CESS Network

The Decentralized Data Infrastructure

Episode 6
Demo: Running a Storage Node

https://www.cess.network

Course Logistics

Course Website: https://course.cess.network/

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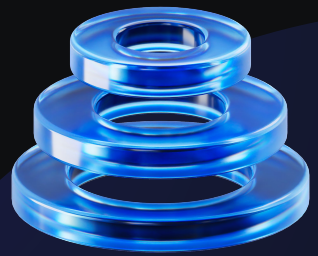


System Requirements

CESS

Resource	Specification
Recommended OS	Linux 64-bit Intel / AMD
# of CPU Cores	≥ 4
Memory	≥ 8 GB
Bandwidth	≥ 5 Mbps
Public Network IP	Required
Linux Kernel Version	5.11 or higher
HDD (Testnet) / SSD (Mainnet)	≥ 50GB (Testnet)

Prerequisites

Software

- Docker and Docker Compose

  Official Documentation
- Firewall Port 4001: For Ubuntu "*ufw allow 4001*"

Static Public IP

- *curl -4 ifconfig.co*

CESS Wallet Accounts

- Staking Account: 4000 TCESS / TB

Wallet Accounts

Earning Account

- Used to receive rewards.

Staking Account

- Used for Staking TCESS.

Signature Account

- Used to sign blockchain transactions.
- If no staking account is specified, Signature account will also be used for staking TCESS.

NOTE: Create Unique Signature Account for Each Storage Node or Exceptions May Occur

Storage Node Installation and Configuration

CESS

Install the CESS Client - nodeadm

wget https://github.com/CESSProject/cess-nodeadm/archive/refs/tags/v0.5.7.tar.gz

tar -xvf v0.5.5.tar.gz

cd cess-nodeadm-0.5.5

sudo ./install.sh

Client Configuration

Set the desired network Devnet or Testnet

sudo cess profile devnet/testnet

Set Configuration

sudo cess config set

Storage Node Installation and Configuration

Enter cess node mode from 'authority/storage/watcher': storage

Enter cess storage listener port (current: 15001, press enter to skip):

Enter cess storage earnings account: <"ACCOUNT_ADDRESS">

Enter cess storage signature account phrase: <ACCOUNT_MNEMONICS>

Enter cess storage disk path: <DISK_PATH>

Enter cess storage space, by GB unit (current: 300, press enter to skip):

Enter the number of CPU cores used for mining; Your CPU cores are 4

(current: 3, 0 means all cores are used; press enter to skip):

Enter the staker's payment account if you have another (if it is the same as the signature account, press enter to skip): <ACCOUNT_ADDRESS>

Enter the reserved TEE worker endpoints (separate multiple values with commas, press enter to skip):

NOTE: If no TEE worker endpoints are provided Default TEE worker endpoints will be used.
This doesn't affect your reward as a storage node.

Running the Storage Node

Command: *sudo cess start*

Output:

```
[+] Running 3/0
 ✔ Container chain          Running   0.0s
 ✔ Container bucket         Running   0.0s
 ✔ Container watchtower     Running   0.0s
```

NOTE: If you have access to Intel SGX with FLC Support you can also speed up your earnings by deploying a TEE-Worker as Market Type and Specifying it in your Storage Node. TEE Worker User Guide

Common Operations

Check Logs

docker logs chain: To check CESS Blockchain Status

```
2023-07-05 05:52:08 □□ Idle (25 peers), best: #15590 (0xadf4…16f3), finalized #15588 (0xb289…d82e), ↓ 10.6kiB/s ↑ 14.5kiB/s
2023-07-05 05:52:12 ✨ Imported #15591 (0x1177…bc3e)
2023-07-05 05:52:13 □□ Idle (26 peers), best: #15591 (0x1177…bc3e), finalized #15589 (0x368e…b4bb), ↓ 10.7kiB/s ↑ 12.2kiB/s
2023-07-05 05:52:18 ✨ Imported #15592 (0xe67a…b89f)
```

docker logs bucket: To check CESS Storage Node Logs

```
++ 2023-07-05 05:51:46 Start node discovery service
++ 2023-07-05 05:51:46 /kldr-testnet
OK 2023-07-05 05:51:46 Start successfully
2023/07/05 05:51:49 Connected to the bootstrap node:  12D3KooWAdyc4qPWFHsxMtXvSrm7CXNFhUmKPQdoXuKQXki69qBo
2023/07/05 05:51:49 Connected to the bootstrap node:  12D3KooWLtpEaPbJhTyC8qoRp8PrjHy4ou7TCSY3XEtzNsh4Jatb
2023/07/05 05:52:05 Connected to the bootstrap node:  12D3KooWHY6BRu2MtG9SampACgYCcGHRSEai2ZkWY3E4VKDYrqh9
```

Common Operations

View Storage Node Status

sudo cess bucket stat

```
+------------------+-------------------------------------------------------+
| name             | storage miner                                         |
| peer id          | 12D3KooWRC8MG91CY9KZQ6HWYyV7zY4sR98rdLYv7ei5NAR1tVXF |
| state            | positive                                              |
| staking amount   | 4000 TCESS                                            |
| validated space  | 0 Bytes                                               |
| used space       | 0 Bytes                                               |
| locked space     | 0 Bytes                                               |
| staking account  | cXjHRBKDQ3LhxWJEqmLv6ZLjSNStJcAJmUHLffNsAWRVgEMef     |
| earnings account | cXjHRBKDQ3LhxWJEqmLv6ZLjSNStJcAJmUHLffNsAWRVgEMef     |
+------------------+-------------------------------------------------------+
```

NOTE:

If you get the message “You are not a storage node”, please wait for the chain synchronization to complete.

Common Operations

Increase Node Stake

sudo cess bucket increase stake <DEPOSITE_AMOUNT_IN_TCESS>

Query Reward Information

sudo cess bucket reward

Claim Reward

sudo cess bucket claim

Withdraw Node Stake

sudo cess bucket withdraw

Update Earning Account

sudo cess bucket update earnings <NEW_ACCOUNT_ADDRESS>

Updating CESS Client

sudo cess stop

sudo cess down

sudo cess purge

Then download and install new cess-nodeadm Client and execute

sudo cess pullimg

Checking Storage Node Status On-Chain

Step 1.

CESS Explorer and Select

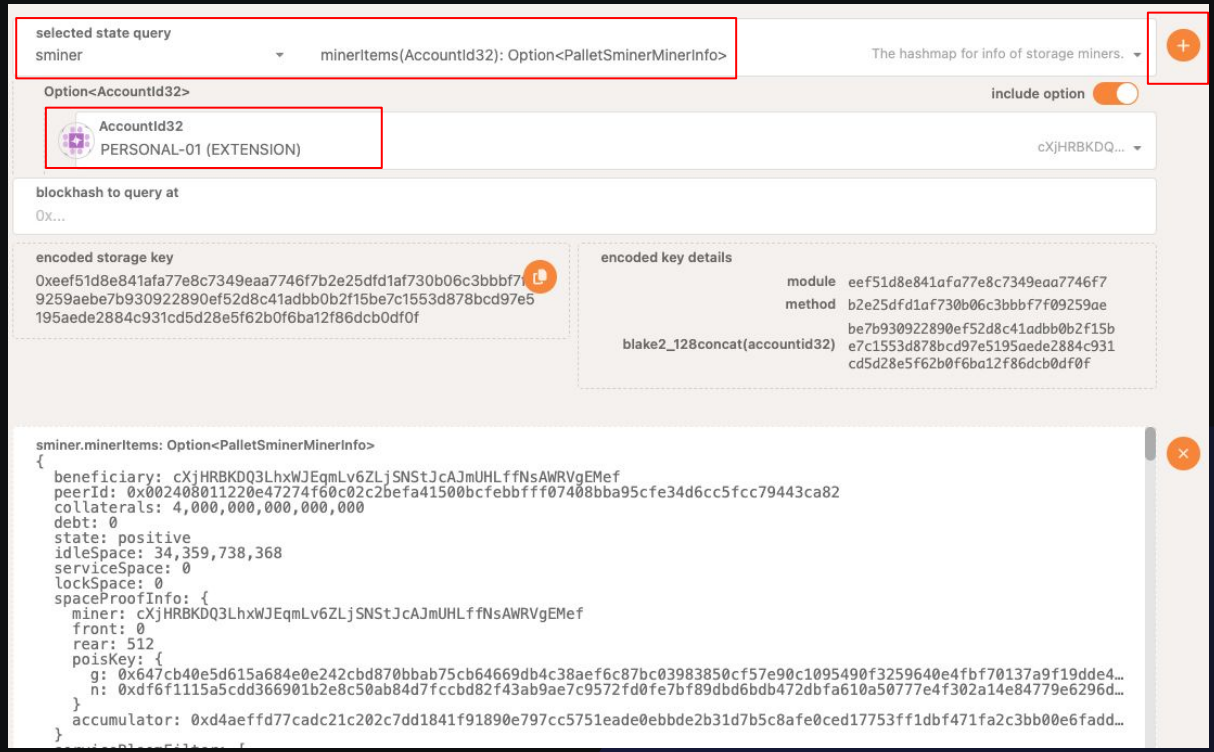
Developer > Chain State

Step 2.

From “selected state query”, Select sminer and minerItems(AccountId32)

Step 3.

Select your Account Address, then click on “+”



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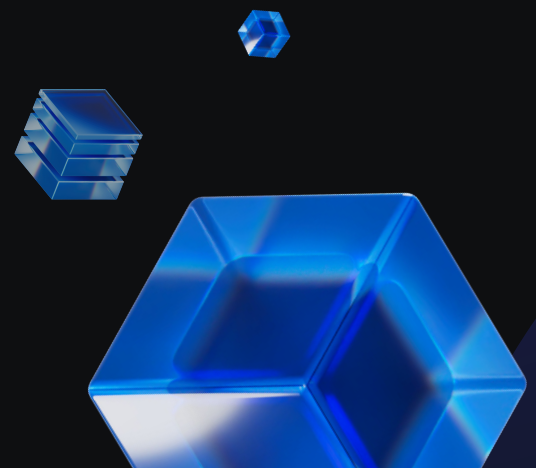
Demo

Running a Storage Node



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