System Configuration Guidance

The system is running on a personal computer. Meanwhile, the system needs some configuration work before it can be used locally. This article describes preparations which people need to do to run this system in their own computer.
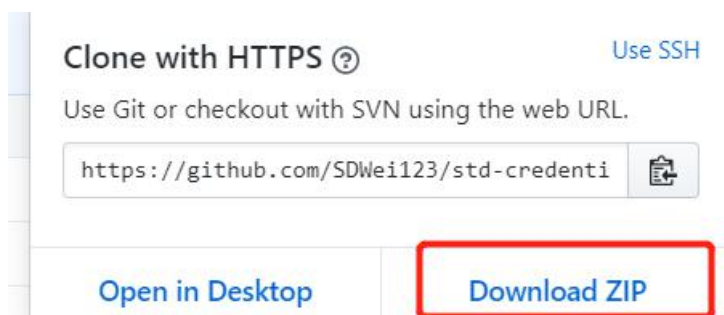
All configuration of this system is conducted under the Windows system. In order to ensure the system work properly, please perform the preparatory work in strict order as follows.

1. Download the code：

Users can download a zip pack of the code from Github and extract it locally.

Programme Website:

https://github.com/SDWei123/student-credential-store.git

2. Install Git

Download version:

https://git-scm.com/download/win

This step is ignored if the software management tool is already installed on the computer. Moreover, make sure Git is added to the system environment variables.

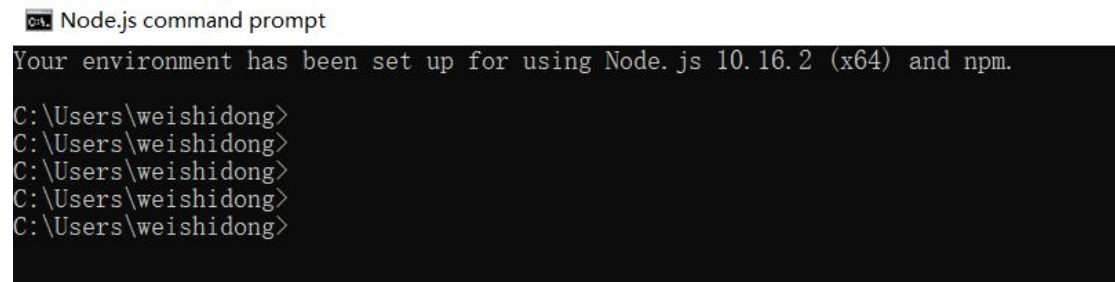3. Install the Node.js environment on your local computer (Node v10.15.1). Node.js download website:

https://nodejs.org/dist/v10.15.1/node-v10.15.1-x64.msi

Select the default installation option when installing, no special requirements. After installation, people can search and open the command line prompt of Node.js to configure the system. The NPM manager version with this version of Node.js is 6.4.1.
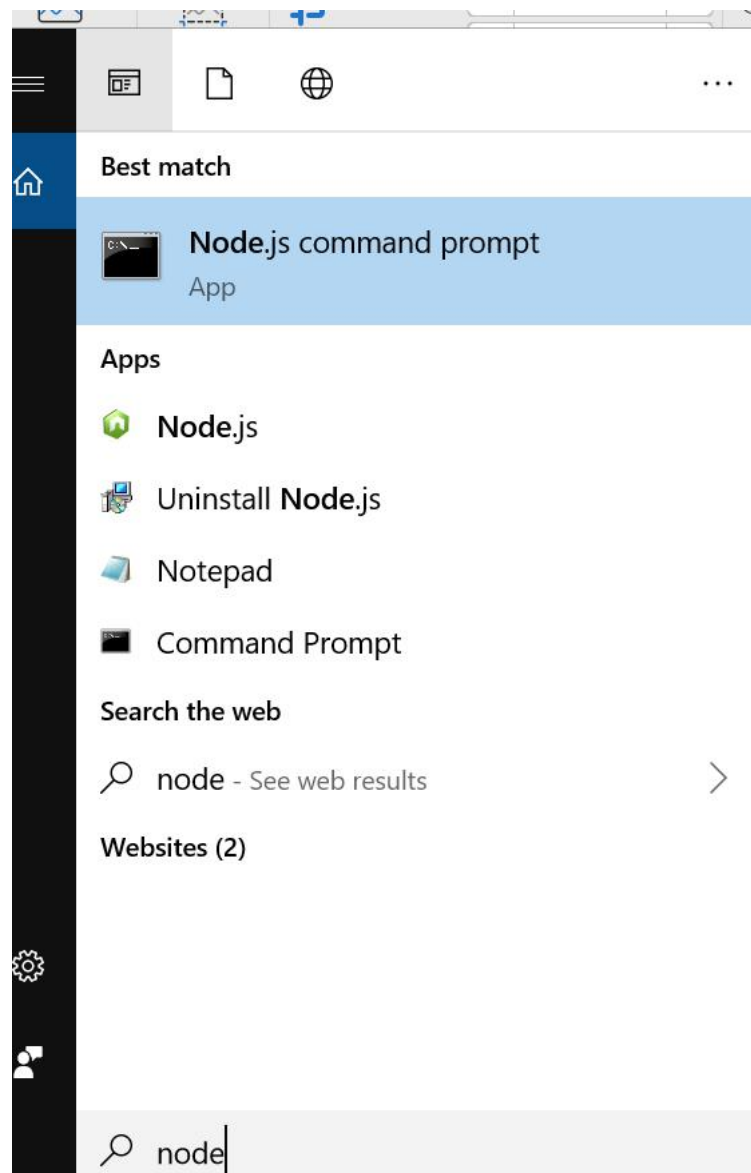
4. Install the plug-in packages that the NPM manager depends on：

When installing, please start the Node.js command prompt in the administrator mode. Then input the following command to install. It takes a long time to install. Please be patient and wait for all packages to be installed.

Command: **npm --add-python-to-path='true' --debug install --global windows-build-tools**

5. Install necessary Node modules for the project system.

Enter the 'app' folder of the system with the Node.js command prompt, and enter the command: '**npm install**'. Then, wait for installation.

After installation, there is an additional 'node_module' folder under the 'app' folder.

Step 5 is the configuration of the system code downloaded from Github (the node_module folder is ignored when uploading code to Github). If users want to skip this configuration, they can download the zip of the system programs folder that possesses all the node modules installed. The code can be directly decompressed to work.
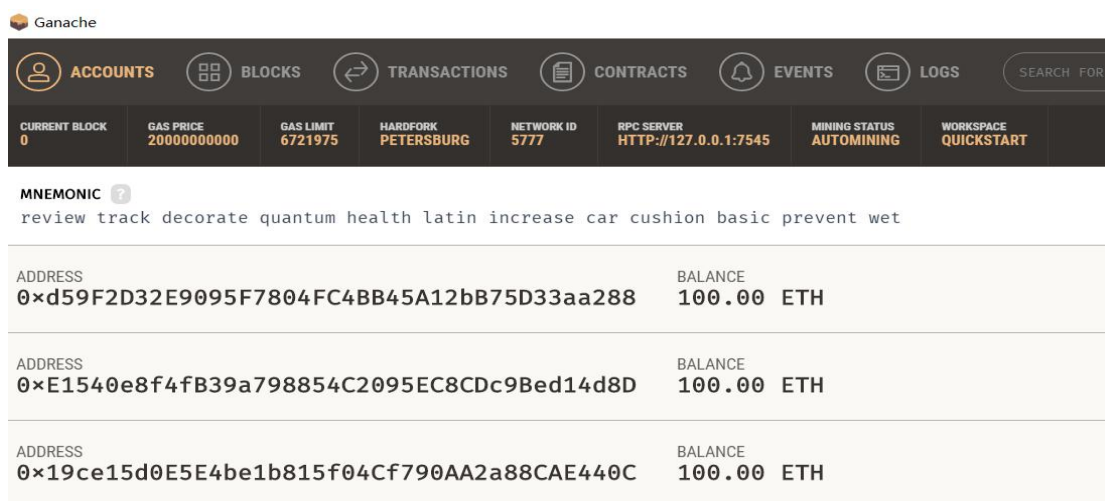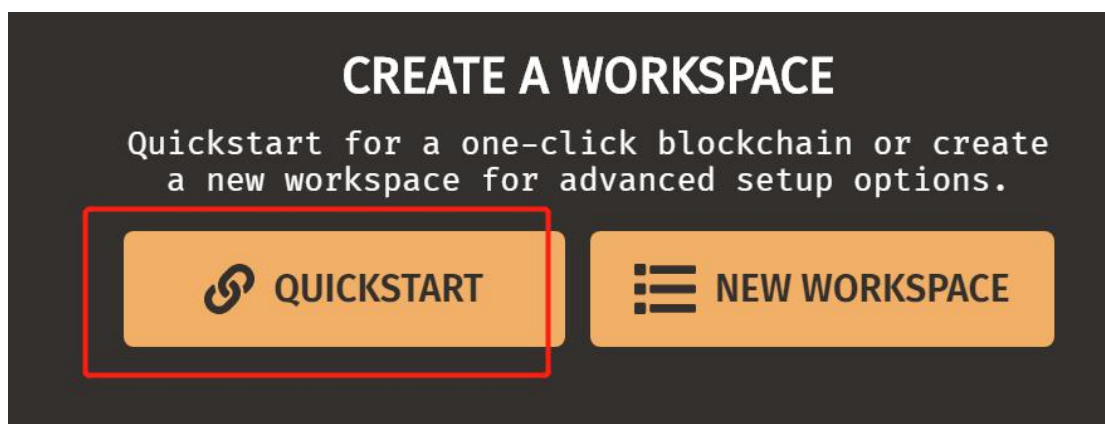
The download link is as follows:

https://drive.google.com/open?id=10UzBjR_ygZilleA-1j8HT-r_i6xyakmP

6. Install Ganache (Graphical version).

Download link: https://www.trufflesuite.com/ganache

After installation, click the quick start mode to use.

7. Install Ganache-cli (Command line version).

Open the Node.js command prompt and enter the installation command:

npm install -g ganache-cli@6.4.3

```
C:\Users\weishidong>npm install -g ganache-cli@6.4.3
C:\Users\weishidong\AppData\Roaming\npm\ganache-cli -> C:\
cli.js
+ ganache-cli@6.4.3
added 54 packages from 46 contributors in 5.209s

C:\Users\weishidong>
```

8. Install Go-IPFS client.

Download website: https://dist.ipfs.io/#go-ipfs.

Download Go-IPFS for Windows. Directly decompress it to use.

First, enter the installed go-ipfs folder with the Windows Command prompt, and use the command of the IPFS directly to use this client.


```
E:\go-ipfs>
E:\go-ipfs>
E:\go-ipfs>
E:\go-ipfs>ipfs --version
ipfs version 0.4.21
```

In this folder, initialize an IPFS node using the command '**ipfs init**', as shown in the figure below:

```
E:\go-ipfs>
E:\go-ipfs>
E:\go-ipfs>
E:\go-ipfs>ipfs init
initializing IPFS node at C:\Users\weishidong\.ipfs
generating 2048-bit RSA keypair...done
peer identity: QmbqCiVmzdo2wbYMwWDmTSGT3WuQUxSrEKKm3H2xLM4wCh
to get started, enter:

        ipfs cat /ipfs/QmS4ustL54uo8FzR9455qaxZwuMiUhyvMcX9Ba8nUH4uVv/readme
```

9. Do the cross-domain configuration on the IPFS.

Start the IPFS node in the folder where Go-IPFS client is installed.

```
E:\go-ipfs>ipfs daemon
Initializing daemon...
go-ipfs version: 0.4.21-
Repo version: 7
System version: amd64/windows
Golang version: go1.12.5
Swarm listening on /ip4/127.0.0.1/tcp/4001
Swarm listening on /ip4/130.88.170.29/tcp/4001
Swarm listening on /ip4/169.254.56.169/tcp/4001
Swarm listening on /ip4/169.254.59.161/tcp/4001
Swarm listening on /ip4/169.254.90.55/tcp/4001
Swarm listening on /ip4/169.254.96.62/tcp/4001
Swarm listening on /ip6/::1/tcp/4001
Swarm listening on /p2p-circuit
Swarm announcing /ip4/127.0.0.1/tcp/4001
Swarm announcing /ip4/130.88.170.29/tcp/4001
Swarm announcing /ip4/169.254.56.169/tcp/4001
Swarm announcing /ip4/169.254.59.161/tcp/4001
Swarm announcing /ip4/169.254.90.55/tcp/4001
Swarm announcing /ip4/169.254.96.62/tcp/4001
Swarm announcing /ip6/::1/tcp/4001
API server listening on /ip4/127.0.0.1/tcp/5001
WebUI: http://127.0.0.1:5001/webui
Gateway (readonly) server listening on /ip4/127.0.0.1/tcp/8080
```

Open a 'cmd' window and go to the go-ipfs folder. Enter the following command for cross-domain configuration:

ipfs config --json API.HTTPHeaders.Access-Control-Allow-Origin "[\"*\"]"

ipfs config --json API.HTTPHeaders.Access-Control-Allow-Methods "[\"GET","POST\"]"

ipfs config --json API.HTTPHeaders.Access-Control-Allow-Credentials "[\"true\"]"

ipfs config --json API.HTTPHeaders.Access-Control-Allow-Methods "[\\ "PUT\\", \\"POST\\", \\"GET\\"]"

ipfs config --json API.HTTPHeaders.Access-Control-Allow-Headers "[\\" Authorization\\"]"

ipfs config --json API.HTTPHeaders.Access-Control-Expose-Headers " [\\"Location\\"]"
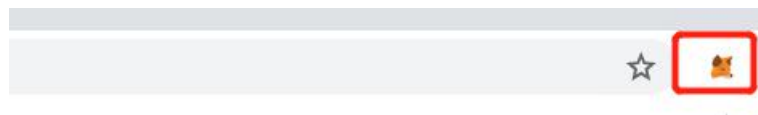
The initialization and cross-domain configuration are performed only when the Go-IPFS client is first installed on the machine and is not required later.

10 Install Metamask.

Download link:

https://chrome.google.com/webstore/detail/metamask/nkbihfbeogaeaoehlefnk odbefgpgknn

Add this plug-in to Google chrome.

欢迎使用 MetaMask 测试版

MetaMask is a secure identity vault for Ethereum.
We're happy to see you.

Get Started

New to MetaMask?

Introduce the following seed phrase and set the password:

sing recall arena manage dash circle buddy crime electric vanish prefer spirit
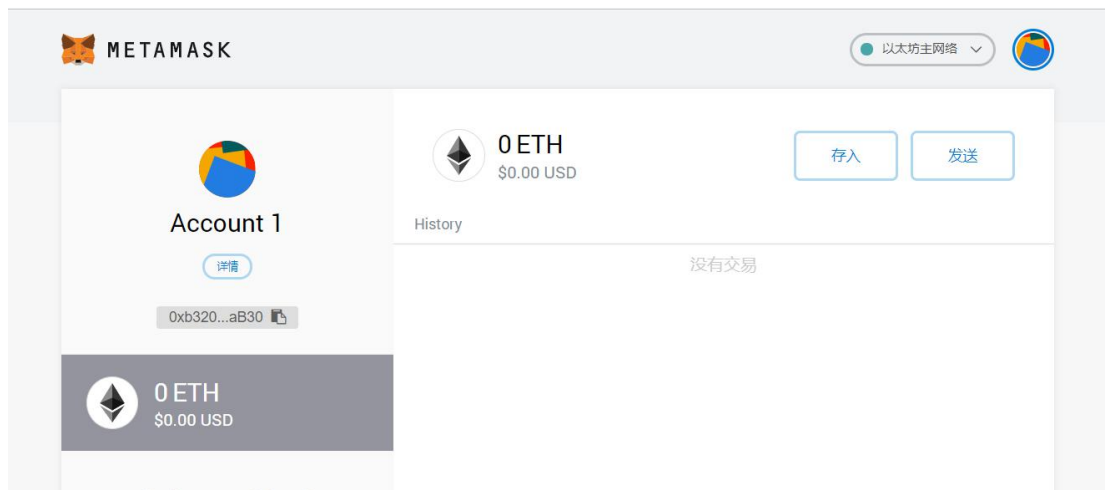
After the above steps, the basic configuration of Metamask is completed.

10. Install Truffle

Open a Node.js command prompt window and input the following command:

npm install -g truffle

Through the above steps, the necessary operating environment of the program is configured, the system can then be used on this computer.