

1. 安装openssh

win10安装openssh，让cmd命令行支持ssh以远程登录树莓派

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New Version

OpenSSH 8.5p1-1

This is an updated OpenSSH 8.5p1-1 installer for both x86 and x64 binaries. This version includes ssh-sk-helper.exe, cygfoto2-1.dll, and cygcbor-0.dll (which was missing last time) so I hope it provides Yubikey support (I have no way to test that)

The random password that is generated WILL NOT work with Windows Server causing the service to be unable to start - you MUST REPLACE THAT PASSWORD WITH SOMETHING THAT MEETS THE COMPLEXITY REQUIREMENTS OF A SERVER. Frankly, that password should be replaced in all cases...but people tend to be lazy :-)

Version	Windows x86	Windows x64
OpenSSH 8.5p1-1	setupssh-8.5p1-1.exe SHA1=b290544abbfa5725496d5e3de6bc26e52cbf27d9	setupssh-8.5p1-1.exe SHA1=9d27016e2367195ee5b4349f0165f7f12e3633c0
(Optional) Cygwin Source Files	cygwin_source.32.85p1-1.zip SHA1=3e647607ebd382caeb519ee5b4beb4742d191d42	cygwin_source.64.85p1-1.zip SHA1=9d27016e2367195ee5b4349f0165f7f12e3633c0
(Optional) Installer Source Files	installer_source_files.85p1-1.zip SHA1=6a39ab82bf8e61a39e4a0562ce70426d745ce527	

Older Versions

OpenSSH 8.4p1-2

2. ssh登录树莓派

使用ssh登录树莓派，需要获得树莓派的IP地址。win10打开终端，输入命令远程登录树莓派：

```
ssh pi@树莓派ip
```

默认密码为 `raspberrypi`，输入密码登录树莓派：

```
pi@raspberrypi: ~
Microsoft Windows [版本 10.0.19041.985]
(c) Microsoft Corporation. 保留所有权利。

C:\Users\2251>ssh pi@192.168.2.190
The authenticity of host '192.168.2.190 (192.168.2.190)' can't be established.
ECDSA key fingerprint is SHA256:fpE5mAs19Wwk7jc1XHF6copgGZ8U19NGxNODYGjMVX8.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.2.190' (ECDSA) to the list of known hosts.
pi@192.168.2.190's password:
Linux raspberrypi 5.10.17-v7+ #1403 SMP Mon Feb 22 11:29:51 GMT 2021 armv7l

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the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

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permitted by applicable law.
Last login: Wed Jun  2 08:57:49 2021

SSH is enabled and the default password for the 'pi' user has not been changed.
This is a security risk - please login as the 'pi' user and type 'passwd' to set a new password.

pi@raspberrypi:~$
```

2.1 首次登录

登录树莓派需要获得树莓派IP地址，树莓派联网有两种方式：

- 有线：使用网线连接。
- 无线：WiFi

树莓派连上网络之后，可以在路由器后台管理界面查到树莓派的IP地址。

在没有网线和显示器的情况下，这里提供一种简单的方式供使用者第一次登录树莓派：树莓派里预置了一条WiFi连接信息，如下所示：

```
network={
    ssid="wifi"
    psk="25802580"
}
```

`ssid` 为WiF名称，`psk` 为Wif密码，首次登录树莓派时可以用手机开启热点，并将热点名字改为"wifi",密码改为"25802580"，树莓派开机后会自动连上手机热点，然后在手机里面热点连接设备信息里面可以看到树莓派IP，接下来使用上面介绍的方法登录树莓派。

2.2 配置WiFi信息

第一次成功登录树莓派之后，需要配置WiFi信息，供树莓派登录时自动连接。树莓派WiFi配置文件为 `/etc/wpa_supplicant/wpa_supplicant.conf` ,打开这个文件，在里面添加WiFi信息，树莓派开机时会自动连上。添加WiFi信息的格式：

```
network={
    ssid="wifi名字"
    psk="wifi密码"
}
```

预置的wifi信息作用很大，请不要删除！经过实验，5GHz频段的WiFi无法连接，配置WiFi信息时请填写2.4G频段的

2.3 开机推送IP地址

树莓派连上网之后，可以在路由器后台管理界面查看IP地址。也可以固定IP地址，但是固定IP地址会有连接冲突的风险，导致树莓派联网失败。这里配置了开机推送IP地址的功能，推送方式为免费的邮件推送。

使用方法：在树莓派登录成功之后，打开文件 `/home/pi/start/start.py`，将56行代码中的邮箱改成自己的：



```
1
2 if __name__ == '__main__':
3     # LCD.turn_light(0)
4     print("正在开机...")
5     time.sleep(15)
6     smtp('2251513837@qq.com', "IP : " + str(get_host_ip()))
7     LCD.clear_lcd()
8     LCD.print_lcd(3, 0, 'WELCOME!!!')
9     LCD.print_lcd(0, 0, 'Raspberry Pi 3B')
10    time.sleep(3)
11    LCD.clear_lcd()
```

这样再树莓派开机并成功连上网络之后，会给设置的邮箱推送树莓派IP地址，效果如下：



树莓派开机需要一定时间才能连上网络，为了避免在未连接上网络时就执行了邮件推送程序，程序里设置了15s的延迟，树莓派上电15s之后才能收到邮件信息，请耐心等待。

项目文件夹路径为 `/home/pi/BSproject` :

```
├── assets
│   ├── css
│   │   ├── animation.css
│   │   ├── button.css
│   │   ├── login.css
│   │   └── style.css
│   ├── images
│   │   ├── admin.svg
│   │   ├── bg1.png
│   │   ├── bg.png
│   │   ├── bnt.png
│   │   ├── close.svg
│   │   ├── favicon.ico
│   │   ├── login_bg.jpg
│   │   ├── point1.svg
│   │   ├── point2.svg
│   │   ├── point.svg
│   │   └── school_logo.png
│   └── js
│       ├── animation.js
│       ├── axios.min.js
│       ├── echarts.min.js
│       ├── jquery.min.js
│       ├── jsmpg.js
│       ├── run.js
│       └── vue.js
├── common
│   ├── Config.py
│   ├── __init__.py
│   ├── LCD.py
│   ├── Notice.py
│   ├── __pycache__
│   │   ├── Config.cpython-37.pyc
│   │   ├── __init__.cpython-37.pyc
│   │   ├── Notice.cpython-37.pyc
│   │   └── User.cpython-37.pyc
│   └── User.py
├── controller
│   ├── data.py
│   ├── device.py
│   ├── __init__.py
│   ├── __pycache__
│   │   ├── data.cpython-37.pyc
│   │   ├── device.cpython-37.pyc
│   │   └── __init__.cpython-37.pyc
├── main.py
├── model
│   ├── DB.py
│   └── __init__.py
```

```
|   └─ __pycache__
|       └─ DB.cpython-37.pyc
|           └─ __init__.cpython-37.pyc
└─ requirements.txt
└─ run.sh
└─ video
    └─ index.html
    └─ jsmpg.js
    └─ server.py
└─ views
    └─ index.html
    └─ login.html
```

项目根目录下有一启动脚本 `run.sh`，启动云平台系统只需执行启动脚本即可，执行以下命令：

```
./run.sh
```

```
pi@raspberrypi:~/BSproject $ ./run.sh
kill: (2836): No such process
Initializing camera
Initializing websockets server on port 8084
Initializing HTTP server on port 8082
Initializing broadcast thread
Spawning background conversion process
Starting recording
Starting websockets thread
Starting HTTP server thread
Starting broadcast thread
```

没有报错，说明系统正常运行。使用Chrome或新版Edge浏览器，输入地址 `树莓派ip:5000` 打开可看到效果：



管理员用户名: admin 密码: 123456