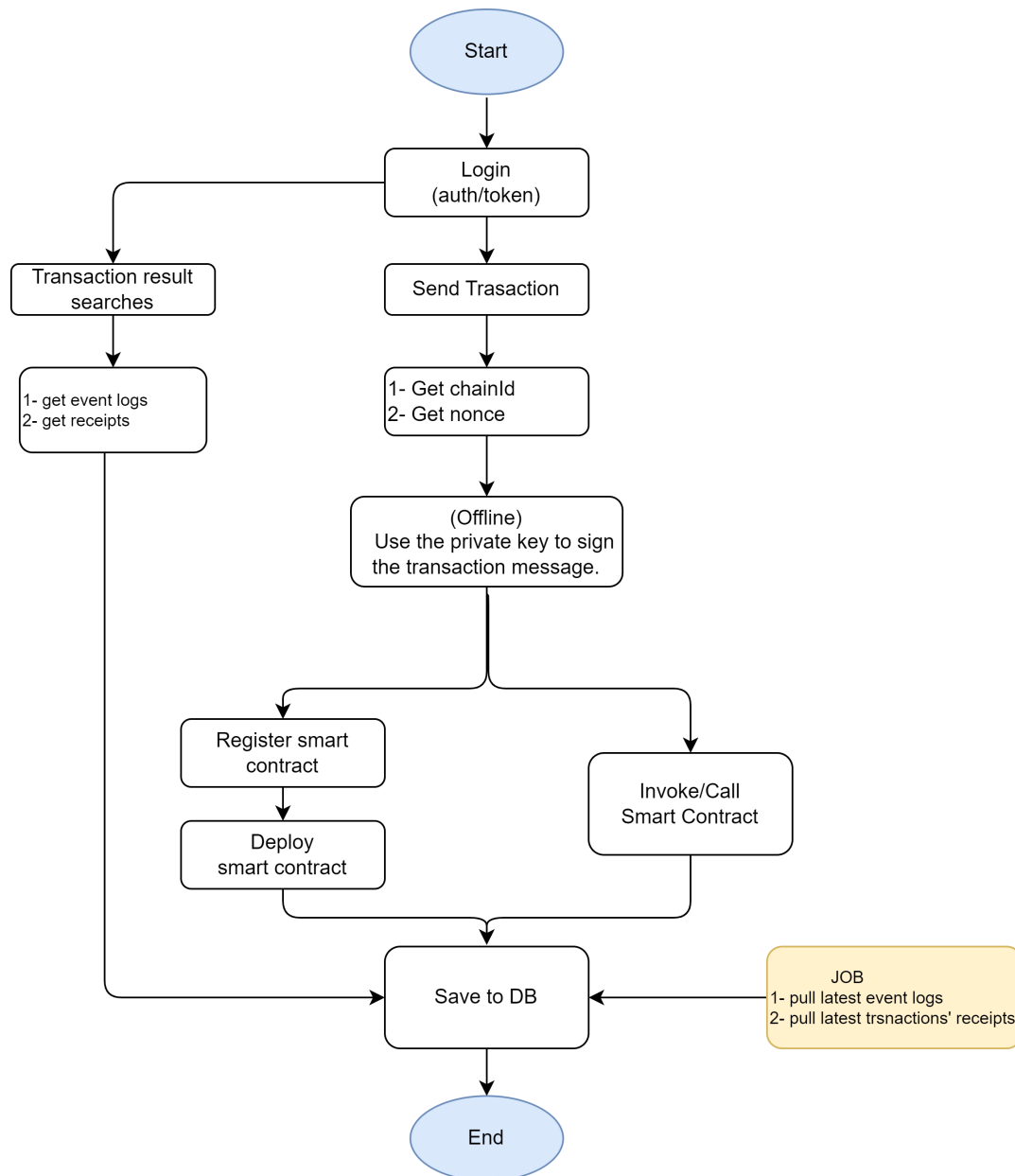


BN API User Guide



Please take note that BN will be compatible with standard Ethereum JSON-RPC, which are indicated in red.

1. BN-API for Smart contracts to register and deploy or invoke/call

1.1 Contract Compilation Support Interface

get ChainID

Retrieves the ChainID related to the chain node, which in this case is the Besu node.

`http://{BNGATEWAY}/v1/udpn/processing/contract/manage/chainid/select`

get Nonce

Calls the `eth_getTransactionCount` method in a similar way to the Ethereum JSON-RPC API.

`http://{BNGATEWAY}/restapi/transaction`

Convert File to Base64

Converts the smart contract compressed package to Base64 format. Currently, the contract package only supports the zip format.

`http://{BNGATEWAY}/v1/udpn/processing/contract/manage/tobase`

1.2 Register and deploy smart contract to UDPN

1- Register smart contract to BN

`http://{BNGATEWAY}/v1/udpn/processing/contract/manage/save`

Uploads the chaincode package and related information to the UDPN network via the create contract interface and waits for the governance system to approve it.

2- Deploy smart contract to UDPN

Deploys the registered smart contract to the UDPN network via the deploy contract interface once it has been approved.

`http://{BNGATEWAY}/restapi/transaction`

This interface follows the Ethereum JSON-RPC format.

JRPC-API

-method: `eth_sendRawTransaction` deploys the contract

Since the BN node does not manage any private keys, the transaction signature needs to be completed offline by the business system. Additionally, the interface follows the `eth_sendRawTransaction` method of the Ethereum JSON-RPC API. Therefore, the params attribute needs to be filled in with the signed transaction message.

1.3 Invoke/Call smart contract with BN

`http://{BNGATEWAY}/restapi/transaction`

This interface follows the Ethereum JSON-RPC format.

JRPC-API

-method: `eth_sendRawTransaction` invokes the smart contract

Since the BN node does not manage any private keys, the transaction signature needs to be completed offline by the business system. Additionally, the interface follows the `eth_sendRawTransaction` method of the Ethereum JSON-RPC API. Therefore, the `params` attribute needs to be filled in with the signed transaction message.

-method: `eth_getTransactionReceipt` queries the receipt

The business system queries the transaction receipt based on the transaction hash to update the transaction status.

-method: `eth_call`

which is used for query contract invocation.

1.4 Get receipts

Queries the on-chain transaction status of the initiated transaction.

`http://{BNGATEWAY}/restapi/transaction` ,

which follows the Ethereum JSON-RPC format.

JRPC-API

-method: `eth_getTransactionReceipt` queries the receipt

The business system queries the transaction receipt based on the transaction hash to update the transaction status.

1.5 Api demo

Please refer to the demo on GitHub.

