UDPN Use Case #6

Enabling Gasless Transactions Using Public Chain-based Stablecoins

Operating Manual

2023/5/30

Catalog

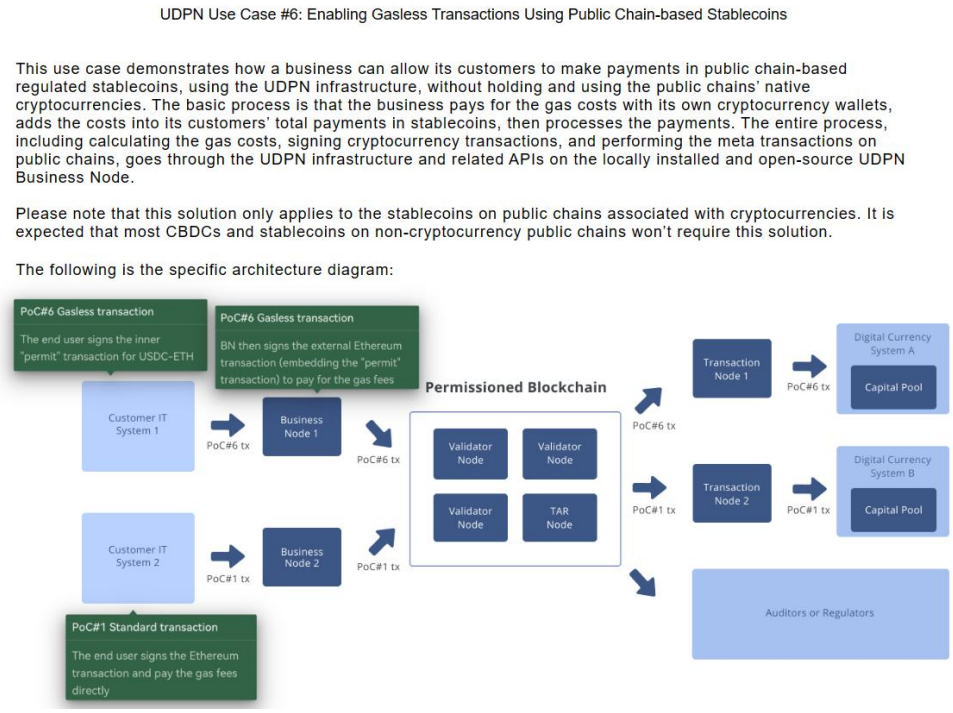
1. General Introduction

This use case demonstrates how a business can allow its customers to make payments in public chain-based regulated stablecoins, using the UDPN infrastructure, without holding and using the public chains' native cryptocurrencies. The basic process is that the business pays for the gas costs with its own cryptocurrency wallets, adds the costs into its customers' total payments in stablecoins, then processes the payments. The entire process, including calculating the gas costs, signing cryptocurrency transactions, and performing the meta transactions on public chains, goes through the UDPN infrastructure and related APIs on the locally installed and open-source UDPN Business Node.

Please note that this solution only applies to the stablecoins on public chains associated with cryptocurrencies. It is expected that most CBDCs and stablecoins on non-cryptocurrency public chains won't require this solution.

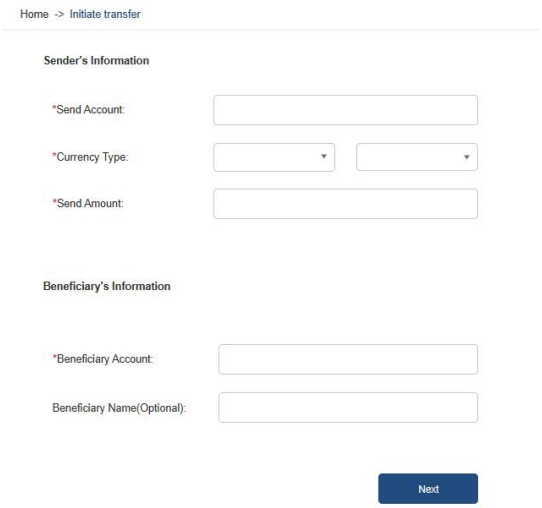
2. Home

You can view detailed description information of PoC6 and the transaction flow architecture diagram of PoC6. In order to better understand the transaction process of PoC6, the transaction process of PoC1 is also displayed.

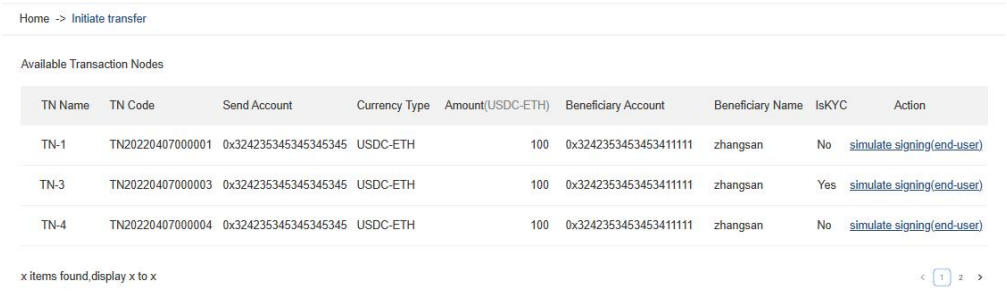


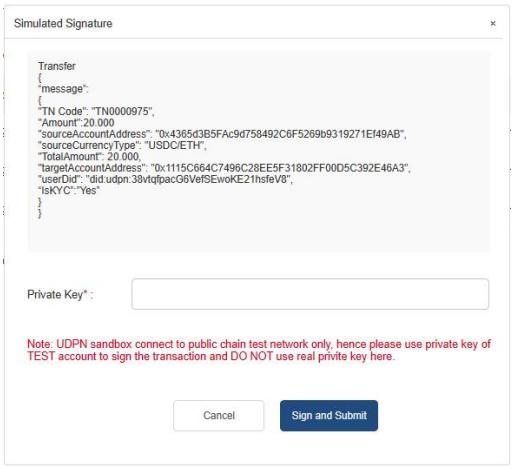
3. Initiate Transfer

Users can initiate a transfer by entering the Send Account, Currency Type, Send Amount of the sender and the Beneficiary Account, Beneficiary Name of the beneficiary.



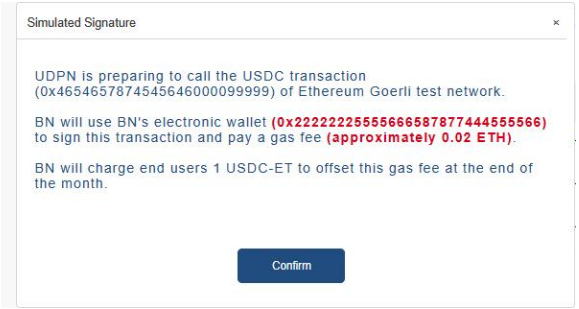
After clicking the "Next" button, you can select the TN node to execute this transfer transaction and simulate the end user clicking the "Simulate signing" button to sign:



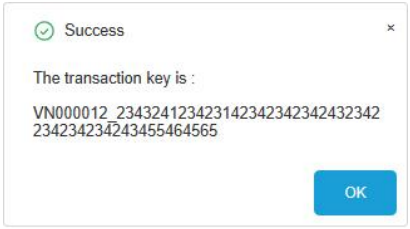


In the pop-up [Simulated Signature] page, the Transfer transaction message will be displayed. After confirming that it is correct, you can simulate the end user using the private key to sign the transaction message.

Click the "Sign and Submit" button, the BN backend will call the smart contract to complete the authorization operation to deduct the gas fee from its e-wallet. The gas fee spent in the subsequent Transfer transaction will be paid by the BN node.

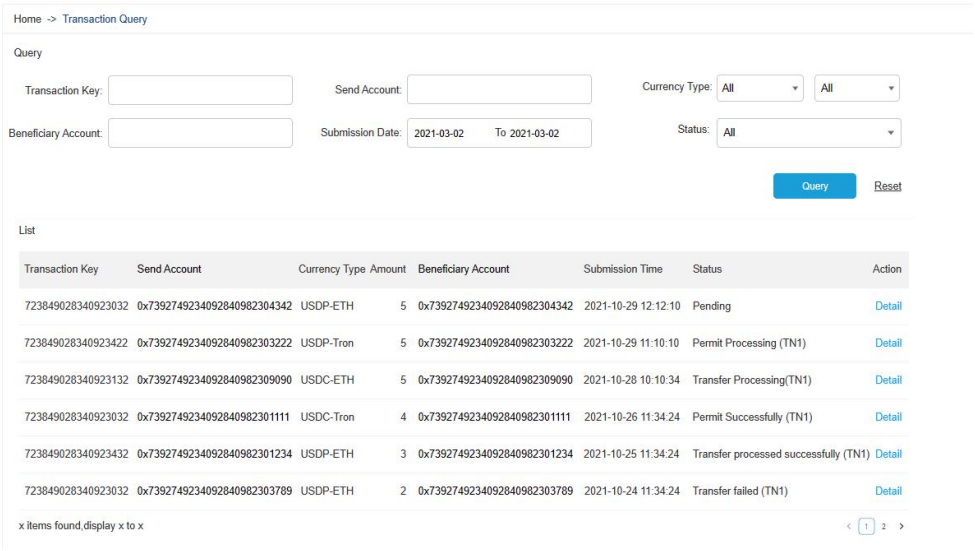


After clicking the "Confirm" button, submit the transfer transaction to the chain for processing. After successful processing, the Transaction Key is returned. Users can use the Transaction Key to query Transfer transactions in the [Transaction Query] module.



4. Transactions Query

You can query Transfer transaction information according to Transaction Key, Send Account, Currency Type, Beneficiary Account, Submission Date, Status and other query conditions.



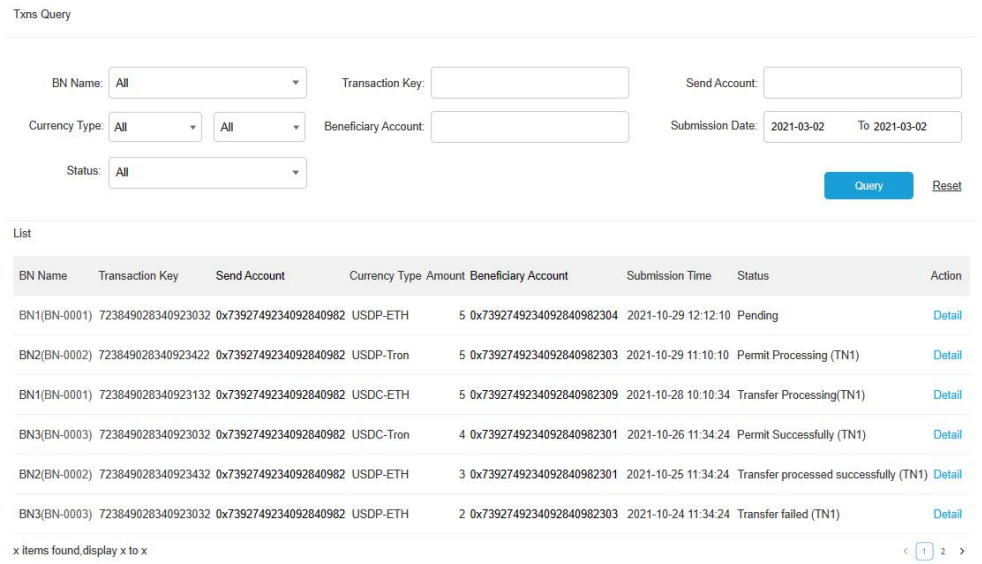
Click the "Detail" button in the list to view the Transfer transaction details:

Click the BN paid wallet address, transaction hash, source account address, destination account address and block number in the transfer transaction state machine to jump to the Ethereum browser to query the transaction.

5. VN Node->Transactions Search

The VN administrator can query the Transfer transaction currently being processed by VN on the VN side.

Enter BN Name, Transaction Key, Send Account, Currency Type, Beneficiary Account, Submission Date, Status and other query conditions to query Transfer transaction information.



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

< Back

VN Side Transaction Information Detail

Basic Information

BN Name:	232332202110280004	Transaction Key:	232332202110280004
TN Name:	name1	TN Code:	TN20220407000001
Currency Type:	USDC-ETH	Amount:	5USDC
Send Account:	0xadddd2342342342343243 24	Beneficiary Account:	0xadddd234225687234324324
Beneficiary Name:	name1	Received Amount:	5USDC
Submission Time:	2021-10-25 10:34:12	Status:	TN1 processed successfully
IsKYC:	Yes	BN's wallet for gas fees:	0xadddd234225687234324000

Circulation Information

State machine of a normal transfer transaction

Click the BN paid wallet address, transaction hash, source account address, destination account address and block number in the transfer transaction state machine to jump to the Ethereum browser to query the transaction.