nebulas native使用

安卓接入

1. 将libnebulas-release.aar包复制到项目的libs中
2. 在build.gradle中引入相关依赖描述

```
repositories {
    flatDir {
        dir 'libs'
    }
}
dependencies {
...
    compile(name: 'libnebulas-release', ext: 'aar')
    implementation 'com.squareup.okhttp3:okhttp:3.10.0'
    implementation 'com.google.code.gson:gson:2.8.4'
...
}
```

调用API

- PAY、CALL、Query Transfer STATUS：与NebPay相关接口对应
- Query Account STATUS：与neb.api相关接口相对应
- CALL CONTRACT FUNCTION：模拟调用

PAY

与NebPay.pay()底层调用一样，只是NebPay.pay()返回serialNumber

只能使用主网，无法通过修改sdk源码支持测试网

```
/**
     * pay接口:        星云地址之间的转账
     *
     * @param mainNet      0 测试网    1 主网
     * @param goods        商品详情
     * @param to           转账目标地址
     * @param value        转账value，单位为wei (1NAS =10^18 wei)
     * @param serialNumber 随机码
     */
public static void pay(Context context, int mainNet, GoodsModel goods, String to,
String value, String serialNumber)

/*
openapp.nasnano://virtual?params={"category":"jump","des":"confirmTransfer","pageP
arams":{"callback":"https://pay.nebulas.io/api/pay","goods":{"desc":"星云链，下一代公
链","name":"Nebulas"},"pay":{"currency":"NAS","payload":{"type":"binary"},"to":"n1V
ovrGLzqCP2PQE6RB1b96b6bVeQTTaELq","value":"1000.0"},"serialNumber":"ZDVDdy1ILSoSye
ZGHi0xYaQ99KvhNtuX"}}
*/
```

```
category : jump
des  : confirmTransfer
pageParams {4}
    callback : https://pay.nebulas.io/api/pay
  ▼ goods {2}
        desc : 星云链，下一代公链
        name : Nebulas
  ▼ pay  {4}
        currency : NAS
      ▼ payload {1}
            type : binary
        to   : n1VovrGLzqCP2PQE6RB1b96b6bVeQTTaELq
        value : 1000.0
    serialNumber : ZDVDdy1ILSoSyeZGHi0xYaQ99KvhNtuX
```

```
<activity android:name="io.nebulas.wallet.android.module.launch.H5RaiseDeliverActi
vity" android:screenOrientation="portrait">
            <intent-filter>
                <action android:name="android.intent.action.VIEW"/>
                <category android:name="android.intent.category.DEFAULT"/>
                <category android:name="android.intent.category.BROWSABLE"/>
                <data android:scheme="openapp.nasnano"/>
            </intent-filter>
        </activity>
```

```
ContractAction.start(context, url);
```

```
/**
     * Schema 方式启动星云钱包
     * @param context 上下文
     * @param url     schema
     */
    public static void start(Context context, String url) {
        if (context == null || TextUtils.isEmpty(url)) {
            return;
        }
        try {
            Intent intent = new Intent(Intent.ACTION_VIEW, Uri.parse(url));
            intent.addFlags(Intent.FLAG_ACTIVITY_NEW_TASK);
            context.startActivity(intent);
        } catch (Exception e) {
            handleException(context);
        }
    }
```

CALL

与NebPay.call()底层调用一样，只是NebPay.call()返回serialNumber

只能使用主网，无法通过修改sdk源码支持测试网

```
String to = "n1iBF1TohLcSaRghKCDjSmD4QzwBpmummfU";//部署上链的，合约地址，合约地址，合约地址
        String functionName = "save";
        String[] args = new String[]{"titleXX","contentXXX"};
        SmartContracts.call(this, Constants.TEST_NET ,  goods, functionName, to, value, args, serialNumber);
```

```
/**
     * call函数:       调用智能合约
     * 所得结果上链
     *
     * @param mainNet      0 测试网     1 主网
     * @param goods        商品详情 (*)
     * @param functionName 调用合约的函数名
     * @param to           转账目标地址
     * @param value        转账value, 单位为wei (1NAS =10^18 wei)
     * @param args         函数参数列表
     * @param serialNumber 随机码
     */
    public static void call(Context context, int mainNet, GoodsModel goods, String
 functionName, String to, String value, String[] args, String serialNumber)

openapp.nasnano://virtual?params={"category":"jump","des":"confirmTransfer","pageP
arams":{"callback":"https://pay.nebulas.io/api/pay","goods":{"desc":"星云链，下一代公
链","name":"Nebulas"},"pay":{"currency":"NAS","payload":{"args":["titleXX","content
XXX"],"function":"save","type":"call"},"to":"n1iBF1TohLcSaRghKCDjSmD4QzwBpmummfU",
"value":"1.0E15"},"serialNumber":"qBcXaTX52YZj7nUqha7rmpkcEQKmGjWf"}}
```

之后的代码调用和pay接口一模一样

```
ContractAction.start(context, url);
```

Query Transfer STATUS

与NebPay.queryPayInfo()底层调用一样，只是NebPay.pay()返回serialNumber

只能使用主网，可以通过修改sdk源码支持测试网

```
SmartContracts.queryTransferStatus(Constants.TEST_NET, serialNumber,new SmartContr
acts.StatusCallback(){
            @Override
            public void onSuccess(String response) {
                Log.i(TAG,"response:" + response);
                Looper.prepare();
                Toast.makeText(MainActivity.this,"response:"+response,Toast.LENGTH
_LONG).show();
                Looper.loop();
            }

            @Override
            public void onFail(String error) {
                Log.i(TAG,"error:" + error);
                Looper.prepare();
                Toast.makeText(MainActivity.this,"error:" + error,Toast.LENGTH_LON
G).show();
                Looper.loop();
            }
        });
```

```
/**
     * 查询交易状态
     *
     * @param mainNet      0 测试网    1 主网
     * @param serialNumber
     */
    public static void queryTransferStatus(int mainNet, String serialNumber, final
 StatusCallback callback) {

        String ENDPOINT = "";

        if (mainNet == 0) {
            ENDPOINT = Constants.MAIN_NET_PAY_URL + "pay/query?payId=" + serialNum
ber;
        } else {
            ENDPOINT = Constants.MAIN_NET_PAY_URL + "mainnet/pay/query?payId=" + s
erialNumber;
        }

        Request request = new Request.Builder().get().url(ENDPOINT).build();
        OkHttpManager.getInstance().getOkHttpClient().newCall(request).enqueue(new
 Callback() {
            @Override
            public void onFailure(Call call, IOException e) {
                if (callback != null) {
                    callback.onFail(e.getMessage());
                }
            }

            @Override
            public void onResponse(Call call, Response response) throws IOExceptio
n {
                if (callback != null && response != null) {
                    callback.onSuccess(response.body().string());
                }
            }
        });
    }
```

Query Account STATUS

与neb.api.getAccountState(address)底层调用一样

只能使用主网，可以通过修改sdk源码支持测试网

```
/**
     * 查询地址详细信息
     * @param address
     * @param callback
     */
    public static void queryAccountState(String address, final StatusCallback call
back) {
        AccountState accountState = new AccountState();
        accountState.address = address;
        RequestBody requestBody = FormBody.create(MediaType.parse("application/jso
n; charset=utf-8")
                , new Gson().toJson(accountState));
        Request request = new Request.Builder().url(Constants.MAIN_NET_RPC_ACCOUNT
_STATE_URL).post(requestBody).build();
        OkHttpManager.getInstance().getOkHttpClient().newCall(request).enqueue(new
 Callback() {
            @Override
            public void onFailure(Call call, IOException e) {
                if (callback != null) {
                    if (callback != null) {
                        callback.onFail(e.getMessage());
                    }
                }
            }

            @Override
            public void onResponse(Call call, Response response) throws IOExceptio
n {
                if (callback != null && response != null) {
                    callback.onSuccess(response.body().string());
                }

            }
        });
    }
```

CALL CONTRACT FUNCTION

调用合约方法：https://mainnet.nebulas.io/v1/user/call，和neb.api.call()、NebPay.simulateCall(以后会被弃用)效果一样是模拟执行，执行的结果并不会上链，常用于调用get类型的接口，查询数据。

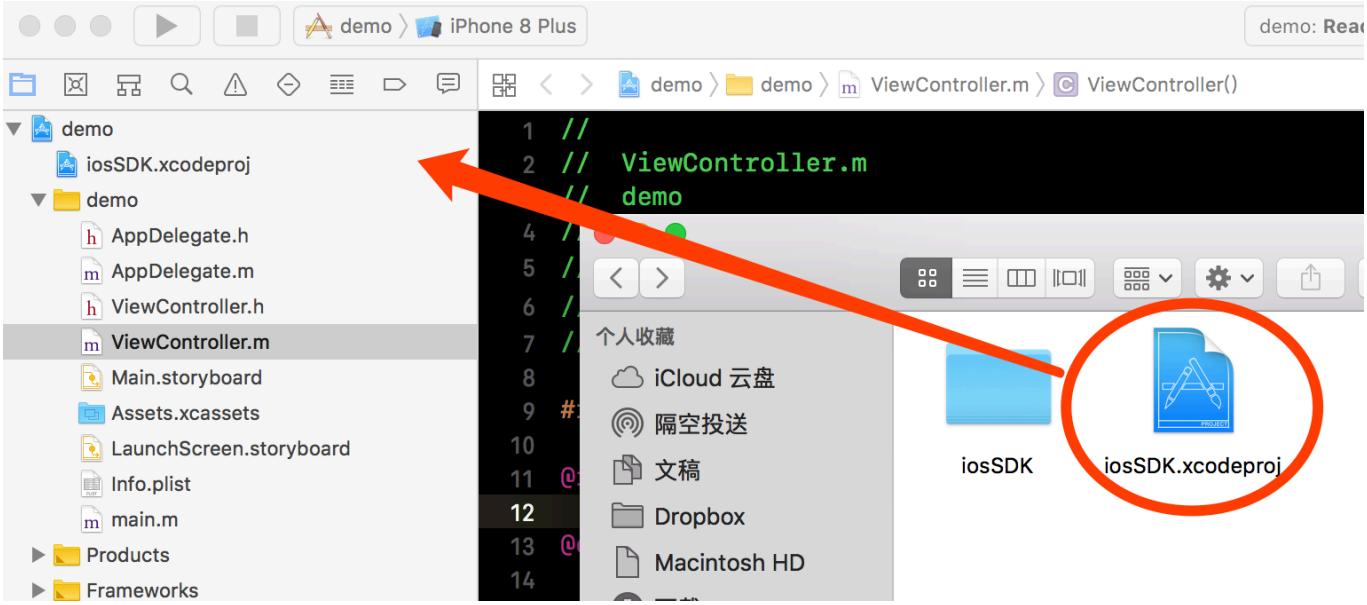
只能使用主网，可以通过修改sdk源码支持测试网

```
public void nasCallContract(View view) {
        ContractModel contractModel = new ContractModel();
        contractModel.addArg(1);
        contractModel.addArg(0);
        contractModel.addArg(1);
        contractModel.function = "history";
        String from = "n22Djb3G8dzLyeRMWAxov7j3ExLdhnLtwgw";

        SmartContracts.simulateCall(contractModel,from,from,1, new SmartContracts.
StatusCallback() {
            @Override
            public void onSuccess(final String response) {
                Log.i(TAG,"response:" + response);
                runOnUiThread(new Runnable() {
                    @Override
                    public void run() {
                        Toast.makeText(MainActivity.this,response,Toast.LENGTH_LON
G).show();
                    }
                });
            }

            @Override
            public void onFail(String error) {
                Log.i(TAG,"error:" + error);
            }
        });
    }
```

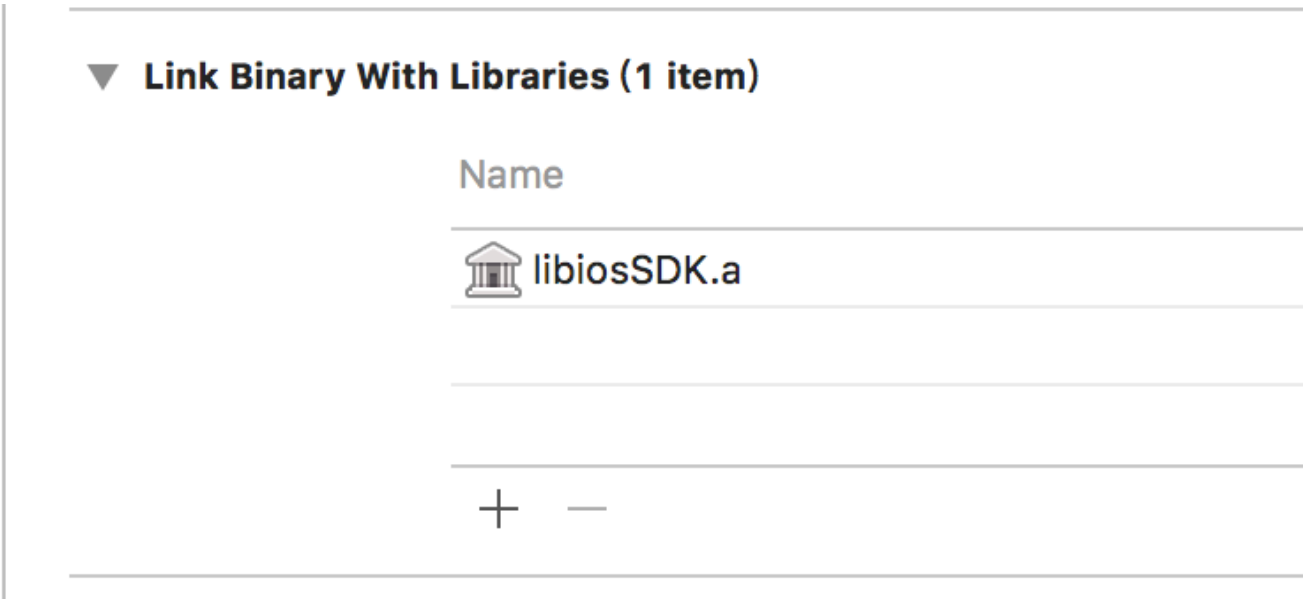
```
/**
     * 注：该方法为模拟执行，执行的结果并不会上链。
     * 常用于调用get类型的接口，查询数据。
     *
     * @param contractModel
     * @param from
     * @param to
     * @param nonce
     * @param callback
     */
    public static void simulateCall(ContractModel contractModel, String from, Stri
ng to, int nonce, final StatusCallback callback){
        if (contractModel == null || TextUtils.isEmpty(from)) {
            return;
        }
        CallContractModel callContractModel = new CallContractModel();
        callContractModel.contract = contractModel;
        callContractModel.from = from;
        callContractModel.to = to;
        callContractModel.nonce = nonce;
        callContractModel.gasLimit = "400000";
        callContractModel.gasPrice = "1000000";
        callContractModel.value = "0";
        RequestBody requestBody = FormBody.create(MediaType.parse("application/jso
n; charset=utf-8"), new Gson().toJson(callContractModel));
        Request request = new Request.Builder().url(Constants.MAIN_NET_RPC_CALL_UR
L).post(requestBody).build();
        OkHttpManager.getInstance().getOkHttpClient().newCall(request).enqueue(new
 Callback() {
            @Override
            public void onFailure(Call call, IOException e) {
                if (callback != null) {
                    if (callback != null) {
                        callback.onFail(e.getMessage());
                    }
                }
            }

            @Override
            public void onResponse(Call call, Response response) throws IOExceptio
n {
                if (callback != null && response != null) {
                    callback.onSuccess(response.body().string());
                }

            }
        });
    }
```

iOS接入

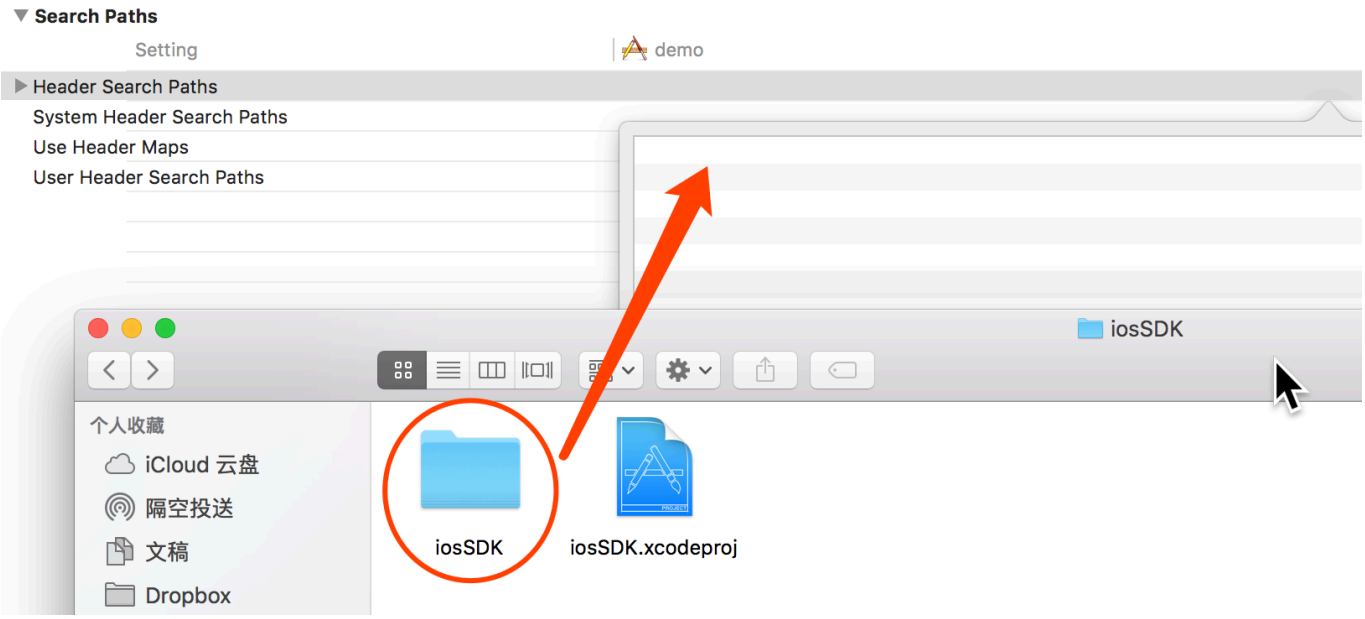
1. Git clone this repo.
2. Drag iosSDK.xcodeproj file to your project.



3. Add link library.



4. Add header search path by dragging iosSDK folder to the setting area.



调用钱包API--NASSmartContracts.m

```
#import <NASSmartContracts.h>
```

```
[NASSmartContracts debug:YES]; // use the debug net
```

判断是否安装钱包

```
+ (BOOL)nasNanoInstalled {
    return [[UIApplication sharedApplication] canOpenURL:[NSURL URLWithString:NAS_
NANO_SCHEMA_URL]];
}
```

Go to appStore

```
+ (void)goToNasNanoAppStore {
    [[UIApplication sharedApplication] openURL:[NSURL URLWithString:@"itms-apps://
itunes.apple.com/cn/app/id1281191905?mt=8"]];
}
```

PAY

会唤起钱包

```
- (IBAction)pay:(id)sender {
    self.sn = [NASSmartContracts randomCodeWithLength:32];
    NSError *error = [NASSmartContracts payNas:@(0.0001)
                                     toAddress:@"n1a4MqSPPND7d1UoYk32jXqKb5m5s3AN6
wB"
                                withSerialNumber:self.sn
                                    forGoodsName:@"test1"
                                         andDesc:@"desc"];
    if (error) {
        self.textView.text = error.userInfo[@"msg"];
        [NASSmartContracts goToNasNanoAppStore];
    } else {
        self.textView.text = @"Pay Successful!";
    }
}
```

CALL

会唤起钱包

```
- (IBAction)call:(id)sender {
    self.sn = [NASSmartContracts randomCodeWithLength:32];
    NSError *error = [NASSmartContracts callWithMethod:@"save"
                                             andArgs:@[@"key111", @"value111"]
                                              payNas:@(0)
                                           toAddress:@"n1zVUmH3BBebksT4LD5gMiWgN
U9q3AMj3se"
                                     withSerialNumber:self.sn
                                         forGoodsName:@"test2"
                                              andDesc:@"desc2"];
    if (error) {
        self.textView.text = error.userInfo[@"msg"];
        [NASSmartContracts goToNasNanoAppStore];
    } else {
        self.textView.text = @"Call Successful!";
    }
}
```

Check Status

可以修改sdk源码以支持测试网络

```
+ (void)checkStatusWithSerialNumber:(NSString *)number
              withCompletionHandler:(void (^)(NSDictionary *data))handler
                       errorHandler:(void (^)(NSInteger code, NSString *msg))error
Handler {
    NSURL *url = [NSURL URLWithString:[NSString stringWithFormat:kNASCheckUrl, num
ber]];
    NSURLRequest *request = [NSURLRequest requestWithURL:url];
    NSURLSession *session = [NSURLSession sharedSession];
    NSURLSessionDataTask *sessionDataTask = [session dataTaskWithRequest:request c
ompletionHandler:^(NSData * _Nullable data, NSURLResponse * _Nullable response, NS
Error * _Nullable error) {
        if (error) {
            if (errorHandler) {
                errorHandler(error.code, error.description);
            }
        } else {
            NSDictionary *resDict = [NSJSONSerialization JSONObjectWithData:data o
ptions:0 error:nil];
            if (resDict[@"code"] && [resDict[@"code"] integerValue] == 0) {
                if (handler) {
                    handler(resDict[@"data"]);
                }
            } else {
                if (errorHandler) {
                    errorHandler([resDict[@"code"] integerValue], resDict[@"msg"])
;
                }
            }
        }
    }];
    [sessionDataTask resume];
}
```

调用NASApi--NASApi.m

```
#import <NASApi.h>
```

```
[NASApi debug:YES]; // use the debug net
```

- contractWithSource
- fetchNebStateWithCompletionHandler

- fetchAccountState
- fetchLatestIrreversibleBlockWithCompletionHandler
- callFuctionFrom
- sendRawTransaction
- fetchBlockByHash
- fetchBlockByHeight
- fetchTransactionReceiptByHash
- fetchTransactionByContract
- fetchGasPriceWithCompletionHandler
- estimateGasFrom
- fetchEventByHash
- fetchDynasty

neb.android

neb.iOS