# 环境准备

## 系统环境准备

目前测试环境为:

Ubuntu 16.04 / MacOS 10.15

## 环境准备

以下均使用 cita 测试网 <a href="https://testnet.citahub.com">https://testnet.citahub.com</a> 来测试合约的部署和调用流程。

- 1. 安装 cita-cli 到网站 <a href="https://github.com/citahub/cita-cli/releases">https://github.com/citahub/cita-cli/releases</a> 下载 安装 cita-cli。
- 2. 生成 account

```
./cita-cli key create > key.json
cat key.json
```

### 返回

```
{
   "address": "0x51b53602bf8ecaef55239fc6d3d2b20379253fb3",
   "private":
   "0xae469f2a07999b3ed42728b7afff2e1219441a0ef65f5e6192f2d8f0
   a47601b1",
        "public":
   "0x85e2314742a0f83144a3cd7f37885b9e5fe1957f88bf16f89cea89f3
   230a3f100be356babb9f9d828b0c49a100c840c5d24e7a43c9058aa1380
   b3ad218e7cff9"
}
```

3. 申请测试币 到网站 <a href="https://faucet.citahub.com/faucet/getNos">https://faucet.citahub.com/faucet/getNos</a> 申请测

试币

4. 查询账户余额

```
./cita-cli rpc getBalance \
--address 0x51b53602bf8ecaef55239fc6d3d2b20379253fb3 \
--url https://testnet.citahub.com
```

### 返回

```
{
  "id": 1,
  "jsonrpc": "2.0",
  "result": "0x65a4d9e22ee90e2b600"
}
```

## 编译合约

- 1. 进入到smart-audit源码文件下,然后进入到 src/cita 子目录。
- 2. 编译 FaceService.sol:

```
solc oracles/face/FaceService.sol --bin
```

返回:

```
====== oracles/face/FaceService.sol:FaceService
======
Binary:
6080604(此处略)
```

3. 编译 TimeService.sol:

```
solc oracles/time/TimeService.sol --bin
```

返回:

```
====== oracles/time/TimeService.sol:TimeService
======
Binary:
6080604(此处略)
```

4. 编译 IdentifyService.sol:

```
solc oracles/identify/IdentifyService.sol --bin
```

返回:

```
======
oracles/identify/IdentifyService.sol:IdentifyService
======
Binary:
6080604(此处略)
```

5. 编译 LocationService.sol:

```
solc oracles/location/LocationService.sol --bin
```

返回:

```
=======
oracles/location/LocationService.sol:LocationService
======
Binary:
6080604(此处略)
```

6. 编译 audit.sol:

```
====== audit/audit.sol:Audit ======
Binary:
6080604(此处略)
```

## 部署合约

### 部署时间合约

通过如下命令部署合约

```
./cita-cli rpc sendRawTransaction \
  --code
```

0x608060405234801561001057600080fd5b50610431806100206000396 000f30060806040526004361061004c576000357c01000000000000000 32ae64bb7146100515780639fd32a3a1461008e575b600080fd5b348015 61005d57600080fd5b50610078600480360361007391908101906102315 65b6100b7565b604051610085919061032c565b60405180910390f35b34 801561009a57600080fd5b506100b560048036036100b09190810190610 272565b610107565b005b60008082511115156100fe576040517f08c379 1526004016100f59061030c565b60405180910390fd5b60009050919050 0000000000000000000000000000000000000081526004016101449061 030c565b60405180910390fd5b5050565b600082601f830112151561016 457600080fd5b813561017761017282610374565b610347565b91508181 83526020840193506020810190508360005b838110156101bd578135860 16101a388826101c7565b84526020840193506020830192505060018101 905061018d565b5050505092915050565b600082601f83011215156101d a57600080fd5b81356101ed6101e88261039c565b610347565b91508082 52602083016020830185838301111561020957600080fd5b61021483828 46103e8565b50505092915050565b600061022982356103d8565b905092 915050565b60006020828403121561024357600080fd5b600082013567f fffffffffffffff81111561025d57600080fd5b61026984828501610151 565b91505092915050565b6000806040838503121561028557600080fd5 b60006102938582860161021d565b925050602083013567ffffffffffff ffff8111156102b057600080fd5b6102bc85828601610151565b9150509 250929050565b6000601e82527fe6b3a8e5868ce8a784e58899e68980e9 9c80e58f82e695b0e4b88de8b6b30000602083015260408201905091905 0565b610306816103c8565b82525050565b600060208201905081810360 00830152610325816102c6565b9050919050565b6000602082019050610 34160008301846102fd565b92915050565b600060405190508181018181 1067fffffffffffffff8211171561036a57600080fd5b8060405250919

```
{
    "id": 4,
    "jsonrpc": "2.0",
    "result": {
        "hash":
"0xac63ddfd47ce752286ef110a9402f011245d9e5211bad710ee0c0e40
0f185b0a",
        "status": "OK"
    }
}
```

### 获取合约地址:

```
./cita-cli rpc getTransactionReceipt \
    --hash
0xac63ddfd47ce752286ef110a9402f011245d9e5211bad710ee0c0e400
f185b0a \
    --url https://testnet.citahub.com
```

得到合约地址: 0x568eae6fcac7c10bfd5258730cd20b0ed90dbc60

### 部署定位合约

通过如下命令部署合约

```
./cita-cli rpc sendRawTransaction \
   --code
```

0x608060405234801561001057600080fd5b50610431806100206000396 000f30060806040526004361061004c576000357c01000000000000000 32ae64bb7146100515780639fd32a3a1461008e575b600080fd5b348015 61005d57600080fd5b50610078600480360361007391908101906102315 65b6100b7565b604051610085919061032c565b60405180910390f35b34 801561009a57600080fd5b506100b560048036036100b09190810190610 272565b610107565b005b60008082511115156100fe576040517f08c379 1526004016100f59061030c565b60405180910390fd5b60009050919050 565b6000815111151561014d576040517f08c379a000000000000000000 030c565b60405180910390fd5b5050565b600082601f830112151561016 457600080fd5b813561017761017282610374565b610347565b91508181 83526020840193506020810190508360005b838110156101bd578135860 16101a388826101c7565b84526020840193506020830192505060018101 905061018d565b5050505092915050565b600082601f83011215156101d a57600080fd5b81356101ed6101e88261039c565b610347565b91508082 52602083016020830185838301111561020957600080fd5b61021483828 46103e8565b50505092915050565b600061022982356103d8565b905092 915050565b60006020828403121561024357600080fd5b600082013567f fffffffffffffff81111561025d57600080fd5b61026984828501610151 565b91505092915050565b6000806040838503121561028557600080fd5 b60006102938582860161021d565b925050602083013567fffffffffff ffff8111156102b057600080fd5b6102bc85828601610151565b9150509 250929050565b6000601e82527fe6b3a8e5868ce8a784e58899e68980e9 9c80e58f82e695b0e4b88de8b6b30000602083015260408201905091905 0565b610306816103c8565b82525050565b600060208201905081810360 00830152610325816102c6565b9050919050565b6000602082019050610 34160008301846102fd565b92915050565b600060405190508181018181 1067fffffffffffffff8211171561036a57600080fd5b8060405250919 050565b600067ffffffffffffffff82111561038b57600080fd5b602082 029050602081019050919050565b600067fffffffffffffff821115610 3b357600080fd5b601f19601f8301169050602081019050919050565b60 0063fffffff82169050919050565b600063fffffff821690509190505

```
{
    "id": 4,
    "jsonrpc": "2.0",
    "result": {
        "hash":
"0xe9e015f39435c49d0b6daa8b24da757a1fef25bb63fc603b7e023ee3
73bb3711",
        "status": "OK"
    }
}
```

### 获取合约地址:

```
./cita-cli rpc getTransactionReceipt \
    --hash
0xe9e015f39435c49d0b6daa8b24da757a1fef25bb63fc603b7e023ee37
3bb3711 \
    --url https://testnet.citahub.com
```

得到合约地址: 0x4254d2c7cd741ab3ff4b4c3ce97caed642be6bef

### 部署人脸识别合约

通过如下命令部署合约

000f30060806040526004361061004c576000357c01000000000000000 32ae64bb7146100515780639fd32a3a1461008e575b600080fd5b348015 61005d57600080fd5b50610078600480360361007391908101906102315 65b6100b7565b604051610085919061032c565b60405180910390f35b34 801561009a57600080fd5b506100b560048036036100b09190810190610 272565b610107565b005b60008082511115156100fe576040517f08c379 1526004016100f59061030c565b60405180910390fd5b60009050919050 565b6000815111151561014d576040517f08c379a000000000000000000 030c565b60405180910390fd5b5050565b600082601f830112151561016 457600080fd5b813561017761017282610374565b610347565b91508181 83526020840193506020810190508360005b838110156101bd578135860 16101a388826101c7565b84526020840193506020830192505060018101 905061018d565b5050505092915050565b600082601f83011215156101d a57600080fd5b81356101ed6101e88261039c565b610347565b91508082 52602083016020830185838301111561020957600080fd5b61021483828 46103e8565b50505092915050565b600061022982356103d8565b905092 915050565b60006020828403121561024357600080fd5b600082013567f fffffffffffffff81111561025d57600080fd5b61026984828501610151 565b91505092915050565b6000806040838503121561028557600080fd5 b60006102938582860161021d565b925050602083013567ffffffffffff ffff8111156102b057600080fd5b6102bc85828601610151565b9150509 250929050565b6000601e82527fe6b3a8e5868ce8a784e58899e68980e9 9c80e58f82e695b0e4b88de8b6b30000602083015260408201905091905 0565b610306816103c8565b82525050565b600060208201905081810360 00830152610325816102c6565b9050919050565b6000602082019050610 34160008301846102fd565b92915050565b600060405190508181018181 1067fffffffffffffff8211171561036a57600080fd5b8060405250919 050565b600067ffffffffffffffff82111561038b57600080fd5b602082 029050602081019050919050565b600067fffffffffffffff821115610 3b357600080fd5b601f19601f8301169050602081019050919050565b60 0063fffffff82169050919050565b600063fffffff821690509190505 65b828183376000838301525050505600a265627a7a723058200b938639 cb27ee211188802626294bfd0d77bfe305c3eb77d279667dd2eb9f916c6 578706572696d656e74616cf50037 \

```
--private-key
0xae469f2a07999b3ed42728b7afff2e1219441a0ef65f5e6192f2d8f0a
47601b1 \
--url https://testnet.citahub.com
```

```
{
    "id": 4,
    "jsonrpc": "2.0",
    "result": {
        "hash":
"0x0d0faedb62523ef3bd8c6ff74da2c228ddf7dd71f0e27583a4424809
b5e4f773",
        "status": "OK"
    }
}
```

### 查询合约地址:

```
./cita-cli rpc getTransactionReceipt \
    --hash
0x0d0faedb62523ef3bd8c6ff74da2c228ddf7dd71f0e27583a4424809b
5e4f773 \
    --url https://testnet.citahub.com
```

得到合约地址: 0xfd851fbbb503cf9a0d6f0a6b5b7db073ddbc5daf

### 部署物体识别合约

通过如下命令部署合约

61005d57600080fd5b50610078600480360361007391908101906102315 65b6100b7565b604051610085919061032c565b60405180910390f35b34 801561009a57600080fd5b506100b560048036036100b09190810190610 272565b610107565b005b60008082511115156100fe576040517f08c379 1526004016100f59061030c565b60405180910390fd5b60009050919050 565b6000815111151561014d576040517f08c379a000000000000000000 00000000000000000000000000000000000081526004016101449061 030c565b60405180910390fd5b5050565b600082601f830112151561016 457600080fd5b813561017761017282610374565b610347565b91508181 83526020840193506020810190508360005b838110156101bd578135860 16101a388826101c7565b84526020840193506020830192505060018101 905061018d565b5050505092915050565b600082601f83011215156101d a57600080fd5b81356101ed6101e88261039c565b610347565b91508082 52602083016020830185838301111561020957600080fd5b61021483828 46103e8565b50505092915050565b600061022982356103d8565b905092 915050565b60006020828403121561024357600080fd5b600082013567f ffffffffffffff81111561025d57600080fd5b61026984828501610151 565b91505092915050565b6000806040838503121561028557600080fd5 b60006102938582860161021d565b925050602083013567fffffffffff ffff8111156102b057600080fd5b6102bc85828601610151565b9150509 250929050565b6000601e82527fe6b3a8e5868ce8a784e58899e68980e9 9c80e58f82e695b0e4b88de8b6b30000602083015260408201905091905 0565b610306816103c8565b82525050565b600060208201905081810360 00830152610325816102c6565b9050919050565b6000602082019050610 34160008301846102fd565b92915050565b600060405190508181018181 1067fffffffffffffff8211171561036a57600080fd5b8060405250919 050565b600067fffffffffffffffff82111561038b57600080fd5b602082 029050602081019050919050565b600067fffffffffffffff821115610 3b357600080fd5b601f19601f8301169050602081019050919050565b60 0063fffffff82169050919050565b600063fffffff821690509190505 65b828183376000838301525050505600a265627a7a72305820818617f5 b35fb7295de96954b04c83411394c4b5dea4f0b894eea8372e8e27926c6 578706572696d656e74616cf50037 \

#### --private-key

0xae469f2a07999b3ed42728b7afff2e1219441a0ef65f5e6192f2d8f0a
47601b1 \

```
--url https://testnet.citahub.com
```

```
{
    "id": 4,
    "jsonrpc": "2.0",
    "result": {
        "hash":
"0x71b1feaf3cf2c15e4f17112048f64421535354e9ef3169138d2459d5
0d25d4ad",
        "status": "OK"
    }
}
```

### 获取合约地址:

```
./cita-cli rpc getTransactionReceipt \
    --hash
0x71b1feaf3cf2c15e4f17112048f64421535354e9ef3169138d2459d50
d25d4ad \
    --url https://testnet.citahub.com
```

得到合约地址: 0x47417dd1835f07a06ad93b4a262a7dd75b7cd550

### 部署审计业务合约

部署审计业务合约需要的参数:

```
/// @dev 规则合约的构造方法,这里实现Rules.
/// @param names 维护人列表.
/// @param face 人脸识别服务合约地址.
/// @param identify 物体识别服务合约地址.
/// @param time 时间服务合约地址.
/// @param location 定位服务合约地址.
constructor(
    string[] names,
    address face,
```

```
address identify,
  address time,
  address location
) Rules (face, identify, time, location) {
  numMaintainers = uint32(names.length);
  for (uint i = 0; i < numMaintainers; i++) {
    maintainers[uint32(i)] = names[i];
  }
}</pre>
```

### 获取维护人列表abi:

```
./cita-cli ethabi encode params --param string alice
```

返

```
./cita-cli ethabi encode params --param string bob
```

汳

### 获取时间识别合约地址abi:

```
./cita-cli ethabi encode params --param address
568eae6fcac7c10bfd5258730cd20b0ed90dbc60
```

汳

回: "000000000000000000000000568eae6fcac7c10bfd5258730cd20b 0ed90dbc60"

### 获取定位识别合约地址abi:

./cita-cli ethabi encode params --param address 4254d2c7cd741ab3ff4b4c3ce97caed642be6bef

返

回: "0000000000000000000000004254d2c7cd741ab3ff4b4c3ce97cae d642be6bef"

获取人脸识别合约地址abi:

./cita-cli ethabi encode params --param address fd851fbbb503cf9a0d6f0a6b5b7db073ddbc5daf

扳

获取物体识别合约地址abi:

./cita-cli ethabi encode params --param address 47417dd1835f07a06ad93b4a262a7dd75b7cd550

返

回: "0000000000000000000000047417dd1835f07a06ad93b4a262a7dd75b7cd550"

将以上合约作为参数,附在审计合约后面,部署审计合约:

ffffffffffffffffffffffffffffff021916908373ffffffffff ffffffffffffffffffffffffff6021790555080600360006101000 00360146101000a81548163ffffffff021916908363ffffffff16021790 5550505050508551600760006101000a81548163ffffffff02191690836 3ffffffff160217905550600090505b600760009054906101000a900463 ffffffff1663fffffff168110156200020a57858181518110151562000 1bd57fe5b90602001906020020151600860008363ffffffff1663ffffff ff1681526020019081526020016000209080519060200190620001fb929 19062000216565b5080806001019150506200018d565b50505050505062 00052d565b8280546001816001161561010002031660029004906000526 02060002090601f016020900481019282601f106200025957805160ff19 168380011785556200028a565b828001600101855582156200028a57918 2015b82811115620002895782518255916020019190600101906200026c 565b5b5090506200029991906200029d565b5090565b620002c291905b8 0821115620002be576000816000905550600101620002a4565b5090565b 90565b6000620002d38251620004d7565b905092915050565b600082601 f8301121515620002ef57600080fd5b8151620003066200030082620004 81565b62000453565b91508181835260208401935060208101905083600 05b838110156200035057815186016200033588826200035a565b845260 2084019350602083019250506001810190506200031c565b50505050929 15050565b600082601f83011215156200036e57600080fd5b8151620003 856200037f82620004aa565b62000453565b91508082526020830160208 301858383011115620003a257600080fd5b620003af838284620004f756 5b50505092915050565b600080600080600060a08688031215620003d15 7600080fd5b600086015167fffffffffffffff811115620003ec576000 80fd5b620003fa88828901620002db565b95505060206200040d8882890 1620002c5565b94505060406200042088828901620002c5565b93505060 606200043388828901620002c5565b92505060806200044688828901620 002c5565b9150509295509295909350565b600060405190508181018181 1067fffffffffffffff821117156200047757600080fd5b80604052509 19050565b600067ffffffffffffffff8211156200049957600080fd5b60 2082029050602081019050919050565b600067fffffffffffffff82111 5620004c257600080fd5b601f19601f8301169050602081019050919050 19050565b60005b83811015620005175780820151818401526020810190

50620004fa565b8381111562000527576000848401525b50505050565b6 1259d806200053d6000396000f3006080604052600436106100a4576000 000900463ffffffff16806304536686146100a957806341ce8235146100 d25780637ee57bdd1461010f5780638206d49f1461014c5780638604844 f146101895780639982924c146101b2578063bed34bba146101ef578063 d17f42251461022c578063e7e4cfb714610257578063fef6d4441461028 0575b600080fd5b3480156100b557600080fd5b506100d0600480360361 00cb9190810190611f94565b6102a9565b005b3480156100de57600080f d5b506100f960048036036100f49190810190611fe8565b6103fd565b60 40516101069190612292565b60405180910390f35b34801561011b57600 080fd5b5061013660048036036101319190810190611dc1565b61052356 5b6040516101439190612373565b60405180910390f35b3480156101585 7600080fd5b50610173600480360361016e9190810190611f42565b6107 2b565b6040516101809190612351565b60405180910390f35b348015610 19557600080fd5b506101b060048036036101ab9190810190611eaf565b 6108f5565b005b3480156101be57600080fd5b506101d96004803603610 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6000612149826124c1565b80845261215d81602086016020860161251f5 65b61216681612552565b602085010191505092915050565b6000601882 527fe7bc96e7a081e7b1bbe59e8be5b09ae69caae694afe68c810000000 0000000006020830152604082019050919050565b6000600f82527fe69c 06020830152604082019050919050565b6000601882527fe8a784e58899 e8a7a3e69e90e58f82e695b0e4b88de8b6b3000000000000000006020830 152604082019050919050565b6000608083016000830151848203600086 0152612236828261213e565b91505060208301518482036020860152612 250828261213e565b91505060408301516122656040860182612283565b 5060608301516122786060860182612283565b508091505092915050565 b61228c816124f0565b82525050565b6000602082019050818103600083 01526122ac818461208b565b905092915050565b6000602082019050612 2c960008301846120f9565b92915050565b600060208201905081810360 008301526122e98184612108565b905092915050565b600060208201905 0818103600083015261230a81612174565b9050919050565b6000602082 019050818103600083015261232a816121ab565b9050919050565b60006 02082019050818103600083015261234a816121e2565b9050919050565b 6000602082019050818103600083015261236b8184612219565b9050929 15050565b60006020820190506123886000830184612283565b92915050 565b60006040820190506123a36000830185612283565b8181036020830 1526123b5818461208b565b90509392505050565b600060608201905061 23d36000830186612283565b6123e06020830185612283565b818103604 08301526123f2818461213e565b90509493505050565b600060405190 5081810181811067ffffffffffffffff8211171561241f57600080fd5b8 060405250919050565b600067ffffffffffffffff821115612440576000 80fd5b602082029050602081019050919050565b600067ffffffffffff fff82111561246857600080fd5b601f19601f8301169050602081019050 919050565b600067ffffffffffffffff82111561249457600080fd5b601 f19601f8301169050602081019050919050565b60006020820190509190 50565b600081519050919050565b600081519050919050565b600081519 050919050565b6000602082019050919050565b60008115159050919050 565b600063fffffff82169050919050565b600063fffffff821690509 19050565b82818337600083830152505050565b60005b8381101561253d 578082015181840152602081019050612522565b8381111561254c57600 0848401525b50505050565b6000601f19601f83011690509190505600a2 65627a7a723058206dad61005ef0facea84e852b4a3315aac5f84bca04d 4ea56df7cf4b5eabe02bd6c6578706572696d656e74616cf50037000000 000000000000000000000fd851fbbb503cf9a0d6f0a6b5b7db073ddbc 5daf0000000000000000000000047417dd1835f07a06ad93b4a262a7dd 75b7cd5500000000000000000000000568eae6fcac7c10bfd5258730c d20b0ed90dbc600000000000000000000004254d2c7cd741ab3ff4b4

```
{
   "id": 4,
   "jsonrpc": "2.0",
   "result": {
      "hash":
   "0x1f6d8f94b3403ed9bfb7f21ff2b84f2c88dbf5ca3194d3b466f6c377
cdc09ef7",
      "status": "OK"
   }
}
```

### 获取合约地址:

```
./cita-cli rpc getTransactionReceipt \
    --hash
0x1f6d8f94b3403ed9bfb7f21ff2b84f2c88dbf5ca3194d3b466f6c377c
dc09ef7 \
    --url https://testnet.citahub.com
```

得到合约地址: 0xf5035f383cf15814f28082df7a4492829d02eca8

## 调用合约

### 获取合约方法 hashes

```
solc audit/audit.sol --hashes
```

### 返回:

```
===== audit/audit.sol:Audit ======
Function signatures:
e7e4cfb7: addEvent(uint32,uint32,string[])
bed34bba: compareStrings(string,string)
9982924c: getAuditee(uint32)
adcdaca8: getMaintainers(uint32)
8206d49f: getProject(uint32)
10f25ff0: queryEvents(uint32)
fef6d444: registerAuditee(string)
a7a6f067: registerProject(string,uint32,uint32)
7ee57bdd: registerRules(string[])
04536686: validateRules(uint32, string[])
===== audit/rules.sol:Rules ======
Function signatures:
bed34bba: compareStrings(string,string)
7ee57bdd: registerRules(string[])
04536686: validateRules(uint32,string[])
```

### 录入审计当事人

获取字符串 "yucong" abi编码,作为当事人名字。

```
./cita-cli ethabi encode params --param string yucong
```

#### 返回:

### 调用合约方法 registerAuditee:

#### 返回:

```
{
   "id": 4,
   "jsonrpc": "2.0",
   "result": {
      "hash":
   "0x3120741475258eb291cf471f2d9e98062fd5639a033cc2729aa7635cd0d05b47",
      "status": "OK"
   }
}
```

### 查看存根:

```
./cita-cli rpc getTransactionReceipt \
    --hash
0x3120741475258eb291cf471f2d9e98062fd5639a033cc2729aa7635cd
0d05b47 \
    --url https://testnet.citahub.com
```

### 获得注册的审计人ID:

### 录入规则

获取参数 ["AND", "Time", "(>= 9) AND (<= 18)", "Location", "IN(39.9 116.3 1000)"] abi编码,作为规则内容。

```
./cita-cli ethabi encode params --param string "[\"AND\", \"Time\", \"(>= 9) AND (<= 18)\", \"Location\", \"IN(39.9 116.3 1000)\"]"
```

#### 返回:

调用合约方法 registerRules:

```
./cita-cli rpc sendRawTransaction \
--code
--address 0xf5035f383cf15814f28082df7a4492829d02eca8 \
--private-key
0xae469f2a07999b3ed42728b7afff2e1219441a0ef65f5e6192f2d8f0a
47601b1 \
--url https://testnet.citahub.com
```

```
"id": 4,
   "jsonrpc": "2.0",
   "result": {
        "hash":
"0x0f8b701f109ea9c8523986870f15d77e2f97a338f5de7417fe83594b
180e05e5",
        "status": "OK"
    }
}
```

### 杳看存根:

```
./cita-cli rpc getTransactionReceipt \
    --hash
0x0f8b701f109ea9c8523986870f15d77e2f97a338f5de7417fe83594b1
80e05e5 \
    --url https://testnet.citahub.com
```

### 获得注册的RuleID:

### 录入项目

获取参数 detail:"yucong\_project", auditeelD:"0", relationID:"0" abi编码。

```
./cita-cli ethabi encode params --param string
yucong_project --param uint32 0 --param uint32 0
```

#### 返回:

### 调用合约方法 registerProject:

### 返回:

```
"id": 4,
   "jsonrpc": "2.0",
   "result": {
        "hash":
"0x978b74325a30b8dc2cf43fb8a978e41f6222e5660e662582cab531be
00d9a09d",
        "status": "OK"
    }
}
```

### 查看存根:

```
./cita-cli rpc getTransactionReceipt \
    --hash
0x978b74325a30b8dc2cf43fb8a978e41f6222e5660e662582cab531be0
0d9a09d \
    --url https://testnet.citahub.com
```

### 获得注册的项目ID:

### 新增审计事件

获取参数 auditeeID:1, projectID:1, value:["Time","2","Location","4"] abi 编码。

```
./cita-cli ethabi encode params --param uint32 0 --param uint32 0 --param string "["Time","2","Location","4"]"
```

返回:

调用合约方法 registerProject:

```
./cita-cli rpc sendRawTransaction \
--code
--address 0xf5035f383cf15814f28082df7a4492829d02eca8 \
--private-key
0xae469f2a07999b3ed42728b7afff2e1219441a0ef65f5e6192f2d8f0a
47601b1 \
--url https://testnet.citahub.com
```

```
{
  "id": 4,
  "jsonrpc": "2.0",
  "result": {
     "hash":
  "0x60db82e49ef1f899cc23e7daf8da55874cdd21b663bf78a595dd7f3f
f76b3b9d",
     "status": "OK"
  }
}
```

### 杳看存根:

```
./cita-cli rpc getTransactionReceipt \
    --hash
0x60db82e49ef1f899cc23e7daf8da55874cdd21b663bf78a595dd7f3ff
76b3b9d \
    --url https://testnet.citahub.com
```

### 可获取被验证的审计事件:

# 参考链接

- 1. <u>cita-cil</u> 使用文档
- 2. solidity 官方文档