**MAP Validator Node Setup**

<https://www.maplabs.io/>

<https://bridge.maplabs.io/>

<https://makalu.mapscan.io/>  
<https://staking.maplabs.io/>

<https://medium.com/marcopolo-protocol/map-mainnet-goes-live-on-august-31-4d3b044fcd8c>

**About MAP Protocol**

MAP Protocol is the omnichain Network for An Interoperable Web3 that enables developers to build omnichain dApps in simple steps. MAP Protocol lets cryptocurrency, NFT, and data flow around all chains securely and seamlessly at minimum cost. MAP Protocol is the only infrastructure made for omnichain dApps that connects all chains, provides security finality, charges the lowest cross-chain gas fees, and offers complete dApp development service toolkits.

**PREREQUISITES:**

* **Server with: 16 GB of Ram**, **a Quad core 2.5 GHz (64-bit) CPU, 256GB SSD and a 100Mb/s Ethernet connection w/ fiber Internet (ideally redundant connection and HA switches)**
* [**Ubuntu 20.04 LTS**](https://releases.ubuntu.com/20.04/) +
* **Your account needs to have at least 1,000,000 MAP**

**Update Linux**

To start we need to ensure that the server is up to date and has all the dependencies required to operate the node.

This guide uses ***Ubuntu 20.04.5 LTS***

First thing is to add update and upgrade the Ubuntu system.

sudo apt update && apt upgrade -y

**Setup User and Firewall**

See Hank the Cranks guide here:

<https://medium.com/@htctimbo/1cfce50d9d2e>

**Setup Server with prerequisites**

Next we need to ensure the server has all the dependencies required to operate the node.

\*\*Building atlas requires \*\*

* Git
* Go (version 1.14 or later)
* C compiler
* Python (optional to use the tool)

apt install git

apt install python3

apt install python3-pip

apt install gcc

apt install make

**Download Go language and do checksum (find latest version at**[**https://go.dev/dl/**](https://go.dev/dl/)**):**

curl -OL <https://go.dev/dl/go1.19.linux-amd64.tar.gz>

**Untar and then remove the tar:**

tar -C /usr/local -xvf go1.19.linux-amd64.tar.gz  
rm go1.19.linux-amd64.tar.gz

**Set permanent path in profile:**

nano ~/.profile

**Add the following lines at the end of the file:**

export PATH=$PATH:/usr/local/go/bin  
export GOROOT=/usr/local/go  
export GOPATH=$HOME/atlas  
export PATH=$GOPATH/bin:$GOROOT/bin:$PATH

CTRL-X to quit, press Y and ENTER to confirm

**Refresh profile:**

source ~/.profile

**Clone atlas:**

git clone <https://github.com/mapprotocol/atlas.git> && cd atlas

**Make atlas:**

make atlas

**Make marker:**

make marker

**Download Tool (Optional)**

git clone <https://github.com/johnashu/pymap.git>

**Install Requirements**

pip3 install -r requirements.txt

**Create .Env file**

Edit example.env file and save it in the pymap dir as .env

nano /pymap/example.env

# location of the MAP binaries from Go installation

binaries=/home/atlas/build/bin

# RPC address of testnet

testnet=http://18.142.54.137:7445

# RPC address of Mainnet

rpcaddr=https://poc3-rpc.maplabs.io

# RPC port number - Not really used unless setting up a local network..

rpcport=False

# Password as a string, used for most CLI methods in Marker

password=password

# Password File location.  Same password as above but stored in a file - used for Atlas Start 'Node'

passwordFile=/home/maffaz/password

# Location of the KeyStore file for this validator

keystore=/home/maffaz/pymap/admin/keystore/UTC--2022-08-26T23-45-19.943014769Z--1234567890abcdef123456

# Type of role for creating new accounts - validator / voter / ...

namePrefix=validator

# Number Map to lock in a node.

lockedNum=10

# Private key of the authorised signer for the node

signerPriv=

# Address of Validator when asked

validator=0x

# Target Validator address. When not calling the node address this can be an External node (I.e. when voting)

target=0x

# number of MAP to vote for a validator

voteNum=5

# Rate of commission this validator will charge

commission=40000

# Directory of data, node, keystore, password, database for this validator

datadir=admin

# Main Validator address that is signing blocks

miner.validator=0x

# Signer Address of Node

unlock=0x

# Type of Sync (Full)

syncmode=full

# Communication Port for the Node

port=30321

# Working Dir for SystemD

working\_dir=/home/maffaz

Ctrl+X to save but rename as .env

Graphical user interface, application, website

Description automatically generated

Type ‘y’ then edit the name to .env

A screenshot of a computer

Description automatically generated with medium confidence >>> A screenshot of a computer

Description automatically generated with medium confidence

**Start Toolbox**

Start the toolbox

Python3 start\_tool.py

**Create Keystores for Account and Signer**

Option 2

Or

Command to Process:

/home/maffaz/atlas/build/bin/atlas --datadir /home/maffaz/node account new

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**Buy Some MAP!!**

**# Buy MAP**

Map is available on several chains and can be purchased with the contract addresses provided.

\* Ethereum - Uniswap / Kucoin

> 0x9E976F211daea0D652912AB99b0Dc21a7fD728e4

​

\* BNB Chain - Pancake Swap

> 0x8105ECe4ce08B6B6449539A5db23e23b973DfA8f

\* Polygon - Quickswap

> 0xBAbceE78586d3e9E80E0d69601A17f983663Ba6a

**# Bridge MAP to MAP protocol**

Goto the MAP bridge and send the MAP from Eth / Matic / BNB -> MAP Address created above.

> https://bridge.maplabs.io/

1. Select the chain from and the amount of map to bridge

2. Approve contract

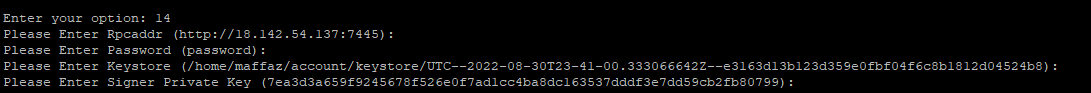
3. bridge assets

4. Add MAP protocol to Metamask by changing the 'From' Protocol to 'MAP'.  This will trigger auto adding the network to Metamask

You should now be able to see you Map in Metamask and also by selecting 'Get Balance' (22) in the Tool.

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**Authorise Signer**

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Command to Process:

/home/maffaz/atlas/build/bin/marker authorizeValidatorSigner --signerPriv 7ea3d3a659f9245678f526e0f7ad1cc4ba8dc163537dddf3e7dd59cb2fb80799 --rpcaddr http://18.142.54.137:7445 --password password --keystore /home/maffaz/node/keystore/UTC--2022-08-30T23-41-00.333066642Z--e3163d13b123d359e0fbf04f6c8b1812d04524b8

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**Start Node Syncing and Create Service File**

To start the node syncing with the chain we need to start atlas using the signer to start the process.

**NOTE:** If using testnet, be sure to add the –testnet flag to the end of the command!

Using the tool

**Text

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**Then check the logs with:**

**A picture containing graphical user interface

Description automatically generated**

**Or**

cat<<-EOF > /etc/systemd/system/atlasNode.service

[Unit]

Description=atlasNode daemon

After=network-online.target

[Service]

Type=simple

Restart=always

RestartSec=1

WorkingDirectory=/home/maffaz

ExecStart=/home/maffaz/atlas/build/bin/atlas --password password --datadir /home/maffaz/node --syncmode full --port 30321 --mine --miner.validator 0x53d923e76645f7d91e1f27d08339937f5aefcb62  --unlock 0x53d923e76645f7d91e1f27d08339937f5aefcb62 < --testnet (optional) >

SyslogIdentifier=atlasNode

StartLimitInterval=0

LimitNOFILE=65536

LimitNPROC=65536

[Install]

WantedBy=multi-user.target

EOF

sudo chmod 644 /etc/systemd/system/atlasNode.service

sudo systemctl enable atlasNode.service

sudo service atlasNode start

sudo service atlasNode status

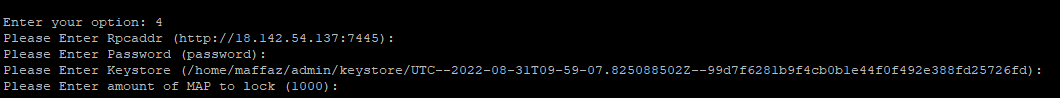
To check logs:

tail -f /var/log/syslog

LOCK MAP

Locking Map makes the tokens available to vote (stake)

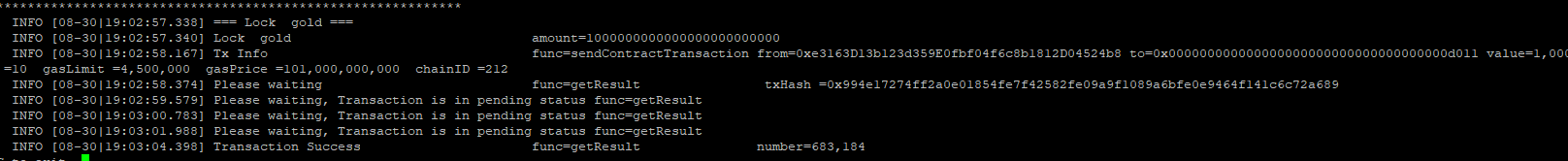
You need to Lock 1,000,000 MAP to be able to register as a validator.



Or

Command to Process:

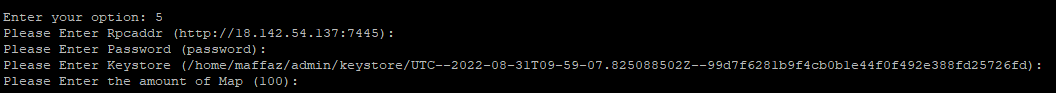
/home/maffaz/atlas/build/bin/marker lockedMAP --lockedNum 1000000 --rpcaddr http://18.142.54.137:7445 --password password --keystore /home/maffaz/admin/keystore/UTC--2022-08-31T09-59-07.825088502Z--99d7f6281b9f4cb0b1e44f0f492e388fd25726fd



**Unlock Map**

If you wish to unlock MAP and take it out of consensus you can do the following.

Thew Unlock process will take 15 days.



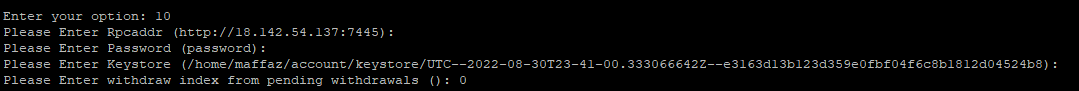
Or

Command to Process:

        /home/maffaz/atlas/build/bin/marker unlockMap --mapValue 100 --rpcaddr http://18.142.54.137:7445 --password password --keystore /home/maffaz/admin/keystore/UTC--2022-08-31T09-59-07.825088502Z--99d7f6281b9f4cb0b1e44f0f492e388fd25726fd

Withdraw MAP

This step will redeem the status of the reward from the unlocked state to the balance, but this step needs to be unlocked for 15 days before it can be executed.

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**Or**

Command to Process:

        /home/maffaz/atlas/build/bin/marker withdrawMap --withdrawIndex 0 --rpcaddr http://18.142.54.137:7445 --password password --keystore /home/maffaz/node/keystore/UTC--2022-08-30T23-41-00.333066642Z--e3163d13b123d359e0fbf04f6c8b1812d04524b8

**Register Validator on the Network**

Register the node on the network as a validator having the required 1,000,000 MAP locked in the account.

Once registered, the node is eligible to receive votes and participate in consensus if elected.

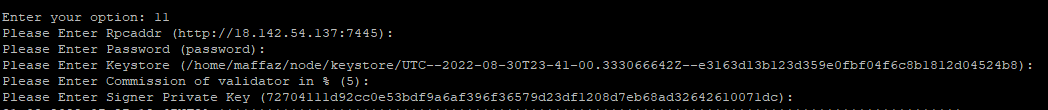
Note that commission is 10000 for the cli

So 5% is 5 \* 10000 = 50000

Reward will be distributed every epoch to all the online validators according to the uptime. Once a validator receives rewards, it will take a portion of it as commission and then it will split the rest of it to all of its voters.

Rewards will be in the form of Locked Map and will be auto-compounded as Votes

Use the Tool:



Or

Command to Process:

        /home/maffaz/atlas/build/bin/marker register --commission 50000 --signerPriv 72704111d92cc0e53bdf9a6af396f36579d23df1208d7eb68ad32642610071dc --rpcaddr http://18.142.54.137:7445 --password password --keystore /home/maffaz/node/keystore/UTC--2022-08-30T23-41-00.333066642Z--e3163d13b123d359e0fbf04f6c8b1812d04524b8

Graphical user interface

Description automatically generated

We can check our locked maps using the command *getAccountTotalLockedGold*

Graphical user interface, text

Description automatically generated

**Voting**

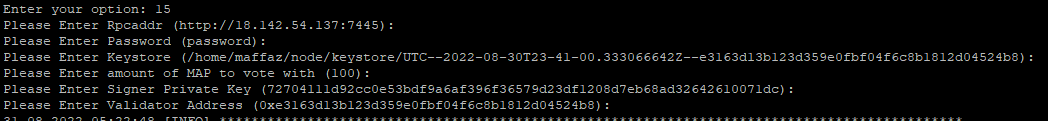
Voting is where we ‘stake’ our map to a validator to enable to earn rewards and participate in consensus.

Once MAP is locked, it is available for voting (staking). Validators must have at least 0.001 proportion of the total votes to be considered for the election. So the validator can't have no votes.

We can use our validator account to vote for ourselves, or we can let other validators or voters vote for ourselves.

Once MAP is allocated as votes to a validator, the votes will be automatically activated at the next epoch.

Using the Tool



Or

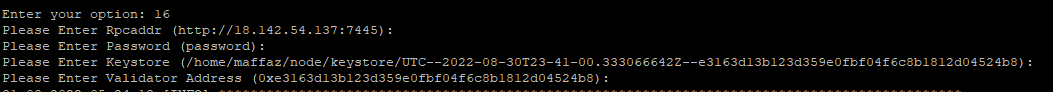
Command to Process:

        /home/maffaz/atlas/build/bin/marker vote --voteNum 100 --signerPriv 72704111d92cc0e53bdf9a6af396f36579d23df1208d7eb68ad32642610071dc --validator 0xe3163d13b123d359e0fbf04f6c8b1812d04524b8 --rpcaddr http://18.142.54.137:7445 --password password --keystore /home/maffaz/node/keystore/UTC--2022-08-30T23-41-00.333066642Z--e3163d13b123d359e0fbf04f6c8b1812d04524b8

**Manual Activation of Votes**

**It is possible to manually activate the votes if you wish.**

**Using the Tool**

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**Or**

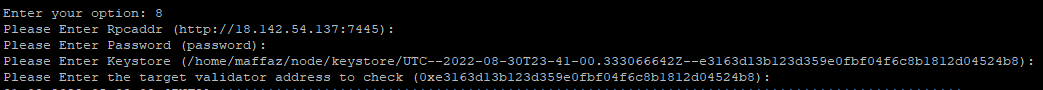
Command to Process:

        /home/maffaz/atlas/build/bin/marker activate --validator 0xe3163d13b123d359e0fbf04f6c8b1812d04524b8 --rpcaddr http://18.142.54.137:7445 --password password --keystore /home/maffaz/node/keystore/UTC--2022-08-30T23-41-00.333066642Z--e3163d13b123d359e0fbf04f6c8b1812d04524b8

**Check Votes by Validator**

To check the number of votes you have given for a validator use *getActiveVotesForValidatorByAccount*

Use the tool:

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OR

Command to Process:

        /home/maffaz/atlas/build/bin/marker getActiveVotesForValidatorByAccount --target 0xe3163d13b123d359e0fbf04f6c8b1812d04524b8 --rpcaddr http://18.142.54.137:7445 --password password --keystore /home/maffaz/node/keystore/UTC--2022-08-30T23-41-00.333066642Z--e3163d13b123d359e0fbf04f6c8b1812d04524b8

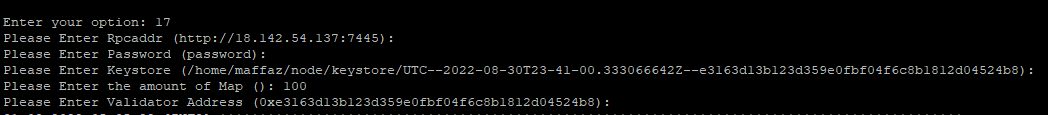
**Revoke Pending Votes**

If you wish to take the votes out of the validator before they are activated you can use the `revokePending`command.

Revokes value pending votes for validator.

This command will put the voting MAP turn into nonvoting MAP.

Use the Tool



Or

Command to Process:

        /home/maffaz/atlas/build/bin/marker revokePending --mapValue 100 --validator 0xe3163d13b123d359e0fbf04f6c8b1812d04524b8 --rpcaddr http://18.142.54.137:7445 --password password --keystore /home/maffaz/node/keystore/UTC--2022-08-30T23-41-00.333066642Z--e3163d13b123d359e0fbf04f6c8b1812d04524b8

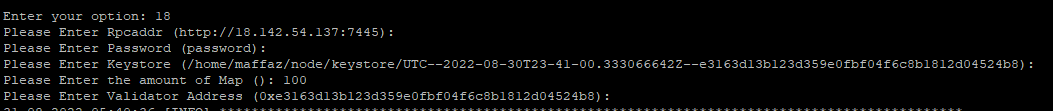
**Revoke Active Votes**

If you wish to take the votes out of the validator before they are activated you can use the ` revokeActive` command.

Revokes Active votes for validator.

This command will put the voting MAP turn into nonvoting MAP.

Use the Tool



Or

Command to Process:

        /home/maffaz/atlas/build/bin/marker revokeActive --mapValue 100 --validator 0xe3163d13b123d359e0fbf04f6c8b1812d04524b8 --rpcaddr http://18.142.54.137:7445 --password password --keystore /home/maffaz/node/keystore/UTC--2022-08-30T23-41-00.333066642Z--e3163d13b123d359e0fbf04f6c8b1812d04524b8