

『0004』 - 基于Ethereum Wallet的Solidity HelloWorld智能合约(Smart Contract)

孔壹学院：国内区块链职业教育领先品牌

作者：黎跃春，区块链、高可用架构工程师

微信：liyc1215 QQ群：348924182 博客：<http://liyuechun.org>

相信大家都有学习各种开发语言的经历，一般学习任何一门语言都会先从最简单的HelloWorld开始，所以本篇文章，我们将编写一个最基本的合约代码，并且一步步讲解如何通过 Ethereum Wallet 将合约部署到区块链，同时我们将通过本demo的演示如何通过发送数据和接收数据和合约进行交互。

Solidity合约的语法和面向对象编程语言非常相似，一个合约有我们能够调用的 方法（函数） 和能够存储数据和读取数据的 属性（状态变量）。

Counter合约源码

我们的 Counter 合约将 increment 方法被调用的次数存储到 count 属性中。并且每个人都可以通过 getCount 方法获取区块链上 count 的值。

```
pragma solidity ^0.4.4;

contract Counter {

    /* 定义一个uint类型的count变量 */
    uint count = 0;

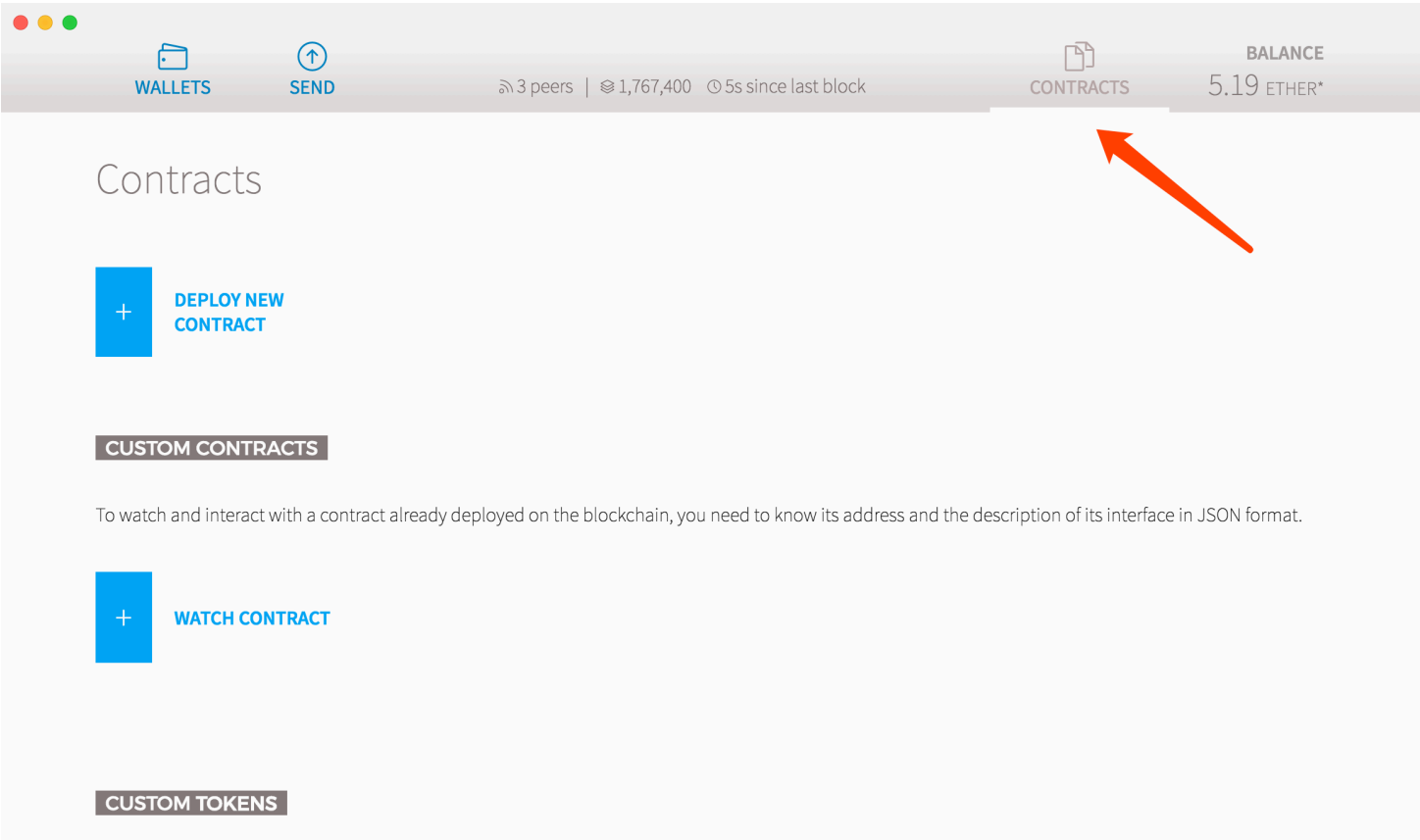
    /* 当这个方法被调用时count的值会加1 */
    function increment() public {
        count = count + 1;
    }

    /* 读取count数据 */
    function getCount() constant returns (uint) {
        return count;
    }

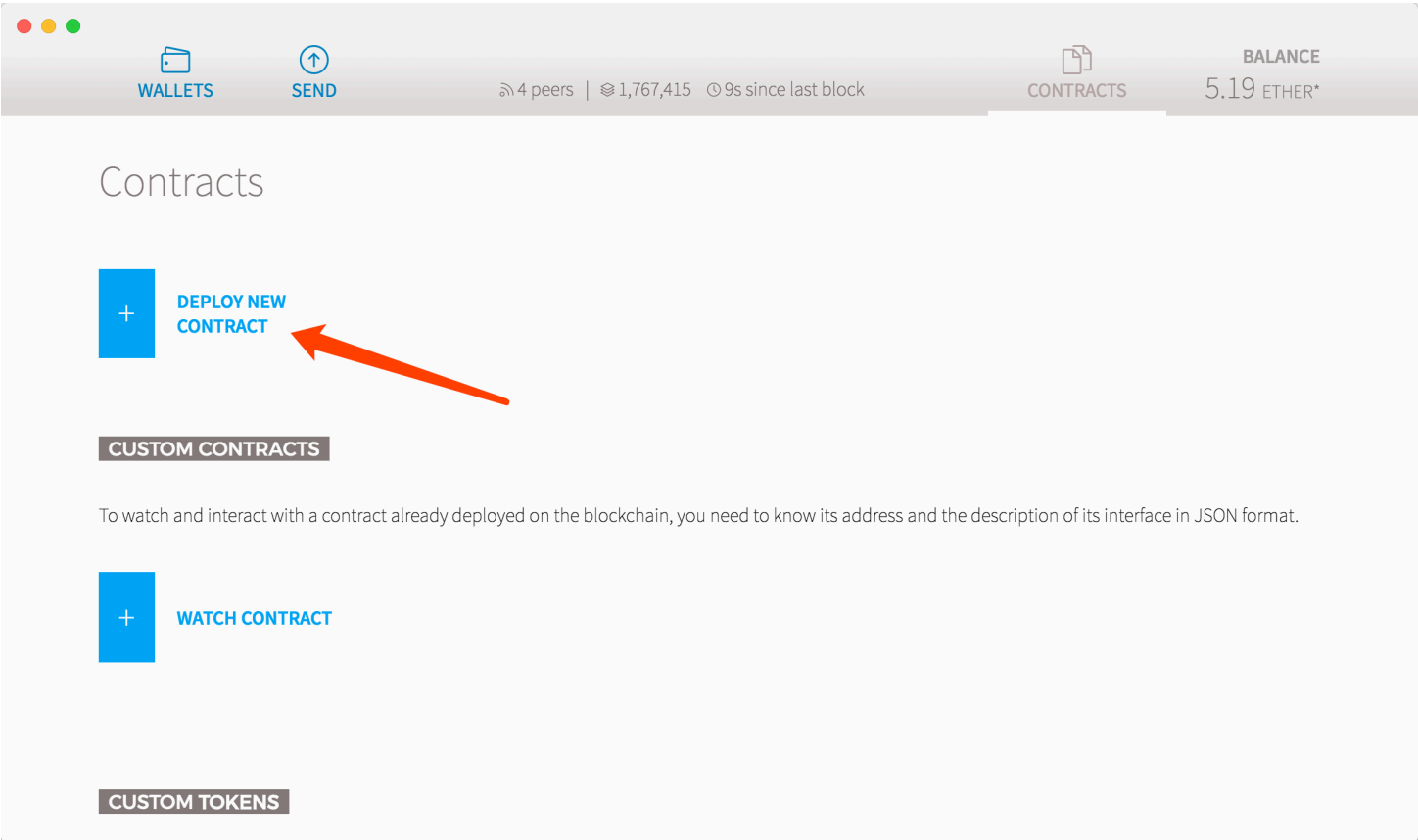
}
```

Counter合约部署

- 要想发布我们的合约到区块链，打开 **Ethereum Wallet** 然后点击 **Contracts** 。



- 点击部署一个新合约。



- 将我们的 Counter 合约代码拷贝到 Ethereum Wallet 代码区域。

Deploy contract

FROM

Account 2 - 5.19 ETH

AMOUNT

0.0

ETHER

5.1863719 ETH

☐ Send everything

You want to send 0 ETH.

SOLIDITY CONTRACT SOURCE CODE

```
1 pragma solidity ^0.4.11;
2
3 contract MyContract {
4     /* Constructor */
5     function MyContract() {
6
7     }
8 }
```

CONTRACT BYTE CODE

Put the source of the contract you want here. You can find many examples of contracts at the ethereum.org:

- [Build a token](#)
- [Start a crowdsale](#)
- [Create a blockchain organization](#)

- 选择 Counter 合约，然后点击 DEPLOY 按钮。

WALLETSSEND5 peers | 1,767,442 22s since last blockCONTRACTS5.19 ETH*

SOLIDITY CONTRACT SOURCE CODECONTRACT BYTE CODE

```
1 pragma solidity ^0.4.4;
2
3 contract Counter {
4
5     /* 定义一个uint类型的count变量 */
6     uint count = 0;
7
8     /* 当这个方法被调用时count的值会加1 */
9     function increment() public {
10         count = count + 1;
11     }
12
13     /* 读取count数据 */
14     function getCount() constant returns (uint) {
15         return count;
16     }
17 }
18
19
```

SELECT CONTRACT TO DEPLOY

Counter

SELECT FEE

0.01285992 ETH

CHEAPERFASTER

TOTAL

0.01285992 ETH

DEPLOY

This is the most amount of money that might be used to process this transaction. Your transaction will be mined **probably within 30 seconds.**

- 输入当前部署的钱包的密码，然后点击 **SEND TRANSACTION** 按钮。

WALLETS

SEND


5 peers | 1,767,495 | 17s since last block

CONTRACTS

5.17 ETHER*

ACCOUNTS


Accounts are password protected keys that can hold Ether and Ethereum-based tokens. They can control contracts, but can't display incoming transactions.



ACCOUNT 2

5.17 ether


0x7A53c2fA4CE50ffEb...



MAIN ACCO...

0.00 ether

0x45eb5aEb86a19561...



ACCOUNT 3

0.00 ether

0x702A7925704A3b8601Be4fcE2482fB528D663195

+

ADD ACCOUNT

WALLET CONTRACTS

These contracts are stored on the blockchain and can hold and secure Ether. They can have multiple accounts as owners and keep a full log of all transactions.

+




ADD WALLET CONTRACT

LATEST TRANSACTIONS


Filter transactions

Sep 29

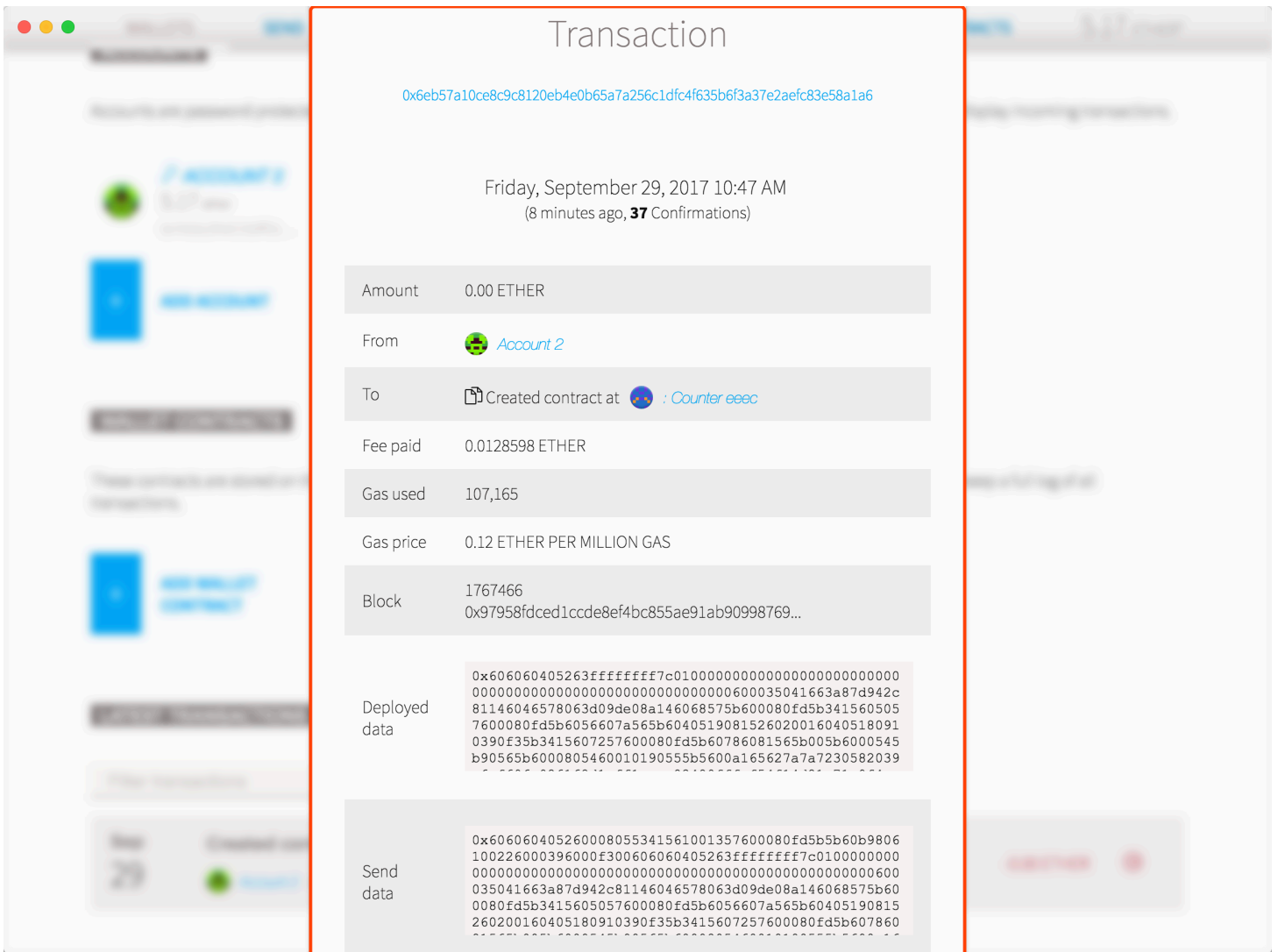
Created contract

 Account 2 →  Created contract at  : Counter eeeec

6 minutes ago

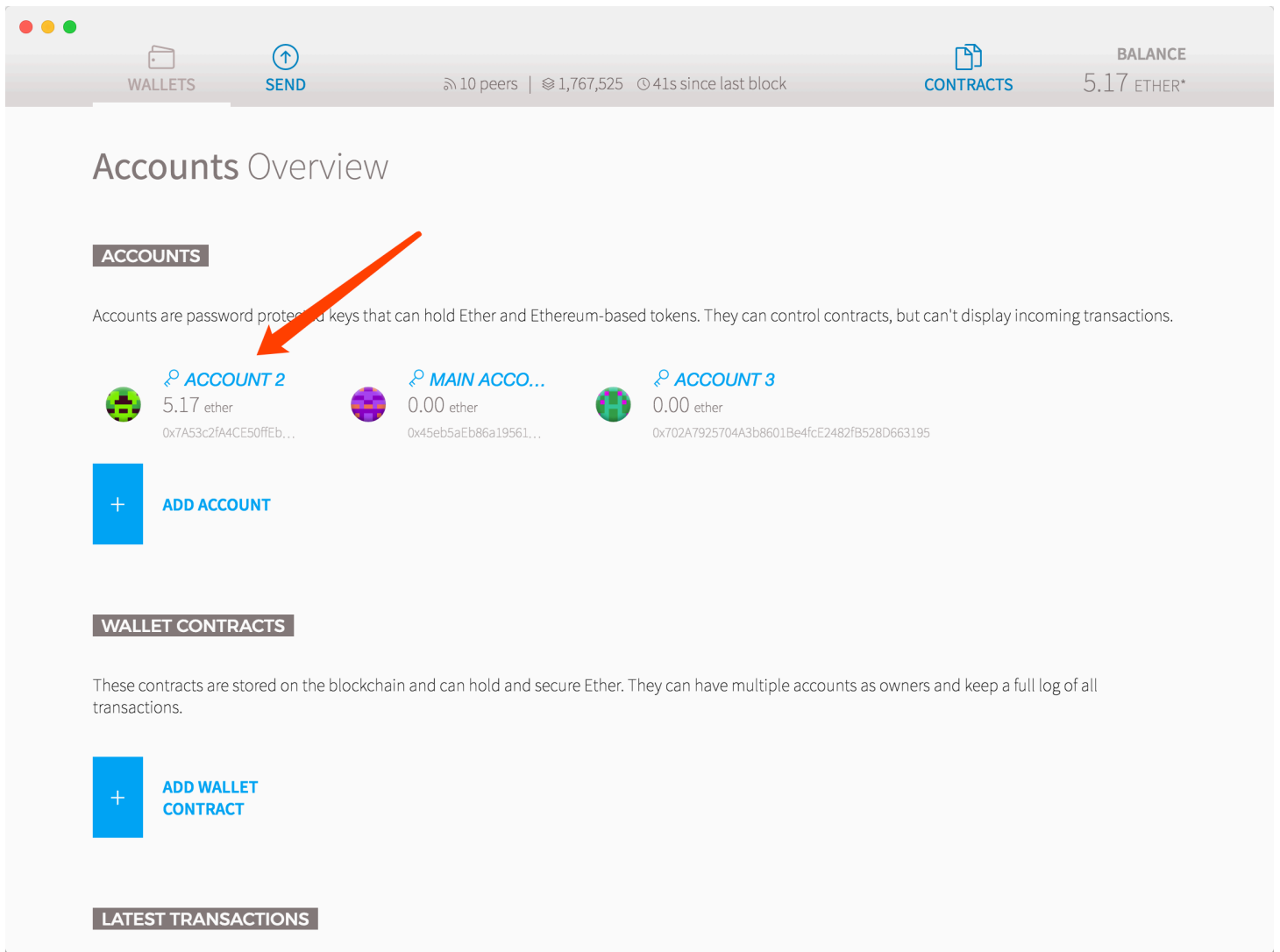
-0.00 ETHER 

- 查看交易信息。



和Counter合约互动

- 因为我们部署的合约是部署在 Account 2 上的，所以我们可以点击 Account 2 查看最新的交易记录。



- 点击 Counter 按钮，进入交互界面。


WALLETS

SEND


8 peers | 1,767,532 | 22s since last block

CONTRACTS

BALANCE
5.17 ETH*



Account 2

 0x7A53c2fA4CE50ffEbC9258941300FA1BB4a33683

5.1735121 ETH*

Transfer Ether & Tokens

Copy address

Show QR-Code

NOTE

Accounts can't display incoming transactions, but can receive, hold and send Ether. To see incoming transactions [create a wallet contract](#) to store ether.




If your balance doesn't seem updated, make sure that you are in sync with the network.

LATEST TRANSACTIONS

Filter transactions


Sep 29

Created contract

 Account 2 →  Created contract at  Counter eeeec

15 minutes ago

-0.00 ETH



- 选择 Increment 和 Account 2 ，然后点击 EXECUTE 按钮。

WALLETS

SEND

8 peers | 1,767,540 | 28s since last block

CONTRACTS

5.17 ETHER*

COUNTER EEEC

0.00 ETHER*

HIDE CONTRACT INFO

READ FROM CONTRACT

Get count

0

WRITE TO CONTRACT

Select function

Increment

Execute from

Account 2 - 5.17 ETHER

EXECUTE

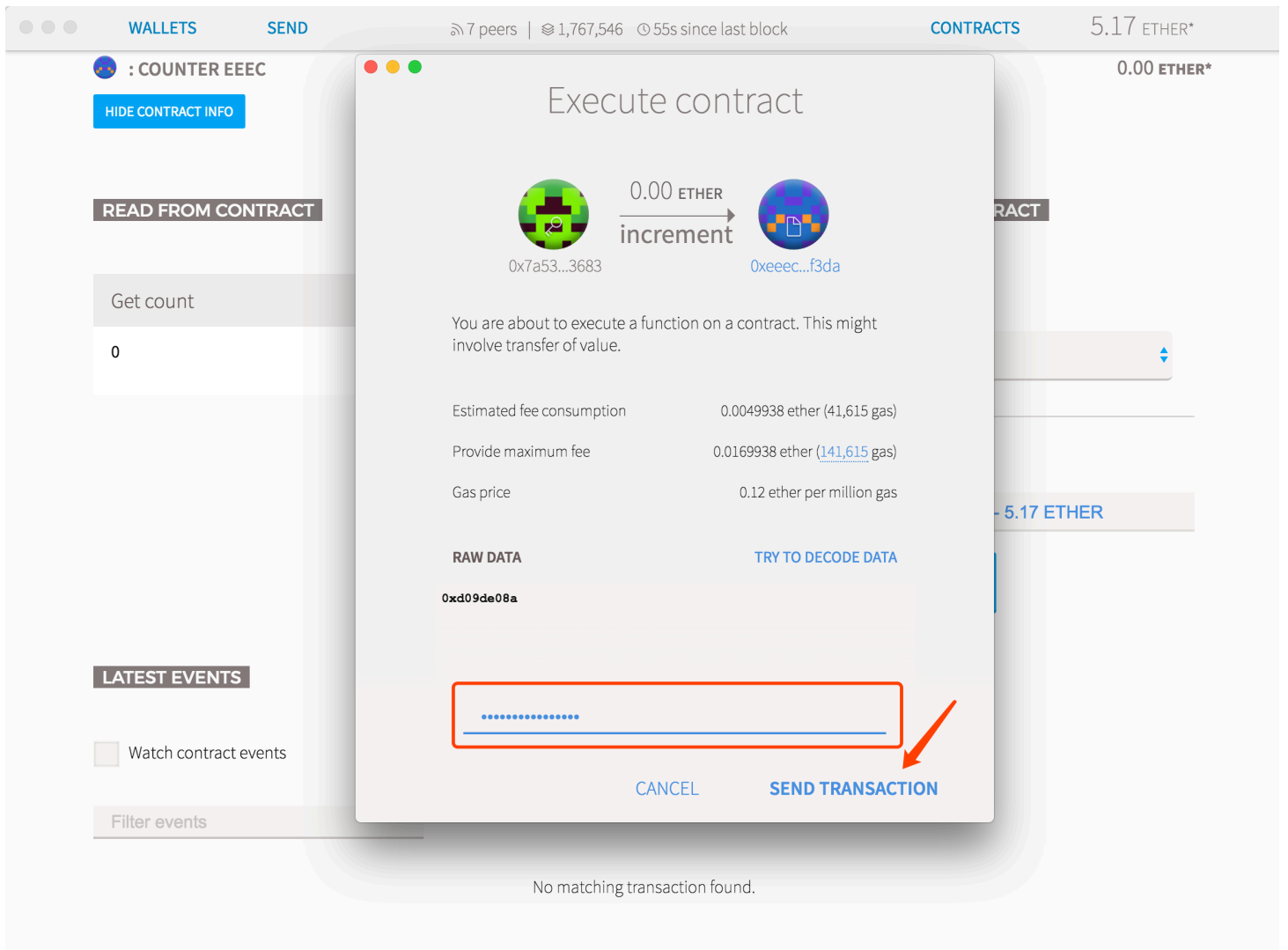
LATEST EVENTS

☐ Watch contract events

Filter events

No matching transaction found.

- 输入密码，点击 **SEND TRANSACTION** 按钮。



- 交易执行完成后，count会自动加1

WALLETS

SEND

7 peers | 1,767,554 | 29s since last block

CONTRACTS

5.17 ETHER*

COUNTER EEEC

0.00 ETHER*

HIDE CONTRACT INFO

READ FROM CONTRACT

WRITE TO CONTRACT

Get count

1

Select function

Increment

Execute from

Account 2 - 5.17 ETHER

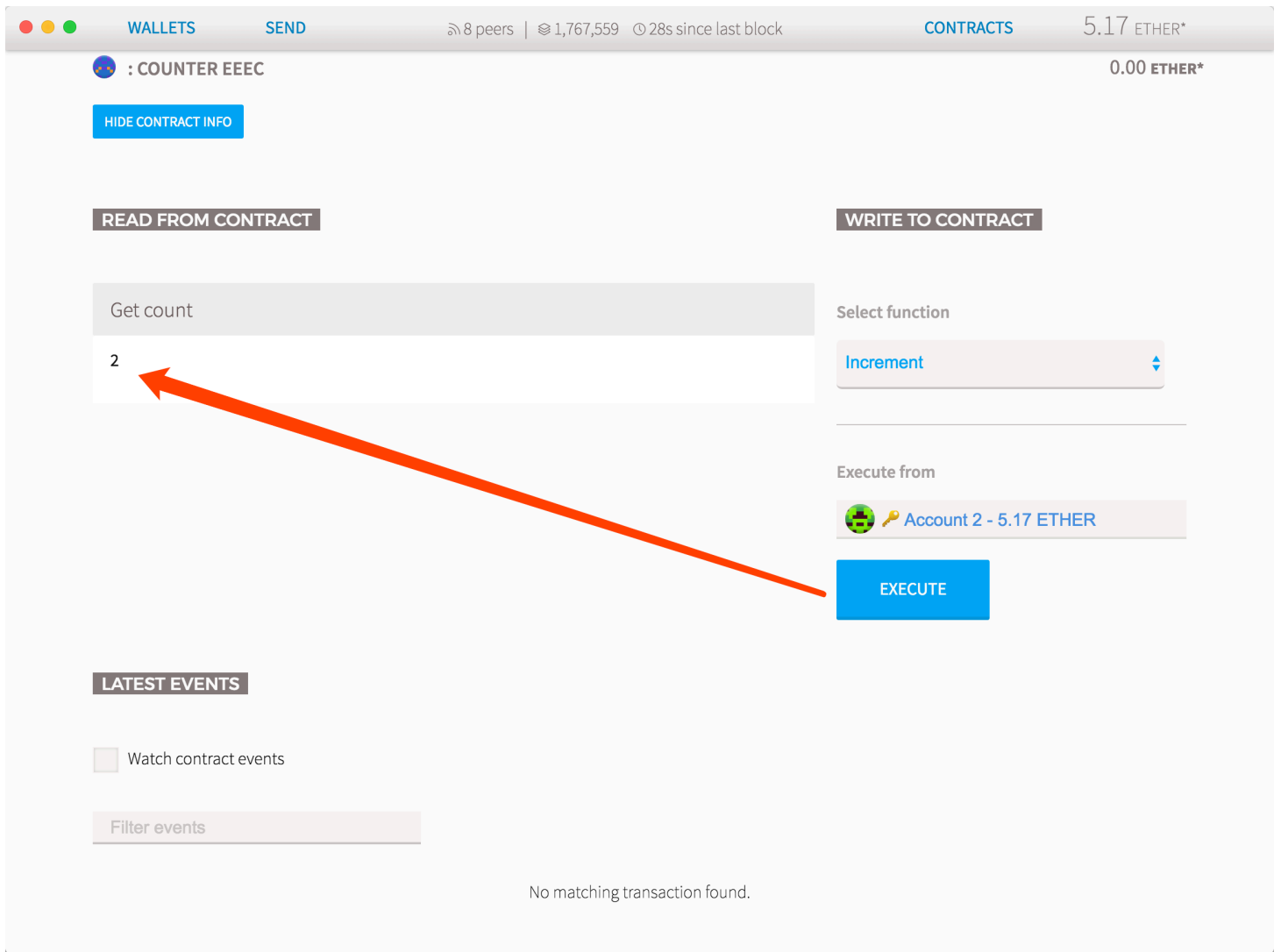
EXECUTE

LATEST EVENTS

☐ Watch contract events

Filter events

No matching transaction found.



小结

部署合约时，因为要往区块链写入数据，需要矿工进行验证，所以需要花费一些gas奖励给矿工，还有当我们每次调用 `increment` 方法时，也属于写入数据，同样需要花费gas，但是调用 `getCount` 方法时只是从区块链读取数据，无需验证，读取数据无须花费gas。

技术交流

- 区块链技术交流QQ群：348924182
- 「区块链部落」官方公众号



长按，识别二维码，加关注