

Project Create and Transact on Ethereum Private Blockchain

1. **Création Ethereum comptes :** besoin d'au moins deux comptes pour jouer à la blockchain et faire de transactions entre les deux

The screenshot shows a terminal window at the top with the message "Script started. Head over to http://localhost:8080 on your browser". Below it is a web browser window titled "Getting Started with Ethereum". The main content of the browser is a form titled "1. Create Ethereum accounts". It contains instructions for creating two accounts, two password input fields, a "Create Accounts" button, and two sections for generated account addresses. The first section is labeled "Generated Account address in Node_1" and contains the value "86cafba6f618b002a899172b1266d97e4ddf771b". The second section is labeled "Generated Account address in Node_2" and contains the value "5bccf6be29e8b6c5c90889745c752bcd025e3c5a".

Le système va calculer les adresses et les **afficher automatiquement** dans ces cases grisées.

2. **Création du genesis files** est le block zéro définit la règle du jeu (qui a de monnaie, quel est la difficulté du minage, qui a l'argent)

The screenshot shows a browser window with a header "2. Create the Genesis files". Below it is a text area with instructions: "Enter the contents for the custom Genesis file in the box below. The content here will be used to initialize both of your Ethereum nodes in the next step." A code editor-like area displays the following JSON content:

```
{  
  "config": {  
    "chainId": 13,  
    "homesteadBlock": 0,  
    "eip155Block": 0,  
    "eip158Block": 0  
  },  
  "difficulty": "0x20000",  
  "extraData": ""  
}
```

Below the code editor is a "Create files" button. At the bottom, the "Genesis File Status" section shows the message "Created the Genesis Files with the name customGenesis.json in both node".

- 3. Initialiser le genesis block :** initialiser le block pour que les nœud savent qu'ils appartiennent sur la blockchain spécifique

3. Initialize a new Genesis Block for both the Nodes

In this step, we will initialize the Ethereum nodes using the custom Genesis file that you created in the previous step. If you did not create a file, please complete step 2 before performing step 3.

Initialize Genesis Blocks

Genesis Block Status

Initialized both Ethereum nodes. You may start them now.

- 4. Démarrer les ethereum nodes**

4. Start the Ethereum Nodes

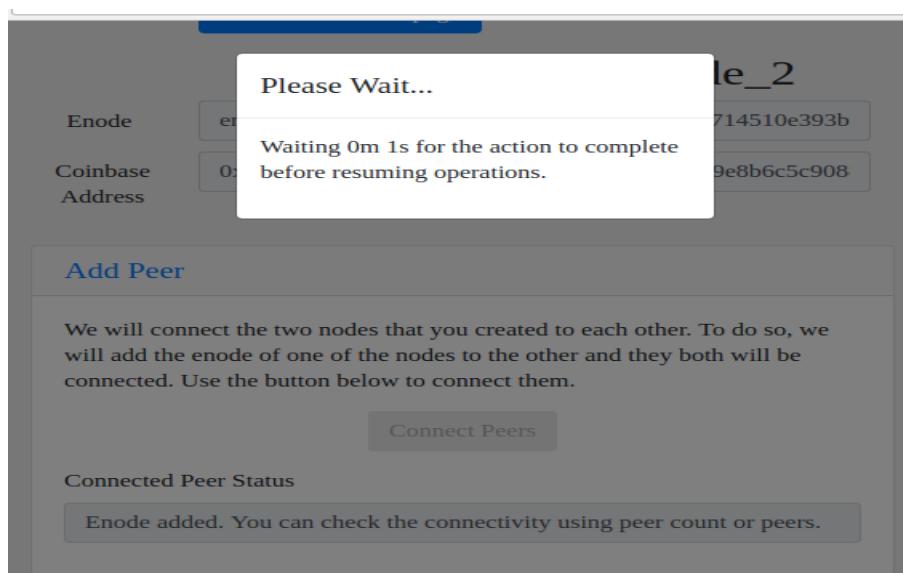
Finally, we will start the Ethereum nodes to be able to join the Blockchain and transact on it. To do so, simply click the button below and then wait for the status to change. Then, move to the next step.

Start Ethereum nodes

Ethereum Node Status

Ethereum started successfully. Move to Step 2 now.

- 5. Connecter les peers** pour que les deux nodes puissent discuter ensemble



Verif :

Check Peer Count

If you want to check the count of connected peers, press the button below to query and return the result.

Node_1

Check Peer Count

Connected Peer Count

1

Node_2

Check Peer Count

Connected Peer Count

1

6. Peers Details :

Check Peer Details

If you want to check the connected peers, press the button below to query and return the result.

Node_1

Check Peer Details

Connected Peers

```
[  
 {  
   "id":  
 "8ae6714510e393beb3b8e96  
d2953874fd9f34d6ebe56ce00  
f764791da906d5abacf6396  
71e0f92fa21c377a8776870cd
```

Node_2

[Check Peer Details](#)

Connected Peers

```
[  
 {  
   "id":  
 "9913996642552c7561f165a  
 cdb5d5a101d7a9751b21e0b0  
 fd98a6f465fa5da4041d1019f  
 5d7b66f681d912246bf79b92
```

7. Create new account:

Create New Accounts

Let us create a few more accounts (4) for every node. Enter the password for the coinbase account so we can use the same password for the other accounts as well.

We are using the same password so it makes it easy to remember the password. In reality, make sure you use different passwords

Node_1

ubuntu

Create 4 accounts

Node_2

ubuntu

Create 4 accounts

Account Creation Status

Accounts created successfully!

8. Lister les account

List Accounts and Check Balance

If you want to check your balance, press the button below to query and return the result for all the accounts.

| Node_1 | | Node_2 | |
|-------------------------------|-------------------|---------------------|------------------|
| Check Balance | | Check Balance | |
| Account and balances fetched. | | | |
| Account Address | Balance (in Weis) | Balance (in Ethers) | Account Address |
| 0x86cafba6f618b0 | 0 | 0 | 0x5bccf6be29e8b6 |
| 0xe489f8c3944204 | 0 | 0 | 0x397e2253bddd4f |
| 0x8448aa6fedfbf6t | 0 | 0 | 0xe9177a9240c2d0 |
| 0x947ed9a33eb84e | 0 | 0 | 0x9494ac898db40e |
| 0x1bbd227a31f2f7 | 0 | 0 | 0x812d1fb742b27c |

9. **Check balance :** au début le solde des deux comptes est vide =0 wei /ethr

Le Wei est la plus petite unité, éther est l'unité principale 1ethr=10^18

10. Start Miner

Le DAG génération est considérer comme préparation du terrain (construction des fichiers)

Create New

List Account

Miner

If you want to S

Waiting for DAG to be generated...

Checking if DAG has been generated or not. If it has not been generated, please wait a maximum of **9m 54s** for them to be generated. If it is completed before that, this screen will disappear and you can continue ahead.

Before you start your miner, make sure you check the account balances. Then start the miner and wait for the timer. Then check your balance again.

Start Miner

Stop Miner

Miner Response

Miner Started

11. Stop Miner

Node 1 admet un solde 145 ethers

Node2 admet un solde 0 ethers

List Accounts and Check Balance

If you want to check your balance, press the button below to query and return the result for all the accounts.

Node_1

[Check Balance](#)

Node_2

[Check Balance](#)

Account and balances fetched.

Account and balances fetched.

| Account Address | Balance (in Weis) | Balance (in Ethers) | Account Address | Balance (in Weis) | Balance (in Ethers) |
|--------------------------------|-------------------|---------------------|--------------------------------|-------------------|---------------------|
| 0x86cafba6f618b002a899172b126t | 14500000000 | 145 | 0x5bccf6be29e8b6c5c90889745c7! | 0 | 0 |
| 0xe489f8c3944204d2b0befef75c8 | 0 | 0 | 0x397e2253bdd40596a26faa729e | 0 | 0 |
| 0x8448aa6fedfb6b224ab9169341c | 0 | 0 | 0xe9177a9240c2d0fa3dc6878e808 | 0 | 0 |
| 0x947ed9a33eb84a76e883e834e12 | 0 | 0 | 0x9494ac898db40c76c1f90c4aafbc | 0 | 0 |
| 0x1bbd227a31f2f7dddcfb0d5a8fb | 0 | 0 | 0x812d1fb742b27df322429aed286 | 0 | 0 |

12. Unlock account pour meilleure sécurité des transactions

[Unlock Account](#)

If you want to unlock your account, please enter the account address and the password you used to create the account and submit the form.

You can get the account addresses from the list accounts and balance section above.

Node_1

0x86cafba6f618b002a899172b126t

ubuntu

Node_2

0x5bccf6be29e8b6c5c90889745c7!

ubuntu

[Unlock Account](#)

[Unlock Account](#)

Unlock Status

Unlock Status

Account Unlocked

Account Unlocked

13. Send transaction

Comme la node2 n'admet pas de solde, toute opération de transaction à effectuer échouera

[Send Transaction](#)

If you want to initiate a transaction, enter the sender's account address, the receiver's account address and the amount you want to send in ethers. Please make sure you unlock the sender account at the respective node and you have sufficient funds.

You can get the account addresses from the list accounts and balance section above.

Node_1

Enter sender's account address here

Enter receiver's account address here

Enter the amount (in Ethers)

[Send Transaction](#)

Node_2

0x5bccf6be29e8b6c5c90889745c7!

0x5bccf6be29e8b6c5c90889745c7!

10

[Send Transaction](#)

Transaction Status

Transaction Status

Transaction Status

Your account has insufficient funds for gas * price + amount that you want to se

Node1 fait une transaction de 45 ethers

The Sender : @ node1

The receiver : @ node2

Send Transaction

If you want to initiate a transaction, enter the sender's account address, the receiver's account address and the amount you want to send in ethers. Please make sure you unlock the sender account at the respective node and you have sufficient funds.

You can get the account addresses from the list accounts and balance section above.

Node_1

Node_2

Transaction Status

Transaction successfully submitted.

Transaction Status

Your account has insufficient funds for gas * price + amount that you want to se

14. Status transaction pending est une transaction qui est en état d'attente n'est pas encore validé

Check Transaction Status

If you want to check the status of transactions, press the button below to query the blockchain and return the result.

For your blockchain, since the difficulty is not too high, every transaction is mined pretty quickly. You should stop the miner and then submit a transaction. After that, if you check you will find that there is a pending transaction. Start the miner to send the transaction through.

Pending Transactions

Queued Transactions

Se valide si seulement le mineur créer un nouveau block

Miner

If you want to Start or Stop a miner, use the buttons below to do so for either of the two nodes.

Before you start your miner, make sure you check the account balances. Then start the miner and wait for the timer. Then check your balance again.

Miner Response

Miner Started

Node2 reçoit le virement de 45 ethers

List Accounts and Check Balance

If you want to check your balance, press the button below to query and return the result for all the accounts.

Node_1

Account and balances fetched.

Node_2

Account and balances fetched.

Il n'y a plus de pending transactions

Check Transaction Status

If you want to check the status of transactions, press the button below to query the blockchain and return the result.

For your blockchain, since the difficulty is not too high, every transaction is mined pretty quickly. You should stop the miner and then submit a transaction. After that, if you check you will find that there is a pending transaction. Start the miner to send the transaction through.

[Check Transaction Status](#)

Pending Transactions

0

Queued Transactions

0