

# 以太坊学习：第十天

学不动了，好多都听不懂，而且对端口网络连接的一点办法都没有，乱撞，以太坊学习就到这吧，有了基础再深入学习

web3.js 1.0中文手册 / web3.eth.getCoinbase - 返回挖矿收益账户 - 汇智网

node控制台进入web3

```
var Web3 = require('web3')
Web3
var web3 = new Web3(new Web3.providers.HttpProvider('http://localhost:8545'))
web3
```

## web3.js

```
1  {
2    admin: {
3      datadir: "/usr/local/GethProjects",
4      nodeInfo: {
5        enode: "enode://1c2193bd16d2ffa085950163852ac3b7e995529aa93ec6b30edda84aa530f500e13308e1707ed0914d859d07081188",
6        enr: "enr:-Je4Q8gi7y0_M2-4d-jdaqS0sRv-hEHG6AvEsHxZ6FZP4gXrcx3fNDrIMH8_B3pC8p0pdpoa0kdqZjGArsrBZQnVpbEWg2V0aMfG",
7        id: "2890073dc31178da9117784a10af010f17b008b299aeaeba210a7f6370952632",
8        ip: "127.0.0.1",
9        listenAddr: "[::]:30303",
10       name: "Geth/v1.9.8-stable-d62e9b28/linux-amd64/go1.13.4",
11       ports: {
12         discovery: 30303,
13         listener: 30303
14       },
15       protocols: {
16         eth: {...}
17     }
18   },
19   peers: [
20     {
21       caps: [...],
22       enode: "enode://fe27ccc5a34d6625ad124eaf8f7b1d1fc0e9aede3b86bd387eaf1247claaeb612d6ba5e6e36f41b637d63f941e551",
23       id: "82f1363499c7910a0138357e98016a5291cf046f568b1d44de0bef0d9e1e2d17",
24       name: "Geth/RoseliBak/v1.10.0-stable(quorum-v22.1.0)/linux-amd64/go1.17.5",
25       network: {...},
26       protocols: {...}
27     },
28     {
29       caps: [...],
30       enode: "enode://3232d616cce22fc6bc5bb34f24ad00386134acb384eb423f9bab6a19066c4c3d8921e3de6b672530c5803fd3905",
31       id: "837c063ac26ca22e355ebc8fd413a5a76ce6e1139d76a54085df6a2c4a8f2eb6",
32       name: "Geth/Offline/v1.10.0-stable(quorum-v22.1.0)/linux-amd64/go1.18.1",
33       network: {...},
34       protocols: {...}
35     }
36   ],
37   addPeer: function(),
38   addTrustedPeer: function(),
39   clearHistory: function(),
40   exportChain: function(),
41   getDataDir: function(callback),
42   getNodeInfo: function(callback),
43   getPeers: function(callback),
44   importChain: function(),
45   removePeer: function(),
46   removeTrustedPeer: function(),
47   sleep: function github.com/ethereum/go-ethereum/console.(*bridge).Sleep-fm(),
48   sleepBlocks: function github.com/ethereum/go-ethereum/console.(*bridge).SleepBlocks-fm(),
49   startRPC: function(),
50   startWS: function(),
51   stopRPC: function(),
52   stopWS: function()
53 }
```



LEVI\_104

0 0 0 0

```

51  bzz: { //bzz: solc相关的组件的对象
52    hive: undefined,
53    info: undefined,
54    blockNetworkRead: function(),
55    download: function(),
56    get: function(),
57    getHive: function(callback),
58    getInfo: function(callback),
59    modify: function(),
60    put: function(),
61    retrieve: function(),
62    store: function(),
63    swapEnabled: function(),
64    syncEnabled: function(),
65    upload: function()
66  },
67  currentProvider: {
68    newAccount: function(),
69    openWallet: function(),
70    send: function github.com/ethereum/go-ethereum/console.(*bridge).Send-fm(),
71    sendAsync: function github.com/ethereum/go-ethereum/console.(*bridge).Send-fm(),
72    sign: function(),
73    unlockAccount: function()
74  },
75  db: { //db: 操作区块链底层数据库
76    getHex: function(),
77    getString: function(),
78    putHex: function(),
79    putString: function()
80  },
81  debug: {
82    backtraceAt: function(),
83    blockProfile: function(),
84    chaindbCompact: function(),
85    chaindbProperty: function(),
86    cpuProfile: function(),
87    dumpBlock: function(),
88    freeOSMemory: function(),
89    freezeClient: function(),
90    gcStats: function(),
91    getBadBlocks: function(),
92    getBlockRlp: function(),
93    getModifiedAccountsByHash: function(),
94    getModifiedAccountsByNumber: function(),
95    goTrace: function(),
96    memStats: function(),
97    mutexProfile: function(),
98    preimage: function(),
99    printBlock: function(),
100   seedHash: function(),
101   setBlockProfileRate: function(),
102   setGCPercent: function(),
103   setHead: function(),
104   setMutexProfileFraction: function(),
105   stacks: function(),
106   standardTraceBadBlockToFile: function(),
107   standardTraceBlockToFile: function(),
108   startCPUProfile: function(),
109   startGoTrace: function(),
110   stopCPUProfile: function(),
111   stopGoTrace: function(),
112   storageRangeAt: function(),
113   testSignCliqueBlock: function(),
114   traceBadBlock: function(),
115   traceBlock: function(),
116   traceBlockByHash: function(),
117   traceBlockByNumber: function(),
118   traceBlockFromFile: function(),
119   traceTransaction: function(),
120   verbosity: function(),
121   vmodule: function(),

```



```

122 |     writeBlockProfile: function(),
123 |         123 |     writeMemProfile: function(),
124 |     writeMutexProfile: function()
125 | },
126 | eth: { //eth: 最重要的
127 |     accounts: ["0x22592dc0a2c474272f364e1b084db58bad0cdd53"],
128 |     blockNumber: 15,
129 |     coinbase: "0x22592dc0a2c474272f364e1b084db58bad0cdd53",
130 |     compile: {
131 |         lll: function(),
132 |         serpent: function(),
133 |         solidity: function()
134 |     },
135 |     defaultAccount: undefined,
136 |     defaultBlock: "latest",
137 |     gasPrice: 1000000000,
138 |     hashrate: 0,
139 |     mining: false,
140 |     pendingTransactions: [],
141 |     protocolVersion: "0x40",
142 |     syncing: false,
143 |     call: function(),
144 |     chainId: function(),
145 |     contract: function(abi),
146 |     estimateGas: function(),
147 |     fillTransaction: function(),
148 |     filter: function(options, callback, filterCreationErrorCallback),
149 |     getAccounts: function(callback),
150 |     getBalance: function(),
151 |     getBlock: function(),
152 |     getBlockByHash: function(),
153 |     getBlockByNumber: function(),
154 |     getBlockNumber: function(callback),
155 |     getBlockTransactionCount: function(),
156 |     getBlockUncleCount: function(),
157 |     getCode: function(),
158 |     getCoinbase: function(callback),
159 |     getCompilers: function(),
160 |     getGasPrice: function(callback),
161 |     getHashrate: function(callback),
162 |     getHeaderByHash: function(),
163 |     getHeaderByNumber: function(),
164 |     getMining: function(callback),
165 |     getPendingTransactions: function(callback),
166 |     getProof: function(),
167 |     getProtocolVersion: function(callback),
168 |     getRawTransaction: function(),
169 |     getRawTransactionFromBlock: function(),
170 |     getStorageAt: function(),
171 |     getSyncing: function(callback),
172 |     getTransaction: function(),
173 |     getTransactionCount: function(),
174 |     getTransactionFromBlock: function(),
175 |     getTransactionReceipt: function(),
176 |     getUncle: function(),
177 |     getWork: function(),
178 |     iban: function(iban),
179 |     icapNamereg: function(),
180 |     isSyncing: function(callback),
181 |     namereg: function(),
182 |     resend: function(),
183 |     sendIBANTransaction: function(),
184 |     sendRawTransaction: function(),
185 |     sendTransaction: function(),
186 |     sign: function(),
187 |     signTransaction: function(),
188 |     submitTransaction: function(),
189 |     submitWork: function()
190 | },
191 | ethash: {
192 |     getHashrate: function()

```



```

193     getWork: function(), 194     submitHashRate: function(),
195     submitWork: function()
196   },
197   isIBAN: undefined,
198   miner: {
199     getHashrate: function(),
200     setEtherbase: function(),
201     setExtra: function(),
202     setGasPrice: function(),
203     setRecommitInterval: function(),
204     start: function(),
205     stop: function()
206   },
207   net: {
208     listening: true,
209     peerCount: 3,
210     version: "15",
211     getListening: function(callback),
212     getPeerCount: function(callback),
213     getVersion: function(callback)
214   },
215   personal: {
216     listAccounts: ["0x22592dc0a2c474272f364e1b084db58bad0cdd53"],
217     listWallets: [
218       accounts: [...],
219       status: "Locked",
220       url: "keystore:///usr/local/GethProjects/keystore/UTC--2022-07-12T14-38-52.834936211Z--22592dc0a2c474272f364e1b084db58bad0cdd53"
221     ],
222     deriveAccount: function(),
223     ecRecover: function(),
224     getListAccounts: function(callback),
225     getListWallets: function(callback),
226     importRawKey: function(),
227     initializeWallet: function(),
228     lockAccount: function(),
229     newAccount: function github.com/ethereum/go-ethereum/console.(*bridge).NewAccount-fm(),
230     openWallet: function github.com/ethereum/go-ethereum/console.(*bridge).OpenWallet-fm(),
231     sendTransaction: function(),
232     sign: function github.com/ethereum/go-ethereum/console.(*bridge).Sign-fm(),
233     signTransaction: function(),
234     unlockAccount: function github.com/ethereum/go-ethereum/console.(*bridge).UnlockAccount-fm(),
235     unpair: function()
236   },
237   providers: {
238     HttpProvider: function(host, timeout, user, password),
239     IpcProvider: function(path, net)
240   },
241   rpc: {
242     modules: {
243       admin: "1.0",
244       debug: "1.0",
245       eth: "1.0",
246       ethash: "1.0",
247       miner: "1.0",
248       net: "1.0",
249       personal: "1.0",
250       rpc: "1.0",
251       txpool: "1.0",
252       web3: "1.0"
253     },
254     getModules: function(callback)
255   },
256   settings: {
257     defaultAccount: undefined,
258     defaultBlock: "latest"
259   },
260   shh: { //与whisper相关的组件
261     addPrivateKey: function(),
262     addSymKey: function(),
263     deleteKeyPair: function(),

```



```

264     deleteSymKey: function(), 265     generateSymKeyFromPassword: function(),
265     getPrivateKey: function(),
266     getPublicKey: function(),
267     getSymKey: function(),
268     hasKeyPair: function(),
269     hasSymKey: function(),
270     info: function(),
271     markTrustedPeer: function(),
272     newKeyPair: function(),
273     newMessageFilter: function(options, callback, filterCreationErrorCallback),
274     newSymKey: function(),
275     post: function(),
276     setMaxMessageSize: function(),
277     setMinPoW: function(),
278     version: function()
279   },
280   txpool: {
281     content: {
282       pending: {},
283       queued: {}
284     },
285     inspect: {
286       pending: {},
287       queued: {}
288     },
289     status: {
290       pending: 0,
291       queued: 0
292     },
293     getContent: function(callback),
294     getInspect: function(callback),
295     getStatus: function(callback)
296   },
297   version: {
298     api: "0.20.1",
299     ethereum: "0x40",
300     network: "15",
301     node: "Geth/v1.9.8-stable-d62e9b28/linux-amd64/go1.13.4",
302     whisper: undefined,
303     getEthereum: function(callback),
304     getNetwork: function(callback),
305     getNode: function(callback),
306     getWhisper: function(callback)
307   },
308   BigNumber: function a(e,n),
309   createBatch: function(),
310   fromAscii: function(str),
311   fromDecimal: function(value),
312   fromICAP: function(icap),
313   fromUtf8: function(str),
314   fromWei: function(number, unit),
315   isAddress: function(address),
316   isChecksumAddress: function(address),
317   isConnected: function(),
318   padLeft: function(string, chars, sign),
319   padRight: function(string, chars, sign),
320   reset: function(keepIsSyncing),
321   setProvider: function(provider),
322   sha3: function(string, options),
323   toAscii: function(hex),
324   toBigNumber: function(number),
325   toChecksumAddress: function(address),
326   toDecimal: function(value),
327   toHex: function(val),
328   toUtf8: function(hex),
329   toWei: function(number, unit)
330 }
331 }
```

```
> eth.getBlock(1,function(error,result){if(error) console.log(error);else console.log(result)});
```

同步回调：会阻塞进程，有顺序保证 **`undefined`**

异步回调，序列化：一般web应用都是用异步调用

## 编译过程：编译sol文件

--bin生成字节码文件，给以太坊去执行



```
[root@QInChanCentos contract]# ll  
总用量 8  
-rw-r--r--. 1 root root 525 7月 13 14:30 Coin.sol  
-rw-r--r--. 1 root root 1104 7月 13 14:30 Coin_sol_Coin.abi  
[root@QInChanCentos contract]# cat Coin_sol_Coin.abi  
[{"inputs": [], "stateMutability": "nonpayable", "type": "constructor"}, {"anonymous": false, "internalType": "address", "name": "from", "type": "address"}, {"anonymous": false, "internalType": "address", "name": "to", "type": "address"}, {"inputs": [{"internalType": "address", "name": "", "type": "address"}], "name": "transfer", "outputs": [], "stateMutability": "view", "type": "function"}, {"inputs": [{"internalType": "uint256", "name": "amount", "type": "uint256"}, {"internalType": "address", "name": "receiver", "type": "address"}], "name": "send", "outputs": [], "stateMutability": "nonpayable", "type": "function"}][root@QInChanCentos contract]#
```

node控制台：js的执行环境，编写好的js文件，可以用node直接去运行

```
00080f0033[root@QInChanCentos contract]# node  
Welcome to Node.js v16.15.0.  
Type ".help" for more information.
```

CSDN @ LEVI 104

创建一个web3对象（web3是一个名字，随意）



```
> web3
Uncaught ReferenceError: web3 is not defined
> var web3 = new Web3(new Web3.providers.HttpProvider('http://localhost:8545'))
undefined
> web3
Web3 {
  currentProvider: [Getter/Setter],
  _requestManager: RequestManager {
    provider: HttpProvider {
      withCredentials: false,
      timeout: 0,
      headers: undefined,
      agent: undefined,
      connected: false,
      host: 'http://localhost:8545',
      httpAgent: [Agent]
    },
    providers: {
      WebsocketProvider: [Function: WebsocketProvider]
    }
  }
}
```

CSDN

```
> var BigNumber = require('bignumber.js')
undefined
> var balance = new BigNumber('42343533333333333333')
undefined
> balance
BigNumber { s: 1, e: 21, c: [ 42343533, 3333333333
BigNumber 333 ] }
```

CSDN @LEVI\_104

s: 表示一个符号，表示正负号。整数是1，负数是-1

e: 科学计数法的位数

c: 是一个数组，每14位切割一次，从低位开始切割

web3中: ctrl+L是一键清屏

“相关推荐” 对你有帮助吗？

 非常没帮助  没帮助  一般

关于我们 招贤纳士 商务合作 寻求报道 400-660-0108 

公安备案号11010502030143 京ICP备19004658号 京网文〔2020〕1039-165

家长监护 网络110报警服务 中国互联网举报中心 Chrome商店下载 ©1999-20

出版物许可证 营业执照