

Blockchain- Centralized Bridge

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PAS 1) Pornim serverul de Sui : `RUST_LOG="off,sui_node=info" sui start --with-faucet --force-regenesis`

PAS 2) Pornim serverul de Eth `user@LAPTOP-I9A9C5OK:~$ source ~/.bashrc`

Anvil

Obs: Chain ID: 31337 (care e default la Anvil)

PAS 3) Apelam sui client pentru a baga bani : `./money.sh`

PAS 4) Dam deploy la contract sui: `sui client publish . --gas-budget 100000000` (trebuie sa fim mereu in directorul cu contractul `move.toml`)

```
user@LAPTOP-I9A9C5OK:~/boo/blockchain-main/contracts/sui/IBTTOKEN$ sui
client publish . --gas-budget 100000000
```

PAS 5) Avem nevoie de PackageID din Published Objects

```
Published Objects:
┌
│ PackageID: 0x47efef0b0d5f7f5feb92fae5849b4aeb4ca3d88d585dc4ba8ac9a6569b91514e
│ Version: 1
│
│ Digest: 82jQZCKdcS7yideMbrdzkS9HmSVMofokVDrpnhnFRvwN
│
│ Modules: IBTTOKEN
└
```

Si de ObjectID <-----admin cap

```
ObjectID: 0xeac42cb55209da4617912c6de2420de9185820f829c9e735eb461dceb005f31d
Sender: 0x2ec67ff2a03a501fdae083d56e1f8ecdffb2ee9a11f6b3f22357ba498201b770
Owner: Account Address ( 0x2ec67ff2a03a501fdae083d56e1f8ecdffb2ee9a11f6b3f22357ba498201b770 )
ObjectType: 0x47efef0b0d5f7f5feb92fae5849b4aeb4ca3d88d585dc4ba8ac9a6569b91514e: :IBTTOKEN: :AdminCap
Version: 3
Digest: AnvVerV66whBi9LkhZxFYpB9rjxd2togYRS3axwQAca
```

Se modifica la fiecare runserver urmatoarele

ObjectID

0xeac42cb55209da4617912c6de2420de9185820f829c9e735eb461dceb005f31d

PackageID

0x47efef0b0d5f7f5feb92fae5849b4aeb4ca3d88d585dc4ba8ac9a6569b91514e (sui pck id dupa publish)

PAS 6) Se adauga tokene automat pe active address

```
sui client call --package <package_id> --module IBToken --function mint --  
args <AdminCap_object_id> 10000 --gas-budget 10000000
```

exemplu: sui client call --package

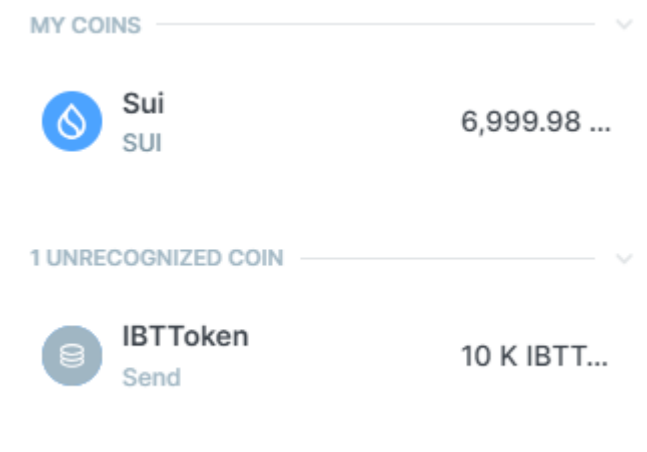
0x47efef0b0d5f7f5feb92fae5849b4aeb4ca3d88d585dc4ba8ac9a6569b91514e

--module IBToken --function mint -- args

0xeac42cb55209da4617912c6de2420de9185820f829c9e735eb461dceb005f31d

10000 --gas-budget 10000000

PAS 7)Observam ca ni s-au adăugat --→ 10k ITBTok



PAS 8)Importam tokens in METAMASK

```
user@LAPTOP-I9A9C50K:~/boo/blockchain-main$ source ~/.bashrc  
user@LAPTOP-I9A9C50K:~/boo/blockchain-main$ ./deploy.sh 0xac0974bec39a17e36ba4a6b4d238ff944bacb478cbed5efcae784d7bf4f2f  
f80  
Deploying contract from contracts/ethereum/src/IBToken.sol:MyToken to http://127.0.0.1:8545 with provided private key.  
..  
[.] Compiling...  
No files changed, compilation skipped  
Deployer: 0xf39Fd6e51aad88F6F4ce6aB8827279cFfFb92266  
Deployed to: 0x5FbDB2315678afecb367f032d93F642f64180aa3  
Transaction hash: 0xe3d19e9952315b37359a2f08154b8576a39efa9ee372f8b29f9e33569d93be0d  
Contract deployed successfully!  
user@LAPTOP-I9A9C50K:~/boo/blockchain-main$
```

-> folosim **Private key** de la anvil

PAS 9)Intram in METAMASK si adaugam la “...”

```
..  
[.] Compiling...  
No files changed, compilation skipped  
Deployer: 0xf39Fd6e51aad88F6F4ce6aB8827279cFfFb92266  
Deployed to: 0x5FbDB2315678afecb367f032d93F642f64180aa3  
Transaction hash: 0xe3d19e9952315b37359a2f08154b8576a39efa9ee372f8b29f9e33569d93be0d  
Contract deployed successfully!  
user@LAPTOP-I9A9C50K:~/boo/blockchain-main$
```

PAS 10) Adauga tokene ethereum

```
cast send --rpc-url http://127.0.0.1:8545 --private-key  
<priv_key_contul_anvil_0_MEREU> <DEPLOYED_TO ADDR> "mint(address,uint256)"
```

```
<RECEIVER ADDR> 70000000000000000000
```

Exemplu :cast send --rpc-url http://127.0.0.1:8545 --private-key
0xac0974bec39a17e36ba4a6b4d238ff944bacb478cbed5efcae784d7bf4f2ff80
0x5FbDB2315678afecb367f032d93F642f64180aa3 "mint(address,uint256)"
70000000000000000000

PAS 11) Revenim în cod și schimbăm adresele. Mai exact în :

Bridge.sh

bridge.js :-adauga pk id de la sui si deployed to de la METAMASK

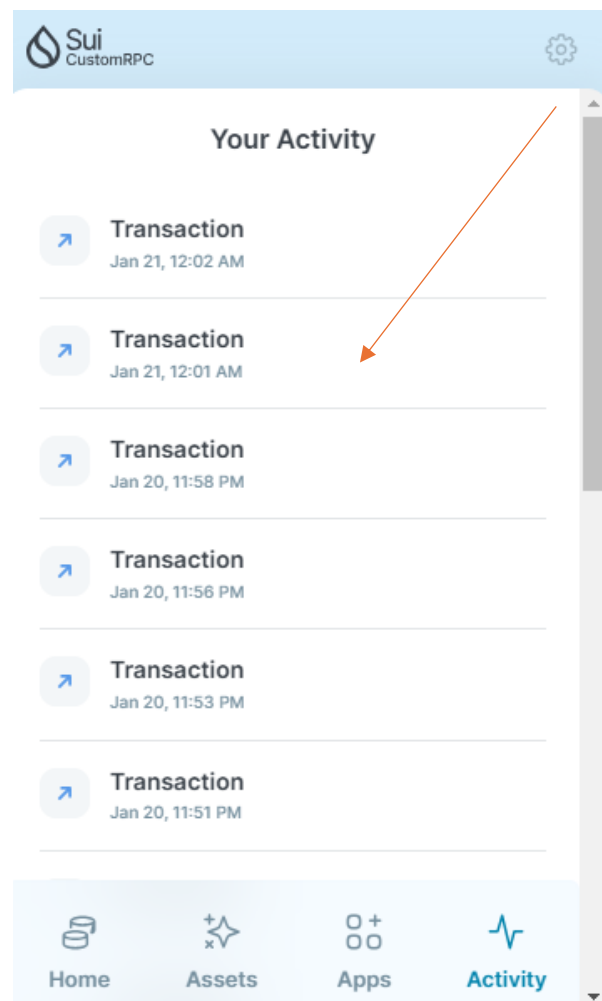
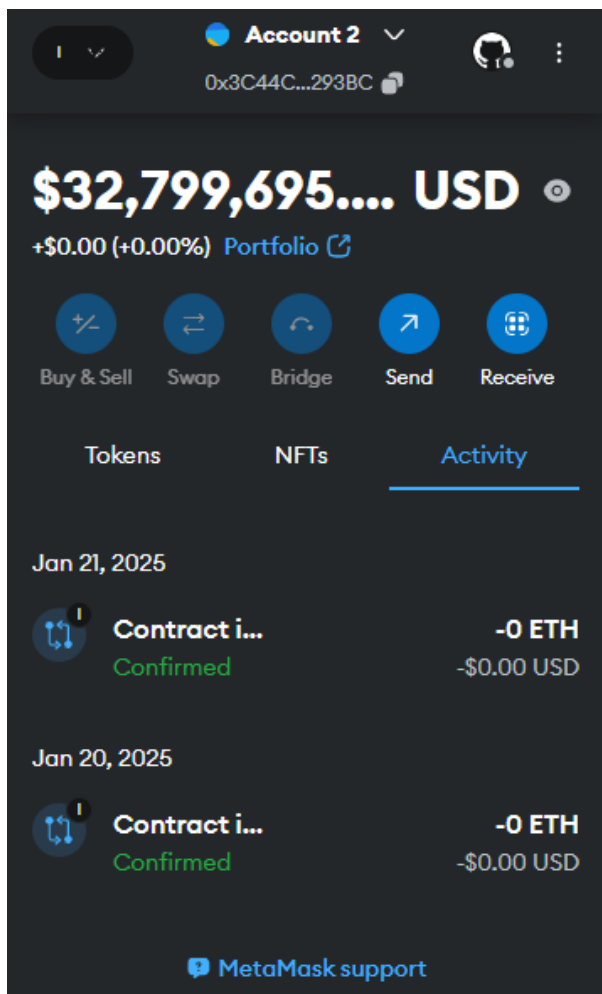
Transfer.jsx : analog bridge.js

PAS 12) Rulăm partea de web

```
bash: cd: pages: no such file or directory  
user@LAPTOP-I9A9C50K:~/boo/blockchain-main/web/blockchain_web/src$ cd pages/  
user@LAPTOP-I9A9C50K:~/boo/blockchain-main/web/blockchain_web/src/pages$ node server.js  
Server is running on port 3000  
[]
```

```
npm ERR! Error: Cannot find module 'vite' from 'blockchain_web'\n\nuser@LAPTOP-I9A9C50K:~/boo/blockchain-main/web$ cd blockchain_web/  
user@LAPTOP-I9A9C50K:~/boo/blockchain-main/web/blockchain_web$ npm run dev  
  
> blockchain_web@0.0.0 dev  
> vite  
  
VITE v6.0.7 ready in 222 ms
```

PAS 13) În urma tranzacțiilor din sui->eth și din eth->sui putem urmări istoricul tranzacțiilor ca în imaginile de mai jos



Observații – am creat script pentru a putea baga mai mulți banii deodată, inițial am folosit simplu **sui client faucet**

CUM E ORGANIZAT PROIECTUL

Realizat în React – javascript ,am folosit move ,dapp kit ,openzeppelin, web3

1)Partea de contracte

2)În src avem

-img

-pages – **Bridge.js , bridge.sh , Login.jsx , server.js , Transfer.jsx**

-styles - un css pentru Login și un css global responsabil pentru restul paginilor (responsive)

3)Scripturile deploy.sh si money.sh