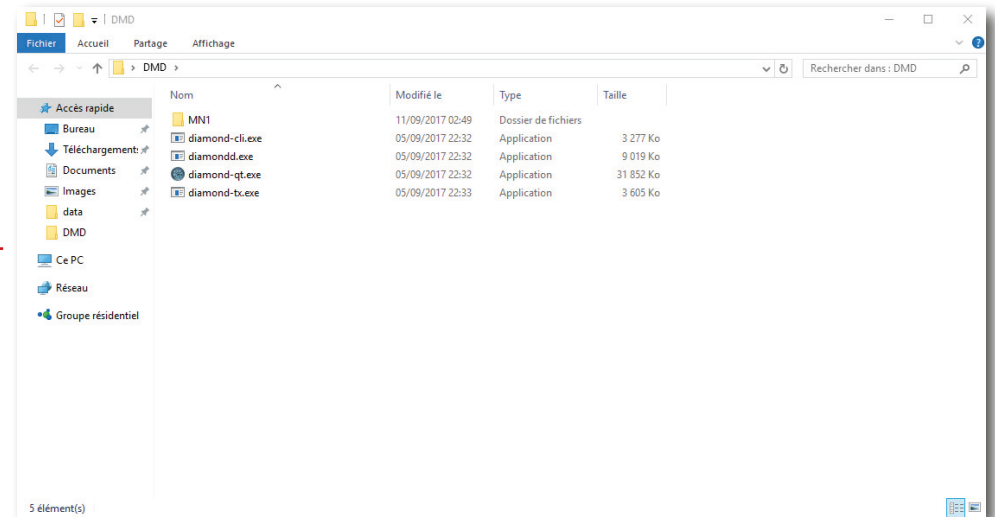
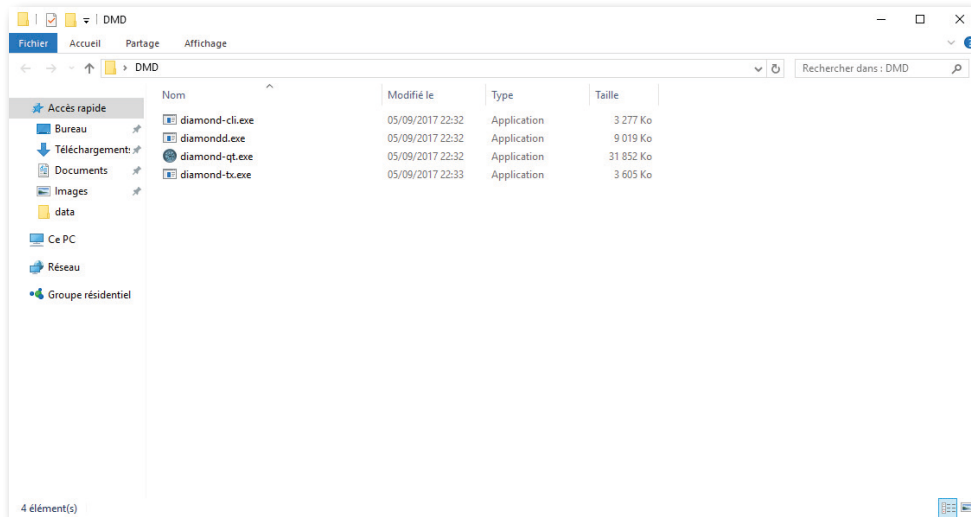
[ Read 1 line ]
^G Get Help  ^O Write Out  ^W Where Is   ^K Cut Text   ^J Justify    ^C Cur Pos    ^Y Prev Page  M-^ First Line
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell   ^_ Go To Line   ^V Next Page  M-/_ Last Line
```

8

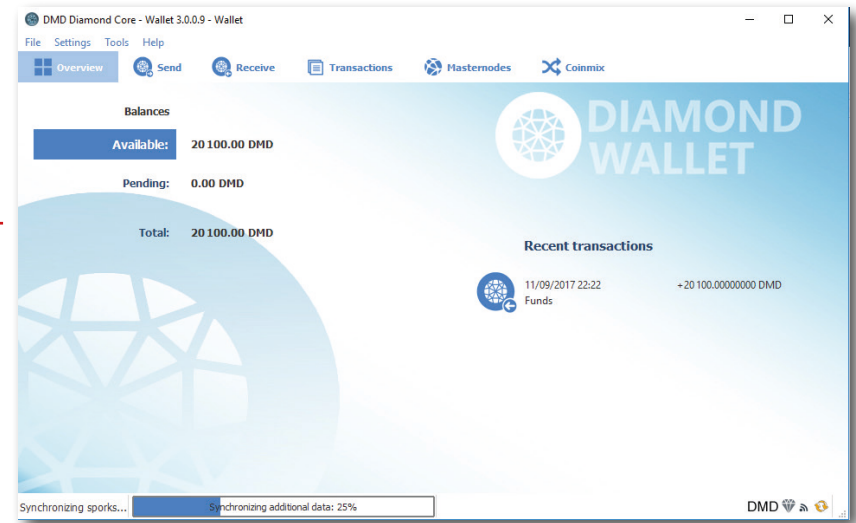
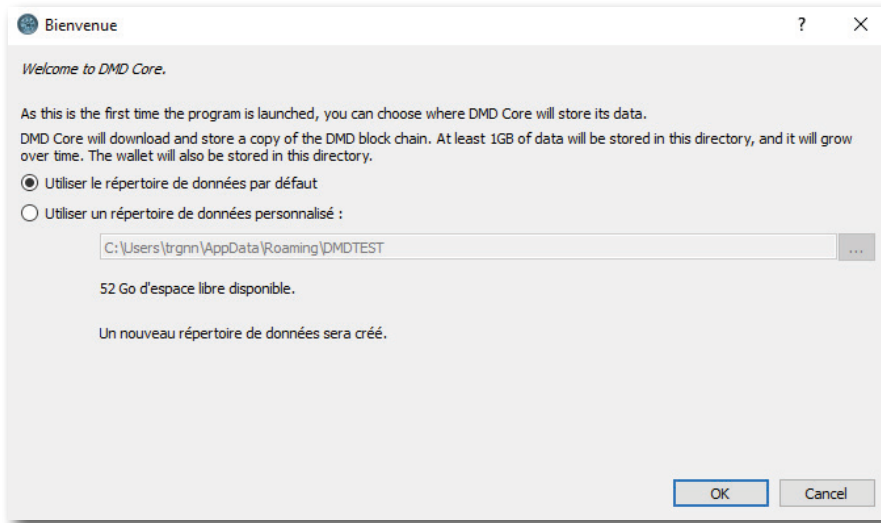
Download DMDv3 Windows wallet from <http://bit.diamonds/>

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.

Use this form to request payments. All fields are optional.

Label:

Amount: DMD

Message:

☐ Reuse an existing receiving address (not recommended)

Requested payments history

Date	Label	Message	Amount (DMD)
12/09/2017 00:18	(no label)	(no message)	(no amount)
11/09/2017 23:42	(no label)	(no message)	(no amount)
11/09/2017 23:41	MN1	(no message)	(no amount)
11/09/2017 03:00	(no label)	(no message)	(no amount)

Request payment to MN1



Payment information
URI: <diamond:dRTtjZpvS1RPJeSJQOmXn4QsWDVe8w89Ay?label=MN1>
Address: [dRTtjZpvS1RPJeSJQOmXn4QsWDVe8w89Ay](diamond:dRTtjZpvS1RPJeSJQOmXn4QsWDVe8w89Ay)
Label: MN1

Go to the send tab, the address you copied, MN1 as label and 10'000 DMD.

Click Send.

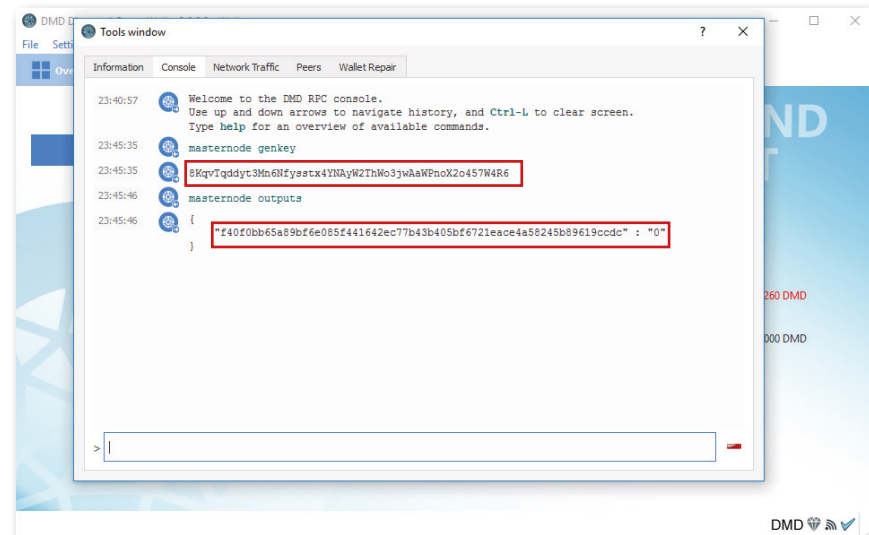
The screenshot shows the 'Send' tab of the DMD Diamond Core - Wallet 3.0.0.9. The interface includes a menu bar (File, Settings, Tools, Help) and a toolbar with icons for Overview, Send, Receive, Transactions, Masternodes, and Coinmix. The 'Send' tab is active, displaying a form with the following fields:

- Pay To:** A text field containing the address `dEXjvzyUY8xH4tgTr2DMnGkghW7XuuGwrN`.
- Label:** A text field containing the label `MN1`.
- Amount:** A numeric input field set to `10000` and a dropdown menu set to `DMD`.

At the bottom of the form, there is a **Transaction Fee** section showing `0.00010000 DMD/kB` and a **Choose...** button. Below this, there are buttons for **Send**, **Clear All**, and **Add Recipient**. On the right side, there are checkboxes for **mixTX** and **quickTX**, and a **Balance** display showing `20 100.00000000 DMD`. The bottom right corner features the DMD logo and a status bar with a signal icon and a checkmark.

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

Copy the private key and outputs in tempMN1.txt



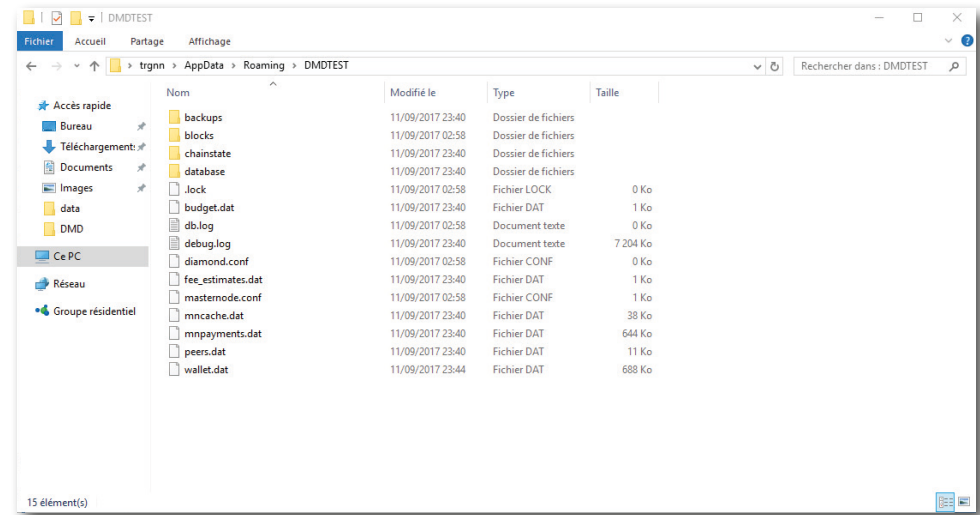
Important! Don't copy paste everything and format your data into tempMN1.txt file like this:
<onion address> <masternode genkey> <masternode output>

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



```
tempMN1.txt - Bloc-notes
Fichier Edition Format Affichage ?
8KqvTqddyt3Mn6Nfysstx4YNAyW2ThWo3jwAaWPnoX2o457W4R6 f40f0bb65a86bf6e085f441642ec77b43b405bf6721eace4a58245b89619ccdc 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.



```
masternode.conf - Bloc-notes
Fichier Edition Format Affichage ?

# Masternode config file
# Format: alias IP:port masternodeprivkey collateral_output_txid collateral_output_index
# Example: mn1 127.0.0.2:51474 93HaYBVUCYjEMeeH1Y4sBGLALQZE1Yc1K64xiqgX37tG0DL8Xg 2bcd3c84c84f87eaa86e4e56834c92927a07f9e18718810b92e0d0324456a67c 0
MN1 mk2f3pwejrkJpp6h.onion:17771 8KqvTqddyT3Mn6Nfysstx4YNAYW2ThWo3jwAaWpNoX2o457W4R6 f40f0bb65a89bf6e085f441642ec77b43b405bf6721eace4a58245b89619ccdc 0
```

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
```

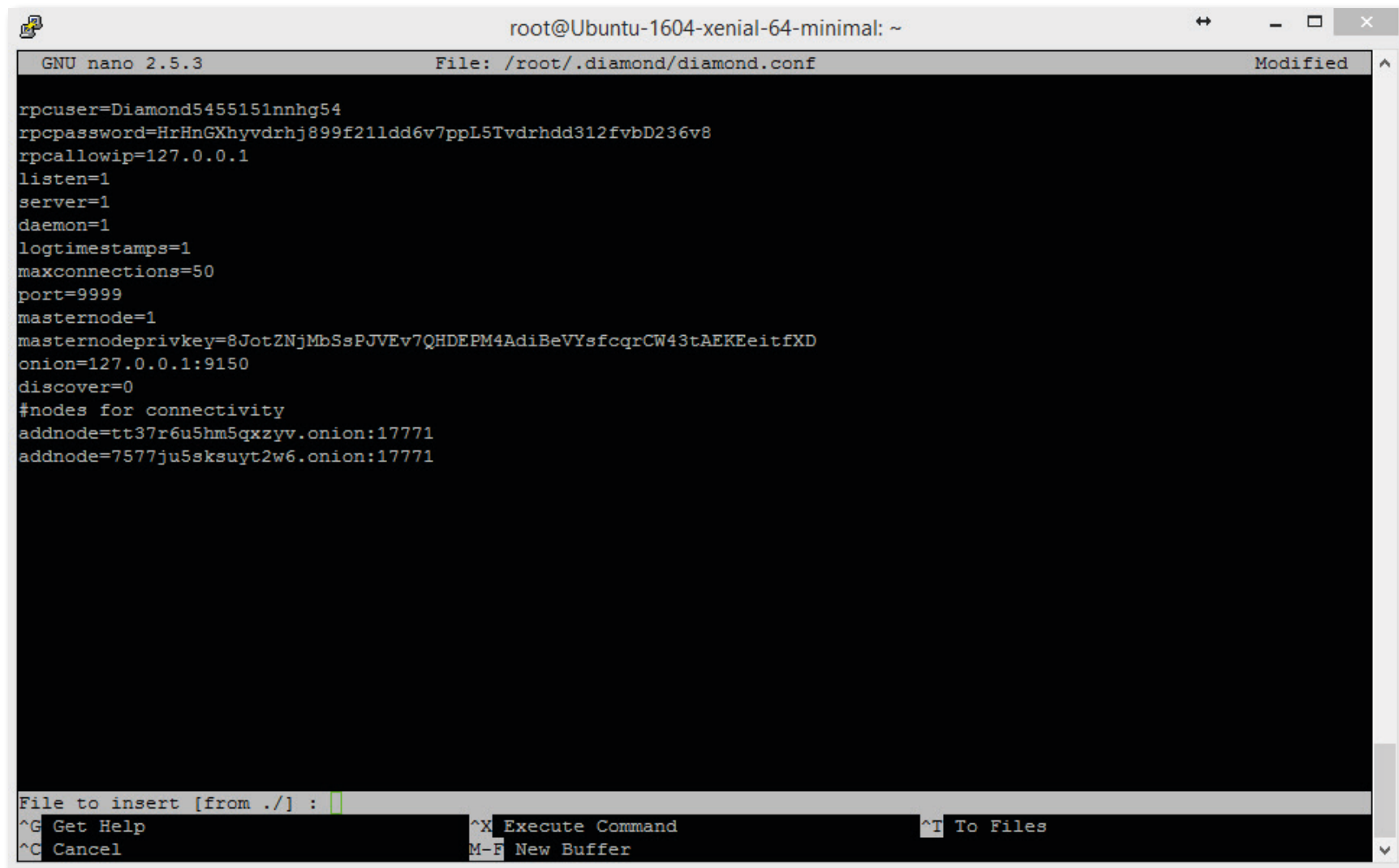
Simply copy and paste these, changing appropriate fields then exit nano:

```
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.



The screenshot shows a terminal window with the title bar "root@Ubuntu-1604-xenial-64-minimal: ~". The window contains the nano 2.5.3 text editor editing the file "/root/.diamond/diamond.conf". The file content is as follows:

```
rpcuser=Diamond5455151nnhg54
rpcpassword=HrHnGXhyvdrhj899f21ldd6v7ppL5Tvdrhdd312fvbD236v8
rpcallowip=127.0.0.1
listen=1
server=1
daemon=1
logtimestamps=1
maxconnections=50
port=9999
masternode=1
masternodeprivkey=8JotZNjMbSsPJVEv7QHDEPM4AdiBeVYsfCqrCW43tAEKEeitfXD
onion=127.0.0.1:9150
discover=0
#nodes for connectivity
addnode=tt37r6u5hm5qxzyv.onion:17771
addnode=7577ju5sksuyt2w6.onion:17771
```

The bottom of the terminal shows the nano editor's status bar with the prompt "File to insert [from ./] : " and a list of keyboard shortcuts: ^G Get Help, ^C Cancel, ^X Execute Command, M-F New Buffer, ^T To Files.

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=7577ju5ksuyt2w6.onion:17771
```

Example:

```
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=7577ju5ksuyt2w6.onion:17771
```

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

DMD Diamond Core - Wallet 3.0.0.9 - Wallet

File Settings Tools Help

Overview Send Receive Transactions **Masternodes** Coinmix

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 node should be running but you still see "MISSING" in "Status" field.

Alias	Address	Protocol	Status	Active	Last Seen (UTC)	Pubkey
MN1	[REDACTED]	70712	ENABLED	00m:00s	2017-09-11 22:16	dEXjvryUY8xH4tgTr2DMnGkghW7XuuGwrN

Start alias Start all Start MISSING Update status Status will be updated automatically in (sec): 44

DMD

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 :)