



Tutorial: How to setup a cold dynode on a remote server

Summary

This tutorial should help you set-up a cold dynode on a remote webserver. “Cold” means that the server running the dynode does *not* need a local wallet containing the dynode collateral. Notice that setting up a dynode requires some basic knowledge of the Unix shell. However, with this guide you should be fine

Requirements

In order to set-up a cold remote wallet, you will need:

- A local QT wallet on your main machine containing at least 1000 DYN (and some change to cover the transaction fees)
- A webserver with a fixed IP(v4) address <webserverIP> and the port 31300 open

Remote set-up

Preparing your webserver

- Connect to your webserver by using `ssh <youruser>@<webserverIP>` or `ssh <youruser>@<webserverURL>`
- Once connected to your webserver, get the Dynamic binary archive from github and extract it.

```
wget https://goo.gl/T0nEyQ
tar -xzf Dynamic-Linux-x64-v1.3.0.1.tar.gz
```

- Change into the Dynamic binary directory to see the binaries

```
cd dynamic-1.3.0/bin
ls -lisa
```

This should show you the binaries. In the following, we will need only the daemon `dynamicd` and the client `dynamic-cli`

- In order to start the binaries from any directory in the system, you need to add this directory to your `$PATH` variable or link them to a place where the system can find it. We assume that `~/bin/` is in your `$PATH`. If you don't know what this all means, you should probably read this

```
sudo ln -s $(pwd)/dynamicd ~/bin/dynamicd
sudo ln -s $(pwd)/dynamic-cli ~/bin/dynamic-cli
```

- Now you should be able to run `dynamicd` and `dynamic-cli` from anywhere

Configuring your dynode

- First, start the daemon by typing `dynamicd`. This creates an initial configuration file at `~/.dynamic/dynamic.conf`. Now press `<CTRL>+c` to stop the daemon again.

- Now start the daemon in background mode

```
dynamicd --daemon
```

- The dynamic node should now start syncing the blockchain automatically. You can check the progress using `dynamic-cli getinfo`.
- Next, we need to create a private key for the dynode. The controller wallet on your main machine will use that key to talk to start the dynode.

```
dynamic-cli dynode genkey
```

- Write down the generated key as `<dynprivkey>`
- After the wallet has synced, stop the daemon

```
dynamic-cli stop
```

- Now we edit the configuration file

```
nano ~/.dynamic/dynamic.conf
```

- Add the following lines (save with `<CTRL>+o`, close with `<CTRL>+x`)

```
port=31300
externalip=<webserverIP>
dynode=1
dynodeprivkey=<dynprivkey>
```

- Now, starting the node you will have a dynode ready to be controlled

```
dynamicd --daemon
```

- You can check the status of your remote dynode using the client:

```
dynamic-cli dynode status
```

Setting up the controller wallet

The wallet on your local machine acts as the controller wallet for your dynodes. It contains the dynode collateral and can activate your cold dynode on your webserver. We will use the Dynamic QT Wallet.

Setting the collateral funds

- In the QT Wallet, go to the tab "Receive", and create a new address. You may use a label like "dynode collateral" for that. Copy the address just generated, which we will call `<collateraladdress>`.
- Go to "Send" and send *exactly* 1000 DYN to the address `<collateraladdress>`
- Now this should have created a dynode compatible transaction output. To confirm this, go to Tools/Debug Console and type `dynode outputs`. You should see something like

```
"<collateralTXID>": "<TXINDEX>"
```

The `<collateralTXID>` is a long alphanumeric string, whereas the `<TXINDEX>` is a small integer (usually 1 or 0)

Configuring the dynode configuration file on the controller wallet

- Now go to Tools/Edit Dynode Configuration File and enter the following line

```
<alias> <webserverIP>:31300 <dynodeprivkey> <collateralTXID> <TXINDX>
```

- can be chosen arbitrarily and just gives a name for your remote dynode. The parameters are the ones mentioned in this document:
 - <webserverIP>: The external IP of your webserver, something like 123.45.67.89
 - <dynodeprivkey>: The key that you generated earlier and put into the dynode.conf file on your remote cold dynode
 - : The details of the collateral transaction from dynode outputs
- Close the wallet and restart it.
- Go to the “Dynodes” Tab. Your dynode should be listed with its alias as “Missing”. Right-click on it and click Start Alias.
- If you did everything right, the dynode will successfully start and become “PRE-ENABLED”
- After a while, it should switch to “ENABLED” and stay like this, as long as everything is fine on your remote webserver.
- Hint: You might need to restart your QT wallet to see the updated status
- When your dynode earns a reward (after block 20546), it will be credited to the corresponding <collateraladdress>

Setting up a hot dynode

- You basically do the same as above, but with all steps on your local machine. Notice that to ensure the dynode being reachable, you need to have a fixed IP and the ports open. For easily editing the dynode configuration file .dynamic.conf, you can simply use Tools/Edit Wallet Configuration File

Congratulations

You have done it! Have fun with your dynode :)