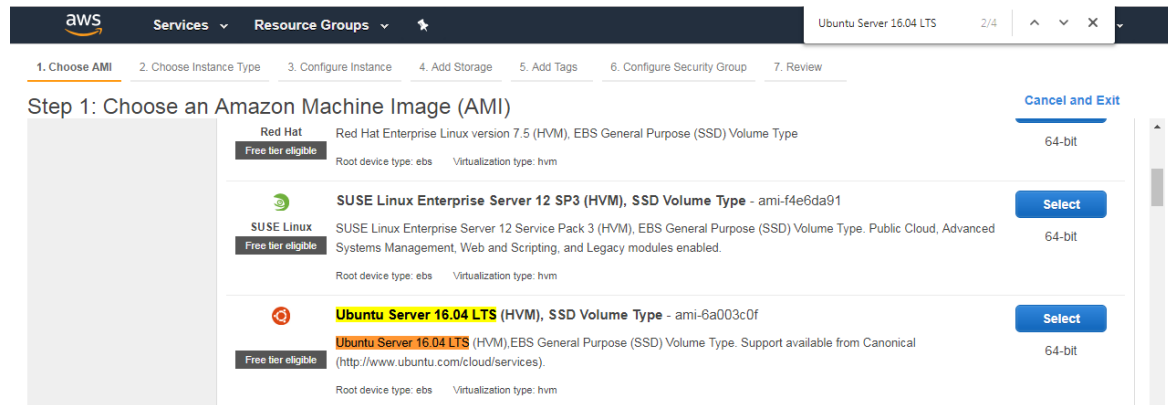


How to run a private Ethereum Blockchain with Jthreum

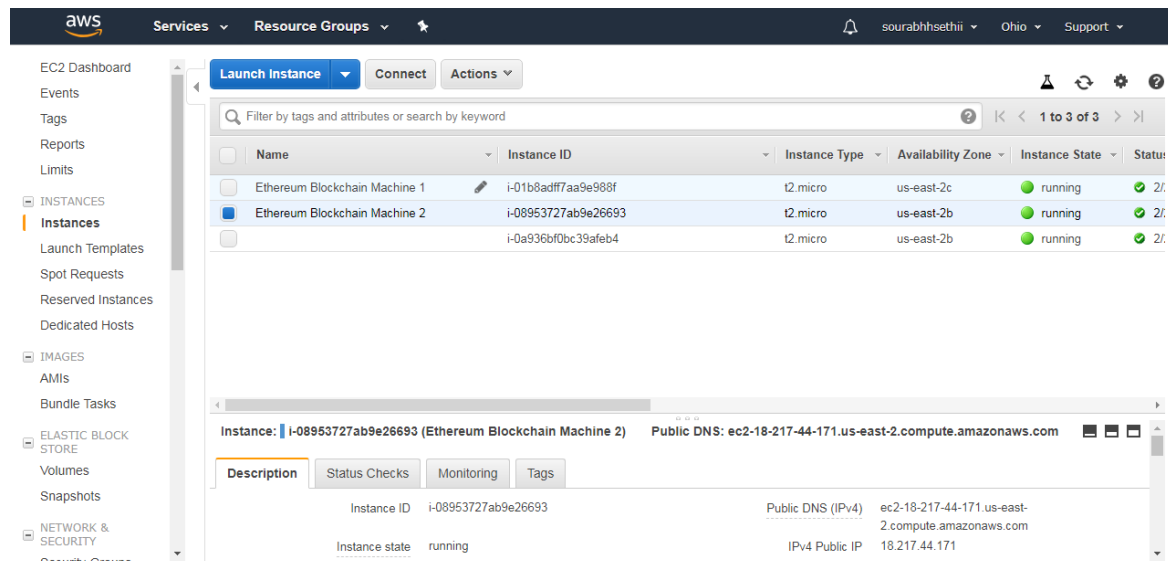
Step 1

Launch one EC 2 Ubuntu 16 LTS or Launch one VM instance on GCP.

If you wish to use AWS, here is how you set up an instance:

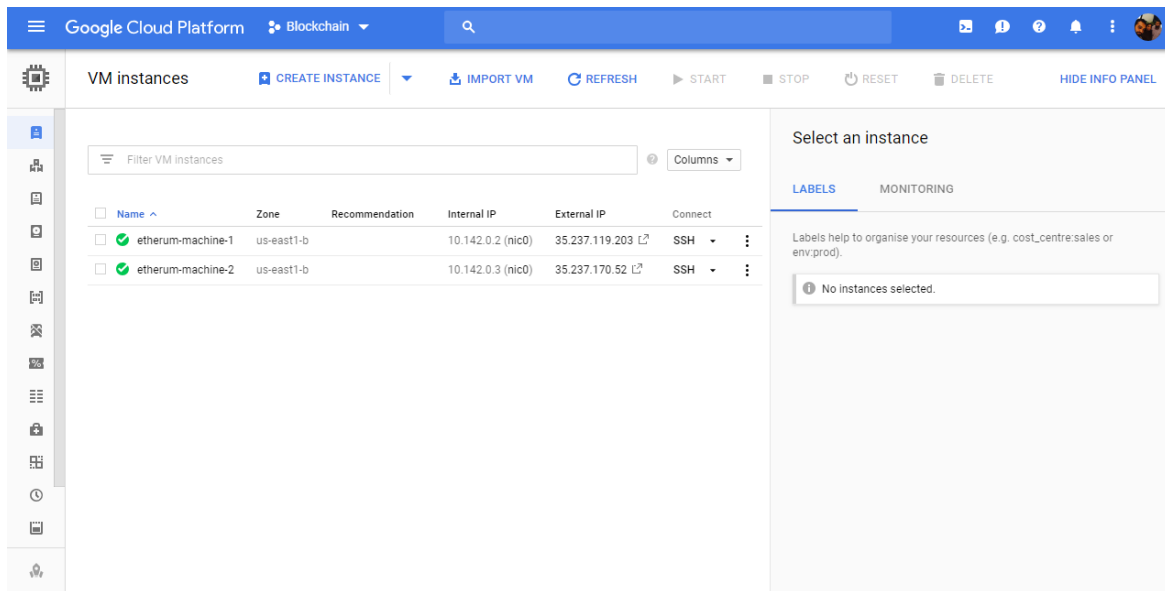


AWS EC Ubuntu 16 LTS Setup.



Running the Machine

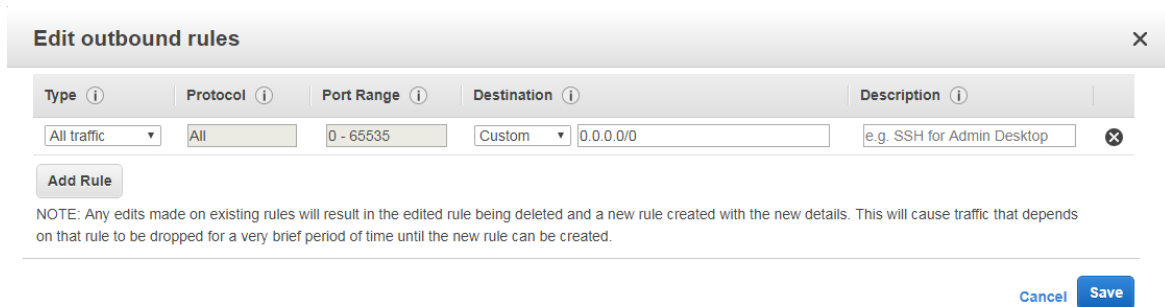
If you want to use GCP, that is how your set up looks like:



Google cloud platform : Ethereum Instances.

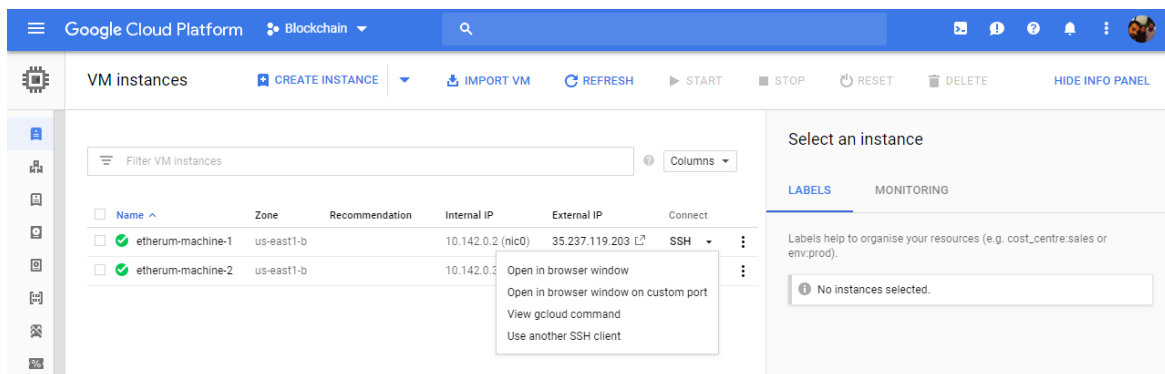
Step 2

Open the inbound ports 30301–30399 in the security group



Step 3

SSH into the Node (ie. Machine)



Click on (Open in browser window).

Step 4

On both server Install Geth (ie. Machine)

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

sudo add-apt-repository -y ppa:ethereum/ethereum

sudo apt-get update

sudo apt-get install ethereum
```

After installation ensure that both servers have geth properly install by running this commands.

```
geth -help
```

Step 5

On the server Install Geth (ie. Machine)

Initialize Genesis Block (0th Block) in genesis.json inside **/home/ubuntu/eth-dev/** directory.

```
cd ~

mkdir eth-dev

cd eth-dev

nano genesis.json
```

Paste the below line into the nano's window.

```
genesis.json  myDataDir  myEth.log
sourabhsethi8888@ethereum-machine-1:~/ethereum-development$ pwd
/home/sourabhsethi8888/ethereum-development
sourabhsethi8888@ethereum-machine-1:~/ethereum-development$
```

```
{ "config": {
  "chainId": 88881,
  "homesteadBlock": 0,
  "eip155Block": 0,
  "eip158Block": 0 },

  "coinbase" : "0x0000000000000000000000000000000000",
  "difficulty" : "0x10",
  "extraData" : "",
  "constantinopleBlock": "5",
  "petersburgBlock": "6",
  "gasLimit" : "0x2fef8",
  "nonce" : "0x0000000000000088",
  "mixhash" : "0x0000000000000000000000000000000000000000000000000000000000000000",
  "parentHash" : "0x0000000000000000000000000000000000000000000000000000000000000000",
  "timestamp" : "0x00", "alloc": {} }
```

Step 5.1

****Initialize the chain data with below command:

```
geth - datadir ~/eth-dev/ init genesis.json
```

Step 5.2

Start the **Ethereum Machine 1** with the below command

```
geth - datadir ~/eth-dev/ - networkid 45634 - verbosity 3 - ipcdisable - rpc - port 3
```

e.g

```
geth - datadir ~/eth-dev/ - networkid 88881 - verbosity 3 - ipcdisable - rpc - port 3
```

You would see the logs created by the geth client.

Step 6

Now go to machine 1 and execute the cmds.

```
admin.addPeer( "enode://5b81114a01d9a382cfc101f13e177f3a784864d6cd9f33eafd33f9fd838fd
```

If above command return "true" after executing above command, then it means you have added the machine 2 as a peer to machine 1.

Check the peers details by running below cmd:

```
> net.peerCount1> admin.peers[{ caps: ["eth/63"], id: "91233bfe9c817a325ee85c0041bb6
```

Step 7

Other Geth console Cmds

```
admin.nodeInfo.enodenet.listeningnet.peerCountadmin.peerseth.coinbaseeth.getBalance(e
```

Step 8

Connect your new blockchain network to Jthereum.

Go to jthereum.config file (it is located in your Jthereum installation folder).

```
jthereum.config
16
17
18 DUMP_ARGUMENT_DETAILS_TO_CONSOLE=true
19
20
21 DEFAULT_BLOCKCHAIN=test
22
23
24 ROPSTEN_PrivateKey = 0xfe8bb202390f99855fdd705d5a33cd881892ce55dfa2b99d403fd1ebfbd68883
25 ROPSTEN_Web3j_URL = http://ropsten.ithereum.com:8545
26 ROPSTEN_VERIFY_SOURCE = true
27
28
29 TEST_PrivateKey = 0xf5adeb6e95cf25a72b7ebe842f17197e594a646afc7f56cba67f315a5787259a
30 TEST_Web3j_URL = http://test.ithereum.com:8545
31
32
33 # MAINNET LIVE!!!! Please be cautious with connecting to mainnet as
34 # transactions will consume real ETH!
35 MAINNET_PrivateKey = <Mainnet private key goes here>
36 MAINNET_Web3j_URL = https://mainnet.infura.io/v3/876ec9dc7dc64fbc7524e8b1066267c
37 MAINNET_VERIFY_SOURCE = true
38
39
~/Library/Jthereum/jthereum.config 1:1 LF UTF-8 XML GitHub Git (0) 2 updates
```

Change DEFAULT_BLOCKCHAIN property

```
DEFAULT_BLOCKCHAIN=new
```

(it will be our new blockchain that we have just created).

Add properties for the private key and Web3JS URL:

```
NEW_PrivateKey = 0xf5adeb6e95cf25a72b7ebe842f17197e594a646afc7f56cba67f315a5787259a
NEW_Web3j_URL = http://35.237.119.203:8545
```

NOTE : Your private key and Web3JS URL will be different from test data provided above.

