



# Masternode setup guide

## Introduction

This guide describes installation and configuration procedures for the Smart Quorum Coin wallet and masternode applications in Ubuntu 14.04 LTS and 16.04 LTS. Installation and running wallet and masternode applications requires basic Linux administration skills.

## 1. System requirements

To run Smart Quorum Coin masternode you need any VPS having at least 1.4 GHz single-core CPU, 1 GB RAM and 30 GB HDD.

To compile server or wallet applications you need 2.4 GHz CPU, 2 GB RAM and 30 GB HDD.

Warning! Never run anything as root! Use sudo instead.

## 2. Compiling and Installation

### 2.1. Compiling server application for Ubuntu 14.04 LTS and Ubuntu 16.04 LTS

Execute following commands to install required system packages:

```
sudo apt-get update
```

```
sudo apt-get install software-properties-common
```

```
sudo apt-add-repository -y ppa:bitcoin/bitcoin
```

```
sudo apt-get update
```

```
sudo apt-get install build-essential libtool autotools-dev automake autoconf pkg-config libssl-dev libevent-dev bsdmainutils libminiupnpc-dev git nano libzmq3-dev libgmp3-dev libboost-all-dev libdb4.8-dev libdb4.8++-dev
```

Execute following command to obtain Smart Quorum Coin source code:

```
git clone https://github.com/smartquorum/sqrcoin
```

Execute following commands to build server application:

```
cd sqrcoin/src
```

```
chmod 755 secp256k1/autogen.sh
```

```
chmod 755 leveldb/build_detect_platform
```

```
make -f makefile.unix
```

```
strip SQRcoind
```

## 2.2. Compiling GUI wallet application for Ubuntu 14.04 LTS and Ubuntu 16.04 LTS

Normally you don't have to compile GUI wallet application, because it can be downloaded from the project web page.

Execute following command to install required system packages:

```
sudo apt-get install qt5-default qt5-qmake qtbase5-dev-tools qttools5-dev-tools
```

Execute following command to obtain Smart Quorum Coin source code:

```
git clone https://github.com/smartquorum/sqrcoin
```

Execute following commands to build GUI wallet application:

```
cd sqrcoin
```

```
chmod 755 src/secp256k1/autogen.sh
```

```
chmod 755 src/leveldb/build_detect_platform
```

```
cd src/
```

```
make -f makefile.unix
```

```
cd ..
```

```
qmake
```

```
make
```

## 2.3. Installing GUI wallet application

Execute following command to install required system packages:

```
sudo apt-get install qt5-default qt5-qmake qtbase5-dev-tools qttools5-dev-tools
```

Download GUI wallet application from the project web page.

## 3. Masternode setup

### 3.1. GUI wallet configuration

- 3.1.1. Run the wallet application and wait until it gets fully synced with network.
- 3.1.2. On Receive tab generate new address by clicking New Address button and copy it.
- 3.1.3. Send exactly 3000 SQR to that address.
- 3.1.5. Wait for at least one confirmation of this transaction.
- 3.1.6. Go to *Help > Debug Window > Console*, and execute command “*masternode outputs*”. Save somewhere TX\_ID and VOUT.
- 3.1.7. Execute command “*masternode genkey*” and save your masternode key.

### 3.2. VPS Wallet Configuration

3.2.1. Execute following commands to create server application configuration file:

```
mkdir ~/.SQRcoin
```

```
touch ~/.SQRcoin/SQRcoin.conf
```

Open configuration file *SQRcoin.conf* in any text editor and paste the following:

```
rpcuser=enter_any_username  
rpcpassword=enter_any_random_password  
rpcallowip=127.0.0.1  
daemon=1  
server=1  
listen=1  
masternode=1  
masternodeaddr=ip_address_of_your_vps:41791  
masternodeprivkey=enter_masternode_key_generated_above
```

Execute following commands to start server application:

```
cd ~/sqrcoin/src
```

```
./SQRcoind
```

If it is already running, execute following commands to restart it:

```
./SQRcoind stop
```

```
./SQRcoind
```

## 3.3. Launching masternode

3.3.1. On the Masternodes tab of the GUI wallet application click on “*Create*” button, and enter the following:

```
Alias: any_name_for_your_masternode  
Address: ip_address_of_your_vps:41791  
PrivKey: enter_masternode_key_generated_above  
TxHash: enter_tx_id_generated_above  
Output Index: enter_vout_generated_above  
Rewards Address: leave_empty  
Rewards %: leave_empty
```

3.3.2. Click “Start All” button to start the node.

## 4. Troubleshooting

4.1. Make sure that ports 41791 and 41792 are opened on your router

4.2. Make sure that your server application is running properly. Execute the following commands on your VPS:

```
cd ~/sqrcoin/src/
```

```
./SQRcoin masternode status
```

The status in the response must be 1 or 8.

4.3. Make sure that the GUI wallet address is not locked.

In the GUI wallet application go to *Settings > Options > Display* and click “*Display control features*”. Then go to “*Send*” and click the “*Inputs*” button. Find the address you sent 3000 SQR to, right-click it and click “*Unlock unspent*”.