



CIF Masternode Guide

Step 1 - Before you get started.

Before you begin, you will need the following.

- 100,000 CIF
- The latest CIF Core wallet which can be downloaded here:

<https://www.cryptoimprovementfund.io/cifblockchain/>

Download and install the following three Windows programs:

- PuTTY: <http://www.putty.org/>
- WinSCP: <http://winscp.net/eng/download.php#download2>
- 7ZIP: <https://www.7-zip.org/>

Create a VULTR account, which can be found here: <https://www.vultr.com/>

Step 2 - Gathering Required Masternode Information

Create a notepad file on your desktop. You may find the following table helpful to fill in as you go:

New CIF Masternode details:	
Vultr Account:	
Email:	
Password:	
Server Hostname:	
Server Username:	root
Server IP:	
MN Server Password:	
New User For Server:	
New User Password For Server:	

*Run your CIF wallet (cif-qt.exe) , add masternodes tab in option. If it is the first time you run it it has to synchronize with the blockchain first.

////ProTip - "Open wallet and let it sync. When it is at 100% click on **SETTINGS** and select **OPTIONS**. A new window will pop up called Options.You will see a number of tabs: **Main, Wallet, Network, Window** and **Display**. Click on **Wallet** and look for the field named **Expert**.You should see some tick boxes - the second down is "**Show Masternodes Tab**" - click in this box so a tick appears and click "**OK**"\ \ \ \

When it is synchronized click on **TOOLS**, then **DEBUG CONSOLE**.

You will find the command line to type into at the bottom of the console.

*Enter the following command: "**masternode genkey**" and press **ENTER**.

You will see a long string of numbers and letters.

Please copy/paste this string to the new notepad file on your Desktop.

*Enter the following command: "**getaccountaddress 0**" and press **ENTER**.

This will generate your new Masternode's receiving address.

Please copy/paste this string to the notepad file, as well.

Please note: This address will be the one that you will send your 100,000 CIF to.

Once you have copy/pasted these items into your notepad file, you are finished with the Console. You may now close it.

Step 3 - Financing your masternode.

Take the new Masternode receiving address you just generated (in the previous step) and send 100,000 CIF to this address.

IMPORTANT: You must send EXACTLY 100,000 CIF to this address, no more, no less, to be eligible to run a masternode! This amount must be sent in one transaction, and cannot be spread across several multiple smaller transactions. *Ensure that the "Subtract fee from amount" box remains UNTICKED. This ensures any fees associated with this transfer of 100,000 CIF are taken from your remaining wallet balance and not from the 100,000 CIF you are sending.

Once you have initiated the transaction, you must wait for 15 confirmations so your address is eligible to be associated with your new masternode. This usually takes about 40 minutes on average.

You can view the status of your transaction in the **Transactions** tab of your wallet. This will appear as a "payment to yourself" and the amount will appear as zero, do not be alarmed! This is just as it should be.

Hover over the icon in the Address/Label column to see how many confirmations you have got - remember you need a minimum of 15.

Step 4 - Wallet Encryption/Backup

Begin securing your wallet by clicking on **SETTINGS->ENCRYPT WALLET**.

Enter a password, repeat it, and click OK.

////ProTip - Do not forget your password! It is a good practice to right your password down on a notepad file and copy and paste it into the “**enter password**” field. If you lose this password, there is no reset option and you will lose access to all your funds. Keeping this in mind, you need to be 100% sure that you did not mistype a character.\\\\

Close your wallet.

Re-run your wallet (cif-qt.exe) and immediately go to **FILE->BACKUP WALLET** and save your backup.

Step 5 - Setup your VPS (Virtual Private Server - Vultr)

You will be deploying your masternode on a private server. For this example we will use Vultr.

Deploy a new server with following specs:

Ubuntu 16.04 x64

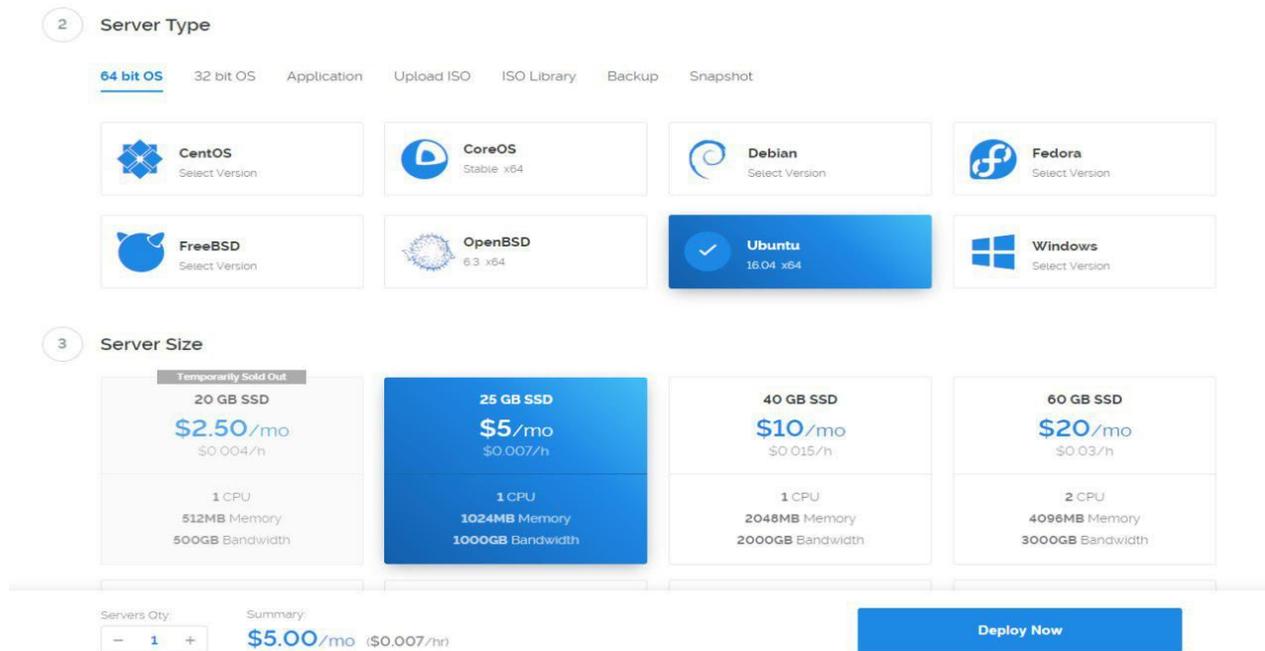
CPU:

1 vCore

Storage:

25 GB SSD

Name it in the field: Server Hostname & Label (name it whatever you like).



Click **“Deploy Now”** to activate your VPS

Go to servers, instances and wait until your server status shows *running*,

Click your server name and you will see.

IP Address: xxx

Username: xxx

Password: xxx

Step 6 - Connect to Your Server

////ProTip - Logging into the VPS with Putty - for the easily alarmed, you should note a pop up may appear with a **“PuTTY Security Alert”**. This is standard practice in Crypto, please click **“yes”** to proceed. When copying and pasting the password click the COPY button in Vultr and in the Putty Command window literally right click the mouse on the green rectangle and press **ENTER**.Normal Copy and Paste rules do not apply in PuTTY\\

Open Putty and connect to your server.

Copy the IP from the Vultr website into the “Host name (or IP address)” field and click the *open* button.

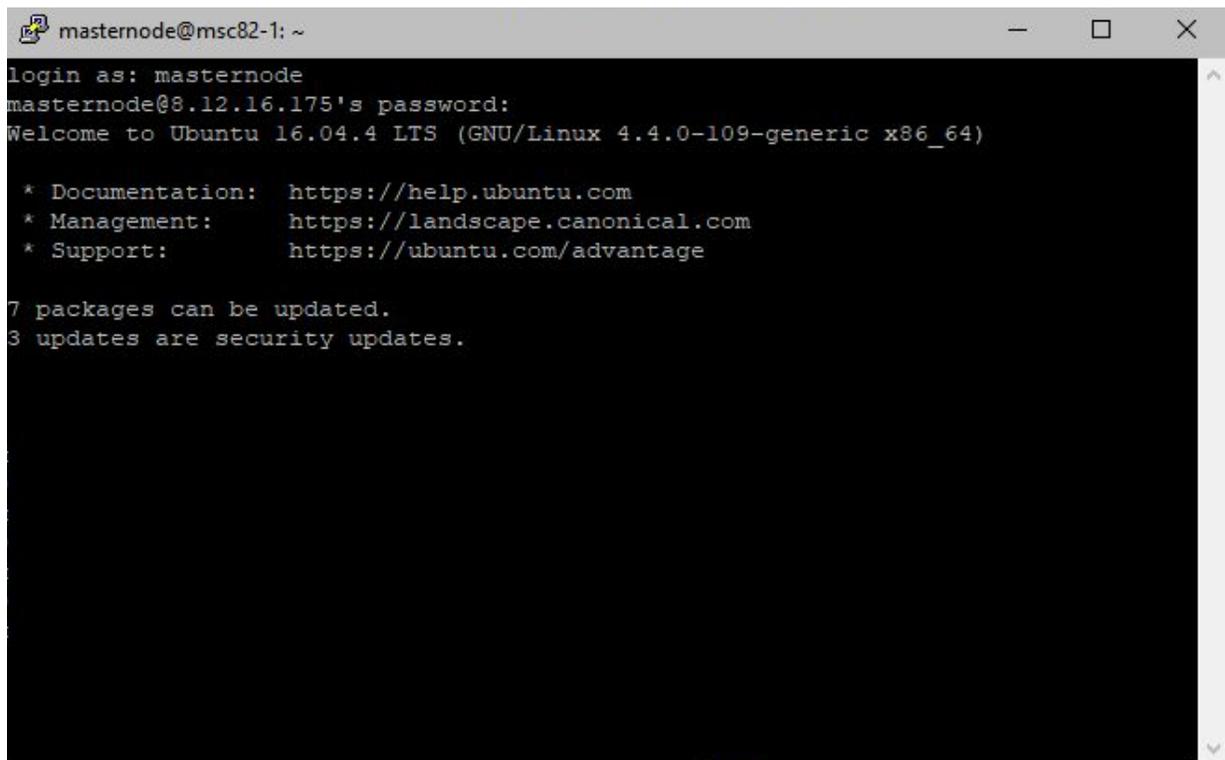
A new window will appear and ask you for the username you want to login with.

Type *root* then hit <ENTER>

Now you will be asked for the password.

Copy it from the Vultr website and paste it into the Putty console window. Then hit <ENTER>.

////ProTip - Copy/Paste to Putty console window: copy what you want to paste into Putty (for example the password) with CTRL+C, move your mouse over the Putty console window and right click mouse (dont use ctrl-v). Your copied text will be entered in the console window. Ps : when paste password ,putty will not show what you have pasted, the password will be hidden.\\\\\



```
masternode@msc82-1: ~
login as: masternode
masternode@8.12.16.175's password:
Welcome to Ubuntu 16.04.4 LTS (GNU/Linux 4.4.0-109-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

7 packages can be updated.
3 updates are security updates.
```

Step 7 - VPS Setup

Once you successfully logged in with *root* copy and paste the following commands into PuTTY:

apt-get update

apt-get upgrade -y

Wait a few minutes for it to finish installing.

Now you need to add a new user to the server (we can't use root for security purposes). Add a new user... in this case we will go with "**masternode**" (you can select a different username if you want).

adduser masternode

You will see:

Adding user `masternode' ...

Adding new group `masternode' (1000) ...

Adding new user `masternode' (1000) with group `masternode' ...

Creating home directory `/home/masternode' ...

Copying files from `/etc/skel' ...

New password:

Enter a password for the new user

////ProTip - When entering a password you will not see the words on the screen. Write it out in Notepad and copy the text, then right click on the green rectangle and hit enter. Same method as entering the password for Vultr.

When it asks you to verify your password having entered it the first time, type it out so that you know it is correct.\\

Repeat the password

You will then see “*Enter the new value, or press ENTER for the default*” and a series of fields. These can remain blank so press **ENTER** for the 5 entries you will see. Finally press **Y** when asked if the information is correct and **ENTER**.

Once the new user is created, you may need to close PuTTY and reopen, logging in again as Root in order for the following commands to take effect. Once logged back in to PuTTY as Root, please copy and paste the following comments (“Masternode” below is the name given to your new user in the previous part above)

usermod -aG sudo masternode

su masternode

Su Masternode will change your user from Root to our new secure user that you have created, in this example we are using “Masternode”.

When these have been successfully run you will see the following text in PuTTY:

To run a command as administrator (user "root"), use "sudo <command>".

See "man sudo_root" for details.

Next we will install some of the required programs. ////When adding python - you will be asked if it is ok to use up additional memory. Type in **Y** for yes and **hit enter**.\\

sudo apt-get install git ufw python

Enter your user password followed by <ENTER>

We will now activate the firewall and allow SSH and CIF by copying and pasting each of the following commands into PuTTY logged in under your new user name (not Root):

sudo ufw allow ssh/tcp

sudo ufw limit ssh/tcp

sudo ufw allow 43199/tcp

sudo ufw logging on

sudo ufw enable

You will see *Command may disrupt existing ssh connections. Proceed with operation (y|n)?*

Type "y" then press <ENTER>.

KEEP PUTTY OPEN. If it times out, log in again.

Step 8 - Install CIFCore on your VPS

Download cif linux wallet x64 release from github, you will need 2 files from this wallet cifd and cif-cli.

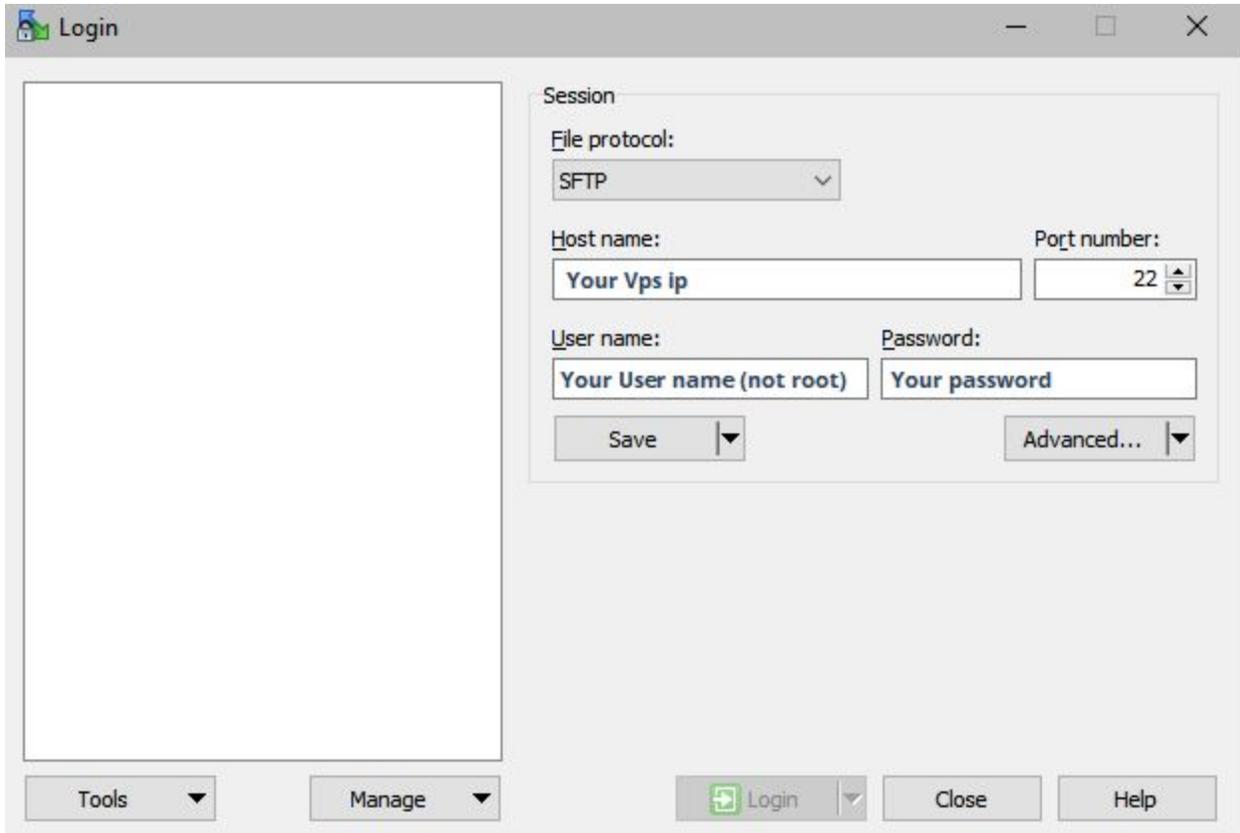
Tip: Be careful that you download the Linux64 version and NOT Linux32.

Install 7zip to extract linux files.

Copy and paste these two files to your desktop.

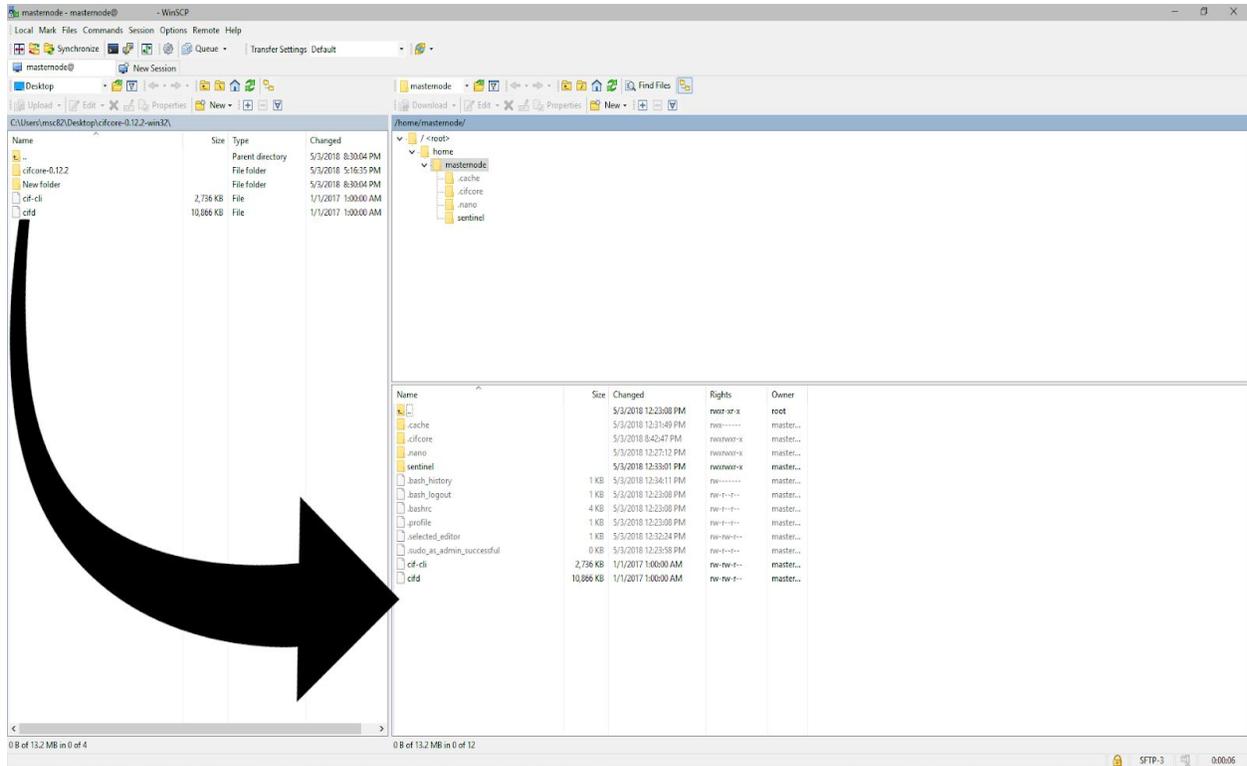
"cifd" and "cif-cli"

Open WinSCP.



Login with your vps account, click yes when you see a warning window.

Copy cifd and cif-cli to your users home directory (for example /home/masternode/). Just remember where you put them on the VPS.



Exit WinSCP.

BACK TO PUTTY

Now you need to go to the directory where you put cifd and cif-cli which you will do by copy and pasting the following into PuTTY - remember that "Masternode" below refers to your new user that you created:

```
cd /home/masternode/
```

Then install the binaries.

```
sudo install cifd /usr/local/bin/cifd
```

```
sudo install cif-cli /usr/local/bin/cif-cli
```

Now cifd and cif-cli can be called/started from everywhere. Copy and paste following into PuTTY:

```
cifd -daemon
```

This will start the CIF daemon.

You should see: CIF Core server starting.

It will run in background and synchronise with the blockchain. As long as the daemon is running cif-cli can communicate with it. There is no need to await any further messages from daemon at this time, and we will go ahead and Stop the daemon with the following command in PuTTY:

cif-cli stop

You should see CIF Core server stopping

Step 9 - Configure masternode.conf

Now we will write the nano... command. Remember again in this case the username is "Masternode".

nano /home/masternode/.cifcore/cif.conf

This will open the CIF configuration file which is located in .cifcore in the home directory of your user by default (e.g. /home/masternode/.cifcore).

Keep putty open and switch back to your desktop/ notepad.

Copy/paste the following information into a new notepad file, and update the xxxxxx with your information.

- rpcuser and rpcpassword can be anything, but it cannot have any special characters such as \$, #, !, only letters and/or numbers.
- The masternode privkey is the one that you generated in your wallet and copied to your notepad file earlier (**masternode genkey**).
- masternodeip is the public IP of your VPS.

rpcuser=XXXXXX

rpcpassword=XXXXXX

rpcallowip=127.0.0.1

listen=1

server=1

daemon=1

maxconnections=24

masternodeip=XXX.XXX.XXX.XXX

masternode=1

masternodeprivkey=XXXXXXXXXXXXXXXXXXXXXXXXXXXX

Change the required information in your notepad file and copy it.

Then go to the Putty window where the nano cif.conf file is already open , and Paste everything with a right click.

Then save the file by pressing **CTRL+X** then **Y** and **<ENTER>**

This will redirect you to first putty page.

Start the CIF daemon again.

cifd -daemon

Step 10 - Configure Local Wallet

Back to your PC, go to your CIF wallet and open the masternode configuration file by clicking:

Tools -> Open Masternode Configuration File

////ProTip - Configuring Local Wallet - when you open the Masternode Configuration File it will display three lines, with a # on each line. Keep the top line, delete the two below. Leave a blank line after the top line with the # on it and start entering your details (as listed below) underneath that blank line.\\\\

The masternode.conf file needs to have the following information:

LABEL: your masternode name (e.g.. CIFmn1)

MN IP : Your VPS's IP (the same that you added at masternodeip)

PORT: port is always **43199**.

MASTERNODEPRIVKEY: This is the result of your "**masternode genkey**" from earlier.

TRANSACTION HASH: The collateral tx. hash from the 100000 deposit.

INDEX: The Index is always 0 or 1.

The MN IP and MASTERNODEPRIVKEY should already be in your notepad file, and the LABEL you make up yourself,

You just need to find out the TRANSACTION HASH and INDEX.

To get this, go to TOOLS=>DEBUG CONSOLE.

On the command line, enter "**masternode outputs**".

You will get a string that looks like this:

{

```
"06e38868bb8f9958e34d5155437d009b72dff33fc28874c87fd42e51c0f74fdb" : "0",  
}
```

The masternode.conf must look like this (all on one line, no spaces between MN IP and PORT.):

```
# Masternode config file
```

```
LABEL MN IP : PORT MASTERNODEPRIVKEY TRANSACTIONHASH INDEX
```

Example:

```
# Masternode config file
```

```
MN1 80.45.4.97:43199 XrxSr3fXpX3dZcU7CoiFuFWqeHYw83r28btCFfIHqf6zkMp1PZ4  
06e38868bb8f9958e34d5155437d009b72dff33fc28874c87fd42e51c0f74fdb 0
```

Save and exit the masternode configuration file.

Step 11 - Configure Sentinel

Back in the still open PuTTY window, copy and paste each of the following lines of text into PuTTY and press **enter**. You may be asked to provide your password for the New User you created after you copy and paste in the first line and you have pressed Enter.

Therefore type the following commands. Enter your password for **your user** that you created if asked. Copy paste following.

```
sudo apt-get update
```

```
sudo apt-get install -y git python-virtualenv virtualenv
```

```
git clone https://github.com/CIF-Github/sentinel.git
```

```
cd sentinel
```

```
virtualenv venv
```

```
venv/bin/pip install -r requirements.txt
```

Now we will wake up your Sentinel.

```
venv/bin/python bin/sentinel.py
```

If this command is returning nothing then everything is running properly.

Though you didn't start the masternode yet so you are likely to see something like

Invalid masternode status, cannot continue or dashd not synced with network! Awaiting full sync before running Sentinel.

Which is **OK** at that moment

Type.

nano sentinel.conf

Enter the following under (REMEMBER that “Masternode” mentioned in the below command is your new user that you created)

```
#dash_conf=/home/evan82/.cifcore/cif.conf
```

```
dash_conf=/home/masternode/.cifcore/cif.conf
```

Then CTRL+X, Y, <ENTER>

Next we’re going to add a cron job to wake up sentinel every minute.

Also we will add a job to start the CIF daemon after a reboot of the server.

Type.

crontab -e

Choose nano as editor number 2 (**enter**).

Using the down arrow on your keyboard, move the cursor to the bottom of the page and add the following line (change the username to the username you chose, in this case “Masternode”).

```
***** cd /home/masternode/sentinel && ./venv/bin/python bin/sentinel.py 2>&1 >>sentinel-cron.log
```

Hit <ENTER> to go to a new line and write.

```
@reboot /usr/local/bin/cifd >/dev/null 2>&1
```

Then close and save the file by CTRL+X , Y , <ENTER>.

Step 12 - Start your Masternode

Before starting the masternode I'd check if everything is synced with this command in putty

cif-cli mnsync status

It will show ... FINISHED

If it shows anything else, wait for a moment and try again until it says finished.

Navigate back to your Windows wallet.

Restart your Windows wallet and wait until full sync.

Select your masternode on the “My masternodes” tab.

Then start it by clicking on the “Start alias” button.

Enter your wallet password.

You can check your masternode status anytime in putty by entering the following command.

cif-cli masternode status

It should show... SUCCESSFULLY STARTED

Wait at least 60 min until your masternode status will change from

PRE-ENABLED or WATCHDOG_EXPIRED to **ENABLED**.

Congratulations, you’ve just setup your first Masternode!

For multiple masternodes : same steps , you need to deploy **new server** and edit you **masternodes.conf** with the second masternode data ,restart your wallet and start the second alias etc...

Good Luck :)

Msc82 , Thanks to @em_age @Scott for support



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