**Task 1**

 Bash scripting

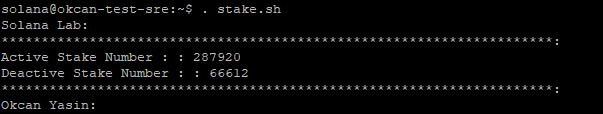
1. Inside the Solana home directory make a bash script that prints the sum of the current epoch’s activating and deactivating stake for the **mainnet-beta** cluster.
2. Hint: solana -um stakes --help

**Solution**

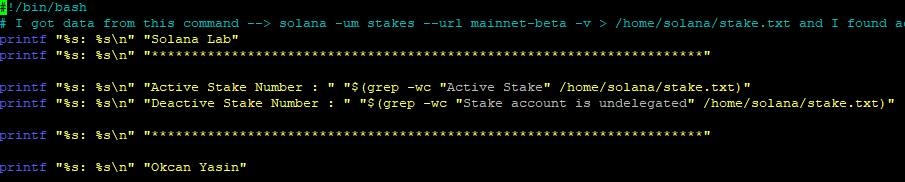
1.First of all , I export all of data from solana to txt.



2. After that , I start my bash script (/home/solana/stack.sh) and my script calculate all of data and the script publish al of Active and Deactive Stake Number. My script file was attached in the file .



3.My bash script as below .



Task 2

 Setting up a Solana RPC node

1. Following the instructions in our [documentation](https://docs.solana.com/running-validator) and any other means necessary set up a Solana RPC node in our **devnet** cluster.
2. The RPC node should be configured with a reverse proxy and be able to handle WebSocket and JSON RPC calls.
3. Make a PR improving our [documentation](https://github.com/solana-labs/solana/tree/master/docs/src).
4. For this task you should use the following server:
   1. IPv4: 136.144.58.249
   2. IPv6: 2604:1380:45d2:c00::1
   3. User: solana
   4. Password: AexC5T6bLE

1.I configured one validator and also I configured one more solana cluster but not as below.

solana@okcan-test-sre:~$ solana-validator --identity ~/validator-keypair.json --vote-account ~/vote-account-keypair.json --rpc-port 8899 --entrypoint entrypoint.devnet.solana.com:8001 --limit-ledger-size --log ~/solana-validator.log --no-poh-speed-test --rpc-bind-address 127.0.0.1 --bind-address 0.0.0.0 --no-port-check

2. I checked validator node logs as below .(my command : tail -300f /home/solana/solana-validator.log )

[2021-10-18T12:06:54.056799746Z INFO solana\_core::heaviest\_subtree\_fork\_choice] marking fork starting at: (88185661, CW7GYx5Dz8PDYH7unJtmPdqEXTUcatmPDnwr1WxMCoTn) valid candidate

[2021-10-18T12:06:54.057499392Z INFO solana\_core::replay\_stage] voting: 88185662 0

[2021-10-18T12:06:54.057844541Z INFO solana\_metrics::metrics] datapoint: tower-vote latest=88185662i root=88185631i

[2021-10-18T12:06:54.180121200Z INFO solana\_metrics::metrics] datapoint: retransmit-first-shred slot=88195701i

[2021-10-18T12:06:54.243361224Z INFO solana\_core::replay\_stage] new root 88185631

[2021-10-18T12:06:54.246067728Z INFO solana\_core::replay\_stage] vote bank: Some((88185662, SameFork)) reset bank: 88185662

[2021-10-18T12:06:54.246223742Z INFO solana\_metrics::metrics] datapoint: blocks\_produced num\_blocks\_on\_fork=824i num\_dropped\_blocks\_on\_fork=72i

[2021-10-18T12:06:54.247816990Z INFO solana\_metrics::metrics] datapoint: block-commitment-cache aggregate-commitment-ms=3i highest-confirmed-root=88185630i highest-confirmed-slot=88185661i

[2021-10-18T12:06:54.254014888Z INFO solana\_poh::poh\_recorder] reset poh from: Bx5jpdm6rCFJDe6WhapdfNXuuABQhuNTjTHJWpzyFjTH,5643882420,88185661 to: Bx5jpdm6rCFJDe6WhapdfNXuuABQhuNTjTHJWpzyFjTH,88185662

[2021-10-18T12:06:54.562658180Z INFO solana\_metrics::metrics] datapoint: retransmit-first-shred slot=88195702i

[2021-10-18T12:06:54.580871094Z INFO solana\_core::repair\_service] repair\_stats: [(88195696, 26), (88195698, 7), (88195701, 14)]

[2021-10-18T12:06:54.581607011Z INFO solana\_metrics::metrics] datapoint: serve\_repair-repair repair-total=47i shred-count=47i highest-

3.I checked node with Curl command as below .

solana@okcan-test-sre:~$ curl -X POST -H "Content-Type: application/json" -d '{"jsonrpc":"2.0","id":1, "method":"getEpochInfo"}' http://localhost:8899

{"jsonrpc":"2.0","result":{"absoluteSlot":88185649,"blockHeight":86214811,"epoch":204,"slotIndex":57649,"slotsInEpoch":432000,"transactionCount":2385173677},"id":1}

4.I installed Nginx for reverse Proxy as below.

solana@okcan-test-sre:~$ apt install nginx

1. I created solana-proxy.conf in /etc/nginx/sites-available or sudo nano /etc/nginx/conf.d/geth.conf and config as below .

server {

listen 8899;

listen [::]:8899;

server\_name okcan-test-sre;

location ^~ /ws {

proxy\_http\_version 1.1;

proxy\_set\_header Upgrade $http\_upgrade;

proxy\_set\_header Connection "upgrade";

proxy\_set\_header X-Real-IP $remote\_addr;

proxy\_set\_header X-Forwarded-For $proxy\_add\_x\_forwarded\_for;

proxy\_set\_header Host $http\_host;

proxy\_set\_header X-NginX-Proxy true;

proxy\_pass http://127.0.0.1:8546/;

}

location ^~ /rpc {

proxy\_http\_version 1.1;

proxy\_set\_header Upgrade $http\_upgrade;

proxy\_set\_header Connection "upgrade";

proxy\_set\_header X-Real-IP $remote\_addr;

proxy\_set\_header X-Forwarded-For $proxy\_add\_x\_forwarded\_for;

proxy\_set\_header Host $http\_host;

proxy\_set\_header X-NginX-Proxy true;

proxy\_pass http://127.0.0.1:8545/;

}

}

6.Check status of script with this command .

Nginx -t

7.Restart nginx server with this command .

Service nginx restart

Ref : <https://www.mortysnode.nl/secure-your-strong-node-with-a-reverse-proxy/>

<https://medium.com/everstake/securing-solana-validator-rpc-with-nginx-server-fbf2cd8a31a8>