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# **MotionProject Docs**

*Release 1.0*

**MotionProject**

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## Motion MasterNode Install from Masternode Installer (Recommended)

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### 1.1 Preparation

You will need an account from Digital Ocean, you can create one from the installer.

- Make sure you have at least 1000 XMN free on your Wallet.
- Make sure you have masternodes tab enabled on your Wallet (Settings -> Advanced Settings -> Show Masternodes Tab)

**NOTES:** `PRE_ENABLED` status is NOT an issue, just restart local wallet and wait a few minutes.

'WATCHDOG\_EXPIRED' is not a problem if you just installed. Give time for the network to sync, 10 + Minutes.

It will create a new droplet (VPS) for each MasterNode you plan to host.

### 1.2 Part 1

- Download the [Masternode Installer](#) for your platform (Currently only 64 bits OS supported).
- Close your Motion Wallet if is open.
- Run the Installer.
- Login into your DigitalOcean account.

### 1.3 Part 2

Wait 5-10 minutes while we provision your VPS, sync the wallet and make magic.

## 1.4 Part 3

When the installer finish the installation, close it. Open your wallet, go to Masternodes tab, right click on your new masternode and then `start alias`.

You are done. Enjoy your new Masternode.



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## Motion MasterNode Install from script (10 minutes)

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### 2.1 Preparation

Get a VPS from a provider like [DigitalOcean](#), [Vultr](#), [Linode](#), etc.

- **Recommended VPS size:** 2GB RAM (if less its ok, we can make swap partition)
- **It must be Ubuntu 16.04 (Xenial)**
- Make sure you have a transaction of **exactly 1000 XMN** in your desktop wallet (If you dont, just send 1000 XMN from you to you).
- motion.conf file on LOCAL wallet **MUST BE EMPTY!** (if you haven't touched this file it's OK)
- masternode.conf file on VPS wallet **MUST BE EMPTY!** (if you haven't touched this file it's OK)

**NOTES:** PRE\_ENABLED status is NOT an issue, just restart local wallet and wait a few minutes.

'WATCHDOG\_EXPIRED' is not a problem if you just installed. Give time for the network to sync, 10 + Minutes

You need a different IP for each masternode you plan to host.

### 2.2 Wallet Setup

- Open your Motion wallet on your desktop.
- Click **Receive** tab, then put your Label such as "MN1" and click Request.
- Copy the Address and Send **EXACTLY** 1000 XMN to this Address, wait for 15 confirmations.
- Go to the tab at the bottom that says `Tools`
- Go to the tab at the top that says `Console`

Wait for 15 confirmations, then run following command:

```
masternode outputs
```

You should see one line corresponding to the transaction id (tx\_id) of your 1000 coins with a digit identifier (digit). Save these two strings in a text file.

Example:

```
{
  "6a66ad6011ee363c2d97da0b55b73584fef376dc0ef43137b478aa73b4b906b0": "0"
}
```

Copy this and paste it to that text file, we will throw away all the {} "" :

Note that if you get more than 1 line, it's because you made multiple 1000 XMN transactions, with the tx\_id and digit associated. This isn't a problem, we just do some extra steps to make a new genkey for each one, if your installing more than one.

Now, type in and run the following command:

```
masternode genkey
```

You should see a long key: (masternodeprivkey)

EXAMPLE: 7xx

This is your masternode private key, copy and paste it to the text file, keep it safe, do not share with anyone. This will be called masternodeprivkey

Next, We need to get the configuration files ready.

- Open Wallet
- Select "settings" => and click "Open masternode configuration file"
- Open this file with a text editor like notepad or notepad ++

You should see 3 lines both with a # to comment them out, Like this EXAMPLE:

```
# Masternode config file_
↪dc56e5560618aca0bdb900e5cd75f25b37910ae9ca7a214ca3d5c935f1912d62
# Format: alias IP:port masternodeprivkey collateral_output_txid collateral_output_
↪index
# Example: mn1 127.0.0.2:19999 93HaYBVUCYjEMeeH1Y4X37tGBDQL8Xg_
↪2bcd3c84c84f87ea188100324456a67c 0
```

The Format here is:

```
MN1 (LABEL) (YOUR VPS IP):7979 masternodeprivkey tx_id digit
```

Please make a new line, or clear the document and put the information we copied earlier.

Example:

```
MN1 148.124.58.33:7979 7xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
6a66ad6011ee363c2d97313773b4b906b0 0
```

So now it should look something like:

```
# Masternode config file_
↪dc56e5560618aca0bdb900e5cd75f25b37910ae9ca7a214ca3d5c935f1912d62
# Format: alias IP:port masternodeprivkey collateral_output_txid collateral_output_
↪index
# Example: mn1 127.0.0.2:19999 93HaYBVUCYjEMeeH1Y4X37tGBDQL8Xg_
↪2bcd3c84c84f87ea18810d0324456a67c 0
MN1 148.124.58.33:7979 7xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx_
↪6a66ad6011ee363c2d973137b73b4b906b0 0
```

Put your data correctly, **save it** and close.

Go to Motion Wallet, Click Settings, Check Show Masternodes Tab.

Save and restart your Motion wallet.

Note that each line of the `masternode.conf` file corresponds to one masternode if you want to run more than one node from the same wallet, just make a new line and repeat steps.

## 2.3 VPS Setup

**Preparation:** Windows users will need a program called `putty` to connect to the VPS Use SSH to Log into your VPS

**Please note:** We will run everything on root user, if you are using any other user will fail.

We need to install some dependencies. Please copy, paste and hit enter:

```
apt-get update;apt-get upgrade -y; apt-get install nano git wget -y;
```

Now lets download the script, copy command into the VPS command line and hit enter: `wget https://raw.githubusercontent.com/motioncrypto/motion-docs/master/scripts/masternode.sh`

And give it permission and run: `chmod +x masternode.sh; ./masternode.sh`

When prompted, enter your `masternodeprivkey` from before.

You will be asked a few other questions, you can push enter to default on these. The installation should finish successfully.

Ask for help in [discord](#) if it doesn't.

## 2.4 Testing

After the script finishes, you will want to check that it is running properly. Please type in:

```
motion-cli getinfo
```

**IF** you put wrong Privkey or VIPSIP>:PORT and get an error, you just need edit the `.conf` file with the correct data with:

```
nano /root/.motioncore/motion.conf
```

Then save and exit using CTRL+X, Y and Enter, and restart daemon with:

```
motiond -daemon
```

now test with:

```
motion-cli getinfo
```

or

```
motion-cli getblockcount
```

If you get an error that file does not exist, it may be that the script failed to build and we need to trace back the problem. Contact devs in [discord](#).

## 2.5 Starting Your Masternode

Go back to your desktop wallet, to the Masternode tab. You need to wait for 15 confirmations in order to start the masternode- you can also check on your VPS by:

```
motion-cli getblockcount
```

(needs to be more than 0 to be in sync, at the moment of writing this guide we are at block 20000)

**NOTE:** If the Masternode tab isn't showing, you need to click settings, check Show Masternodes Tab save, and restart the wallet.

If your Masternode does not show, restart the wallet.

If it is your first, Click `start-all`. Your masternode should be now up and running! If this is another Masternode, Highlight the Masternode by clicking on it once, then click "Start Alias"

## 2.6 Checking Your Masternode

You can check the masternode status by Logging into the VPS and typing:

```
motion-cli masternode status
```

If your masternode is running it should print `Masternode successfully started`.

You can also check your MN status by local wallet - `tools -> console`, just type:

```
masternode list full XXXXX
```

(Where XXXXX is yours first 5 character of TX\_ID).

**CONGRATULATIONS!**

**TROUBLESHOOTING:**

- If you put wrong Privkey or VPSIP:PORT and get an error, you need edit the `.conf` file with the correct data with: `nano /root/.motioncore/motion.conf`

and restart daemon with: `motiond -daemon`

- If get error: incorrect rpcuser or rpcpassword (authorization failed) you need to kill the process first with: `pkill -9 motiond` Then save and exit using CTRL+X, Y and Enter, and restart daemon with: `motiond -daemon` Now test with: `motion-cli getinfo` or `motion-cli getblockcount`
- If after start alias and when check with `motion-cli masternode status` on your VPS isn't showing as "Masternode successfully started", go to your data folder of local wallet and delete files: `mncache.dat` and `mnpayments.dat`, restart local wallet, wait full sync and start the alias again.
- If you get an error that file does not exist, it may be that the script failed to build and we need to trace back the problem. Contact our support in discord.

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## Motion MasterNode Manual Install

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### 3.1 Preparation

- **Recommended VPS size:** 2GB RAM (if less its ok, we can make swap partition)
- **It must be Ubuntu 16.04 (Xenial)**
- Make sure you have a transaction of **exactly 1000 XMN** in your desktop wallet (If you dont, you can auto-make that transaction from you to you).
- motion.conf file on LOCAL wallet **MUST BE EMPTY!** (if you haven't touched this file it's OK)
- masternode.conf file on VPS wallet **MUST BE EMPTY!** (if you haven't touched this file it's OK)
- You need a different IP for each masternode you plan to host

This guide is for a single masternode, on a Ubuntu 14.04 64bit server (2GB RAM minimum) or 16.04 LTS (2GB RAM minimum). That will be controlled from the wallet on your local computer and all commands on VPS are running as root.

**NOTES:** PRE\_ENABLED status is NOT an issue, just restart local wallet and wait a few minutes.

If your VPS doesn't have enough RAM, create 2-4GB of swap memory using these commands line by line:

```
cd /
sudo dd if=/dev/zero of=swapfile bs=1M count=3000
sudo mkswap swapfile
sudo swapon swapfile
sudo nano etc/fstab
/swapfile none swap sw 0 0
```

### 3.2 Wallet Setup Part 1

- Open your wallet on your desktop.



<https://www.digitalocean.com/community/tutorials/how-to-log-into-a-vps-with-putty-windows-users>

Other:

<https://www.webhostface.com/kb/knowledgebase/connecting-to-vps-via-ssh/>

Now, Use SSH to Log into your VPS

We need to install some dependencies. Please copy, paste and hit enter:

```
apt-get update;apt-get upgrade -y;apt-get dist-upgrade -y;apt-get install nano htop
↵git wget unzip -y;apt-get install build-essential libtool autotools-dev automake
↵pkg-config -y;apt-get install libssl-dev libevent-dev bsdmainutils software-
↵properties-common -y;apt-get install libboost-all-dev -y;apt-get install libzmq3-
↵dev libminiupnpc-dev libssl-dev libevent-dev -y;add-apt-repository ppa:bitcoin/
↵bitcoin -y;apt-get update;apt-get install libdb4.8-dev libdb4.8+-dev -y;
```

Now we have to build the wallet. Clone the Motion Github from Here:

```
wget https://github.com/motioncrypto/motion/archive/v0.1.2.zip
unzip v0.1.2.zip
mv /root/motion-0.1.2 /root/motion
```

Then navigate to the newly created motion folder and execute the following, line by line:

```
cd motion
chmod 755 autogen.sh
./autogen.sh
./configure
chmod 755 share/genbuild.sh
make
```

## IMPORTANT

Your build will FAIL if you do not have enough RAM memory. If you do not have 2GB or more make a Swap partition BEFORE you try to build!

This process can take a while, it will compile the Motion wallet.

After build completes, you need to start the daemon to create data folders and files, wait a few seconds and stop the daemon so you can edit the conf file on next step, use the follow commands to navigate to src folder to do it:

```
cd src/
./motiond -daemon
```

Wait a few seconds then stop with:

```
./motion-cli stop
```

Navigate to the data directory by typing:

```
cd ~/.motioncore
```

now edit with:

```
nano motion.conf
```

Now copy paste the following configuration, and edit with your VPS IP and msternodeprivkey:

```
rpcuser=user(replace with whatever you want)
rpcpassword=pass(replace with whatever you want)
rpcallowip=127.0.0.1
```

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```
listen=1
server=1
daemon=1
rpcport=3385
staking=0
externalip=(YOUR VPS IP):7979
masternode=1
masternodeprivkey=masternodeprivkey
```

**IMPORTANT** You need to change IP to your VPS IP address, the `masternodeprivkey` is the one that you got from the main wallet. Choose whatever you like for user and password. Note that the port should be 7979 for Motion masternodes and `rpcport` is 3385 for sentinel.

Hold `Ctrl + X`, type `Y => Enter` The file `motion.conf` is now saved!

If you have a firewall running, you need to open the 7979 and 3385 port, example on UFW:

```
sudo ufw allow 7979/tcp
sudo ufw allow 3385/tcp
sudo ufw enable
```

Now Let's restart motiond:

```
cd /root/motion/src/
./motiond -daemon
```

Wait like 10 mins for your wallet to download the blockchain. You can check the progress with the following command :

```
./motion-cli getblockcount
```

Now we need SENTINEL to fix WATCHDOG EXPIRED issue:

### 3.4 Install Prerequisites For Sentinel

Make sure Python version 2.7.x or above is installed:

```
python --version
```

Update system packages and ensure `virtualenv` is installed:

```
sudo apt-get update
sudo apt-get update; sudo apt-get install python3-pip
sudo pip3 install virtualenv
```

Make sure the local Motion daemon running is at least version 0.1.2 (10200)

### 3.5 Install Motion Sentinel

Clone the Sentinel repo and install Python dependencies.

type in terminal:



```
cd
git clone https://github.com/motioncrypto/sentinel.git && cd sentinel
virtualenv ./venv
./venv/bin/pip install -r requirements.txt
```

## 3.6 Set up Cron

Set up a crontab entry to call Sentinel every minute:

```
crontab -e
```

In the crontab editor, add the lines below, replace `/home/YOURUSERNAME/sentinel` to the path where you cloned sentinel: (should be `/root`)

```
* * * * * cd /home/YOURUSERNAME/sentinel && ./venv/bin/python bin/sentinel.py >/dev/
↵null 2>&1
```

## 3.7 Test the Configuration

Test the config by running all tests from the sentinel folder you cloned into

```
./venv/bin/py.test ./test
```

With all tests passing and crontab setup, Sentinel will stay in sync with motiond and the installation is complete

## 3.8 Configuration (Optional)

An alternative (non-default) path to the `motion.conf` file can be specified in `sentinel.conf`:

```
motion_conf=/path/to/motion.conf
```

## 3.9 Troubleshooting

To view debug output, set the `SENTINEL_DEBUG` environment variable to anything non-zero, then run the script manually:

```
SENTINEL_DEBUG=1 ./venv/bin/python bin/sentinel.py
```

## 3.10 Starting Your Masternode

Go back to your desktop wallet, to the Masternode tab. You need to wait for 15 confirmations in order to start the masternode on your VPS

You can check by going to putty and type:

```
cd /root/motion/src
./motion-cli getblockcount (needs to be more than 0 to be in sync)
```

**NOTE:** If the Masternode tab isn't showing, you need to click settings, check Show Masternodes Tab save, and restart the wallet If your Masternode does not show, restart the wallet

Now Click `start-all`. Your masternode should be now up and running!

## 3.11 Checking Your Masternode

You can check the masternode status by going to the masternode vps and typing:

```
cd /root/motion/src/  
./motion-cli masternode status
```

If your masternode is running it should print `Masternode successfully started`.

You can also check your MN status by local wallet - `tools -> console`, just type:

```
masternode list full XXXXX
```

(Where XXXXX is yours first 5 character of TX\_ID).

**CONGRATULATIONS!**

## CHAPTER 4

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Authors

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