TestCoin Operation Manual

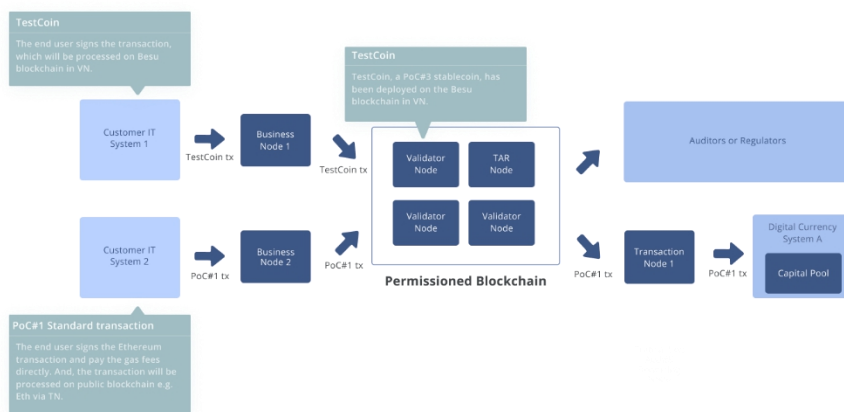June 2023

Catalog

1. Background

Using the Ethereum testnet as a reference, in usual situations, it usually requires approximately 5-10 minutes to complete a transfer transaction due to the operational procedures of public blockchains. Nevertheless, on the Besu chain, employing smart contracts for executing a transfer transaction can be done in just a few seconds. To showcase the rapidity of transactions on the Besu chain, we present TestCoin from PoC#3 as an example for executing a transfer transaction. The diagram below illustrates the exact process of executing this transaction.

2. TestCoin Transfer

Access the sandbox system and navigate to Transaction Management -> TestCoin Transfer. Fill in the necessary details of the Sender and then proceed to enter the relevant information of the Beneficiary. Click on the "Next" button to initiate the transfer. Please note that the TestCoin Transfer feature is primarily designed to showcase the superior speed of TestCoin on the Besu chain compared to stablecoins on public chains. As a result, the TestCoin Transfer function replicates and utilizes the binding information of USDC-ETH. This means that if the Business Account of USDC is linked to the sender's DID, you can utilize the Business Account, Sender DID, Source Currency Type, and Sender Account in the TestCoin Transfer process.

Use this screen to transfer digital currency either internal to your Business Node or external.Prior to transfering on UDPN,Users must have bound their DID to the digital currency wallet.

Sender Details

Business Account: 6666

* Sender DID: did:udpn:2TH17J6Qg1Xk17FVAt7ARfL1avdf

* Source Currency Type: TestCoin / UDPN

* Send Account: 0xfc8d04578b0ff6441acfd2183525b0c783c2c4c1

* Send Amount: 11   TestCoin

Beneficiary Details

* Beneficiary Type: Internal Bank Beneficiary

Beneficiary Name: Beneficiary Name

* Business Account: 222

* Beneficiary Account: 0x6d5d1a8b3adb3e17637ea93fd08d1402e63dd6aa

Next   Reset

The 【Simulated Signature】 page pops up to simulate the end user using the private key to sign the transaction message. Click the "Sign and Submit" button to submit the transfer transaction to the chain for processing.

Simulated Signature   ✕

```
{
"message":
"Amount": "1",
"sourceAccountAddress": "0xfc8d04578b0ff6441acfd2183525b0c783c2c4c1",
"sourceCurrencyType": "TestCoin/UDPN",
"TotalAmount": 1,
"targetAccountAddress": "0x6d5d1a8b3adb3e17637ea93fd08d1402e63dd6aa",
"userDid": "did:udpn:2TH17J6Qg1Xk17FVAt7ARfL1avdf"
"IsKYC": Yes
}
```

* Private Key: ●●   👁

Note: UDPN sandbox connects to public chain test network only, hence please use private key of TEST account to sign the transaction and DO NOT use real private key here.

Sign and Submit   Cancel

After successful processing, the Transaction Key is returned. Users can use the Transaction Key in the 【Transaction Search】 module to query TestCoin Transfer transactions.

✓ success   ✕

The transaction key is:
VN1111_BN0000503_ea53a5fdc89b4b80abbfa561c
140143d1685346662651

OK

3. Transactions Search

You can query TestCoin Transfer transaction information according to DID, Transaction Key, Transaction Type (Transfer), Source Currency (TestCoin), Source Platform Type (UDPN), Target Currency (TestCoin), Target Platform Type (UDPN), Transaction Submit Date, Status and other query conditions.

Click the "Detail" button in the list to view the TestCoin Transfer transaction details:

4. VN Node->Transactions Search

   Users can query the TestCoin Transfer transaction currently being processed by VN on the VN side.

   Enter BN Name, DID, Transaction Key, Transaction Type (Transfer), Source Currency (TestCoin), Source Platform Type (UDPN), Target Currency (TestCoin), Target Platform Type (UDPN), Transaction Submit Date, Status and other query conditions to query TestCoin Transfer transaction information.

Txns Query

BN Name	DID	Txn Key	Txn Type
BN Name	DID	Txn Key	All

Source Currency	Source PlatformType	Target Currency	Target PlatformType
All	All	All	All

Submission Date	Status		
Start date → End date	All		Query Reset

Txns List

BN Name	DID	Txn Key	Txn Type	Source Currency	Amount	Target Currency	Transaction Submit Time	Status	Action
tao0509	did:udpn:2TH17J6Qg1Xk17FVAt7ARfL1avdf	VN1111_BN0000503_ea53a5fdc89b4b80abbfa561...	Transfer	TestCoin-UDPN	1	TestCoin-UDPN	2023-05-29 15:51:02 PM G...	Processed successfully	Detail
tao0509	did:udpn:2TH17J6Qg1Xk17FVAt7ARfL1avdf	VN1111_BN0000503_238150b150d547a0b5c555a...	Transfer	TestCoin-UDPN	1	TestCoin-UDPN	2023-05-29 15:29:58 PM G...	Processed successfully	Detail
tao0509	did:udpn:2TH17J6Qg1Xk17FVAt7ARfL1avdf	VN1111_BN0000503_ec3d6c02fa5d467fb097ef66...	Transfer	TestCoin-UDPN	10.1	TestCoin-UDPN	2023-05-29 15:26:13 PM G...	Processed successfully	Detail
tao0509	did:udpn:2TH17J6Qg1Xk17FVAt7ARfL1avdf	VN1111_BN0000503_4a768da6be4248208dfbd14...	Transfer	TestCoin-UDPN	1	TestCoin-UDPN	2023-05-29 15:24:11 PM G...	Processed successfully	Detail
tao0509	did:udpn:2TH17J6Qg1Xk17FVAt7ARfL1avdf	VN1111_BN0000503_72bf3b1fc56242d181344bc2...	Transfer	TestCoin-UDPN	0.001	TestCoin-UDPN	2023-05-29 14:46:49 PM G...	Processed successfully	Detail

   Click the "Detail" button in the list to view the TestCoin Transfer transaction details:

Transaction Execution Time: 4s

DID	did:udpn:2TH17J6Qg1Xk17FVAt7ARfL1avdf	Transaction Type	Transfer
Currency Type	TestCoin-UDPN	Amount	1 TestCoin
Source Account Address	0xfc8d04578b0ff6441acfd2183525b0c783c2c4c1	Target Account Address	0x6d5d1a8b3adb3e17637ea93fd08d1402e63dd6aa
Total Amount	1 TestCoin	Received Amount	1 TestCoin
Submission Time	2023-05-29 15:51:05 PM GMT+8	Status	Processed successfully

Circulation Information

State machine of a normal Transfer transaction

Start

Init
(#1)

txn id:VN1111_BN0000503_ea53a5fdc89b4...
txn state:Pending
received time:2023-05-29 15:51:05 PM GMT+8

txn id:VN1111_BN0000503_ea53a5fdc89b4...
txn state:Processed successfully
received time:2023-05-29 15:51:07 PM GMT+8

Processed successfully
(#2)

End

Txn Settlement