

Labs ETHEREUM

Geth : Go ethereum implementation protocol

install geth

<https://geth.ethereum.org/downloads/>

Launch geth

```
geth --syncmode "light"
```

Launch javascript console in other terminal

```
geth console
```

eth: List of all commands on the javascript console

web3 : JS library to interact with ethereum BC

<https://web3js.readthedocs.io/>

Create accounts

Create account 1

```
personal.newAccount("test1")
```

Create account 2

```
personal.newAccount("test2")
```

Transfer some ether from one account to another

```
web3.eth.sendTransaction({  
  from: '0x46aa2ba6e569dc9d6de1888be0957e31bb5c0c96',  
  to: '0x24ed2d783f19ee3b6d82d509eff47ef0a19b11ff',  
  value: web3.toWei(0.1, "ether")  
})
```

Unit of gas is expressed in wei. You can find the metric system here : <https://gwei.io>

Metamask.io

Installation of the plugin

<https://metamask.io/>

Get some ether for testing purpose

- Choose ropsten network
- Create account using metamask
- get some faucet for your account
- Transfer ether from accounts
- See transaction on etherscan

Private network on ethereum

Configuration file: genesis.json

```
cd ~/gethDataDir  
geth --datadir ~/gethDataDir/ init genesis.json
```

Starting ethereum network

```
geth --datadir ~/gethDataDir --networkid 15  
  
geth console
```

List ethereum account and get balance

```
web3.eth.accounts  
web3.eth.getBalance(web3.eth.accounts[0])  
web3.eth.getBalance(web3.eth.accounts[1])
```

Truffle framework

Truffle is the framework that facilitated the development of a smart contract

node -v

npm -v

npm install -g truffle

truffle unbox

https://github.com/deliumu/sfeirschool_lab.git

> git clone https://github.com/deliumu/sfeirschool_lab.git

> cp helloworld.sol /my-contracts/contracts \$

add the contracts to 2_deploy_contracts.js

> ganache-cli

> truffle compile

> truffle migrate