SpaceChain Client Server Deployment Guide

Version	Date	Note
V0.0	2020.08.05	Original version（HF）
V1.0	2020.09.27	Revised version

1. Corporate user registration

Introduction

Users need to register an account on SPC homepage. An email with regards to Docker deployment will be sent to users upon successful registration. Users need to provide the TX details of SPC Token or BTC paid to SpaceChain in order to approve wallet creation. Users need to provide the RSA public key which will be used to encrypt the OTP.

After verifying the user identity and payment information, users will receive an email regarding the OTP encrypted by RSA public keys. Users can decrypt the OTP with RSA public keys.

Note: Please use a secure email address for user registration. Please install SPC Authenticator in advance. The SPC Authenticator installation process can be found in the below link.

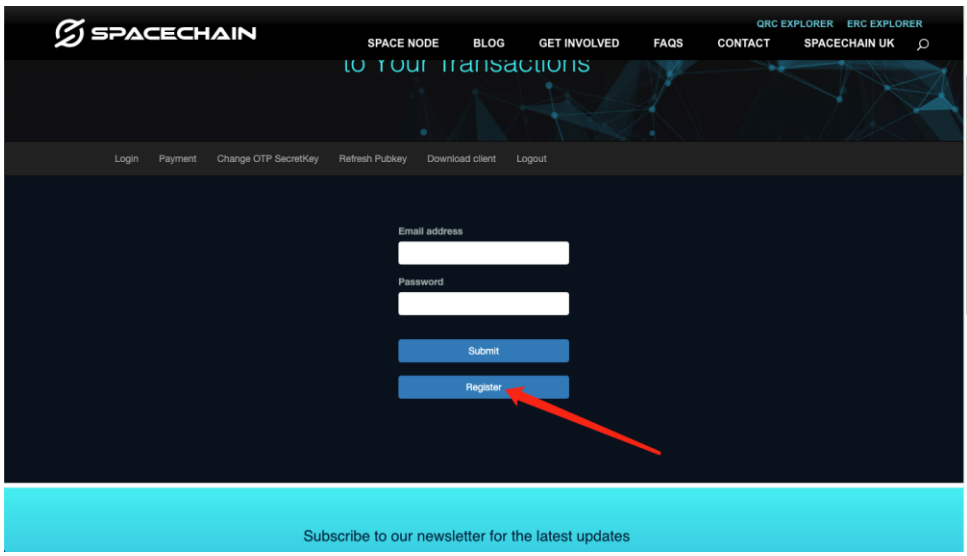
https://github.com/spacechain/SpaceChain-Board/tree/master/document

Register account on SPC homepage

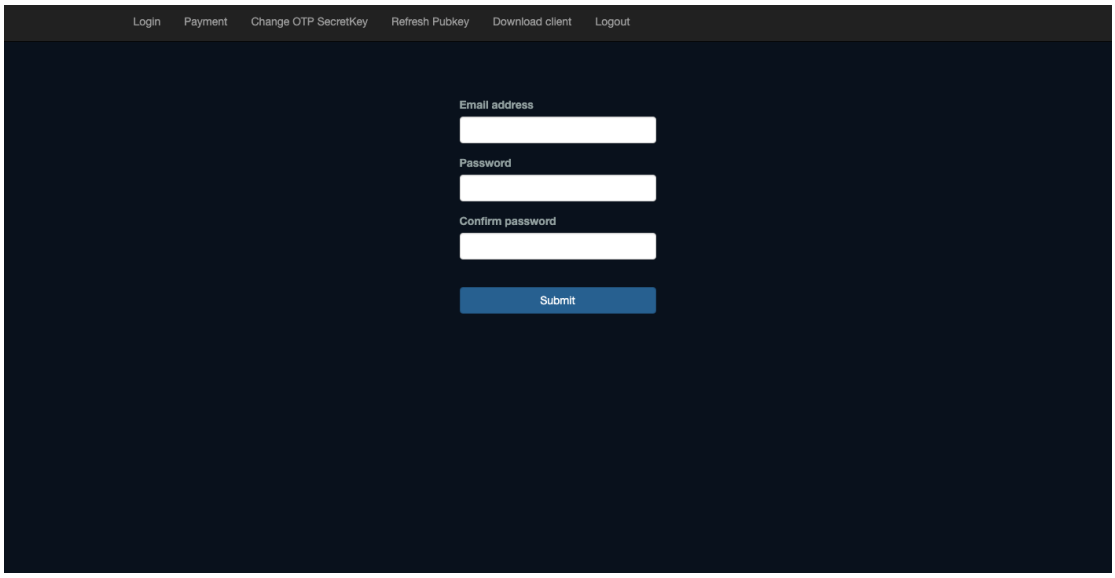
Visit the SPC home to register a user account, linked here.

https://spacechain.com/space-node-login/

Click “Register”.



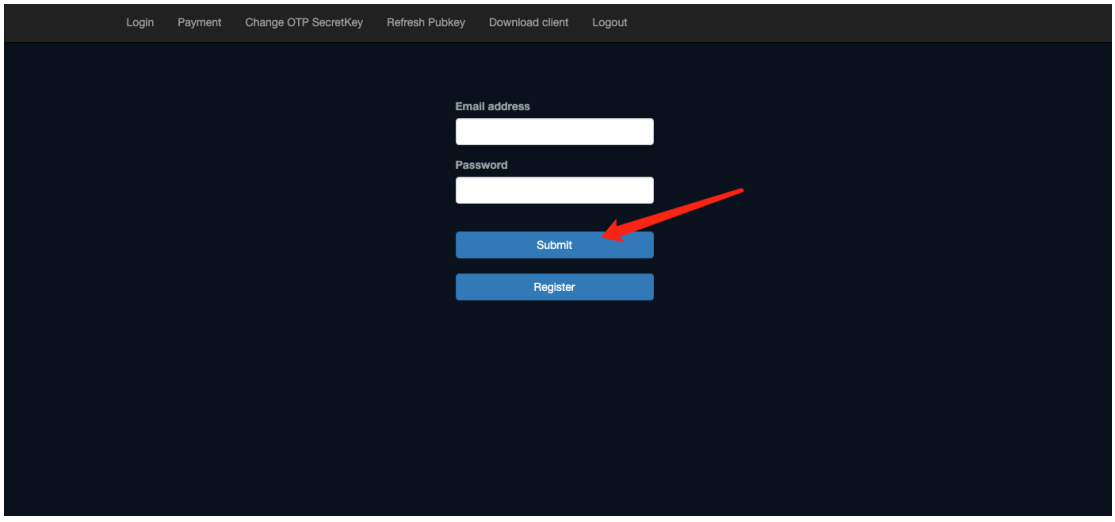
Fill in the user information and Click “Submit”.



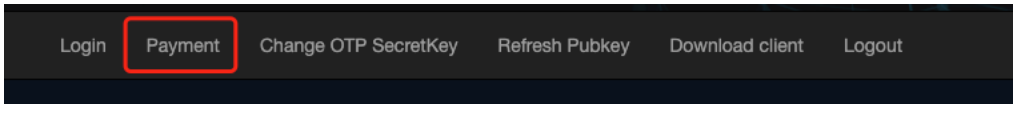
Use the below address to log in.

> https://spacechain.com/space-node-login/

Fill in the user information and Click “Submit”.



Click “Payment” to pay via BTC or SPC token.



Bitcoin fee structure:

Please send the user registration fee to this Bitcoin wallet address：
1HBHWQVYm1oWCwSCWztzWeidCdrJt45YA7

Amount of fees：0.1 BTC

SPC token fee structure:

Please send the user registration fee to this SPC token wallet address：
0x62D730284eE7a75775e071c25D8b72e7c97eD3b2

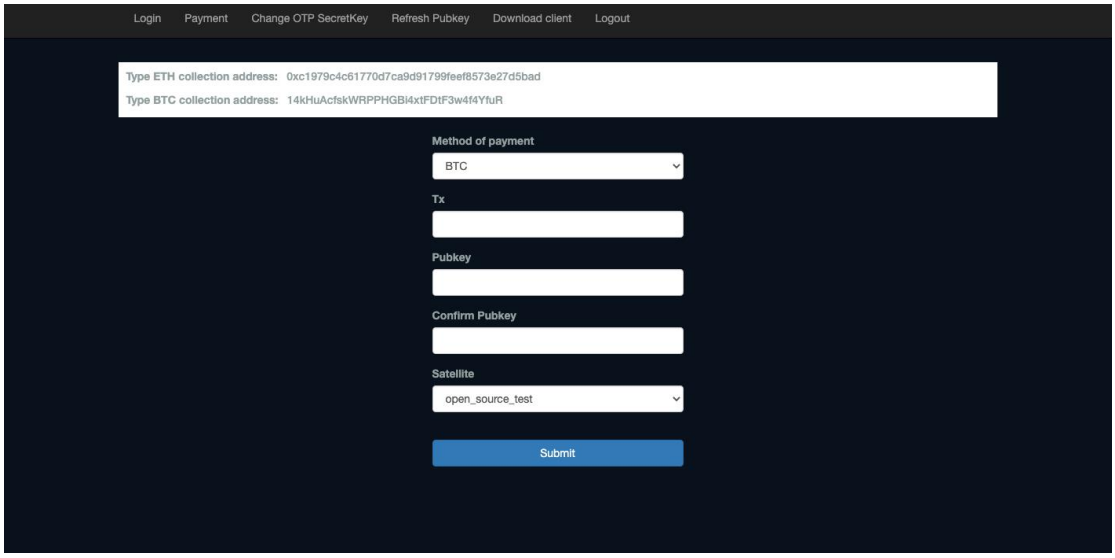
Amount of fees：50000 SPC

Install SPC Authenticator and obtain the RSA public key.

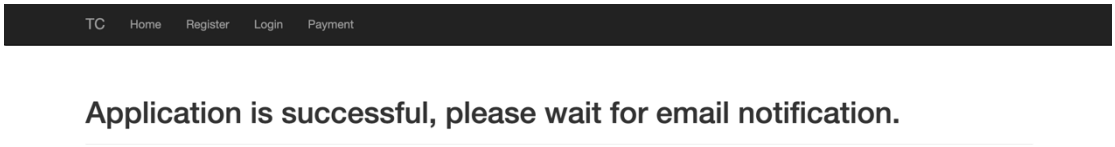
Please refer to the below address for SPC authenticator.

https://github.com/spacechain/SpaceChain-Board/tree/master/document

Fill the information shown in the below figure.



Registration is successful. Please wait for email notification. You should see the screen below.



Obtain OTP private keys

Please check your registered email address. You should receive an email containing the OTP secret key ciphertext. Below is an example you should expect to see.

Open SPC Authenticator to decrypt the ciphertext and obtain the OTP. The account has been successfully added to the SPC Authenticator.

Please refer to the files below for more details.

https://github.com/spacechain/opensource_otp_app

2. Activate POP/IMAP service

Introduction

Corporate users are expected to have a G Suite account. The POP/IMAP service of the G suite account needs to be activated.

Note: We only show procedures of activating the POP/IMAP service of Gmail in this document.

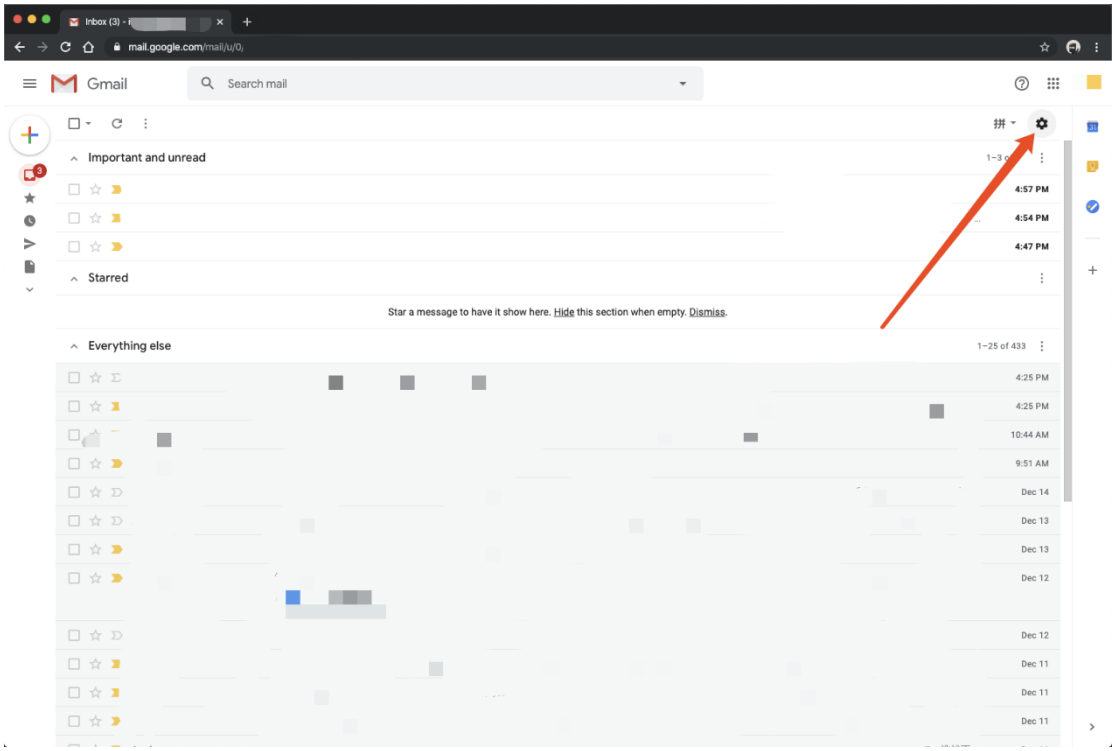
Procedures

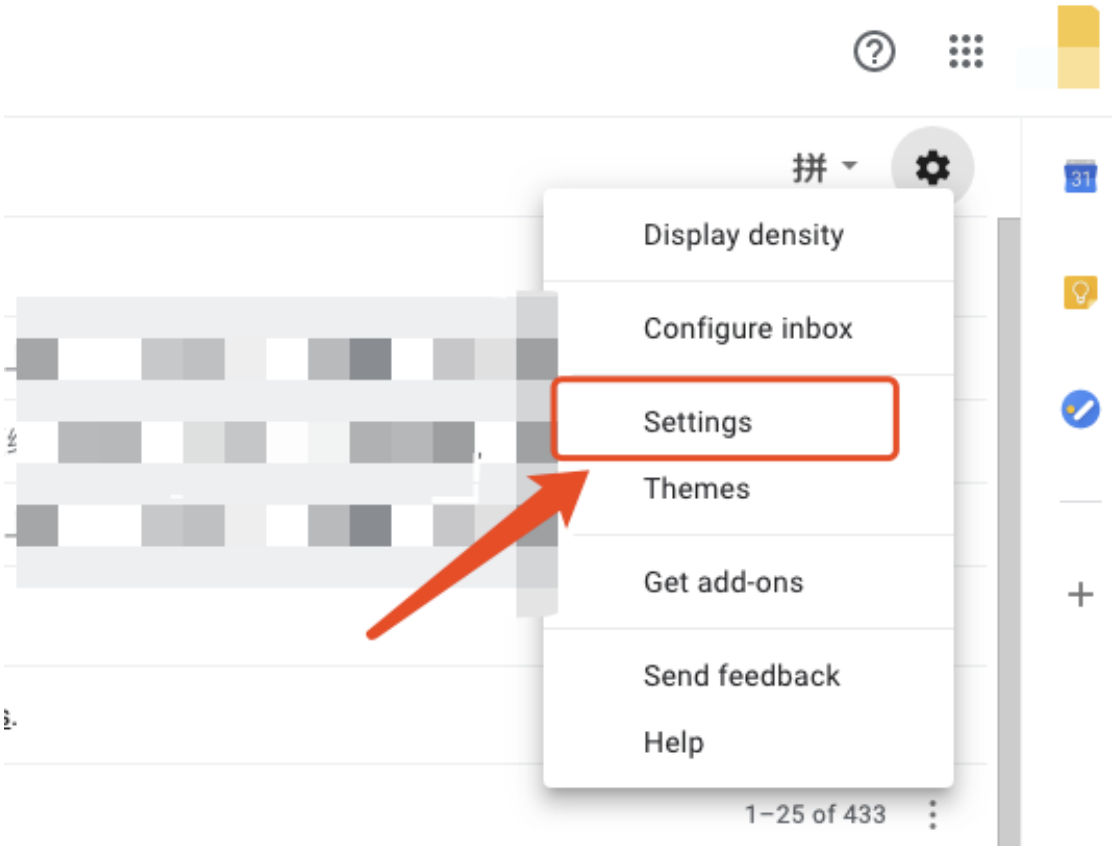
Activate POP/IMAP service

Log in to your Gmail amount.

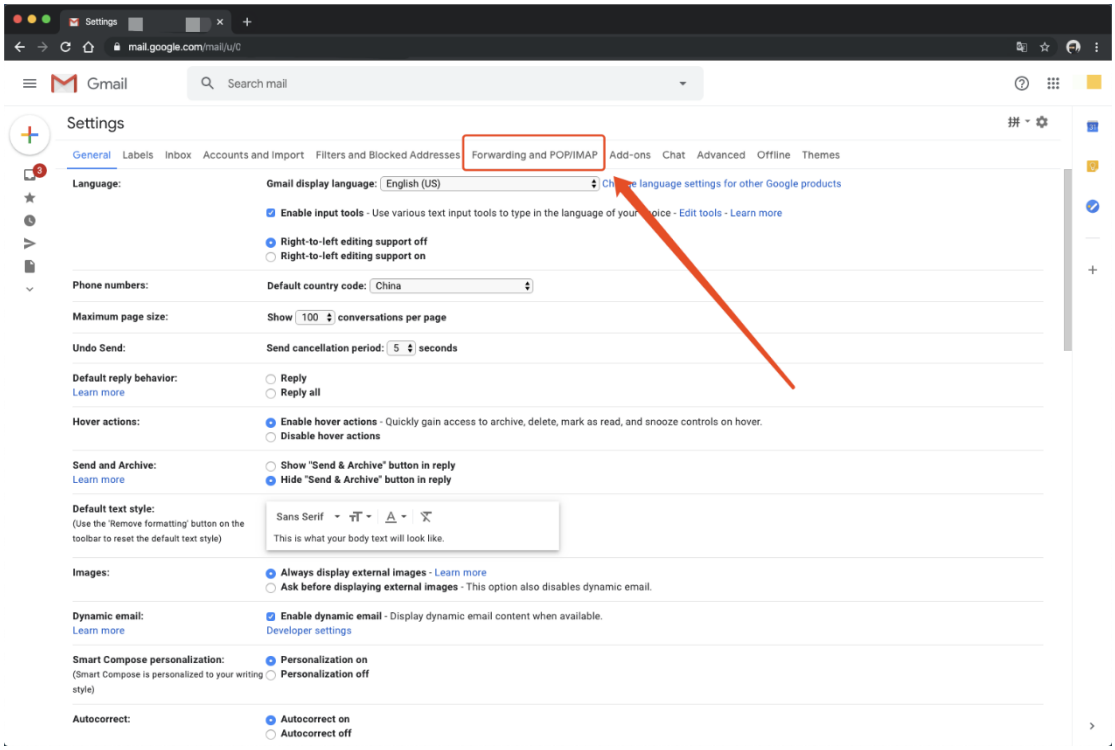
> https://accounts.google.com/signin

Click “Settings”.

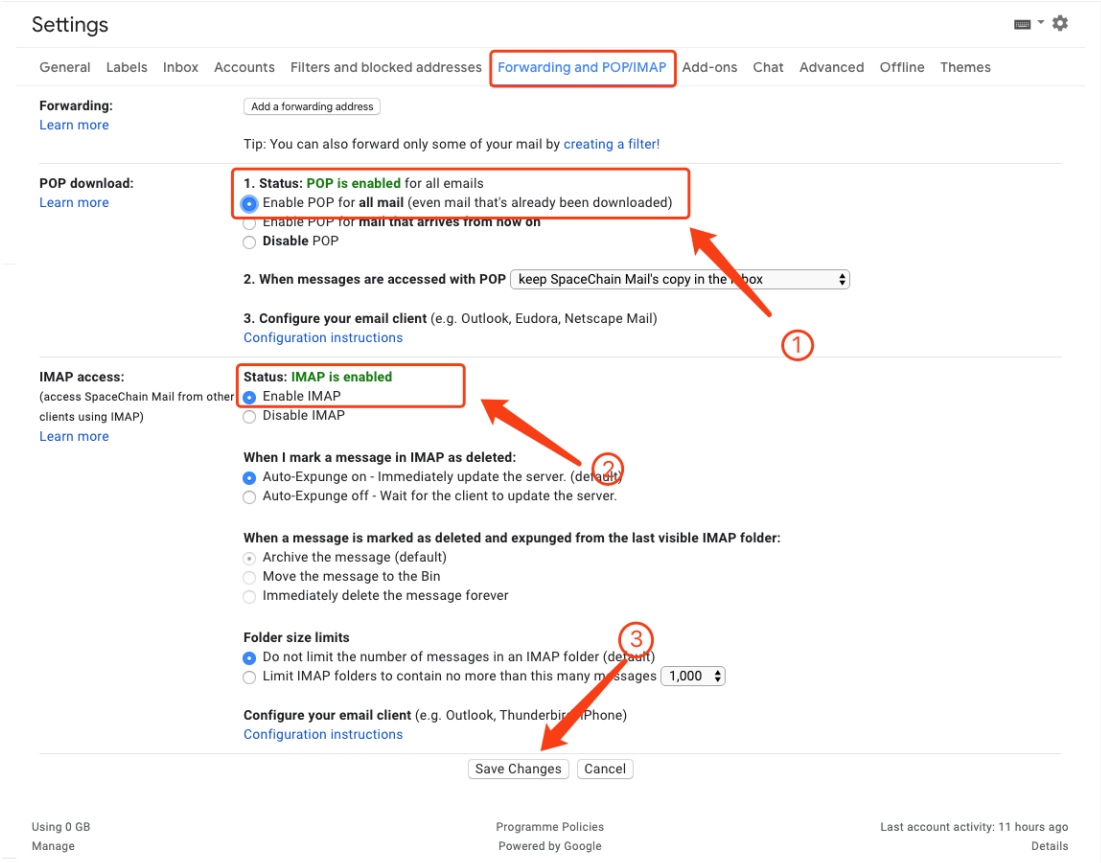




Select “Forwarding and POP/IMAP”.



Enable POP/IMAP and save all the changes.

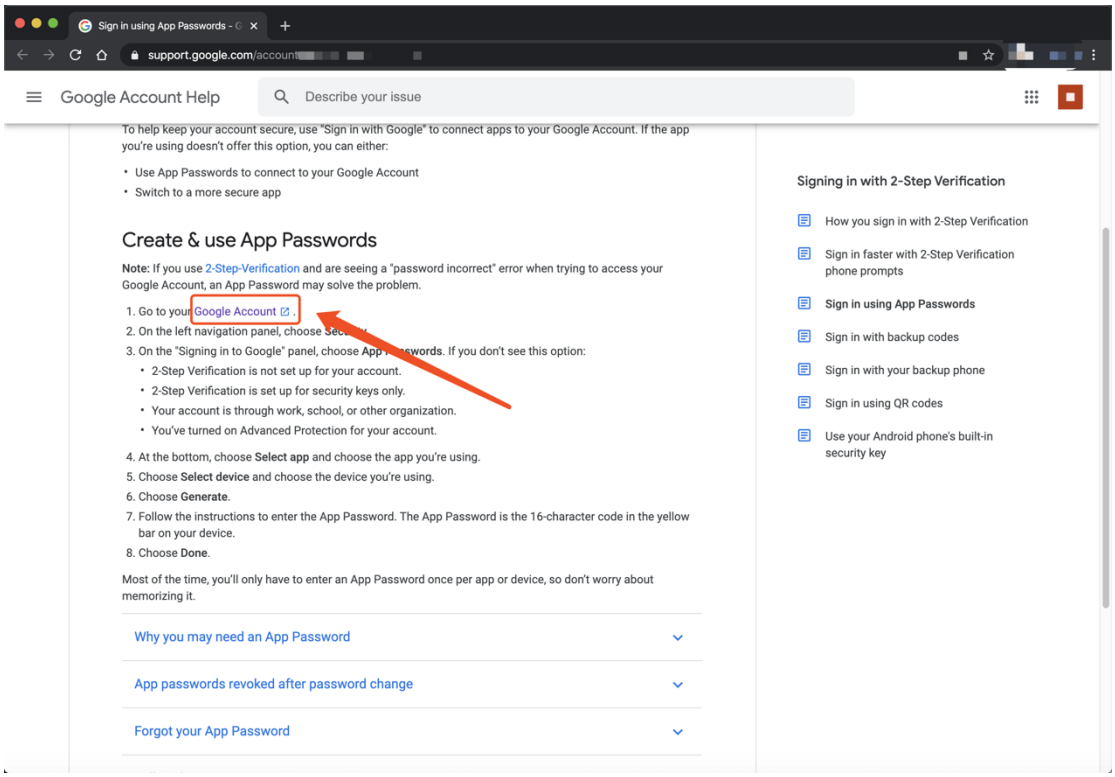


Active two-step authentication

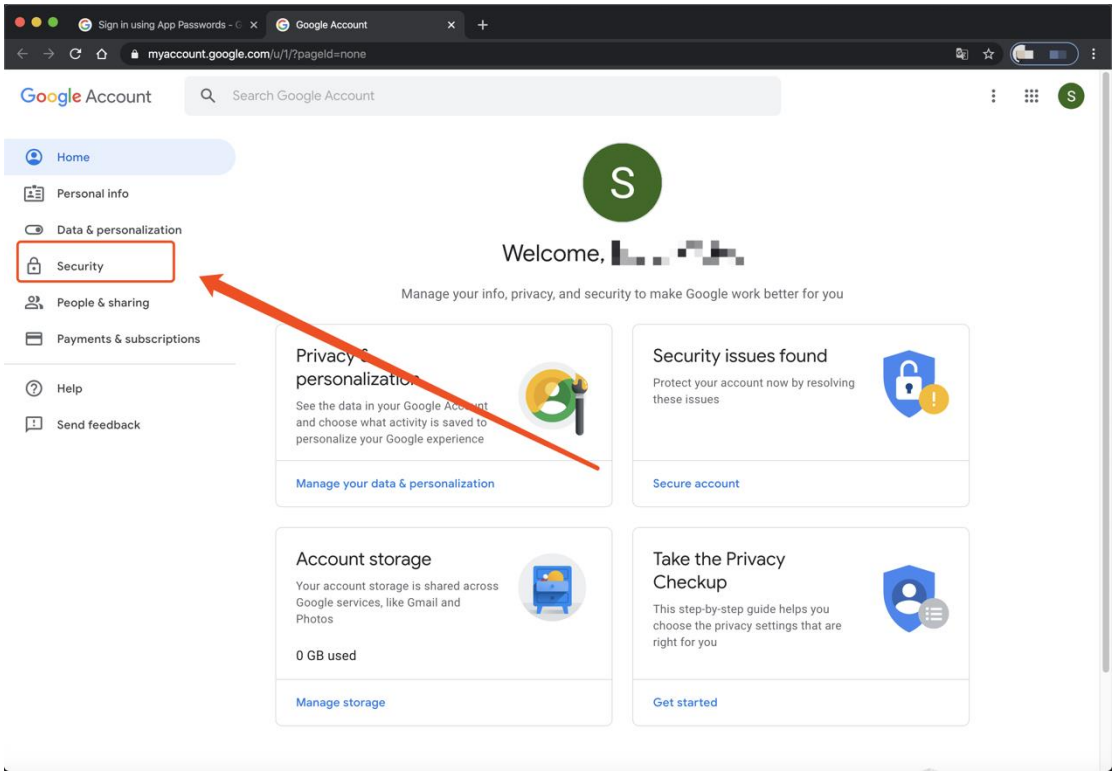
Activate two-step authentication for Gmail account.

Please refer to the below link for more detail.

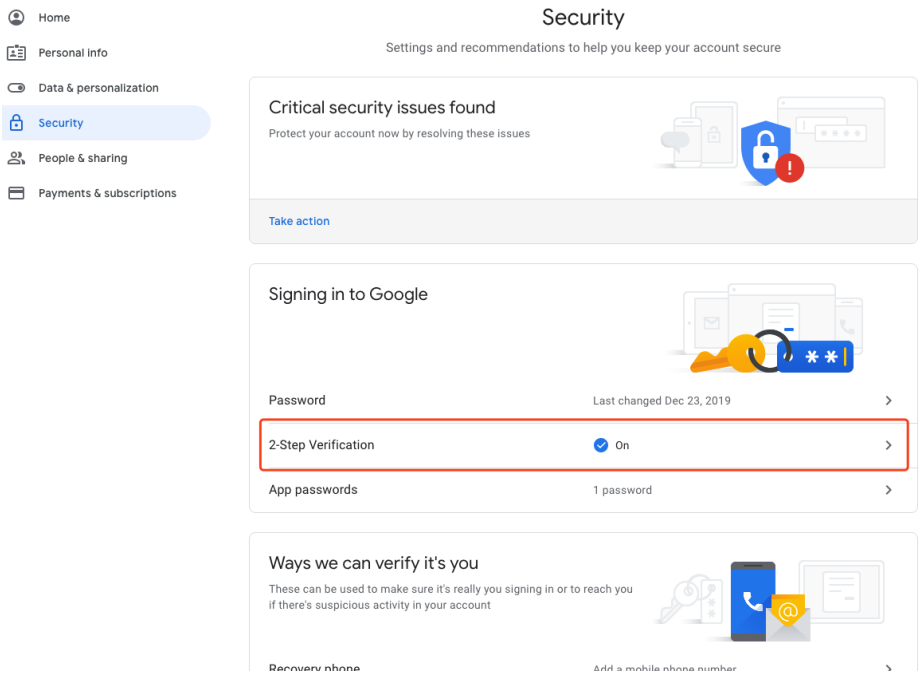
https://support.google.com/accounts/answer/185833?hl=en



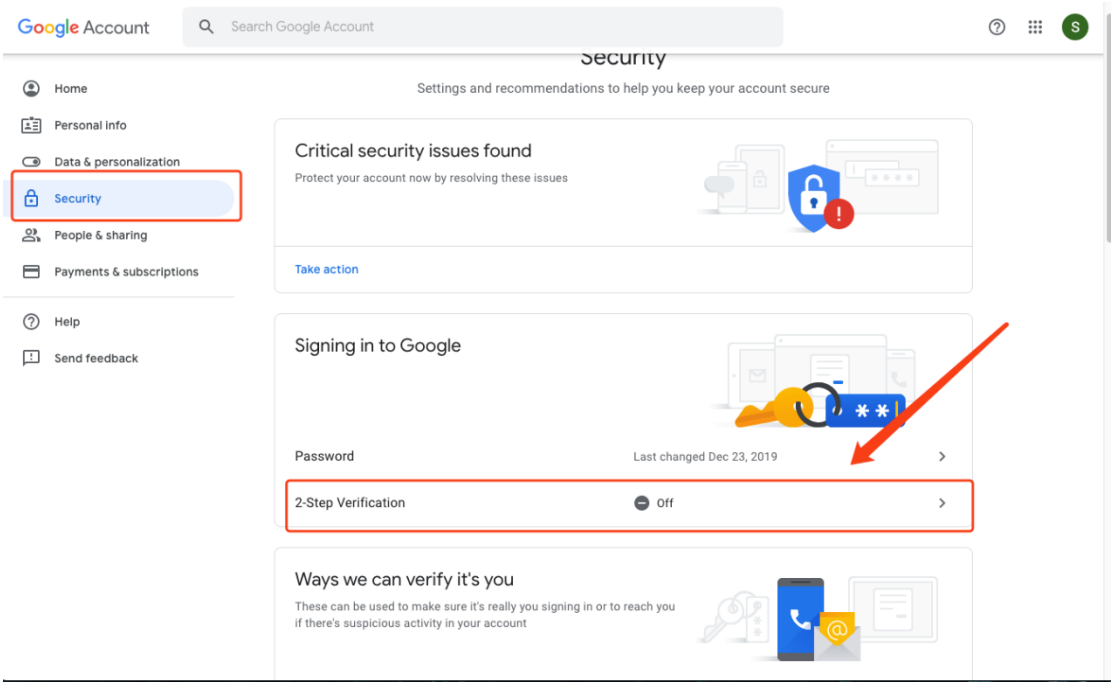
Select “Security”.



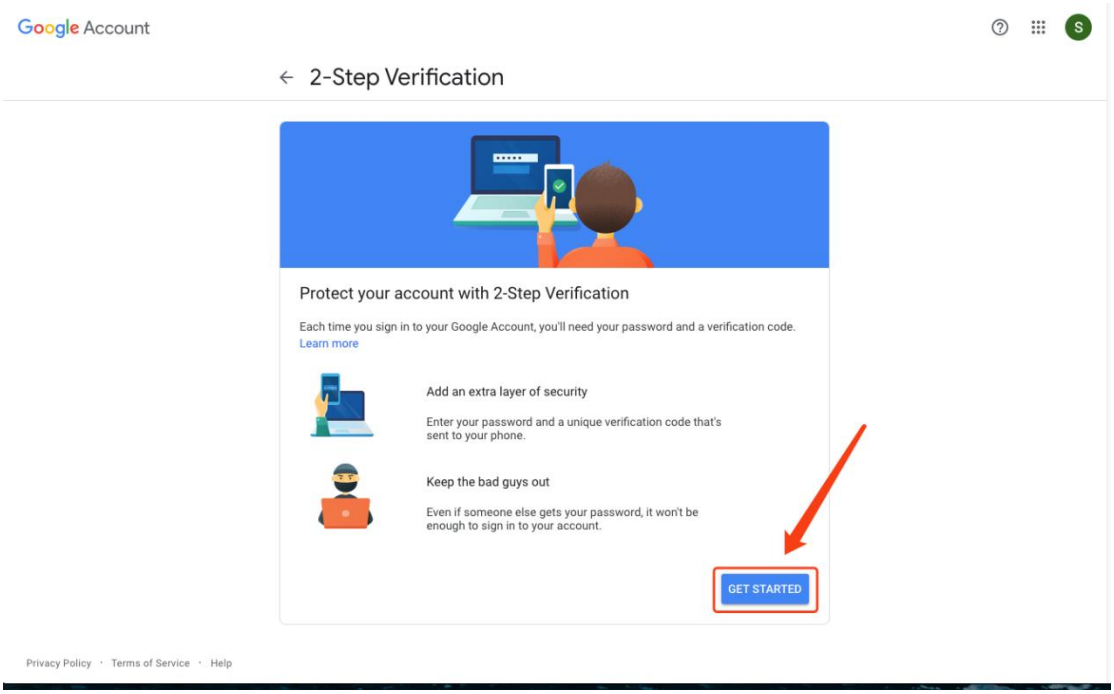
If you already have the two-step verification, please skip this step.



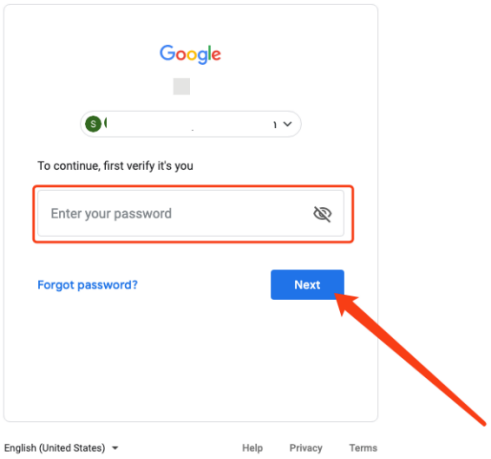
Please follow these steps below to activate two-step verification.



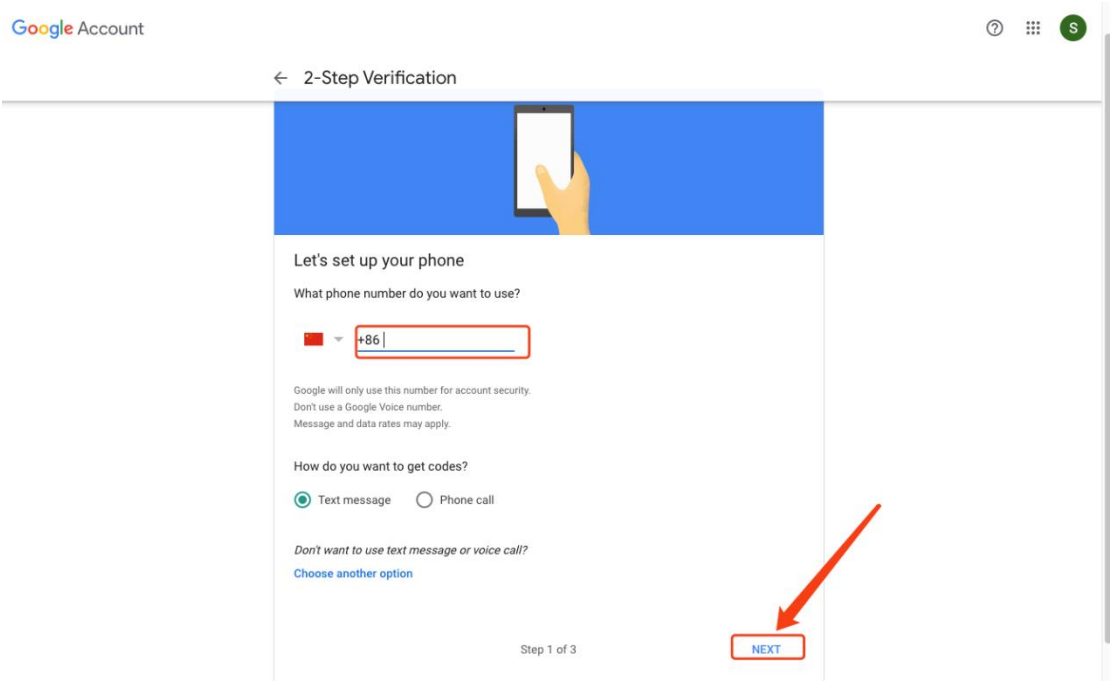
Click “GET STARTED”.



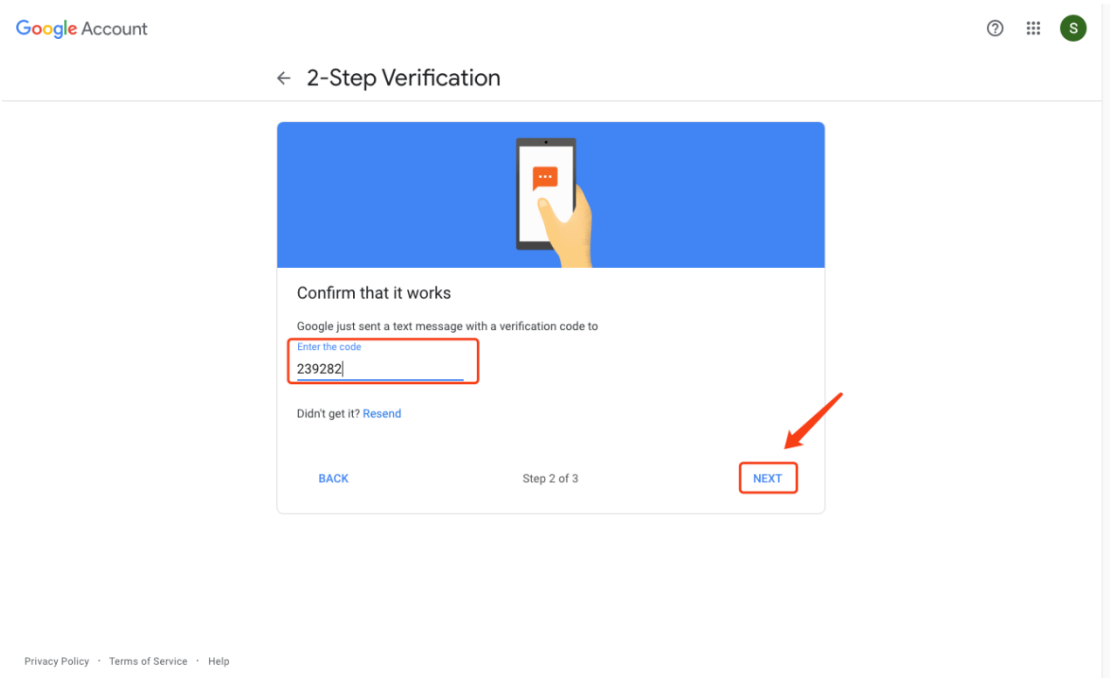
Enter your password and click “NEXT”.



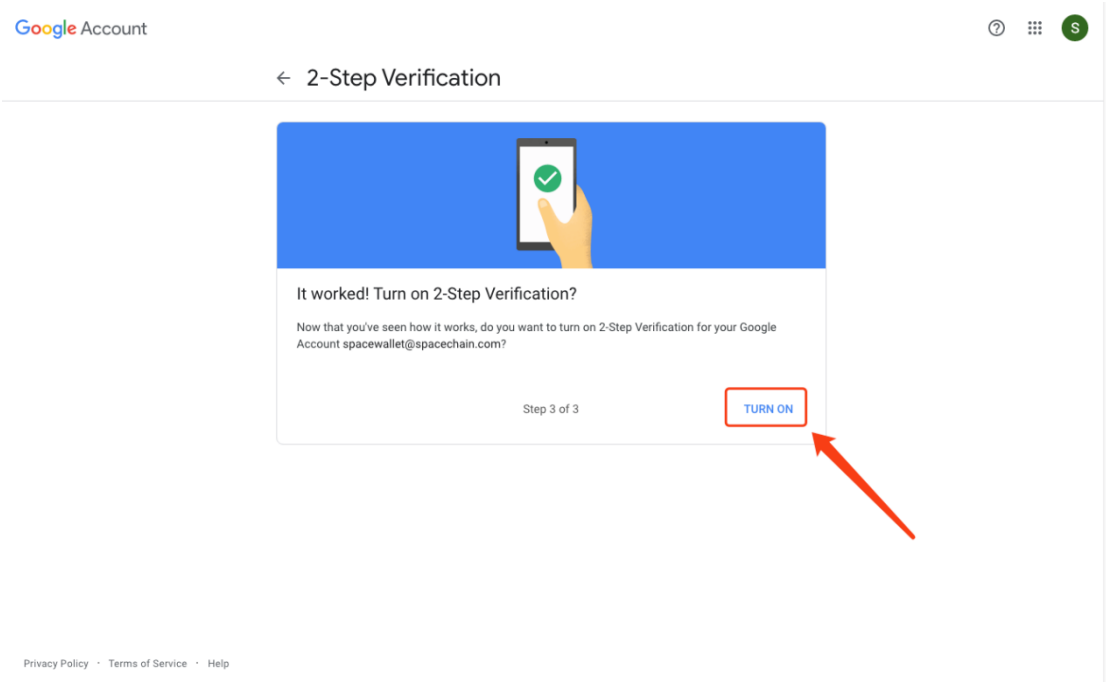
Enter your phone number to receive the code.



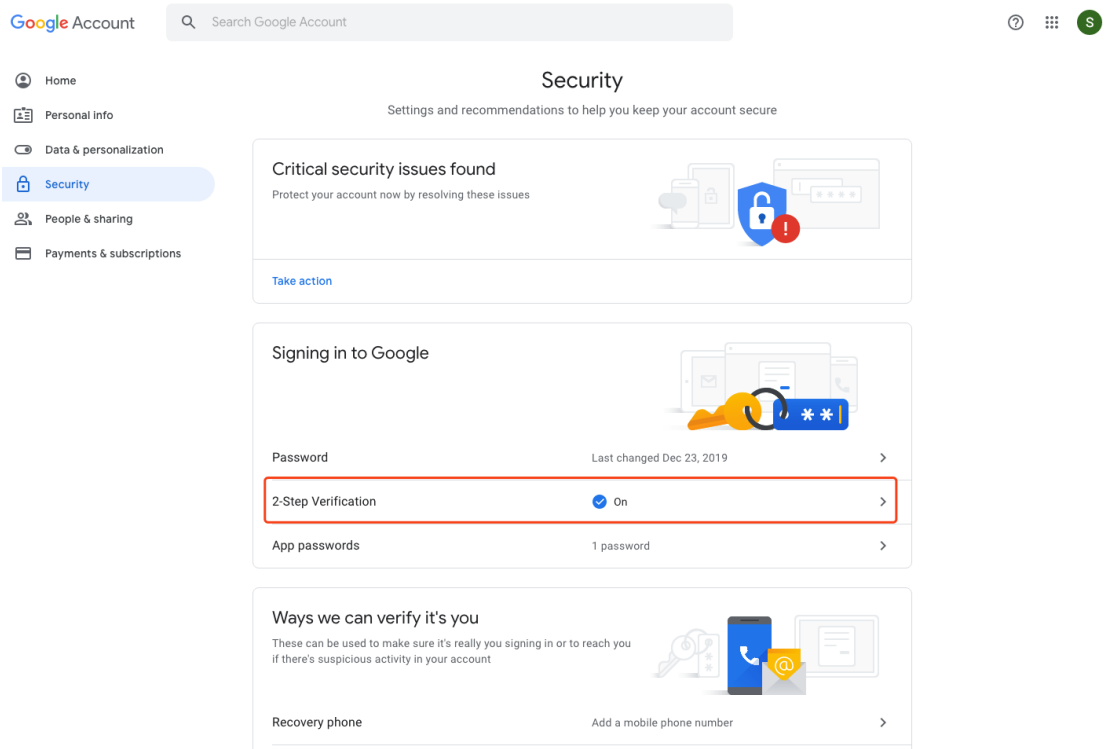
Enter the received one-time code and Click “NEXT”.



Click “TURN ON”.

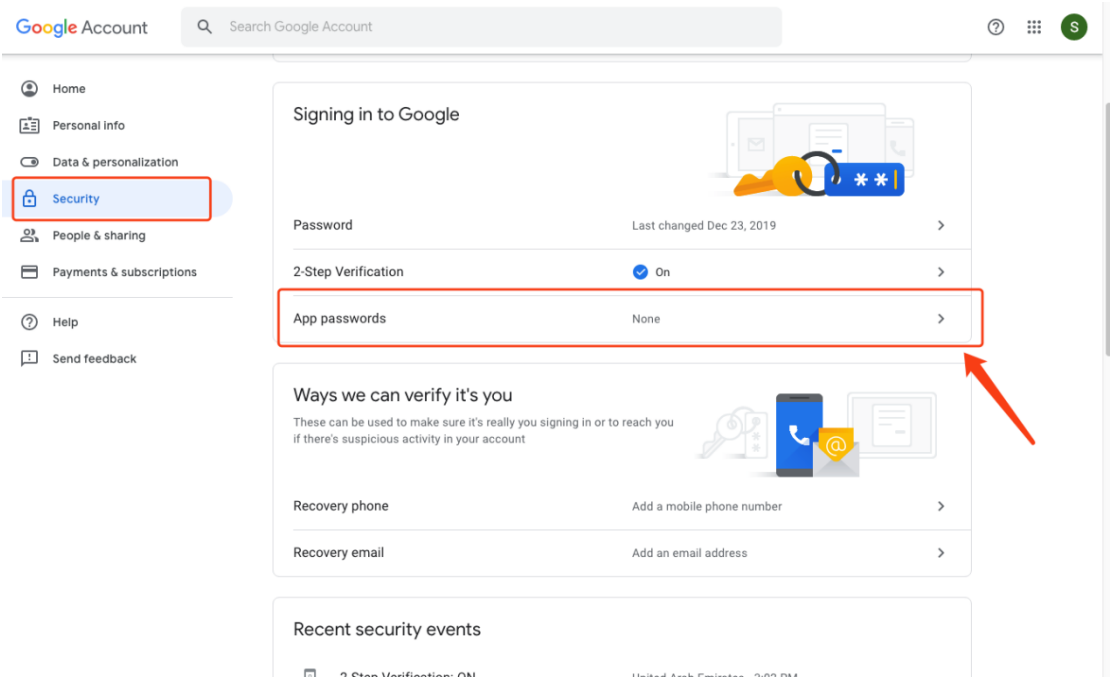


Two-step verification is successfully activated.

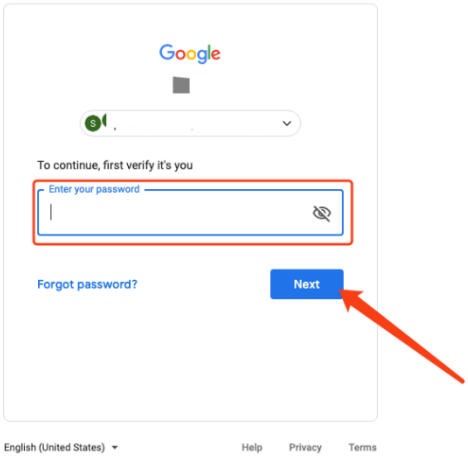


Set App passwords

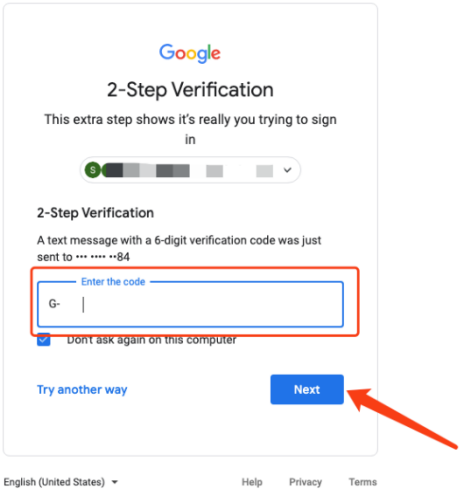
Select “App passwords”.



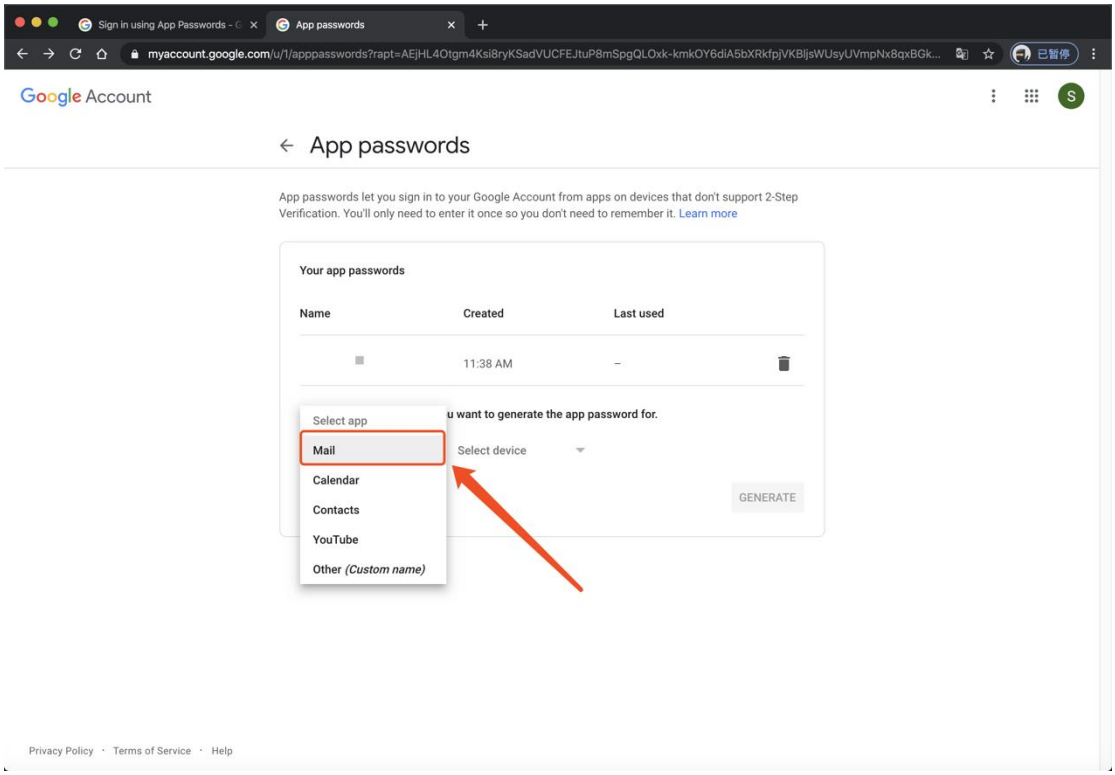
Enter Gmail account password and click “NEXT”.



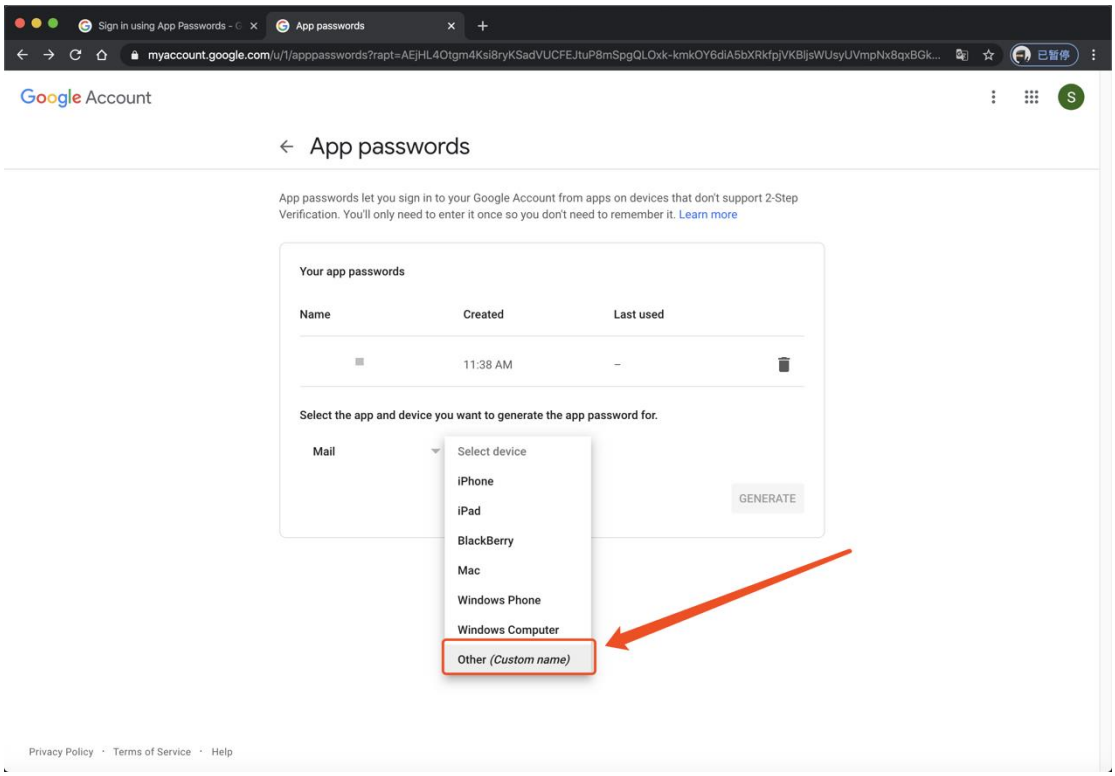
Enter the one-time code sent to your phone.



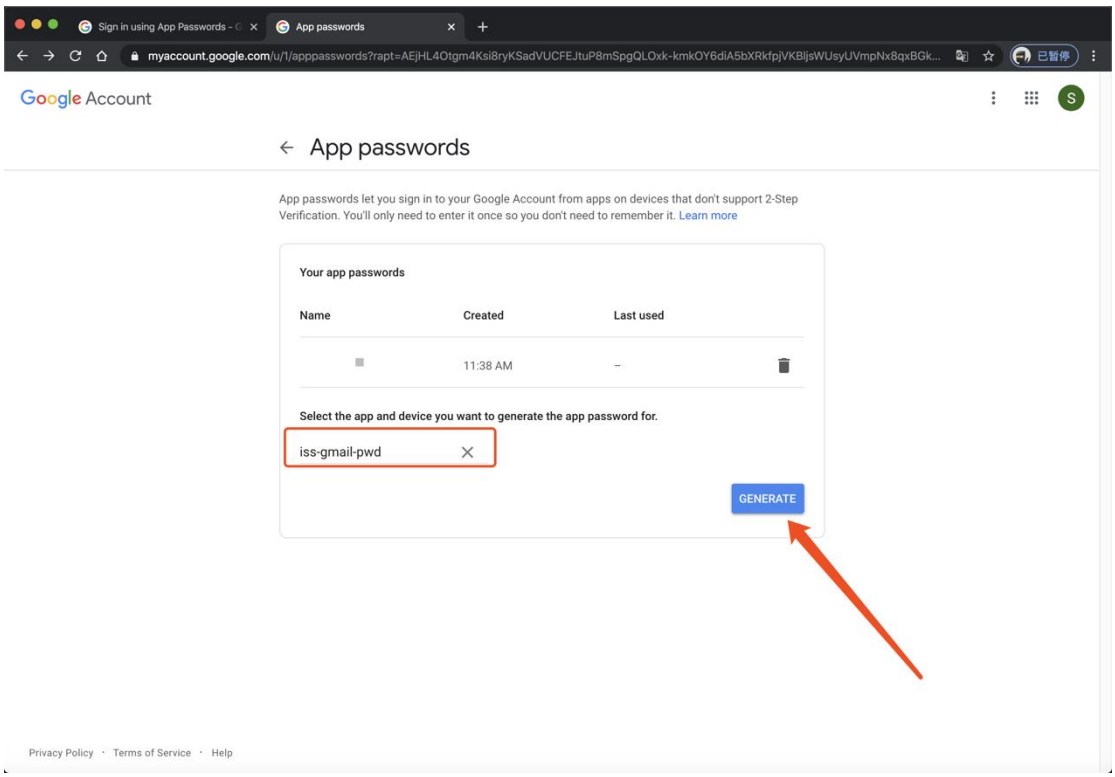
Select “Mail” as shown in the below figure.



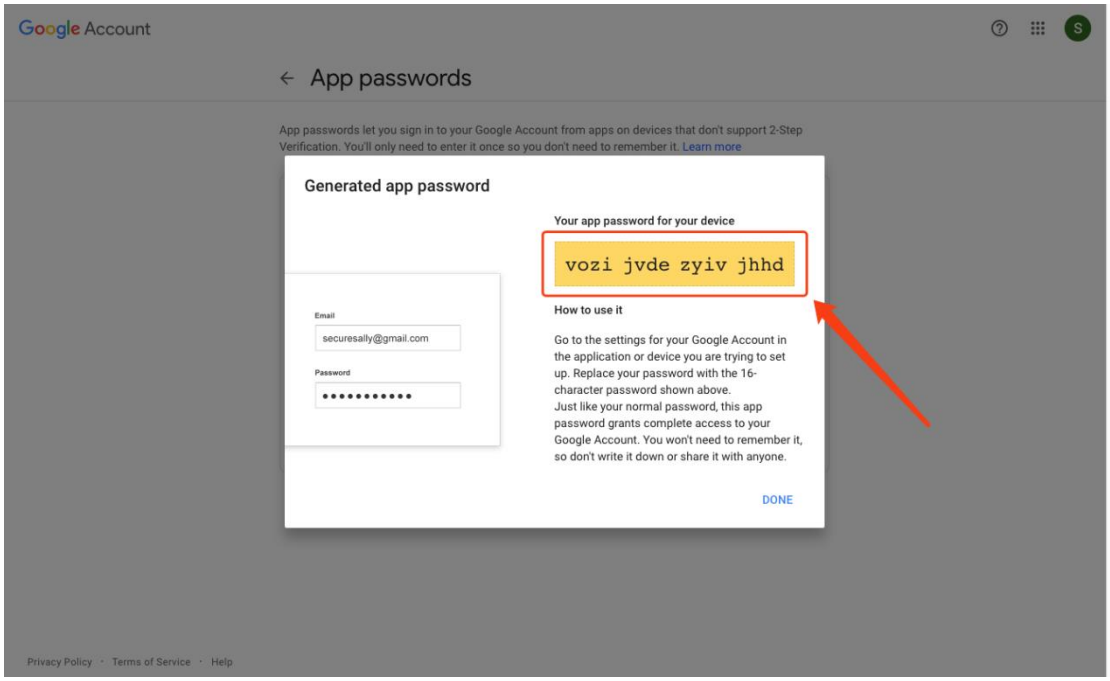
Set device as “Other (Custom name)”.



Enter the device name and click “GENERATE”.



Please record the password of your device.



The password will be used for Docker deployment.

3. Deploy MySQL with Docker

Introduction

Docker is a platform that uses OS-level virtualization to deliver software in packages called containers. Containers isolate software from its environment and ensure that it works uniformly regardless of the development environment. Our docker contains file dependencies of MySQL database. Users just need to own a MySQL account.

MySQL database stores wallet data, transaction detail. Please deploy MySQL database before deploying the ISS-SERVER.

Procedures

Install Docker

Switch to ROOT

```
sudo su
```

Install the Docker

```
$ yum install docker
```

Start the Docker

```
$ service docker start
```

Please refer to the below link for docker deployment under different OS.
https://docs.docker.com/

Install MySQL and create a user account

```
docker pull mysql
```

Set the password as ‘qazwer1122’. The password is changeable.

```
docker run --name tc-agency-mysql -p 3306:3306 -e MYSQL_ROOT_PASSWORD=qazwer1122 -d mysql
```

Create the database with the command below. Please note that this process takes around 5 minutes.

```
docker exec -it tc-agency-mysql bash
```

Enter the below command to log in MySQL.

```
mysql -u root -p
```

Enter the password “qazwer1122”.

Enter the command below to create a user account. ‘mysqlaccount’ is the username and ‘qazwer1122’ is the user password.

```
CREATE USER 'mysqlaccount'@'%' IDENTIFIED WITH mysql_native_password BY 'qazwer1122';
GRANT ALL PRIVILEGES ON *.* TO 'mysqlaccount'@'%';
```

Enter the command below to create a database.

```
create database TC;
```

Enter ‘exit’ two consecutive times to exit the MySQL container.

4. Server deployment with Docker

Introduction

This Docker contains the file dependencies for server deployment (SpaceNode_Server_ISS). Users only need to set email addresses, FTP account to use this server. The server is mainly used for communications among users, as well as communications between users and SPC payload.

Procedures

Server deployment

Switch to ROOT

```
sudo su
```

Create an empty folder. All the subsequent steps are executed in this folder.

```
mkdir tc_docker && cd tc_docker
```

Create a script named start.sh.

```
vim start.sh
```

Write the below codes to the script.

```
#! /bin/bash
uwsgi home/tc/uwsgi/uwsgi.ini
nginx
/home/tc/Electrum-3.3.8/run_electrum    daemon start
python3 /home/tc/tc-agency/manage.py db init
python3 /home/tc/tc-agency/manage.py db migrate
python3 /home/tc/tc-agency/manage.py db upgrade
```

```
service cron restart
tail -f -n 100    /home/tc/server_log/tc-server-request.log
```

Create Dockerfile

```
vim Dockerfile
```

Write the codes below to dockerfile.

```
# tc-agency
FROM spacechain/iss-image:19.12.25
MAINTAINER IDKTP
ADD tc-agency/    /home/tc/tc-agency/
ADD start.sh /
WORKDIR /
ENTRYPOINT ["sh", "start.sh"]
```

Download the code SpaceNode_Server_ISS from SpaceChain GitHub.
Install git

```
yum install git
```

Download the code.

```
git clone https://github.com/spacechain/opensource_server
```

Change the file name.

```
mv opensource_server/ tc-agency/
```

Enter the *tc-agency* folder and create *account-config.py*, which is used to configure the constants used for Docker configuration. Please check your

email with the theme “Docker configuration’” and copy the content in your email.


```
cd tc-agency/
```

Create *account-config.py*

```
vim account_config.py
```

Write the code below to *account-config.py* and complete the configuration.

```
EOYDVGJ = 'agencybcdb444c8f4240a1bc5015d097f4b88f'
# Please check your email
WCTSIGB = 'f32fd265a43e42369afe5dc8a56ec244'
# Please check your email


# Please change the information below to your email address. Please make sure that the POP/IMAP service is activated.
MAIL_SERVER = "smtp.gmail.com"
MAIL_PORT = 465
MAIL_USERNAME = "xxxxx@gmail.com"    # email address
MAIL_PASSWORD = "xxxxx"
# Please enter the app password created in Section 2, Page 18 of this document.
# Please change the address below to your wallet address. All the transaction fees will be credited to this address.
# Wallet address XPUB
FEE_XPUB_BY_TESTNET = 'xxxxx'
# Mainnet wallet address XPUB
```

```
FEE_XPUB = 'xxxxx'


# Connect to MySQL database. Change the ‘0.0.0.0’ to your own IP address.
SQLALCHEMY_DATABASE_URI =
'mysql+pymysql://mysqlaccount:qazwer1122@0.0.0.0:3306/TC'
```

Enter the below command.

```
cd ..
```

Create a Docker image file.

```
docker build -t='tcimage' .
```

Create a Docker container.

```
docker run -idt -p 5000:5000 -p 8099:8099 -p 9090:9090 -p 80:80 -p 21:21 -p
20:20 -p 0.0.0.0:10221:10221 -p 0.0.0.0:10222:10222 --name tcserver
tcimage
```

Administrator registration

Administrative account registration

Enter the link (http://0.0.0.0:8099/auth/register’) to register an administrative account. Please change ‘0.0.0.0’ to your IP address.

Initialize docker server

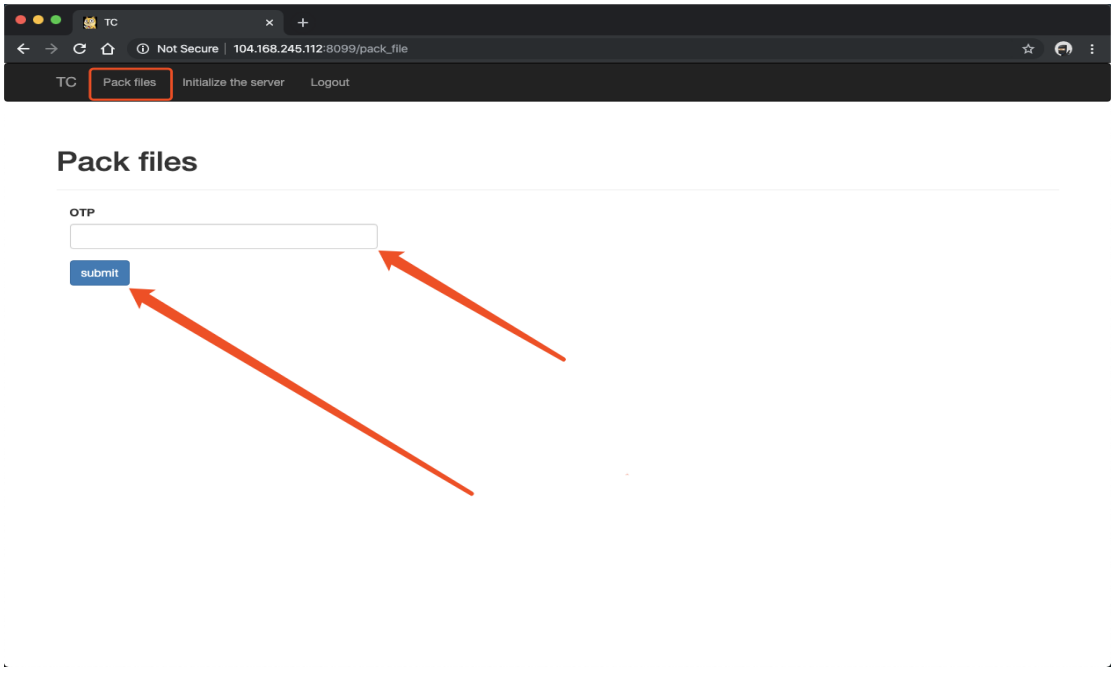
5. Compress the transaction files and send to FTP server

Introduction

All the transaction files are compressed and sent to FTP server. SPC payload will authenticate these transaction files.

Procedures

Enter the below link (http://0.0.0.0:8099/pack_file) to compress the file.
Enter the Google Authenticator OTP and click ‘submit’. Please refer to the document below(https://github.com/spacechain/opensource_otp_app) for OTP generation.



Wait for the authentication from SPC payload.