Skywire

Installation Guide | 安装指南

- English
- 简体中文

v 1.0

Choose Your Device

- Skyminer
- Mac OS
- Linux

简体中文

Skycoin

Preparation

- Please download the node images from the links below:
- The following items are necessary to run Skyminer properly:
  - An assembled Skyminer
  - A computer with Ethernet port
  - An Ethernet cable to connect Skyminer and house router
  - A Micro SD card adapter
- For stable operation of Skywire, we suggest not deploying Skyminer to any type of public networks, including those in the café, on the campus, in the office towers etc.
- When Skyminer nodes run for the first time, it takes them a while to finish the initialization process. Don't switch them off in 5 minutes after power on, otherwise the Micro SD cards need to be flashed again with the images

Skycoin

Download Images

- Please download the node images from the links below:
  - https://downloads2.skycoin.net/skywire-images/manager.tar.gz
  - https://downloads2.skycoin.net/skywire-images/node-1-03.tar.gz
  - https://downloads2.skycoin.net/skywire-images/node-2-04.tar.gz
  - https://downloads2.skycoin.net/skywire-images/node-3-05.tar.gz
  - https://downloads2.skycoin.net/skywire-images/node-4-06.tar.gz
  - https://downloads2.skycoin.net/skywire-images/node-5-07.tar.gz
  - https://downloads2.skycoin.net/skywire-images/node-6-08.tar.gz
  - https://downloads2.skycoin.net/skywire-images/node-7-09.tar.gz
- Unzip the files to .tar files, then unzip them again into folders

Skycoin

Flash Images

- Download Etcher, a image flashing tool from https://etcher.io and install it
- Run Etcher as administrator, then choose the image file in Manager folder and the Micro SD disk connected, and click ‘Flash’
- After flashing successfully, eject the Micro SD and insert it into an Orange Pi in Skyminer
- Repeat this procedure until all the 8 images are flashed into 8 different Micro SD cards

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Power On

- Connect all the nodes to the LAN ports of Skyminer router
- Make sure that all the switches next to Orange Pi and on the socket are OFF
- Connect the power cable, then turn on the socket switch, and wait until all the LEDs on the router go off, which indicates the finish of booting, before carrying out the next step
- Then connect Skyminer WAN port to one of the LAN ports of house router, with LEDs lighting up accordingly
- Turn on the switch of the Skywire Manager node, and wait until its LAN status LED lights up on Skyminer router, before carrying out the next step
- After that, turn on the switches of other nodes one by one, with a recommended interval of 15 seconds between booting any two nodes
- When all the 8 LAN LEDs on Skyminer router goes on, all the nodes have booted up successfully. Now you can unplug the Ethernet cable of a Non-manager node and connect your computer to the vacant port, in order to manage your nodes in the browser.

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Congratulations!

- A Skywire Node has been set up! You can manage it by visiting the following address on your computer (Chrome and Firefox are recommended):
  http://192.168.0.2:8000
- Login with the default password: 1234, then change it and re-login
- A successful installation should look like image 1.1, and you can label each node by clicking the underscore below 'Label'.
- If you click on the 64-character key of the node, it should look like image1.2.

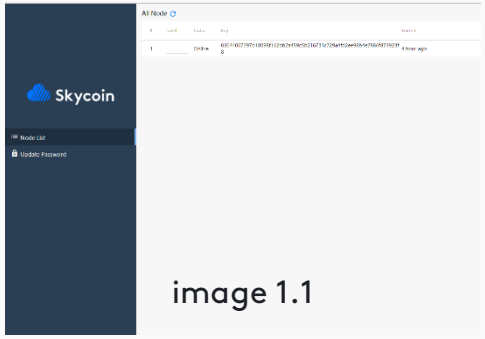

image 1.1

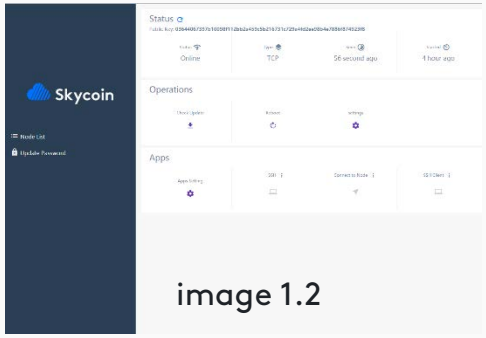

image 1.2

Home

Skycoin

Install dependencies

- Open Terminal in Finder -> Applications -> Utilities
- Paste the following command lines, and press Enter at the end of each line

```
/usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"
brew install node
npm install git
```

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Install Go

- Click and download the installation package of Go:
  https://dl.google.com/go/go1.10.darwin-amd64.pkg
- Open the downloaded file and follow the installation instructions
- Open Terminal again and enter the following command line, then press Enter, then your password and Enter

```
sudo nano ~/.bash_profile
```

- Now you should see a black screen in your terminal. Enter the following lines

```
export GOPATH=$HOME/go
export GOBIN=$HOME/go/bin
```

- Press control + x, then y, then Enter

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Download Skywire

- Paste the following lines into Terminal, and press Enter at the end of each line

```
mkdir -p $GOPATH/src/github.com/skycoin
cd $GOPATH/src/github.com/skycoin
git clone https://github.com/skycoin/skywire.git
cd $GOPATH/src/github.com/skycoin/skywire/cmd
go install ./...
```

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Run Skywire

- Run Skywire Manager and Node by typing the following lines, and press Enter at the end of each line

```
cd $GOPATH/bin

nohup ./manager -web-dir ${GOPATH}/src/github.com/skycoin/skywire/static/skywire-manager > /dev
/null 2>&1 &sleep 3

nohup ./node -connect-manager -manager-address :5998 -manager-web :8000 -discovery-address disc
overy.skycoin.net:5999-034b1cd4ebad163e457fb805b3ba43779958bba49f2c5e1e8b062482904bacdb68  -add
ress :5000 -web-port :6001 > /dev/null 2>&1 &cd /
```

- Wait for 15 seconds

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Congratulations!

- A Skywire Node has been set up! You can manage it by visiting the following address in your browser:

  http://localhost:8000/

- Login with the default password: 1234, then change it and re-login
- A successful installation should look like image 1.1, and you can label each node by clicking the underscore below 'Label'.
- If you click on the 64-character key of the node, it should look like image1.2.

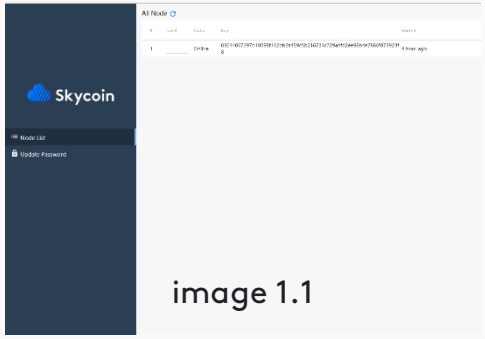

image 1.1

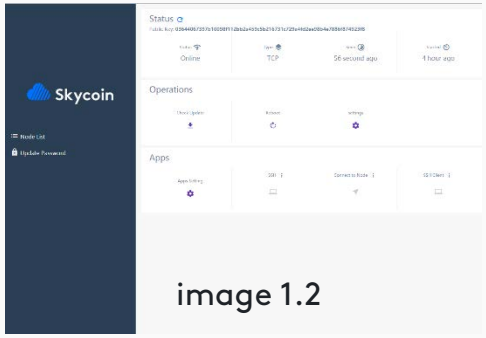

image 1.2

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What If Port in Use?

- If Skywire login page is not shown in your browser, there must be something wrong in the installation process
- If Git Bash prompts the text below, it is telling you that the port for Skywire is already in use. Please check the following instructions to solve this problem

  ```
  ERRO[0001] failed to listen addr(:5000) err listen tcp :5000: bind: address already in use
  ```

- Enter this line in Terminal

  ```
  lsof -i
  ```

- In the result list, find the row with '*:5000 (LISTEN)' as 'Name', and remember the PID on the left, such as: 1234
- Then enter this line in Terminal, with 1234 replaced by correct PID

  ```
  kill 1234
  ```

- Now shut down all the Terminal windows, and 'Run Skywire' again according to the instructions

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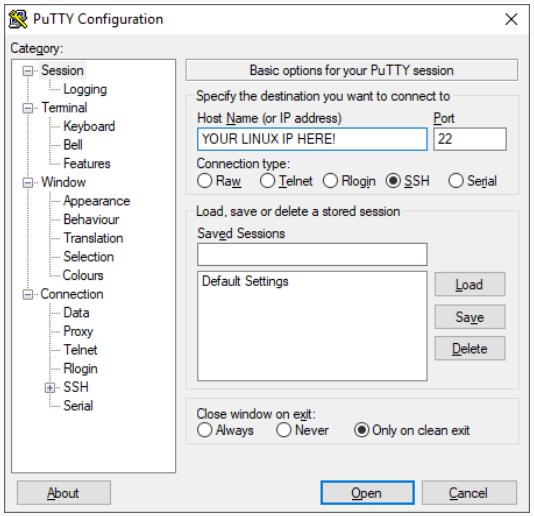
Skycoin

Connect Linux

This page introduces an optional step for those who want to install skywire remotely on their Linux computer or server, otherwise you might skip it

- Run PuTTY and enter the IP address of Linux computer in 'Host name (or IP address)' pane, '22' in 'Port', and 'SSH' in 'Connection type', like image 2.1
- Click 'Open', then click 'Yes' if needed
- Log in your Linux computer in the PuTTY window

image 2.1



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Install dependencies

- Open a terminal
- Paste the following command lines, and press Enter at the end of each line, also press Enter when prompted for a Y/N

```
sudo apt-get update && sudo apt-get upgrade -y
```

```
sudo apt-get install -y curl git mercurial make binutils gcc bzr bison libgmp3-dev screen gcc build-essential
```

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Install Go

- Download Go matching your CPU. The following is for 64-bit Intel or AMD.

```
cd ~
curl –sS https://dl.google.com/go/go1.10.linux-amd64.tar.gz > go$1.10.linux-amd64.tar.gz
tar xvf go1.10.linux-amd64.tar.gz
rm go1.10.linux-amd64.tar.gz
```

  - If it's a 32-bit (x86) processor, please replace the link with:

https://dl.google.com/go/go1.10.linux-386.tar.gz

  - If it's an ARMv8 processor, please replace the link with :

https://dl.google.com/go/go1.10.linux-arm64.tar.gz

- Then install Go with these lines

```
sudo mv go /usr/local/go
sudo ln -s /usr/local/go/bin/go /usr/local/bin/go
sudo ln -s /usr/local/go/bin/godoc /usr/local/bin/godoc
sudo ln -s /usr/local/go/bin/gofmt /usr/local/bin/gofmt
```

- Create Go directories with the following lines

```
mkdir -p $HOME/go/{bin,pkg,src}
```

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Configure Go

- Enter the following commands to open .bashrc with vi editor

```
cd ~
vi .bashrc
```

- Press shift + G, then shift + $, then a, then Enter, after that, paste these lines.

```
export GOROOT=/usr/local/go
export GOPATH=$HOME/go
export GOBIN=$GOPATH/bin
export PATH=$PATH:$GOBIN
```

- Press Esc twice, then type the following characters, then press Enter

```
:wq
```

- Reload the path by running the following command

```
source ~/.bashrc
```

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Install Skywire

- Download skywire with Git, using the following commands

```
mkdir -p $GOPATH/src/github.com/skycoin
cd $GOPATH/src/github.com/skycoin
git clone https://github.com/skycoin/skywire.git
```

- Build binaries for Skywire, using the following commands

```
cd $GOPATH/src/github.com/skycoin/skywire/cmd
go install ./...
```

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Skycoin

Run Skywire

- Run Skywire Manager and Node by typing the following lines, and press Enter at the end of each line

```
cd $GOPATH/bin

nohup ./manager -web-dir ${GOPATH}/src/github.com/skycoin/skywire/static/skywire-manager > /dev
/null 2>&1 &sleep 3

nohup ./node -connect-manager -manager-address :5998 -manager-web :8000 -discovery-address disc
overy.skycoin.net:5999-034b1cd4ebad163e457fb805b3ba43779958bba49f2c5e1e8b062482904bacdb68  -add
ress :5000 -web-port :6001 > /dev/null 2>&1 &cd /
```

- Wait for 15 seconds

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Congratulations!

- A Skywire Node has been set up! You can manage it by typing the IP address of Linux computer and port :8000 in your browser, for example:

  http://localhost:8000/ or http://(Your.Linux.IP.Address):8000/

- Login with the default password: 1234, then change it and re-login
- A successful installation should look like image 1.1, and you can label each node by clicking the underscore below 'Label'.
- If you click on the 64-character key of the node, it should look like image1.2.

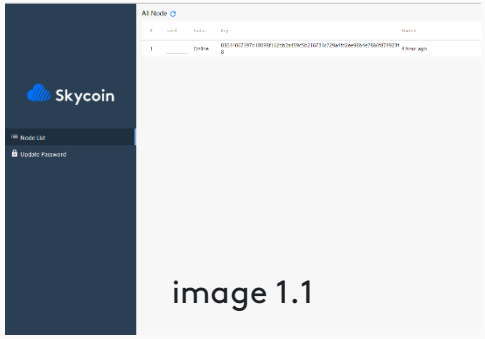

image 1.1

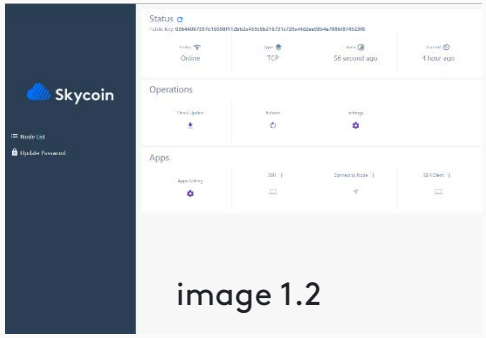

image 1.2

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What If Port in Use?

- If Skywire login page is not shown in your browser, there must be something wrong in the installation process
- If Git Bash prompts the text below, it is telling you that the port for Skywire is already in use. Please check the following instructions to solve this problem

  ```
  ERRO[0001] failed to listen addr(:5000) err listen tcp :5000: bind: address already in use
  ```

- Enter this line in Terminal

  ```
  lsof -i tcp -P -s TCP:listen
  ```

- In the result list, find the row with '*:5000 (LISTEN)' as 'Name', and remember the PID on the left, such as: 1234
- Then enter this line in Terminal, with 1234 replaced by correct PID

  ```
  kill 1234
  ```

- Now shut down all the Terminal windows, and 'Run Skywire' again according to the instructions

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Skycoin

选择您的设备类型

- Skyminer
- Mac OS
- Linux

English

Skycoin

准备工作

- 为了让Skyminer正常运行，需要准备以下材料：
  - 一台组装完成的Skyminer
  - 一台拥有网线接口的电脑
  - 一条连接Skyminer与家庭路由器的网线
  - 一个Micro SD卡读卡器
- 为了保证Skywire的稳定工作，我们不建议将Skyminer部署在各类公共场所的网络中，例如咖啡馆、校园、办公楼宇等
- Skyminer的节点首次开机需要较长的时间进行初始化，在通电后5分钟内切勿中断电源，否则就需要重新将镜像刷入Micro SD卡

返回主菜单

Skycoin

下载镜像

- 请在电脑上通过以下链接，下载8个节点的镜像文件：
  https://downloads2.skycoin.net/skywire-images/manager.tar.gz
  https://downloads2.skycoin.net/skywire-images/node-1-03.tar.gz
  https://downloads2.skycoin.net/skywire-images/node-2-04.tar.gz
  https://downloads2.skycoin.net/skywire-images/node-3-05.tar.gz
  https://downloads2.skycoin.net/skywire-images/node-4-06.tar.gz
  https://downloads2.skycoin.net/skywire-images/node-5-07.tar.gz
  https://downloads2.skycoin.net/skywire-images/node-6-08.tar.gz
  https://downloads2.skycoin.net/skywire-images/node-7-09.tar.gz
- 将压缩文件解压为.tar文件，并再次解压为文件夹

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刷入镜像

- 在https://etcher.io上下载镜像刷写工具Etcher，并在电脑上进行安装
- 以管理员身份运行Etcher，选中Manager文件夹中的镜像文件，以及电脑上的Micro SD卡，点击“Flash”
- 完成后将Micro SD卡拔出，插入矿机的Orange Pi Prime中
- 重复这个流程，直到8个不同的镜像文件分别刷入8张Micro SD卡

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Skycoin

上电启动

- 使用网线将所有的Orange Pi连接到Skyminer路由器的LAN端口上
- 确保所有Orange Pi的电源开关和插座开关都处于关闭状态
- 连接电源线并打开插座上的开关，并等待Skyminer路由器面板上的LED灯全部熄灭，即路由器启动完成之后，再进行下一步操作
- 使用网线连接Skyminer路由器的WAN端口和家庭路由器的LAN端口，相应指示灯会被点亮
- 打开运行Manager的节点的Orange Pi电源开关，等待Skyminer路由器上相应LAN端口指示灯被点亮之后，再进行下一步操作
- 逐步打开其他Orange Pi的电源开关，建议每次间隔15秒再开启下一个节点
- 直到所有Skyminer路由器上所有LAN端口指示灯都被点亮，说明节点全部启动完成；此时可以拔掉一个非Manager节点的网线，将电脑连接到空出的路由器端口上，以管理您的节点

返回主菜单

Skycoin

大功告成!

- 恭喜您成功创建“Skywire节点”！您可以通过Chrome或火狐浏览器访问以下地址，管理您的节点:

  http://192.168.0.2:8000/

- 默认的密码为: 1234，登录后请更换新的密码，并再次登陆
- 成功安装并登陆后，界面如图1.1所示。您可以在点击“Label”一栏的下划线，编辑节点的名称
- 点击64个字符的“Key”，可以进入节点设置界面，如图1.2所示

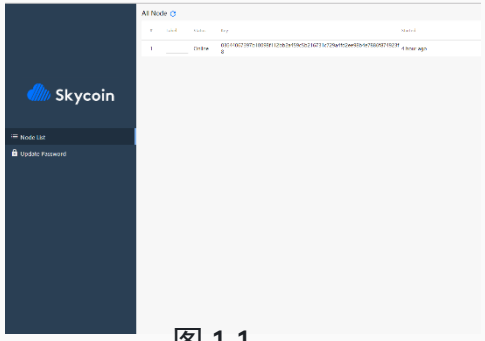

图 1.1

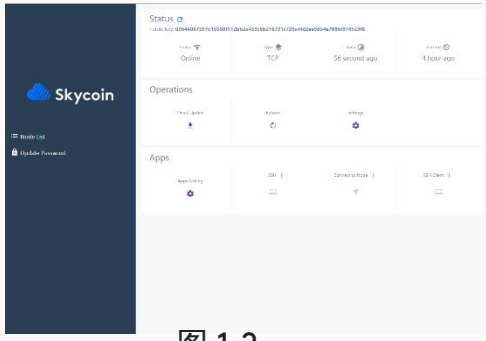

图 1.2

返回主菜单

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安装必备程序

- 在Finder->应用程序->实用工具中找到“终端”，双击打开
- 将以下三行命令逐行复制到“终端”窗口中，并在每行的结尾按回车键

```
/usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"
brew install node
npm install git
```

返回主菜单

Skycoin

安装Go语言

- 选择一个链接，下载Go语言的安装包:
  地址1：https://dl.google.com/go/go1.10.darwin-amd64.pkg
  地址2：https://www.golangtc.com/static/go/1.9.2/go1.9.2.darwin-amd64.pkg
- 打开下载后的文件，并按照提示进行安装
- 再次打开“终端”，输入以下命令行并按回车键，之后输入您的密码并按回车键

```
sudo nano ~/.bash_profile
```

- 当 “终端”窗口变成一片黑色时，逐行输入以下命令，并按回车键

```
export GOPATH=$HOME/go
export GOBIN=$HOME/go/bin
```

- 依次按下 control + x、y、回车键

返回主菜单

Skycoin

下载Skywire

- 将下列命令行复制到“终端”窗口中，并在每一行的末尾按回车键

```
mkdir -p $GOPATH/src/github.com/skycoin
cd $GOPATH/src/github.com/skycoin
git clone https://github.com/skycoin/skywire.git
cd $GOPATH/src/github.com/skycoin/skywire/cmd
go install ./...
```

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启动Skywire

- 在“终端”中键入以下命令行，以启动“Skywire管家”和“Skywire节点”

```
cd $GOPATH/bin

nohup ./manager -web-dir ${GOPATH}/src/github.com/skycoin/skywire/static/skywire-manager > /dev
/null 2>&1 &sleep 3

nohup ./node -connect-manager -manager-address :5998 -manager-web :8000 -discovery-address disc
overy.skycoin.net:5999-034b1cd4ebad163e457fb805b3ba43779958bba49f2c5e1e8b062482904bacdb68  -add
ress :5000 -web-port :6001 > /dev/null 2>&1 &cd /
```

- 等待约15秒

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Skycoin

大功告成!

- 恭喜您成功创建“Skywire节点”！您可以使用浏览器访问以下地址管理您的节点:
  http://localhost:8000/
- 默认的密码为: 1234，登录后请更换新的密码，并再次登陆
- 成功安装并登陆后，界面如图1.1所示。您可以在点击“Label”一栏的下划线，编辑节点的名称
- 点击64个字符的“Key”，可以进入节点设置界面，如图1.2所示

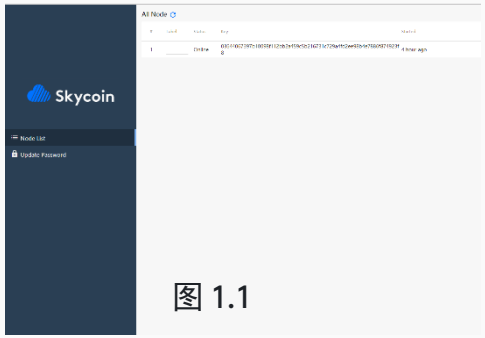

图 1.1

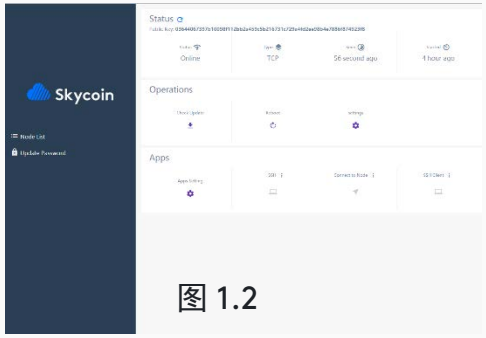

图 1.2

返回主菜单

Skycoin

端口占用的解决

- 如果您没能在浏览器中看到Skywire的登陆界面，那么可能是安装出现了问题
- 当你在“终端”中看到类似下列语句的内容时，说明问题的原因是端口正在被占用，请按后续步骤解决问题

```
ERRO[0001] failed to listen addr(:5000) err listen tcp :5000: bind: address already in use
```

- 在“终端”中输入下列命令

```
lsof -i
```

- 在弹出的列表中，找到Name为“*:5000 (LISTEN)”的那一行，并记下左侧的PID编号，如：1234
- 将下列命令中的1234替换成相应的PID编号，并输入“终端”

```
kill 1234
```

- 关闭所有“终端”窗口，并回到“启动Skywire”页面再次进行相应操作

返回主菜单

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连接到Linux

此步骤介绍的是如何通过网络连接，将Skywire远程安装到Linux系统的电脑或服务器上，如果您是直接在Linux电脑上进行操作，请跳过本页

- 启动PuTTY，并在“Host name (or IP address)”框中输入您Linux电脑的IP地址，“Port”框保留默认的“22”，“Connection Type”选择“SSH”，如图2.1所示
- 点击“Open”，并在弹出的提示框中点击“是”
- 在PuTTY窗口中登录您的Linux电脑

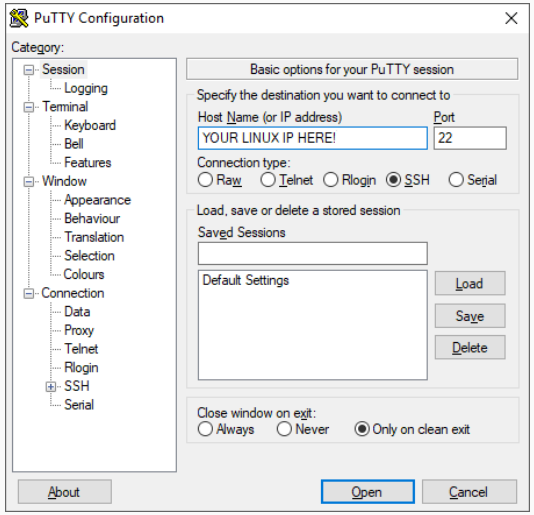

图 2.1

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配置安装环境

- 打开“Terminal”
- 将以下两行命令逐行复制到“终端”窗口中，并在每行的结尾按回车键，当弹出Y/N提示时也按下回车键

```
sudo apt-get update && sudo apt-get upgrade -y
```

```
sudo apt-get install -y curl git mercurial make binutils gcc bzr bison libgmp3-dev screen gcc build-essential
```

返回主菜单

Skycoin

安装Go语言

- 下载与您的处理器对应的Go语言安装包，以下代码适用于64位英特尔或AMD处理器

```
cd ~
curl -sS https://dl.google.com/go/go1.10.linux-amd64.tar.gz > go$1.10.linux-amd64.tar.gz
tar xvf go1.10.linux-amd64.tar.gz
rm go1.10.linux-amd64.tar.gz
```

  - 如果您使用的是32位处理器，请使用以下链接替代上文命令行中的地址：

  https://dl.google.com/go/go1.10.linux-386.tar.gz

  - 如果您使用的是ARMv8架构处理器，请使用以下链接替代上文命令行中的地址：

  https://dl.google.com/go/go1.10.linux-arm64.tar.gz

- 键入下列代码进行安装

```
sudo mv go /usr/local/go
sudo ln -s /usr/local/go/bin/go /usr/local/bin/go
sudo ln -s /usr/local/go/bin/godoc /usr/local/bin/godoc
sudo ln -s /usr/local/go/bin/gofmt /usr/local/bin/gofmt
```

- 键入下列代码创建Go目录

```
mkdir -p $HOME/go/{bin,pkg,src}
```

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配置Go语言

- 输入以下命令行，使用vi编辑器打开.bashrc文件

```
cd ~
vi .bashrc
```

- 依次按下shift + G、shift + $、a、回车键, 之后将下列文本一起粘贴进去

```
export GOROOT=/usr/local/go
export GOPATH=$HOME/go
export GOBIN=$GOPATH/bin
export PATH=$PATH:$GOBIN
```

- 连续按下Esc键两次，之后输入下列命令行，并按回车键

```
:wq
```

- 运行下面命令以重新载入路径

```
source ~/.bashrc
```

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安装Skywire

- 键入下列命令行，使用Git语句下载Skywire

```
mkdir -p $GOPATH/src/github.com/skycoin
cd $GOPATH/src/github.com/skycoin
git clone https://github.com/skycoin/skywire.git
```

- 键入下列命令行，建立Skywire的二进制文件并完成安装

```
cd $GOPATH/src/github.com/skycoin/skywire/cmd
go install ./...
```

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启动Skywire

- 键入以下命令行中，以启动“Skywire管家”和“Skywire节点”

```
cd $GOPATH/bin

nohup ./manager -web-dir ${GOPATH}/src/github.com/skycoin/skywire/static/skywire-manager > /dev
/null 2>&1 &sleep 3

nohup ./node -connect-manager -manager-address :5998 -manager-web :8000 -discovery-address disc
overy.skycoin.net:5999-034b1cd4ebad163e457fb805b3ba43779958bba49f2c5e1e8b062482904bacdb68  -add
ress :5000 -web-port :6001 > /dev/null 2>&1 &cd /
```

- 等待约15秒

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大功告成!

- 恭喜您成功创建“Skywire节点”！您可以使用浏览器访问Linux电脑IP地址的8000端口来管理您的节点，例如：

  http://localhost:8000/或 http://(你的Linux电脑IP地址):8000

- 默认的密码为: 1234，登录后请更换新的密码，并再次登陆
- 成功安装并登陆后，界面如图1.1所示。您可以在点击“Label”一栏的下划线，编辑节点的名称
- 点击64个字符的“Key”，可以进入节点设置界面，如图1.2所示

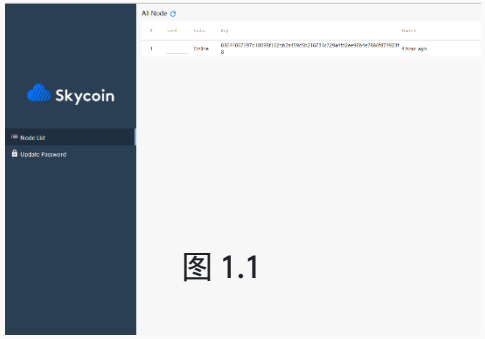

图 1.1

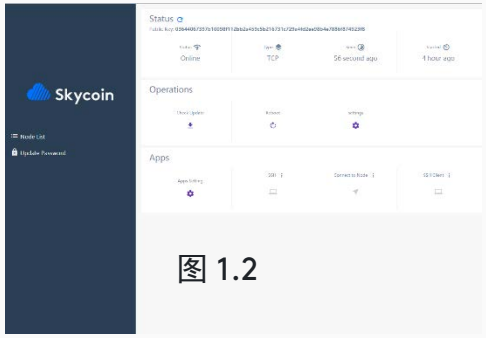

图 1.2

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端口占用的解决

- 如果您没能在浏览器中看到Skywire的登陆界面，那么可能是安装出现了问题
- 当你在“Terminal”或类似窗口中看到类似下列语句的内容时，说明问题的原因是端口正在被占用，请按后续步骤解决问题

  ```
  ERRO[0001] failed to listen addr(:5000) err listen tcp :5000: bind: address already in use
  ```

- 输入下列命令

  ```
  lsof -i
  ```

- 在弹出的列表中，找到Name为“*:5000 (LISTEN)”的那一行，并记下左侧的PID编号，如：1234
- 将下列命令中的1234替换成相应的PID编号，并输入

  ```
  kill 1234
  ```

- 关闭所有窗口，并回到“启动Skywire”页面再次进行相应操作

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