



Get your own RIF Lumino node up and running

Prerequisites

1. Access to a synched RSK node. You can do this in a variety of ways:
 - a. Run your own node on TestNet or MainNet, see <https://github.com/rksmart/rskj/wiki/Install-RskJ-and-join-the-RSK-Orchid-Mainnet-Beta>
 - b. Compile and run a RSK node locally, see <https://github.com/rksmart/rskj/wiki/Compile-and-run-a-RSK-node-locally>
2. An RSK account with an RBTC balance now lower than 0.001 RBTC
3. Linux OS
4. Python 3.6
5. Pip
6. Virtualenv

Build RIF Lumino from code

1. Get the [RELEASE.NUMBER] code from [GITHUB.URL]
2. Go to the path you downloaded or cloned Lumino's code (lets call this path \$RIF_LUMINO_PATH)
3. Create python virtual env for RIF Lumino (this needs to be performed only once) and execute the following command:

```
virtualenv -p <PATH_TO_PYTHON3.6> clientEnv
```

Note 1:

Replace ``<PATH_TO_PYTHON3.6>`` with the path where Python3.6 is installed in your system. In the case of Ubuntu OS, this is usually ``/usr/bin/python3.6``

Note 2:

If you receive an error please check the ***Additional Help*** section.

4. Activate python virtual env, by executing the following command:

```
source clientEnv/bin/activate
```

5. Check if the Python version is correct inside the virtual environment by running:

```
python --version
```

This command should output version 3.6.x

Install RIF Lumino requirements. Inside the virtual environment run the following command:

```
pip install -c constraints.txt --upgrade -r requirements-dev.txt
```

6. Run Lumino setup with the following command:

```
python setup.py develop
```

Start your RIF Lumino Node

1. Go to `$RIF_LUMINO_PATH`
2. If you haven't execute it before, run: `source clientEnv/bin/activate`
3. Run the following command:

lumino

```
--keystore-path $KEYSTORE_PATH
```

```
--network-id 31
```

```
--eth-rpc-endpoint $RSK_NODE_URL
```

```
--environment-type development
```

```
--tokennetwork-registry-contract-address=$TOKENNETWORK_REGISTRY_CONTR  
ACT_ADDRESS
```

```
--secret-registry-contract-address=$SECRET_REGISTRY_CONTRACT_ADDRESS
```

```
--endpoint-registry-contract-address=$ENDPOINT_REGISTRY_CONTRACT_ADDR
```

```
ESS
```

--no-sync-check
--api-address=127.0.0.1:5001

The following list describes each field:

FIELD	DESCRIPTION
\$KEYSTORE_PATH	The path to your keystore
\$RSK_NODE_URL	URL of your RSK node (http://URL:PORT)
\$TOKENNETWORK_REGISTRY_CONTRACT_ADDRESS	Address for the token registry contract deployed (view contracts table)
\$SECRET_REGISTRY_CONTRACT_ADDRESS	Address for the secret registry contract deployed (view contracts table)
\$ENDPOINT_REGISTRY_CONTRACT_ADDRESS	Address for the endpoint registry contract deployed (view contracts table)

4. After you run the "lumino" command you will be presented with the following confirmation message:

Welcome to RIF Lumino, version 0.1

```
-----  
| This is an Alpha version of experimental open source software |  
| released as a test version under an MIT license and may contain |  
| errors and/or bugs. No guarantee or representations whatsoever is |  
| made regarding its suitability (or its use) for any purpose or |  
| regarding its compliance with any applicable laws and regulations. |  
| Use of the software is at your own risk and discretion and by |  
| using the software you acknowledge that you have read this |  
| disclaimer, understand its contents, assume all risk related |  
| thereto and hereby release, waive, discharge and covenant not to |  
| sue Brainbot Labs Establishment or any officers, employees or |  
| affiliates from and for any direct or indirect liability resulting |  
| from the use of the software as permissible by applicable laws and |  
| regulations. |  
| |  
| Privacy Warning: Please be aware, that by using the Raiden Client, |  
| among others, your Ethereum address, channels, channel deposits, |  
| settlements and the Ethereum address of your channel counterparty |  
| will be stored on the Ethereum chain, i.e. on servers of Ethereum |  
| node operators and ergo are to a certain extent publicly available. |  
| The same might also be stored on systems of parties running Raiden |  
| nodes connected to the same token network. Data present in the |
```

| Ethereum chain is very unlikely to be able to be changed, removed |
 | or deleted from the public arena. |
 |
 | Also be aware, that data on individual Lumino token transfers will |
 | be made available via the Matrix protocol to the recipient, |
 | intermediating nodes of a specific transfer as well as to the |
 | Matrix server operators. |

Have you read, understood and hereby accept the above disclaimer and privacy warning?
 [y/N]:
 press Y followed by Enter.

5. After you accepted you will be asked to select the account you want to use. Select the account and enter your passphrase to continue.

Contracts addresses table for each environment

In the table below you can find the addresses of the contracts that you should use in order to connect to the RIF Lumino network for each environment.

You should replace these addresses in the executing of the command described in the previous section.

Contract	TestNet	MainNet
\$TOKENNETWORK_REGISTRY_CONTRACT_ADDRESS	0xa494FC762181fF78Fe4CBB75D8609CCff1E63c1B	To Be Deployed
\$SECRET_REGISTRY_CONTRACT_ADDRESS	0xFd17D36EF2b3C5E71aBA059b3FC361644206213b	To Be Deployed
\$ENDPOINT_REGISTRY_CONTRACT_ADDRESS	0xb048Af6c0FBFBF1c0c01Ea9A302987011153dbB8	To Be Deployed

Additional Help

The following sections present how to install a variety of packages on a machine running Ubuntu 16.04.6 OS

Install Python 3.6

(source:

<http://ubuntuhandbook.org/index.php/2017/07/install-python-3-6-1-in-ubuntu-16-04-lts/>)

Add a new repository to you apt:

```
sudo add-apt-repository ppa:jonathonf/python-3.6
```

Update your local APT repository:

```
sudo apt-get update
```

Install Python 3.6:

```
sudo apt-get install python3.6
```

Install PIP3

If you didn't update your local APT repository:

```
sudo apt update
```

Install pip3:

```
sudo apt-get install python3-pip
```

Install virtualenv

If you didn't update your local APT repository:

```
sudo apt update
```

Install virtualenv:

```
sudo apt-get install virtualenv
```

Error when we try to create python virtualenv

If when you run the *virtualenv -p ...* command you get an error similar to the following one:

Original exception was:

Traceback (most recent call last):

```
File "/usr/lib/python3/dist-packages/virtualenv.py", line 2363, in <module>
    main()
```

```
File "/usr/lib/python3/dist-packages/virtualenv.py", line 719, in main
    symlink=options.symlink)
```

```
File "/usr/lib/python3/dist-packages/virtualenv.py", line 988, in create_environment
    download=download,
```

```
File "/usr/lib/python3/dist-packages/virtualenv.py", line 918, in install_wheel
    call_subprocess(cmd, show_stdout=False, extra_env=env, stdin=SCRIPT)
```

```
File "/usr/lib/python3/dist-packages/virtualenv.py", line 812, in call_subprocess
    % (cmd_desc, proc.returncode))
```

OSError: Command /root/raidn/clientEnv/bin/python3.6 - setuptools pkg_resources pip wheel failed with error code 1

You can solve it executing:

```
export LC_ALL="en_US.UTF-8"
export LC_CTYPE="en_US.UTF-8"
```

Error installing requirements

If when you're installing Lumino requirements you receive any error try this procedure:

1. Exit the virtual environment using ``deactivate`` command
2. Remove clientEnv folder: `rm -rf clientEnv`

Install the package you need, restart from the step 3 of the main process.

If you receive the error: ``Command "python setup.py egg_info" failed with error code 1 in /tmp/pip-install-3qvhi58l/psycopg2/``

Install python3.6-dev package and try again. To install that package you should run:

```
sudo apt-get install libpq-dev python3.6-dev
```

If you receive the error: ``Command "python setup.py egg_info" failed with error code 1 in /tmp/pip-install-4ceg89vs/psycopg2/``

Install psycopg2 running:

pip3 install psycopg2

Conclusion

After you follow all the previous steps you should have your RIF Lumino Node up and running, and you should be part of the RIF Lumino Network.

From this point you should be able to create payment channels with any registered token on RSK and start to make fast, cheap and reliable payments.