# 从头学Python程序化交易

Version 0.1

2017.4.22

[从头学Python程序化交易 1](#_Toc18371)

[Python进阶 2](#_Toc8644)

[基本python介绍 2](#_Toc18950)

[Python集成环境 2](#_Toc27362)

[Anaconda系统安装 3](#_Toc17941)

[Notebook远程系统安装 3](#_Toc6933)

[Notebook多用户版本jupyterHub 3](#_Toc18550)

[阿里云10.1版本FreeBSD升级到11.0版本 10](#_Toc23200)

[微博登陆认证： 34](#_Toc14061)

[现在再次调试jupyterhub 服务 34](#_Toc1177)

[FreeBSD升级到11.0后添加用户失败 35](#_Toc25358)

[Jupyterhub 8000端口不能使用错误 36](#_Toc25523)

[Jupyterhub 8081端口被占用问题 37](#_Toc30316)

[Jupyterhub 配置问题 38](#_Toc1591)

[Jupyterhub的Nginx代理配置 39](#_Toc11557)

[安装科学计算包 40](#_Toc27358)

[Notebook无法运行代码 40](#_Toc14808)

[500Error 42](#_Toc5486)

[安装ta-lib 42](#_Toc17995)

[RQalpha测试框架 46](#_Toc20807)

[VNpy交易框架 46](#_Toc24140)

[Python金融科学计算包 46](#_Toc22846)

[安装matplotlib 48](#_Toc16020)

[安装scipy 53](#_Toc6014)

[安装sympy成功 56](#_Toc4014)

[安装tushare 56](#_Toc1350)

[现在的工作 59](#_Toc5428)

[解决程序化几个问题： 60](#_Toc12731)

[1 信息获取 60](#_Toc23522)

[1 Tushare框架 60](#_Toc28714)

[2 Ricequant 60](#_Toc1356)

[3 RQalpha 60](#_Toc29031)

[4 Wind程序化插件 60](#_Toc1597)

[Quandl 61](#_Toc26935)

[2 信息处理 62](#_Toc5380)

[3 信息输出 62](#_Toc10206)

[4 程序化交易 62](#_Toc12093)

[程序化交易系统实例 62](#_Toc4426)

[Wind资讯量化交易系统 62](#_Toc6874)

[2 开始使用 66](#_Toc26228)

[Wind几个查询函数简单学习： 72](#_Toc9335)

[3 股票模拟交易 73](#_Toc15085)

[4 期货交易 73](#_Toc11578)

[数据挖掘与算法 73](#_Toc32694)

[基本数据操作： 73](#_Toc27856)

[从日收益到月收益： 73](#_Toc5572)

[附录： 73](#_Toc12366)

[环境相关文档链接 74](#_Toc11762)

[Jupyter FreeBSD案例！ 75](#_Toc25840)

[2017.3.11 更新freebsd10.1到11.0-release-p8记录 83](#_Toc10536)

[Nginx代理 90](#_Toc30231)

[【个人版】Wind量化接口个人版使用和权限说明 91](#_Toc761)

[Wind插件python接口手册 98](#_Toc32756)

[接口规范 98](#_Toc25105)

[函数说明 102](#_Toc9405)

[交易函数 111](#_Toc1315)

[日期函数 119](#_Toc99)

[Talib简介 121](#_Toc14393)

[苹果端brew安装！ 121](#_Toc22307)

[海龟turtle模型 121](#_Toc7572)

[Rqalpha支持Facebook的 122](#_Toc15716)

[RQalpha苹果上面输出是英文 122](#_Toc11902)

[ricequant支持基金回测吗 122](#_Toc11199)

[报错集锦 122](#_Toc15294)

[Tesseract安装 123](#_Toc18478)

[名词解析 123](#_Toc12936)

[Zmq 123](#_Toc13737)

# Python进阶

## 基本python介绍

## Python集成环境

### Anaconda系统安装

直接到网站下载、安装。支持windows和苹果系统。

清华大学有Anaconda镜像网站：

https://mirror.tuna.tsinghua.edu.cn/help/anaconda/

Anaconda 镜像使用帮助

Anaconda 是一个用于科学计算的 Python 发行版，支持 Linux, Mac, Windows, 包含了众多流行的科学计算、数据分析的 Python 包。

Anaconda 安装包可以到 https://mirrors.tuna.tsinghua.edu.cn/anaconda/archive/ 下载。

TUNA 还提供了 Anaconda 仓库的镜像，运行以下命令:

conda config --add channels https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/free/

conda config --set show\_channel\_urls yes

即可添加 Anaconda Python 免费仓库。

运行 conda install numpy 测试一下吧。

### Notebook远程系统安装

### Notebook多用户版本jupyterHub

Notebook可以远程使用，但是只能一个人用。如果想多个人，推荐使用jupyter hub 。

它是由三部分组成的：

Three subsystems make up JupyterHub:

a multi-user Hub (tornado process)

a configurable http proxy (node-http-proxy)

multiple single-user Jupyter notebook servers(Python/IPython/tornado)

一个多用户hub，用的tornado

一个可管理的http代理

一个多倍的个人jupyter notebook

jupyterHub的安装：

安装参考这个文档：

<https://github.com/jupyterhub/jupyterhub/wiki/Installation-of-Jupyterhub-on-remote-server>

安装需求：

Python3.3以上版本

nodejs/npm

Install nodejs/npm, using your operating system’s package manager. For example, install on Linux (Debian/Ubuntu) using:

sudo apt-get install npm nodejs-legacy

(The nodejs-legacy package installs the node executable and is currently required for npm to work on Debian/Ubuntu.)

TLS certificate and key for HTTPS communication

Domain name

Before running the single-user notebook servers (which may be on the same system as the Hub or not):

Jupyter Notebook version 4 or greater

Nodejs/npm

可以使用系统安装包来安装，比如在linux下，可以用apt-get

sudo apt-get install npm nodejs-legacy

在freebsd下，应该是pkg install nodejs-legacy

TLS认证和key，以便HTTPS 通讯

域名

Jupyter Notebook 版本4以上 。

好了，我们先去FreeBSD系统下，安装这些东西去吧！

首先在FreeBSD下安装Nodejs/npm，但是出师不利，显示

libpkg.so.4

Installed packages to be UPGRADED:

pkg: 1.5.6 -> 1.10.0\_2

The process will require 711 KiB more space.

3 MiB to be downloaded.

Proceed with this action? [y/N]: y

Fetching pkg-1.10.0\_2.txz: 100% 3 MiB 328.4kB/s 00:08

Checking integrity... done (0 conflicting)

[1/1] Upgrading pkg from 1.5.6 to 1.10.0\_2...

[1/1] Extracting pkg-1.10.0\_2: 100%

/usr/local/lib/libpkg.so.4: Undefined symbol "openat"

通过网络搜索，发现是freebsd 10.1,10.2过了维护期导致的问题，网上的解决方法有2个：

1 用pkg-static

2 更新freebsd咯

于是先用pkg-static，但是好像没有nodejs/npm 。没有nodejs-legacy 。Ports里压根就没有 。

让我们先来看看，nodejs-legacy是个什么东西

让机器先ports安装pkg试试。

pkg-static: warning: database version 34 is newer than libpkg(3) version 31, but still compatible

pkg-static: sqlite error while executing INSERT OR ROLLBACK INTO pkg\_search(id, name, origin) VALUES (?1, ?2 || '-' || ?3, ?4); in file pkgdb.c:1542: no such table: pkg\_search

\*\*\* Error code 74

Stop.

make[1]: stopped in /usr/ports/ports-mgmt/pkg

\*\*\* Error code 1

Stop.

make: stopped in /usr/ports/ports-mgmt/pkg

后来发现，nodejs-legacy 不就是node吗？ FreeBSD里面是有node的呀！

于是直接pkg-static install node

New packages to be INSTALLED:

node: 7.7.1

c-ares: 1.12.0

libuv: 1.11.0

icu: 58.2,1

Number of packages to be installed: 4

The process will require 65 MiB more space.

14 MiB to be downloaded.

Proceed with this action? [y/N]: y

[1/4] node-7.7.1.txz : 100% 5 MiB 90.1kB/s 01:00

[2/4] c-ares-1.12.0.txz : 100% 120 KiB 122.8kB/s 00:01

[3/4] libuv-1.11.0.txz : 100% 87 KiB 89.1kB/s 00:01

[4/4] icu-58.2,1.txz : 100% 9 MiB 73.7kB/s 02:07

Checking integrity... done (0 conflicting)

[1/4] Installing c-ares-1.12.0...

[1/4] Extracting c-ares-1.12.0: 100%

[2/4] Installing libuv-1.11.0...

[2/4] Extracting libuv-1.11.0: 100%

[3/4] Installing icu-58.2,1...

[3/4] Extracting icu-58.2,1: 100%

[4/4] Installing node-7.7.1...

Extracting node-7.7.1: 100%

Message from node-7.7.1:

Note: If you need npm (Node Package Manager), please install www/npm.

安装完成！

按照提示，安装npm：

root@iZ25alqsdzzZ:~ # pkg-static install www/npm

Updating FreeBSD repository catalogue...

FreeBSD repository is up to date.

All repositories are up to date.

The following 2 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

npm: 4.1.2

gmake: 4.2.1\_1

Number of packages to be installed: 2

The process will require 13 MiB more space.

3 MiB to be downloaded.

Proceed with this action? [y/N]: y

[1/2] npm-4.1.2.txz : 100% 2 MiB 208.4kB/s 00:11

[2/2] gmake-4.2.1\_1.txz : 100% 378 KiB 96.8kB/s 00:04

Checking integrity... done (0 conflicting)

[1/2] Installing gmake-4.2.1\_1...

[1/2] Extracting gmake-4.2.1\_1: 100%

[2/2] Installing npm-4.1.2...

Extracting npm-4.1.2: 100%

好，下面准备安装相关程序了，

先portsnap一下：

|  |  |
| --- | --- |
| 3 | portsnap fetch extract |

Pkg update是没法了

root@iZ25alqsdzzZ:~ # pkg update

/usr/local/lib/libpkg.so.4: Undefined symbol "openat"

root@iZ25alqsdzzZ:~ # portsnap fetch extract

Looking up portsnap.hshh.org mirrors... 6 mirrors found.

Fetching snapshot tag from ec2-ap-northeast-1.portsnap.freebsd.org... done.

Fetching snapshot metadata... done.

Updating from Tue Jul 7 22:58:33 CST 2015 to Fri Mar 10 21:12:02 CST 2017.

Fetching 4 metadata patches... done.

Applying metadata patches... done.

Fetching 6 metadata files...

看看，已经2年没有管过它了，FreeBSD就是这样！

安装Python！

|  |  |
| --- | --- |
| 1  2 | pkg install python34  ln /usr/local/bin/python3.4 /usr/local/bin/python |

我这边直接安装python3.6

root@iZ25alqsdzzZ:~ # pkg-static install python36

Updating FreeBSD repository catalogue...

FreeBSD repository is up to date.

All repositories are up to date.

The following 1 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

python36: 3.6.0

Number of packages to be installed: 1

The process will require 100 MiB more space.

15 MiB to be downloaded.

Proceed with this action? [y/N]: y

[1/1] python36-3.6.0.txz : 100% 15 MiB 220.9kB/s 01:09

Checking integrity... done (0 conflicting)

[1/1] Installing python36-3.6.0...

Extracting python36-3.6.0: 100%

Message from python36-3.6.0:

===========================================================================

Note that some standard Python modules are provided as separate ports

as they require additional dependencies. They are available as:

py36-gdbm databases/py36-gdbm

py36-sqlite3 databases/py36-sqlite3

py36-tkinter x11-toolkits/py36-tkinter

Ok完成！

下面就开始安装jupyter了

****3. Install Jupyter**** [[^top]](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "tableofcontents)  
pyzmq the Python bindings for [ZeroMQ](http://zeromq.org/" \t "http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/_blank) must be installed before jupyter.

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9 | #for Python 3.4:  cd /usr/ports/net/py-pyzmq  make PYTHON\_VERSION=python3.4 install clean    #for Python 2.7 simply run:  pkg install py-pyzmq    #after pyzmq is installed successfully run:  pip install jupyter |

This whole installation shouldn’t take more than a few minutes. Before I figured out how to install these quickly, I went down the route of installing jupyter from BSD ports and it took a very long time!

上面pyzmq使用的ports安装，因为要设置python版本！

root@iZ25alqsdzzZ:~ # whereis py-pyzmq

py-pyzmq: /usr/ports/net/py-pyzmq

root@iZ25alqsdzzZ:~ # cd /usr/ports/net/py-pyzmq

root@iZ25alqsdzzZ:/usr/ports/net/py-pyzmq # make PYTHON\_VERSION=python3.6 install clean

make[1]: chdir /usr/ports/lang/python36: No such file or directory

make: "/usr/ports/Mk/Uses/python.mk" line 385: warning: "make -V PORTVERSION -C /usr/ports/lang/python36" returned non-zero status

===> License LGPL3 accepted by the user

===> py36-pyzmq-14.6.0\_1 depends on file: /usr/local/sbin/pkg - found

=> pyzmq-14.6.0.tar.gz doesn't seem to exist in /usr/ports/distfiles/.

make[2]: chdir /usr/ports/lang/python36: No such file or directory

make[1]: "/usr/ports/Mk/Uses/python.mk" line 385: warning: "make -V PORTVERSION -C /usr/ports/lang/python36" returned non-zero status

=> Attempting to fetch ftp://ftp.freebsdchina.org/pub/FreeBSD/ports/distfiles/pyzmq-14.6.0.tar.gz

===> Fetching all distfiles required by py36-pyzmq-14.6.0\_1 for building

===> Extracting for py36-pyzmq-14.6.0\_1

=> SHA256 Checksum OK for pyzmq-14.6.0.tar.gz.

===> Patching for py36-pyzmq-14.6.0\_1

Error a dependency refers to a non existing origin: /usr/ports/devel/py-setuptools36 in BUILD\_DEPENDS

\*\*\* Error code 1

Stop.

make: stopped in /usr/ports/net/py-pyzmq

root@iZ25alqsdzzZ:/usr/ports/net/py-pyzmq # pkg-static install py-setuptools36

Updating FreeBSD repository catalogue...

FreeBSD repository is up to date.

All repositories are up to date.

pkg-static: No packages available to install matching 'py-setuptools36' have been found in the repositories

root@iZ25alqsdzzZ:/usr/ports/net/py-pyzmq # pkg-static install devel/py-setuptools36

Updating FreeBSD repository catalogue...

FreeBSD repository is up to date.

All repositories are up to date.

The following 1 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

py36-setuptools36: 32.1.0

Number of packages to be installed: 1

The process will require 3 MiB more space.

461 KiB to be downloaded.

Proceed with this action? [y/N]: y

[1/1] py36-setuptools36-32.1.0.txz : 100% 461 KiB 157.3kB/s 00:03

Checking integrity... done (0 conflicting)

[1/1] Installing py36-setuptools36-32.1.0...

Extracting py36-setuptools36-32.1.0: 100%

Message from py36-setuptools36-32.1.0:

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Only /usr/local/bin/easy\_install-3.6 script has been installed

since Python 3.6 is not the default Python version.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 阿里云10.1版本FreeBSD升级到11.0版本

因为10.1版本FreeBSD的pkg挂了，后面就花精力把FreeBSD从10.1升级到10.3再升级到11.0 ，具体过程见后面章节介绍。现在准备在freebsd下重新安装jupyterhub！

root@rich:~ # pkg update

pkg: Warning: Major OS version upgrade detected. Running "pkg-static install -f pkg" recommended

Updating FreeBSD repository catalogue...

FreeBSD repository is up to date.

All repositories are up to date.

root@rich:~ # pkg-static install -f pkg

pkg-static: Warning: Major OS version upgrade detected. Running "pkg-static install -f pkg" recommended

Updating FreeBSD repository catalogue...

FreeBSD repository is up to date.

All repositories are up to date.

The following 1 package(s) will be affected (of 0 checked):

Installed packages to be DOWNGRADED:

pkg: 1.10.0\_2 -> 1.9.4\_1

Number of packages to be downgraded: 1

3 MiB to be downloaded.

Proceed with this action? [y/N]: y

[1/1] pkg-1.9.4\_1.txz : 100% 3 MiB 180.1kB/s 00:16

Checking integrity... done (0 conflicting)

[1/1] Downgrading pkg from 1.10.0\_2 to 1.9.4\_1...

Extracting pkg-1.9.4\_1: 100%

不明白为什么从1.10到1.9...程序员的思维我们凡人是不懂的。不管怎么说，把pkg更新到能用了，继续

root@rich:~ # pkg update

Updating FreeBSD repository catalogue...

pkg: Unable to downgrade "FreeBSD" repo schema version 2014 (target version 2013) -- change not found

pkg: need to re-create repo FreeBSD to upgrade schema version

Fetching meta.txz: 100% 944 B 0.9kB/s 00:01

Fetching packagesite.txz: 100% 6 MiB 190.5kB/s 00:31

Processing entries: 100%

FreeBSD repository update completed. 25859 packages processed.

metadata

更新的还算快，后面更新portsnap就不快了，

portsnap fetch extract

不过作者使用phttpget，有效解决了portsnap都是小文件下载慢的问题！

现在过了一会儿了，还没弄好

晚上让机器继续干活，也不知道它干到几点，早晨起来，再来一次：  
 /usr/sbin/portsnap fetch extract

很快就完成了，证明它晚上确实把活干好了。看到done字眼，好开心！

/usr/ports/x11/zenity/

Building new INDEX files... done.

安装nano

pkg install nano

先看看以前有没有安装nano

root@rich:~/temp # pkg info nano

pkg: No package(s) matching nano

root@rich:~/temp #

由于前面把pkg库删除，pkg upgrade了，所以什么信息都没了。

开始安装nano：

root@rich:~/temp # pkg info nano

pkg: No package(s) matching nano

root@rich:~/temp # pkg install nano

Updating FreeBSD repository catalogue...

Fetching meta.txz: 100% 944 B 0.9kB/s 00:01

Fetching packagesite.txz: 100% 6 MiB 421.8kB/s 00:14

Processing entries: 100%

FreeBSD repository update completed. 25859 packages processed.

The following 3 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

nano: 2.7.3

indexinfo: 0.2.6

gettext-runtime: 0.19.8.1\_1

Number of packages to be installed: 3

The process will require 3 MiB more space.

573 KiB to be downloaded.

Proceed with this action? [y/N]:

Fetching nano-2.7.3.txz: 100% 421 KiB 107.7kB/s 00:04

Fetching indexinfo-0.2.6.txz: 100% 5 KiB 5.3kB/s 00:01

Fetching gettext-runtime-0.19.8.1\_1.txz: 100% 148 KiB 151.1kB/s 00:01

Checking integrity... done (0 conflicting)

[1/3] Installing indexinfo-0.2.6...

[1/3] Extracting indexinfo-0.2.6: 100%

[2/3] Installing gettext-runtime-0.19.8.1\_1...

[2/3] Extracting gettext-runtime-0.19.8.1\_1: 100%

[3/3] Installing nano-2.7.3...

[3/3] Extracting nano-2.7.3: 100%

root@rich:~/temp #

安装完才知道nano是一个编辑器，这个我不需要啊！

然后安装

pkg install python34

ln /usr/local/bin/python3.4 /usr/local/bin/python

这个我已经安装过python36了，也建立了一个链接：

ln /usr/local/bin/python3.6 /usr/local/bin/python

发现wget和curl都没有，于是安装两个包：

root@rich:~ # pkg install wget

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 2 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

wget: 1.18\_2

libidn: 1.33\_1

Number of packages to be installed: 2

The process will require 4 MiB more space.

781 KiB to be downloaded.

Proceed with this action? [y/N]: y

Fetching wget-1.18\_2.txz: 100% 578 KiB 148.0kB/s 00:04

Fetching libidn-1.33\_1.txz: 100% 202 KiB 103.6kB/s 00:02

Checking integrity... done (0 conflicting)

[1/2] Installing libidn-1.33\_1...

[1/2] Extracting libidn-1.33\_1: 100%

[2/2] Installing wget-1.18\_2...

[2/2] Extracting wget-1.18\_2: 100%

root@rich:~ # pkg install curl

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 3 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

curl: 7.53.0

libnghttp2: 1.18.0

ca\_root\_nss: 3.29.3

Number of packages to be installed: 3

The process will require 5 MiB more space.

1 MiB to be downloaded.

Proceed with this action? [y/N]: y

Fetching curl-7.53.0.txz: 100% 1 MiB 184.1kB/s 00:06

Fetching libnghttp2-1.18.0.txz: 100% 104 KiB 106.4kB/s 00:01

Fetching ca\_root\_nss-3.29.3.txz: 100% 335 KiB 114.3kB/s 00:03

Checking integrity... done (0 conflicting)

[1/3] Installing libnghttp2-1.18.0...

[1/3] Extracting libnghttp2-1.18.0: 100%

[2/3] Installing ca\_root\_nss-3.29.3...

[2/3] Extracting ca\_root\_nss-3.29.3: 100%

[3/3] Installing curl-7.53.0...

[3/3] Extracting curl-7.53.0: 100%

Message from ca\_root\_nss-3.29.3:

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* WARNING \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

FreeBSD does not, and can not warrant that the certification authorities

whose certificates are included in this package have in any way been

audited for trustworthiness or RFC 3647 compliance.

Assessment and verification of trust is the complete responsibility of the

system administrator.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* NOTE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

This package installs symlinks to support root certificates discovery by

default for software that uses OpenSSL.

This enables SSL Certificate Verification by client software without manual

intervention.

If you prefer to do this manually, replace the following symlinks with

either an empty file or your site-local certificate bundle.

\* /etc/ssl/cert.pem

\* /usr/local/etc/ssl/cert.pem

\* /usr/local/openssl/cert.pem

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

root@rich:~ #

下一步安装pip

curl -G "https://bootstrap.pypa.io/get-pip.py" -o get-pip.py

python get-pip.py

root@rich:~ # python get-pip.py

Collecting pip

Downloading pip-9.0.1-py2.py3-none-any.whl (1.3MB)

100% |################################| 1.3MB 53kB/s

Collecting wheel

Downloading wheel-0.29.0-py2.py3-none-any.whl (66kB)

100% |################################| 71kB 36kB/s

Installing collected packages: pip, wheel

Successfully installed pip-9.0.1 wheel-0.29.0

root@rich:~ #

然后

#for Python 3.4:

cd /usr/ports/net/py-pyzmq

make PYTHON\_VERSION=python3.4 install clean

#for Python 2.7 simply run:

pkg install py-pyzmq

#after pyzmq is installed successfully run:

pip install jupyter

我们是python3.6，所以要:

cd /usr/ports/net/py-pyzmq

make PYTHON\_VERSION=python3.6 install clean

+------------------------------ libzmq4-4.1.5 ---------------------------------+

| +--------------------------------------------------------------------------+ |

| |+[x] CURVE CURVE security mechanism via libsodium | |

| |+[ ] DEBUG Build with debugging support | |

| |+[x] MANPAGES Build and/or install manual pages | |

| |+[x] NORM Reliable multicast transport using NORM via NRL | |

| |+[x] PGM Reliable multicast transport using PGM via OpenPGM | |

| +--------------------------------------------------------------------------+ |

+------------------------------------------------------------------------------+

| < OK > <Cancel> |

+------------------------------------------------------------------------------+

这个附带安装的东西真多啊！

不过至少，大部分文件是从freebsdchina下载的，速度还算快！

但是估计编译时间太长，所以准备找到它的相关依赖包，先把依赖包安装好。

pkg rquery %do lynx 可以用来查依赖关系

不过py-pyzmq的没查到

发现有libzmq5 。

重新安装了python36

查询到py27-pyzmq-16的依赖库为：

gettext indexinfo libffi libsodium libzmq norm openpgm perl5 readline

全部pkg安装：

root@rich:~ # pkg install gettext indexinfo libffi libsodium norm openpgm perl5 readline

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 6 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

gettext: 0.19.8.1

libsodium: 1.0.11\_1

norm: 1.5r6

openpgm: 5.2.122\_2

perl5: 5.24.1.r4\_1

gettext-tools: 0.19.8.1

Number of packages to be installed: 6

The process will require 65 MiB more space.

16 MiB to be downloaded.

Proceed with this action? [y/N]:

Fetching gettext-0.19.8.1.txz: 100% 500 B 0.5kB/s 00:01

Fetching libsodium-1.0.11\_1.txz: 100% 203 KiB 103.8kB/s 00:02

Fetching norm-1.5r6.txz: 100% 219 KiB 112.1kB/s 00:02

Fetching openpgm-5.2.122\_2.txz: 100% 303 KiB 155.4kB/s 00:02

Fetching perl5-5.24.1.r4\_1.txz: 100% 13 MiB 583.8kB/s 00:24

Fetching gettext-tools-0.19.8.1.txz: 100% 2 MiB 289.8kB/s 00:08

Checking integrity... done (0 conflicting)

[1/6] Installing perl5-5.24.1.r4\_1...

[1/6] Extracting perl5-5.24.1.r4\_1: 100%

[2/6] Installing gettext-tools-0.19.8.1...

[2/6] Extracting gettext-tools-0.19.8.1: 100%

[3/6] Installing gettext-0.19.8.1...

[4/6] Installing libsodium-1.0.11\_1...

[4/6] Extracting libsodium-1.0.11\_1: 100%

[5/6] Installing norm-1.5r6...

[5/6] Extracting norm-1.5r6: 100%

[6/6] Installing openpgm-5.2.122\_2...

[6/6] Extracting openpgm-5.2.122\_2: 100%

Message from perl5-5.24.1.r4\_1:

The /usr/bin/perl symlink has been removed starting with Perl 5.20.

For shebangs, you should either use:

#!/usr/local/bin/perl

or

#!/usr/bin/env perl

The first one will only work if you have a /usr/local/bin/perl,

the second will work as long as perl is in PATH.

root@rich:~ #

刚才libzmq被我用libzmq5的时候报错，拿下了，现在单独安装libzq，查询了一下，它的依赖库最多了：

**[libzmq4-4.1.5](http://svnweb.freebsd.org/ports/head/net/libzmq4)**

ZeroMQ core library (Version 4)  
[Long description](http://svnweb.freebsd.org/ports/head/net/libzmq4/pkg-descr?revision=HEAD) **:** [Changes](http://svnweb.freebsd.org/ports/head/net/libzmq4/?view=log)   
*Maintained by:* [koobs@FreeBSD.org](mailto:koobs@FreeBSD.org?cc=ports@FreeBSD.org&subject=FreeBSD Port: libzmq4-4.1.5)  
*Requires:* [asciidoc-8.6.9\_5](https://www.freebsd.org/cgi/ports.cgi?query=^asciidoc-8.6.9_5&stype=name), [bash-4.4.12\_1](https://www.freebsd.org/cgi/ports.cgi?query=^bash-4.4.12_1&stype=name), [boehm-gc-7.6.0](https://www.freebsd.org/cgi/ports.cgi?query=^boehm-gc-7.6.0&stype=name), [docbook-1.5](https://www.freebsd.org/cgi/ports.cgi?query=^docbook-1.5&stype=name), [docbook-sgml-4.5\_1](https://www.freebsd.org/cgi/ports.cgi?query=^docbook-sgml-4.5_1&stype=name), [docbook-xml-5.0\_3](https://www.freebsd.org/cgi/ports.cgi?query=^docbook-xml-5.0_3&stype=name), [docbook-xsl-1.76.1\_3](https://www.freebsd.org/cgi/ports.cgi?query=^docbook-xsl-1.76.1_3&stype=name), [getopt-1.1.6](https://www.freebsd.org/cgi/ports.cgi?query=^getopt-1.1.6&stype=name), [gettext-runtime-0.19.8.1\_1](https://www.freebsd.org/cgi/ports.cgi?query=^gettext-runtime-0.19.8.1_1&stype=name), [indexinfo-0.2.6](https://www.freebsd.org/cgi/ports.cgi?query=^indexinfo-0.2.6&stype=name),[iso8879-1986\_3](https://www.freebsd.org/cgi/ports.cgi?query=^iso8879-1986_3&stype=name), [libffi-3.2.1](https://www.freebsd.org/cgi/ports.cgi?query=^libffi-3.2.1&stype=name), [libgcrypt-1.7.6](https://www.freebsd.org/cgi/ports.cgi?query=^libgcrypt-1.7.6&stype=name), [libgpg-error-1.27](https://www.freebsd.org/cgi/ports.cgi?query=^libgpg-error-1.27&stype=name), [libpaper-1.1.24.4](https://www.freebsd.org/cgi/ports.cgi?query=^libpaper-1.1.24.4&stype=name), [libsodium-1.0.11\_1](https://www.freebsd.org/cgi/ports.cgi?query=^libsodium-1.0.11_1&stype=name), [libxml2-2.9.4](https://www.freebsd.org/cgi/ports.cgi?query=^libxml2-2.9.4&stype=name), [libxslt-1.1.29\_1](https://www.freebsd.org/cgi/ports.cgi?query=^libxslt-1.1.29_1&stype=name), [norm-1.5r6](https://www.freebsd.org/cgi/ports.cgi?query=^norm-1.5r6&stype=name), [openpgm-5.2.122\_2](https://www.freebsd.org/cgi/ports.cgi?query=^openpgm-5.2.122_2&stype=name), [perl5-5.24.1](https://www.freebsd.org/cgi/ports.cgi?query=^perl5-5.24.1&stype=name), [pkgconf-1.3.0\_3](https://www.freebsd.org/cgi/ports.cgi?query=^pkgconf-1.3.0_3&stype=name),[python2-2\_3](https://www.freebsd.org/cgi/ports.cgi?query=^python2-2_3&stype=name), [python27-2.7.13\_1](https://www.freebsd.org/cgi/ports.cgi?query=^python27-2.7.13_1&stype=name), [readline-6.3.8](https://www.freebsd.org/cgi/ports.cgi?query=^readline-6.3.8&stype=name), [sdocbook-xml-1.1\_2,2](https://www.freebsd.org/cgi/ports.cgi?query=^sdocbook-xml-1.1_2,2&stype=name), [w3m-0.5.3.20170102](https://www.freebsd.org/cgi/ports.cgi?query=^w3m-0.5.3.20170102&stype=name), [xmlcatmgr-2.2\_2](https://www.freebsd.org/cgi/ports.cgi?query=^xmlcatmgr-2.2_2&stype=name), [xmlcharent-0.3\_2](https://www.freebsd.org/cgi/ports.cgi?query=^xmlcharent-0.3_2&stype=name), [xmlto-0.0.28](https://www.freebsd.org/cgi/ports.cgi?query=^xmlto-0.0.28&stype=name)

Pkg直接查询，显示它需要的库很少：

root@rich:~ # pkg rquery %do libzmq4

net/openpgm

net/norm

security/libsodium

Pkg安装这些依赖库：

root@rich:~ # pkg install docbook pkgconf readline docbook xmlcatmgr docbook-sgml getopt libpaper openpgm

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 10 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

docbook: 1.5

pkgconf: 1.1.0

xmlcatmgr: 2.2\_2

docbook-sgml: 4.5\_1

getopt: 1.1.6

libpaper: 1.1.24.4

sdocbook-xml: 1.1\_2,2

docbook-xml: 5.0\_3

xmlcharent: 0.3\_2

iso8879: 1986\_3

Number of packages to be installed: 10

The process will require 9 MiB more space.

844 KiB to be downloaded.

Proceed with this action? [y/N]:

[1/10] Installing xmlcatmgr-2.2\_2...

[1/10] Extracting xmlcatmgr-2.2\_2: 100%

+ Creating /usr/local/share/sgml/catalog

+ Registering CATALOG catalog.ports (SGML)

+ Creating /usr/local/share/sgml/catalog.ports

+ Creating /usr/local/share/xml/catalog

+ Registering nextCatalog catalog.ports (XML)

+ Creating /usr/local/share/xml/catalog.ports

[2/10] Installing xmlcharent-0.3\_2...

[2/10] Extracting xmlcharent-0.3\_2: 100%

[3/10] Installing iso8879-1986\_3...

[3/10] Extracting iso8879-1986\_3: 100%

[4/10] Installing docbook-sgml-4.5\_1...

[4/10] Extracting docbook-sgml-4.5\_1: 100%

[5/10] Installing sdocbook-xml-1.1\_2,2...

[5/10] Extracting sdocbook-xml-1.1\_2,2: 100%

[6/10] Installing docbook-xml-5.0\_3...

[6/10] Extracting docbook-xml-5.0\_3: 100%

[7/10] Installing docbook-1.5...

[8/10] Installing pkgconf-1.1.0...

[8/10] Extracting pkgconf-1.1.0: 100%

[9/10] Installing getopt-1.1.6...

[9/10] Extracting getopt-1.1.6: 100%

[10/10] Installing libpaper-1.1.24.4...

[10/10] Extracting libpaper-1.1.24.4: 100%

Message from xmlcatmgr-2.2\_2:

The following catalogs are installed:

1) /usr/local/share/sgml/catalog

The top level catalog for SGML stuff. It is not changed

by any ports/packages except textproc/xmlcatmgr.

2) /usr/local/share/sgml/catalog.ports

This catalog is for handling SGML stuff installed under

/usr/local/share/sgml. It is changed by ports/packages.

3) /usr/local/share/xml/catalog

The top level catalog for XML stuff. It is not changed

by any ports/packages except textproc/xmlcatmgr.

4) /usr/local/share/xml/catalog.ports

This catalog is for handling XML stuff installed under

/usr/local/share/xml. It is changed by ports/packages.

再一次port安装编译：

cd /usr/ports/net/py-pyzmq

make PYTHON\_VERSION=python3.6 install clean

好了，出编译界面了，让它慢慢去编译吧

几分钟就编译完了：

running install\_scripts

writing list of installed files to '/usr/ports/net/py-pyzmq/work/.PLIST.pymodtmp'

====> Compressing man pages (compress-man)

===> Installing for py36-pyzmq-16.0.2

===> Checking if py36-pyzmq already installed

===> Registering installation for py36-pyzmq-16.0.2

Installing py36-pyzmq-16.0.2...

===> Cleaning for py36-setuptools36-32.1.0

===> Cleaning for libzmq4-4.1.5

===> Cleaning for xmlto-0.0.28

===> Cleaning for py36-pyzmq-16.0.2

安装完yzmq后，该开始安装jupyter了

pip install jupyter

走到这一步，发现上面文档是安装jupyter，而不是jupyterhub，所以重新到官网，按照官网来做；

<https://github.com/jupyterhub/jupyterhub/wiki/Installation-of-Jupyterhub-on-remote-server>

Wget <https://repo.continuum.io/archive/Anaconda3-4.3.1-Linux-x86_64.sh>

让它慢慢下载吧，没秒10k，我也是醉了

下载后安装，失败：

installing: conda-env-2.6.0-0 ...

ELF binary type "0" not known.

Anaconda3-4.3.1-Linux-x86\_64.sh: line 479: /var/anaconda3/pkgs/python-3.6.0-0/bin/python: cannot execute binary file: Exec format error

ERROR:

cannot execute native linux-64 binary, output from 'uname -a' is:

FreeBSD rich 11.0-RELEASE-p8 FreeBSD 11.0-RELEASE-p8 #0: Wed Feb 22 06:12:04 UTC 2017 root@amd64-builder.daemonology.net:/usr/obj/usr/src/sys/GENERIC amd64

root@rich:~ #

先不管它，我们继续安装jupyterhub！

root@rich:~ # pkg install npm nodejs-legacy

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

pkg: No packages available to install matching 'nodejs-legacy' have been found in the repositories

root@rich:~ # pkg install npm node

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 8 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

npm: 4.0.5

node: 7.3.0

python27: 2.7.13\_1

gmake: 4.2.1\_1

python2: 2\_3

c-ares: 1.12.0

libuv: 1.10.1

icu: 58.2,1

Number of packages to be installed: 8

The process will require 147 MiB more space.

26 MiB to be downloaded.

Proceed with this action? [y/N]:

Fetching npm-4.0.5.txz: 100% 2 MiB 242.1kB/s 00:10

Fetching node-7.3.0.txz: 100% 4 MiB 133.3kB/s 00:33

Fetching python27-2.7.13\_1.txz: 100% 10 MiB 236.1kB/s 00:46

Fetching gmake-4.2.1\_1.txz: 100% 378 KiB 193.6kB/s 00:02

Fetching python2-2\_3.txz: 100% 1 KiB 1.1kB/s 00:01

Fetching c-ares-1.12.0.txz: 100% 120 KiB 122.5kB/s 00:01

Fetching libuv-1.10.1.txz: 100% 88 KiB 90.4kB/s 00:01

Fetching icu-58.2,1.txz: 100% 9 MiB 180.8kB/s 00:52

Checking integrity... done (0 conflicting)

[1/8] Installing python27-2.7.13\_1...

[1/8] Extracting python27-2.7.13\_1: 100%

[2/8] Installing c-ares-1.12.0...

[2/8] Extracting c-ares-1.12.0: 100%

[3/8] Installing libuv-1.10.1...

[3/8] Extracting libuv-1.10.1: 100%

[4/8] Installing icu-58.2,1...

[4/8] Extracting icu-58.2,1: 100%

[5/8] Installing node-7.3.0...

[5/8] Extracting node-7.3.0: 100%

[6/8] Installing gmake-4.2.1\_1...

[6/8] Extracting gmake-4.2.1\_1: 100%

[7/8] Installing python2-2\_3...

[7/8] Extracting python2-2\_3: 100%

[8/8] Installing npm-4.0.5...

[8/8] Extracting npm-4.0.5: 100%

Message from python27-2.7.13\_1:

===========================================================================

Note that some standard Python modules are provided as separate ports

as they require additional dependencies. They are available as:

bsddb databases/py-bsddb

gdbm databases/py-gdbm

sqlite3 databases/py-sqlite3

tkinter x11-toolkits/py-tkinter

===========================================================================

Message from node-7.3.0:

Note: If you need npm (Node Package Manager), please install www/npm.

root@rich:~ #

安装用npm安装代理

root@rich:~ # npm install -g configurable-http-proxy

/usr/local/bin/configurable-http-proxy -> /usr/local/lib/node\_modules/configurable-http-proxy/bin/configurable-http-proxy

/usr/local/lib

`-- configurable-http-proxy@1.3.1

+-- commander@2.9.0

| `-- graceful-readlink@1.0.1

+-- http-proxy@1.13.3

| +-- eventemitter3@1.2.0

| `-- requires-port@1.0.0

+-- lynx@0.2.0

| +-- mersenne@0.0.3

| `-- statsd-parser@0.0.4

+-- strftime@0.9.2

`-- winston@2.2.0

+-- async@1.0.0

+-- colors@1.0.3

+-- cycle@1.0.3

+-- eyes@0.1.8

+-- isstream@0.1.2

+-- pkginfo@0.3.1

`-- stack-trace@0.0.9

root@rich:~ #

Pip3安装jupyterhub！

root@rich:~ # pip3 install jupyterhub

Collecting jupyterhub

Downloading jupyterhub-0.7.2-py3-none-any.whl (1.4MB)

100% |################################| 1.4MB 45kB/s

Collecting sqlalchemy>=1.0 (from jupyterhub)

Downloading SQLAlchemy-1.1.6.tar.gz (5.2MB)

100% |################################| 5.2MB 21kB/s

Collecting alembic (from jupyterhub)

Downloading alembic-0.9.1.tar.gz (999kB)

100% |################################| 1.0MB 32kB/s

Collecting pamela (from jupyterhub)

Downloading pamela-0.3.0-py2.py3-none-any.whl

Collecting traitlets>=4.1 (from jupyterhub)

Downloading traitlets-4.3.2-py2.py3-none-any.whl (74kB)

100% |################################| 81kB 22kB/s

Collecting tornado>=4.1 (from jupyterhub)

Downloading tornado-4.4.2.tar.gz (460kB)

100% |################################| 460kB 17kB/s

Collecting requests (from jupyterhub)

Downloading requests-2.13.0-py2.py3-none-any.whl (584kB)

100% |################################| 593kB 15kB/s

Collecting jinja2 (from jupyterhub)

Downloading Jinja2-2.9.5-py2.py3-none-any.whl (340kB)

100% |################################| 348kB 25kB/s

Collecting Mako (from alembic->jupyterhub)

Downloading Mako-1.0.6.tar.gz (575kB)

100% |################################| 583kB 14kB/s

Collecting python-editor>=0.3 (from alembic->jupyterhub)

Downloading python-editor-1.0.3.tar.gz

Collecting six (from traitlets>=4.1->jupyterhub)

Downloading six-1.10.0-py2.py3-none-any.whl

Collecting decorator (from traitlets>=4.1->jupyterhub)

Downloading decorator-4.0.11-py2.py3-none-any.whl

Collecting ipython-genutils (from traitlets>=4.1->jupyterhub)

Downloading ipython\_genutils-0.1.0-py2.py3-none-any.whl

Collecting MarkupSafe>=0.23 (from jinja2->jupyterhub)

Downloading MarkupSafe-1.0.tar.gz

Building wheels for collected packages: sqlalchemy, alembic, tornado, Mako, python-editor, MarkupSafe

Running setup.py bdist\_wheel for sqlalchemy ... done

Stored in directory: /root/.cache/pip/wheels/c5/1d/84/168a2c298f745255527b263944d2bd7115202073ce0aed3084

Running setup.py bdist\_wheel for alembic ... done

Stored in directory: /root/.cache/pip/wheels/37/02/8e/1b941acb6b5c81a5c3cc10b6ac6532f488ee04c694544cfe6d

Running setup.py bdist\_wheel for tornado ... done

Stored in directory: /root/.cache/pip/wheels/b3/db/47/46e05d1ee3ecfba252fcab42f0a156dab0df0cddf99fa0827c

Running setup.py bdist\_wheel for Mako ... done

Stored in directory: /root/.cache/pip/wheels/34/be/28/7999aa61d80a775c9e85a5a7d345777f73e87e6e30573e9551

Running setup.py bdist\_wheel for python-editor ... done

Stored in directory: /root/.cache/pip/wheels/84/d6/b8/082dc3b5cd7763f17f5500a193b6b248102217cbaa3f0a24ca

Running setup.py bdist\_wheel for MarkupSafe ... done

Stored in directory: /root/.cache/pip/wheels/88/a7/30/e39a54a87bcbe25308fa3ca64e8ddc75d9b3e5afa21ee32d57

Successfully built sqlalchemy alembic tornado Mako python-editor MarkupSafe

Installing collected packages: sqlalchemy, MarkupSafe, Mako, python-editor, alembic, pamela, six, decorator, ipython-genutils, traitlets, tornado, requests, jinja2, jupyterhub

Successfully installed Mako-1.0.6 MarkupSafe-1.0 alembic-0.9.1 decorator-4.0.11 ipython-genutils-0.1.0 jinja2-2.9.5 jupyterhub-0.7.2 pamela-0.3.0 python-editor-1.0.3 requests-2.13.0 six-1.10.0 sqlalchemy-1.1.6 tornado-4.4.2 traitlets-4.3.2

它自动安装了不少东西啊！

再来安装notebook

root@rich:~ # pip3 install --upgrade notebook

Collecting notebook

Downloading notebook-4.4.1-py2.py3-none-any.whl (6.9MB)

100% |################################| 6.9MB 15kB/s

Collecting nbformat (from notebook)

Downloading nbformat-4.3.0-py2.py3-none-any.whl (154kB)

100% |################################| 163kB 29kB/s

Collecting terminado>=0.3.3; sys\_platform != "win32" (from notebook)

Downloading terminado-0.6.tar.gz

Collecting nbconvert (from notebook)

Downloading nbconvert-5.1.1-py2.py3-none-any.whl (372kB)

100% |################################| 378kB 23kB/s

Requirement already up-to-date: ipython-genutils in /usr/local/lib/python3.6/site-packages (from notebook)

Collecting jupyter-core (from notebook)

Downloading jupyter\_core-4.3.0-py2.py3-none-any.whl (76kB)

100% |################################| 81kB 29kB/s

Requirement already up-to-date: tornado>=4 in /usr/local/lib/python3.6/site-packages (from notebook)

Requirement already up-to-date: jinja2 in /usr/local/lib/python3.6/site-packages (from notebook)

Collecting jupyter-client (from notebook)

Downloading jupyter\_client-5.0.0-py2.py3-none-any.whl (83kB)

100% |################################| 92kB 25kB/s

Collecting ipykernel (from notebook)

Downloading ipykernel-4.5.2-py2.py3-none-any.whl (98kB)

100% |################################| 102kB 35kB/s

Requirement already up-to-date: traitlets in /usr/local/lib/python3.6/site-packages (from notebook)

Collecting jsonschema!=2.5.0,>=2.4 (from nbformat->notebook)

Downloading jsonschema-2.6.0-py2.py3-none-any.whl

Collecting ptyprocess (from terminado>=0.3.3; sys\_platform != "win32"->notebook)

Downloading ptyprocess-0.5.1-py2.py3-none-any.whl

Collecting mistune!=0.6 (from nbconvert->notebook)

Downloading mistune-0.7.3-py2.py3-none-any.whl

Collecting pygments (from nbconvert->notebook)

Downloading Pygments-2.2.0-py2.py3-none-any.whl (841kB)

100% |################################| 849kB 25kB/s

Collecting entrypoints>=0.2.2 (from nbconvert->notebook)

Downloading entrypoints-0.2.2-py2.py3-none-any.whl

Collecting bleach (from nbconvert->notebook)

Downloading bleach-2.0.0-py2.py3-none-any.whl

Collecting testpath (from nbconvert->notebook)

Downloading testpath-0.3-py2.py3-none-any.whl (82kB)

100% |################################| 92kB 34kB/s

Collecting pandocfilters>=1.4.1 (from nbconvert->notebook)

Downloading pandocfilters-1.4.1.tar.gz

Requirement already up-to-date: MarkupSafe>=0.23 in /usr/local/lib/python3.6/site-packages (from jinja2->notebook)

Requirement already up-to-date: pyzmq>=13 in /usr/local/lib/python3.6/site-packages (from jupyter-client->notebook)

Collecting python-dateutil>=2.1 (from jupyter-client->notebook)

Downloading python\_dateutil-2.6.0-py2.py3-none-any.whl (194kB)

100% |################################| 194kB 18kB/s

Collecting ipython>=4.0.0 (from ipykernel->notebook)

Downloading ipython-5.3.0-py3-none-any.whl (750kB)

100% |################################| 757kB 34kB/s

Requirement already up-to-date: decorator in /usr/local/lib/python3.6/site-packages (from traitlets->notebook)

Requirement already up-to-date: six in /usr/local/lib/python3.6/site-packages (from traitlets->notebook)

Collecting html5lib>=0.99999999 (from bleach->nbconvert->notebook)

Downloading html5lib-0.999999999-py2.py3-none-any.whl (112kB)

100% |################################| 122kB 12kB/s

Collecting prompt-toolkit<2.0.0,>=1.0.4 (from ipython>=4.0.0->ipykernel->notebook)

Downloading prompt\_toolkit-1.0.13-py3-none-any.whl (247kB)

100% |################################| 256kB 26kB/s

Collecting setuptools>=18.5 (from ipython>=4.0.0->ipykernel->notebook)

Downloading setuptools-34.3.2-py2.py3-none-any.whl (389kB)

100% |################################| 399kB 42kB/s

Collecting pickleshare (from ipython>=4.0.0->ipykernel->notebook)

Downloading pickleshare-0.7.4-py2.py3-none-any.whl

Collecting pexpect; sys\_platform != "win32" (from ipython>=4.0.0->ipykernel->notebook)

Downloading pexpect-4.2.1-py2.py3-none-any.whl (55kB)

100% |################################| 61kB 44kB/s

Collecting simplegeneric>0.8 (from ipython>=4.0.0->ipykernel->notebook)

Downloading simplegeneric-0.8.1.zip

Collecting webencodings (from html5lib>=0.99999999->bleach->nbconvert->notebook)

Downloading webencodings-0.5.tar.gz

Collecting wcwidth (from prompt-toolkit<2.0.0,>=1.0.4->ipython>=4.0.0->ipykernel->notebook)

Downloading wcwidth-0.1.7-py2.py3-none-any.whl

Collecting packaging>=16.8 (from setuptools>=18.5->ipython>=4.0.0->ipykernel->notebook)

Downloading packaging-16.8-py2.py3-none-any.whl

Collecting appdirs>=1.4.0 (from setuptools>=18.5->ipython>=4.0.0->ipykernel->notebook)

Downloading appdirs-1.4.3-py2.py3-none-any.whl

Collecting pyparsing (from packaging>=16.8->setuptools>=18.5->ipython>=4.0.0->ipykernel->notebook)

Downloading pyparsing-2.2.0-py2.py3-none-any.whl (56kB)

100% |################################| 61kB 84kB/s

Building wheels for collected packages: terminado, pandocfilters, simplegeneric, webencodings

Running setup.py bdist\_wheel for terminado ... done

Stored in directory: /root/.cache/pip/wheels/3b/c2/ea/af635ffb63857a8c2ddd22da6a4b52f5b7ea3065db94ef5d7c

Running setup.py bdist\_wheel for pandocfilters ... done

Stored in directory: /root/.cache/pip/wheels/d4/01/68/49055c80b9f01ccb49241e73c8019628605064730941d70b56

Running setup.py bdist\_wheel for simplegeneric ... done

Stored in directory: /root/.cache/pip/wheels/7b/31/08/c85e74c84188cbec6a6827beec4d640f2bd78ae003dc1ec09d

Running setup.py bdist\_wheel for webencodings ... done

Stored in directory: /root/.cache/pip/wheels/0a/73/c2/1dcc99951b6aeac495e7695505d1837616ca194938f07d1d7b

Successfully built terminado pandocfilters simplegeneric webencodings

Installing collected packages: jupyter-core, jsonschema, nbformat, ptyprocess, terminado, mistune, pygments, entrypoints, pyparsing, packaging, appdirs, setuptools, webencodings, html5lib, bleach, testpath, pandocfilters, nbconvert, python-dateutil, jupyter-client, wcwidth, prompt-toolkit, pickleshare, pexpect, simplegeneric, ipython, ipykernel, notebook

Found existing installation: setuptools 32.1.0

Uninstalling setuptools-32.1.0:

Successfully uninstalled setuptools-32.1.0

Successfully installed appdirs-1.4.3 bleach-2.0.0 entrypoints-0.2.2 html5lib-0.999999999 ipykernel-4.5.2 ipython-5.3.0 jsonschema-2.6.0 jupyter-client-5.0.0 jupyter-core-4.3.0 mistune-0.7.3 nbconvert-5.1.1 nbformat-4.3.0 notebook-4.4.1 packaging-16.8 pandocfilters-1.4.1 pexpect-4.2.1 pickleshare-0.7.4 prompt-toolkit-1.0.13 ptyprocess-0.5.1 pygments-2.2.0 pyparsing-2.2.0 python-dateutil-2.6.0 setuptools-34.3.2 simplegeneric-0.8.1 terminado-0.6 testpath-0.3 wcwidth-0.1.7 webencodings-0.5

测试运行,但是没有成功

Test Jupyterhub default configuration

$ jupyterhub --no-ssl

This will start session in localhost:8000

Go to [http://your\_ip\_address:8000](http://www.example.com/)

\*\* Make sure that port isn't protected under Firewall of your system

root@rich:~ # jupyterhub --no-ssl

[I 2017-03-13 22:18:47.433 JupyterHub app:745] Writing cookie\_secret to /root/jupyterhub\_cookie\_secret

[E 2017-03-13 22:18:47.480 JupyterHub app:1527]

Traceback (most recent call last):

File "/usr/local/lib/python3.6/site-packages/jupyterhub/app.py", line 1524, in launch\_instance\_async

yield self.initialize(argv)

File "/usr/local/lib/python3.6/types.py", line 204, in \_\_next\_\_

return next(self.\_\_wrapped)

File "/usr/local/lib/python3.6/site-packages/jupyterhub/app.py", line 1307, in initialize

self.init\_db()

File "/usr/local/lib/python3.6/site-packages/jupyterhub/app.py", line 802, in init\_db

\*\*self.db\_kwargs

File "/usr/local/lib/python3.6/site-packages/jupyterhub/orm.py", line 572, in new\_session\_factory

engine = create\_engine(url, \*\*kwargs)

File "/usr/local/lib/python3.6/site-packages/sqlalchemy/engine/\_\_init\_\_.py", line 387, in create\_engine

return strategy.create(\*args, \*\*kwargs)

File "/usr/local/lib/python3.6/site-packages/sqlalchemy/engine/strategies.py", line 80, in create

dbapi = dialect\_cls.dbapi(\*\*dbapi\_args)

File "/usr/local/lib/python3.6/site-packages/sqlalchemy/dialects/sqlite/pysqlite.py", line 339, in dbapi

raise e

File "/usr/local/lib/python3.6/site-packages/sqlalchemy/dialects/sqlite/pysqlite.py", line 334, in dbapi

from pysqlite2 import dbapi2 as sqlite

ModuleNotFoundError: No module named 'pysqlite2'

根据报错，是sqlite数据库这里出错，于是寻找解决办法：

root@rich:~ # pip3 install pysqlite

Collecting pysqlite

Downloading pysqlite-2.8.3.tar.gz (80kB)

100% |################################| 81kB 227kB/s

Complete output from command python setup.py egg\_info:

pysqlite is not supported on Python 3. When using Python 3, use the sqlite3 module from the standard library.

----------------------------------------

Command "python setup.py egg\_info" failed with error code 1 in /tmp/pip-build-fn5sbi06/pysqlite/

root@rich:~ # pkg install sqlite3

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 1 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

sqlite3: 3.17.0

Number of packages to be installed: 1

The process will require 3 MiB more space.

687 KiB to be downloaded.

Proceed with this action? [y/N]: y

Fetching sqlite3-3.17.0.txz: 100% 687 KiB 175.9kB/s 00:04

Checking integrity... done (0 conflicting)

[1/1] Installing sqlite3-3.17.0...

[1/1] Extracting sqlite3-3.17.0: 100%

最终通过pkg 安装的sqlite3

还是报错，通过网上得知，需要改一下：

from sqlite3 import dbapi2 as sqlite

Sqlite3这里卡住了

root@rich:~ # pkg remove sqlite3

Checking integrity... done (0 conflicting)

Deinstallation has been requested for the following 1 packages (of 0 packages in the universe):

Installed packages to be REMOVED:

sqlite3-3.17.0

Number of packages to be removed: 1

The operation will free 3 MiB.

Proceed with deinstalling packages? [y/N]: y

[1/1] Deinstalling sqlite3-3.17.0...

[1/1] Deleting files for sqlite3-3.17.0: 100%

root@rich:~ # pip3 install sqlite3

Collecting sqlite3

Using cached sqlite3-99.0.tar.gz

Complete output from command python setup.py egg\_info:

Traceback (most recent call last):

File "<string>", line 1, in <module>

File "/tmp/pip-build-\_0ar9mo9/sqlite3/setup.py", line 2, in <module>

raise RuntimeError("Package 'sqlite3' must not be downloaded from pypi")

RuntimeError: Package 'sqlite3' must not be downloaded from pypi

----------------------------------------

Command "python setup.py egg\_info" failed with error code 1 in /tmp/pip-build-\_0ar9mo9/sqlite3/

root@rich:~ # pip3 upgrade sqlite3

ERROR: unknown command "upgrade"

root@rich:~ # pip3 install --upgrade sqlite3

Collecting sqlite3

Using cached sqlite3-99.0.tar.gz

Complete output from command python setup.py egg\_info:

Traceback (most recent call last):

File "<string>", line 1, in <module>

File "/tmp/pip-build-ivd52gnd/sqlite3/setup.py", line 2, in <module>

raise RuntimeError("Package 'sqlite3' must not be downloaded from pypi")

RuntimeError: Package 'sqlite3' must not be downloaded from pypi

----------------------------------------

Command "python setup.py egg\_info" failed with error code 1 in /tmp/pip-build-ivd52gnd/sqlite3/

最后的解决方案是：重新port安装python36和py-sqlite3，其中py-sqlite3在/usr/port/databases/目录下：

skywalk@rich:~ % whereis py-sqlite3

py-sqlite3: /usr/ports/databases/py-sqlite3

skywalk@rich:~ %

现在启动jupyterhub，成功拉！

root@rich:~ # jupyterhub --no-ssl

[I 2017-03-25 08:52:43.446 JupyterHub app:724] Loading cookie\_secret from /root/jupyterhub\_cookie\_secret

[W 2017-03-25 08:52:43.500 JupyterHub app:365]

Generating CONFIGPROXY\_AUTH\_TOKEN. Restarting the Hub will require restarting the proxy.

Set CONFIGPROXY\_AUTH\_TOKEN env or JupyterHub.proxy\_auth\_token config to avoid this message.

[W 2017-03-25 08:52:43.506 JupyterHub app:864] No admin users, admin interface will be unavailable.

[W 2017-03-25 08:52:43.506 JupyterHub app:865] Add any administrative users to `c.Authenticator.admin\_users` in config.

[I 2017-03-25 08:52:43.506 JupyterHub app:892] Not using whitelist. Any authenticated user will be allowed.

[I 2017-03-25 08:52:43.528 JupyterHub app:1453] Hub API listening on http://127.0.0.1:8081/hub/

在本地浏览器测试一下，ok

创建安全认证文件：

openssl req -x509 -nodes -days 365 -newkey rsa:1024 -keyout mykey.key -out mycert.pem

生成mykey.key和mycert.pem两个文件。

注意，在网络上很多文档里的命令粘贴的时候会丢掉“-”，要修正、补上。

按照里面的提示输入就行，如果输入‘.’,就是留空白，如果直接留空白，就是用默认值。

root@rich:~/temp # openssl req -x509 -nodes -days 365 -newkey rsa:1024 -keyout mykey.key -out mycert.pem

Generating a 1024 bit RSA private key

...........++++++

...................................++++++

writing new private key to 'mykey.key'

-----

You are about to be asked to enter information that will be incorporated

into your certificate request.

What you are about to enter is what is called a Distinguished Name or a DN.

There are quite a few fields but you can leave some blank

For some fields there will be a default value,

If you enter '.', the field will be left blank.

-----

Country Name (2 letter code) [AU]:CN State or Province Name (full name) [Some-State]:Shandong

Locality Name (eg, city) []:Jining

Organization Name (eg, company) [Internet Widgits Pty Ltd]:quye.com

Organizational Unit Name (eg, section) []:quye

Common Name (e.g. server FQDN or YOUR name) []:Aiskywalk

Email Address []:skywalk.duan@gmail.com

创建配置文件：

$ jupyterhub --generate-config

root@rich:~ # jupyterhub --generate-config

Overwrite jupyterhub\_config.py with default config? [y/N]y

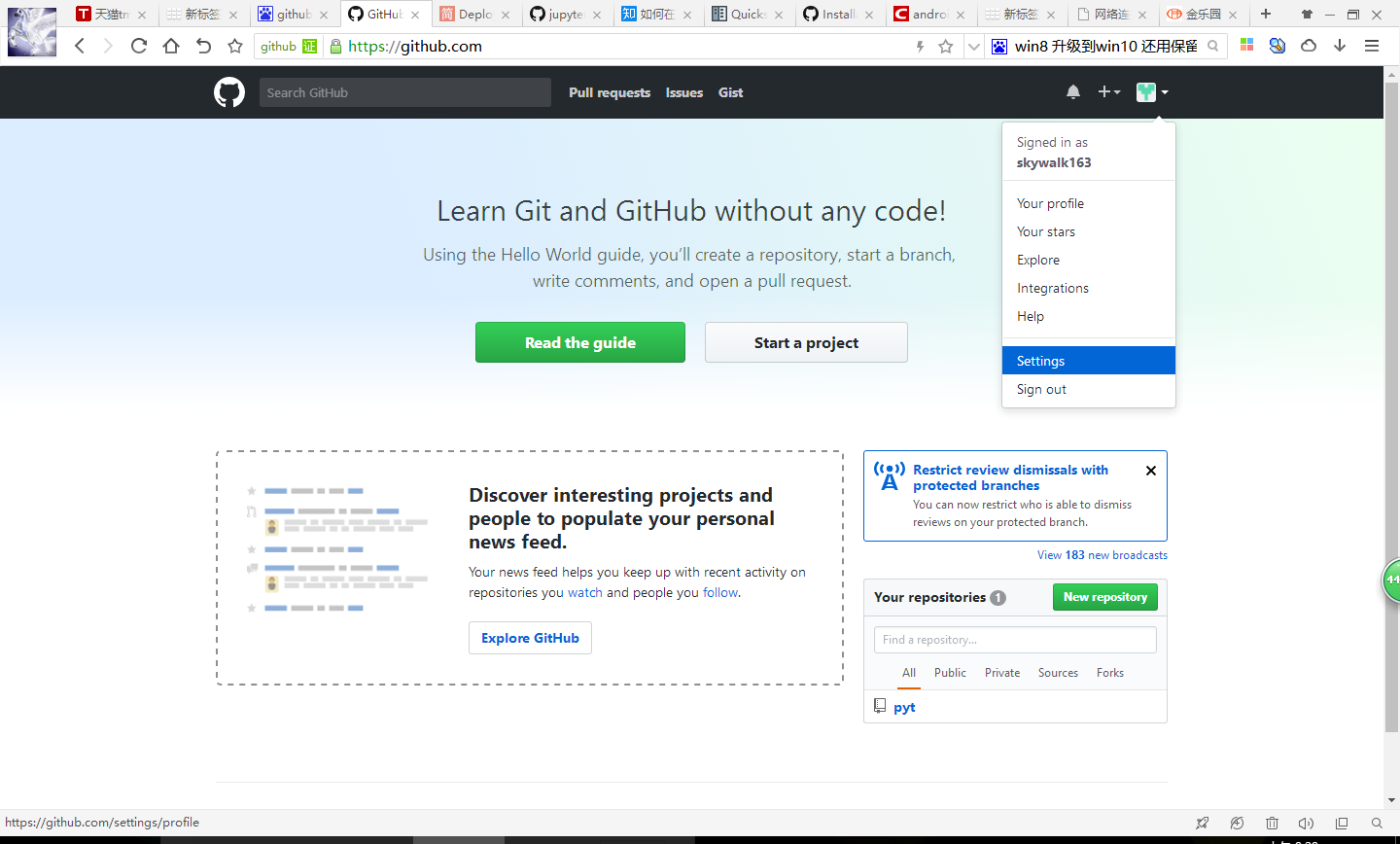
Writing default config to: jupyterhub\_config.py

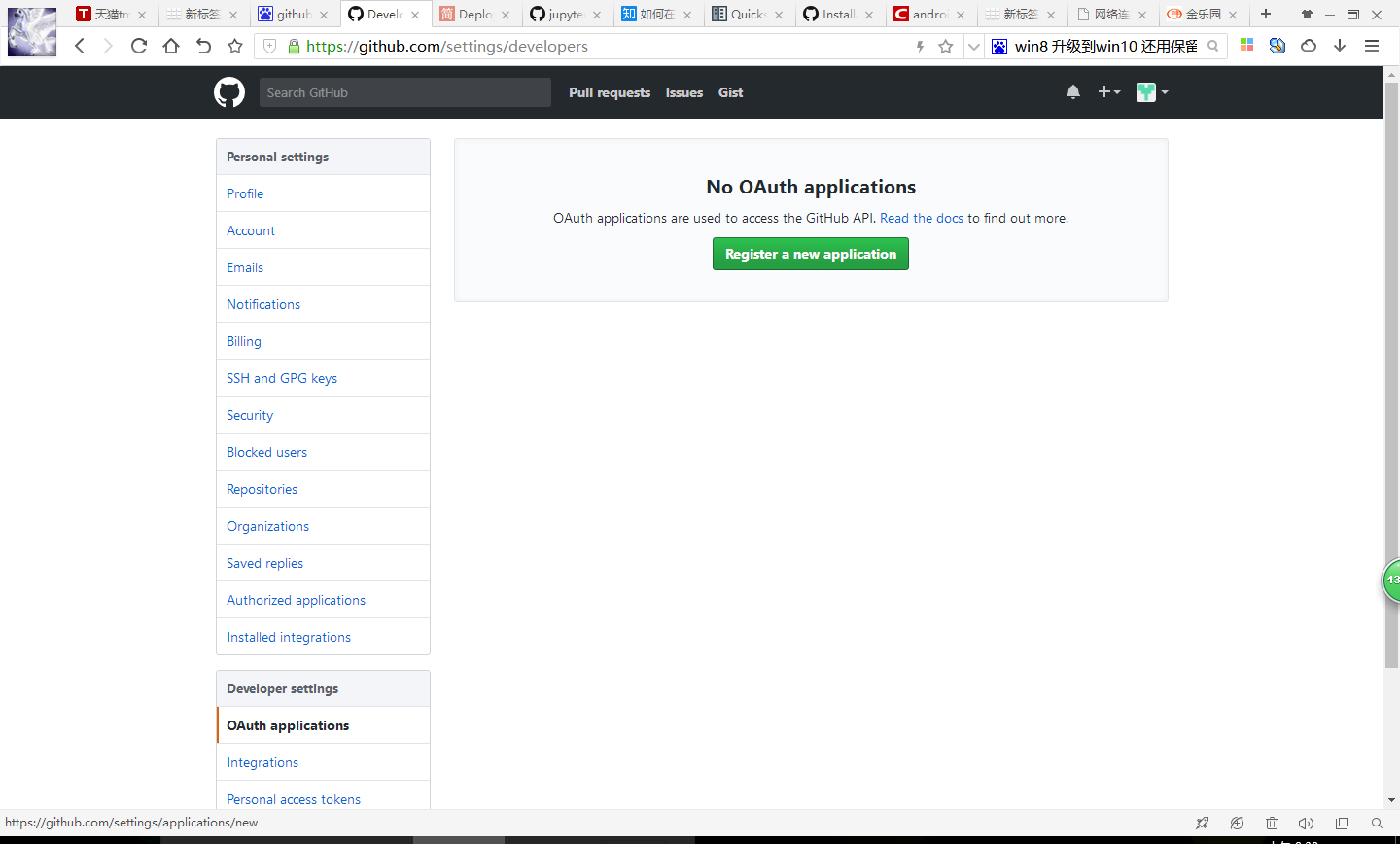
在当前目录，生成jupyterhub\_config.py文件！

我们将使用Github 的Oauthentication作为认证。需要到Github网站创建一个认证程序。

打开网站：<https://github.com/>

注册、登录，





Client ID

25348bcc94402a1d3795

Client Secret

c7a3ac9e4f3dde505264e31b23d2e8f1e35534d1

Github client\_id = '25348bcc94402a1d3795'

Github client\_secret = 'c7a3ac9e4f3dde505264e31b23d2e8f1e35534d1'

Jupyter\_config.py 文档：

#-----------------------------------------------------------------------------------------------------------------------------------------------------

# Application configuration

#-----------------------------------------------------------------------------------------------------------------------------------------------------

# This is an application.

c.JupyterHub.authenticator\_class = 'oauthenticator.GitHubOAuthenticator'

c.GitHubOAuthenticator.oauth\_callback\_url = 'https://www.zqfx.org/hub/oauth\_callback'

c.GitHubOAuthenticator.client\_id = '25348bcc94402a1d3795'

c.GitHubOAuthenticator.client\_secret = 'c7a3ac9e4f3dde505264e31b23d2e8f1e35534d1'

# This is an application.

# create system users that don't exist yet

c.LocalAuthenticator.create\_system\_users = True

c.Authenticator.whitelist = {'skywalk', 'skywalk163', 'Benybrahim'}

c.Authenticator.admin\_users = {'skywalk', 'skywalk163'}

c.Spawner.notebook\_dir = '~/notebooks'

c.JupyterHub.ssl\_cert = 'mycert.pem'

c.JupyterHub.ssl\_key = 'mykey.key'

We will use Github OAuthentication as our Authenticator. so steps are as follows:

Go to your Github profile > Settings > Oauth application

Register new application

Under callback URL is:聽[https://your\_host/hub/oauth\_callback](http://www.example.com/)

Where聽your颅host聽is where your server will be running. Such as example.com:8000 .

click on Register application.

You will see Client id and secret key generated above:

OAuth + JupyterHub Authenticator = OAuthenticator

<https://github.com/jupyterhub/oauthenticator>

### 微博登陆认证：



### 现在再次调试jupyterhub 服务

配置文件中加入：

c.JupyterHub.authenticator\_class = 'oauthenticator.GitHubOAuthenticator'

c.GitHubOAuthenticator.oauth\_callback\_url = 'https://www.zqfx.org/hub/oauth\_call

back'

c.GitHubOAuthenticator.client\_id = '25348bcc94402a1d3795'

c.GitHubOAuthenticator.client\_secret = 'c7a3ac9e4f3dde505264e31b23d2e8f1e35534d1

'

# This is an application.

# create system users that don't exist yet

c.LocalAuthenticator.create\_system\_users = True

c.Authenticator.whitelist = {'skywalk', 'skywalk163', 'Benybrahim'}

c.Authenticator.admin\_users = {'skywalk', 'skywalk163'}

c.Spawner.notebook\_dir = '~/notebooks'

c.JupyterHub.ssl\_cert = 'mycert.pem'

c.JupyterHub.ssl\_key = 'mykey.key'

启动报错：

root@rich:~ # jupyterhub

[I 2017-04-04 11:06:36.150 JupyterHub app:724] Loading cookie\_secret from /root/jupyterhub\_cookie\_secret

[W 2017-04-04 11:06:36.268 JupyterHub app:365]

Generating CONFIGPROXY\_AUTH\_TOKEN. Restarting the Hub will require restarting the proxy.

Set CONFIGPROXY\_AUTH\_TOKEN env or JupyterHub.proxy\_auth\_token config to avoid this message.

{'trait': <traitlets.traitlets.Unicode object at 0x809133128>, 'value': '~/notebooks', 'owner': <jupyterhub.spawner.LocalProcessSpawner object at 0x809bae0b8>}

{'trait': <traitlets.traitlets.Unicode object at 0x809133128>, 'value': '~/notebooks', 'owner': <jupyterhub.spawner.LocalProcessSpawner object at 0x809bae0f0>}

{'trait': <traitlets.traitlets.Unicode object at 0x809133128>, 'value': '~/notebooks', 'owner': <jupyterhub.spawner.LocalProcessSpawner object at 0x809bae748>}

[I 2017-04-04 11:06:36.314 JupyterHub app:1453] Hub API listening on http://127.0.0.1:8081/hub/

[E 2017-04-04 11:06:36.328 JupyterHub app:1139] Proxy appears to be running at http://127.0.0.1:8000/, but I can't access it (HTTP 403: Forbidden)

Did CONFIGPROXY\_AUTH\_TOKEN change?

不知道原因在哪里.....于是重新生成config文件，

提示创建新用户。

'adduser', '-q', '--gecos', '""', '--disabled-password'

### FreeBSD升级到11.0后添加用户失败

在FreeBSD中创建新用户的时候，出现如下错误提示：

pw: user 'skywalk163' disappeared during update

root@rich:~ # adduser -v

Username: testone

Full name:

Uid (Leave empty for default):

Login group [testone]:

Login group is testone. Invite testone into other groups? []:

Login class [default]:

Shell (sh csh tcsh bash rbash nologin) [sh]:

Home directory [/home/testone]:

Home directory permissions (Leave empty for default):

Use password-based authentication? [yes]:

Use an empty password? (yes/no) [no]:

Use a random password? (yes/no) [no]:

Enter password:

Enter password again:

Lock out the account after creation? [no]:

Username : testone

Password : \*\*\*\*\*

Full Name :

Uid : 1002

Class :

Groups : testone

Home : /home/testone

Home Mode :

Shell : /bin/sh

Locked : no

OK? (yes/no): yes

pw: user 'testone' disappeared during update

adduser: ERROR: There was an error adding user (testone).

Add another user? (yes/no): no

Goodbye!

从网上查找了一下，据说是passwd和master.passwd不同步导致的。

解决的方法是：运行vipw，然后不用修改任何东西，存盘推出即可！

另外一个解决方法是：   
Run /usr/sbin/pwd\_mkdb -p /etc/master.passwd.   
相关问题解决文档链接是：   
[https://forums.freebsd.org/threads/59525/](https://forums.freebsd.org/threads/59525/" \t "https://www.freebsdchina.org/forum/_blank)

### Jupyterhub 8000端口不能使用错误

Proxy appears to be running at http://\*:8000/, but I can't access it

现在jupyterhub的报错信息是：

root@rich:~ # jupyterhub

[I 2017-04-04 11:34:07.067 JupyterHub app:724] Loading cookie\_secret from /root/jupyterhub\_cookie\_secret

[W 2017-04-04 11:34:07.115 JupyterHub app:365]

Generating CONFIGPROXY\_AUTH\_TOKEN. Restarting the Hub will require restarting the proxy.

Set CONFIGPROXY\_AUTH\_TOKEN env or JupyterHub.proxy\_auth\_token config to avoid this message.

[W 2017-04-04 11:34:07.120 JupyterHub app:864] No admin users, admin interface will be unavailable.

[W 2017-04-04 11:34:07.120 JupyterHub app:865] Add any administrative users to `c.Authenticator.admin\_users` in config.

[I 2017-04-04 11:34:07.121 JupyterHub app:892] Not using whitelist. Any authenticated user will be allowed.

[E 2017-04-04 11:34:07.125 JupyterHub app:916] Error adding user 'benybrahim' already in db

Traceback (most recent call last):

File "/usr/local/lib/python3.6/site-packages/jupyterhub/app.py", line 911, in init\_users

yield gen.maybe\_future(self.authenticator.add\_user(user))

File "/usr/local/lib/python3.6/site-packages/jupyterhub/auth.py", line 403, in add\_user

raise KeyError("User %s does not exist." % user.name)

KeyError: 'User benybrahim does not exist.'

[I 2017-04-04 11:34:07.156 JupyterHub app:1453] Hub API listening on http://127.0.0.1:8081/hub/

[E 2017-04-04 11:34:07.167 JupyterHub app:1139] Proxy appears to be running at http://\*:8000/, but I can't access it (HTTP 403: Forbidden)

Did CONFIGPROXY\_AUTH\_TOKEN change?

网上查找解决方法，原来是node的代理服务没有重置导致的，解决的方法就是杀掉node进程！

root@rich:~ # pkill node

再重启jupyterhub就ok了！

登录zqfx.org，终于见到了jupyterhub的web界面了！

重新加上配置文件，现在终于比较完整的装成了！

### Jupyterhub 8081端口被占用问题

有一次碰到8081端口被占用的问题，

Failed to bind hub to http://127.0.0.1:8081/hub/

直接测试如下两条命令：

configurable-http-proxy

configurable-http-proxy --ip 0.0.0.0 --port 443

root@rich:~ # configurable-http-proxy --ip 0.0.0.0 --port 443

09:02:31.478 - warn: [ConfigProxy] REST API is not authenticated.

09:02:31.488 - info: [ConfigProxy] Proxying http://0.0.0.0:443 to (no default)

09:02:31.489 - info: [ConfigProxy] Proxy API at http://localhost:444/api/routes

09:02:40.825 - error: [ConfigProxy] 404 GET /

09:02:43.772 - error: [ConfigProxy] 404 GET /

09:02:49.038 - error: [ConfigProxy] 404 GET /hub

09:03:08.913 - error: [ConfigProxy] 404 GET /hub

09:03:14.937 - error: [ConfigProxy] 404 GET /

09:03:16.483 - error: [ConfigProxy] 404 GET /

09:03:16.597 - error: [ConfigProxy] 404 GET /favicon.ico

系统能够启动。

但是8081端口被占用问题还是没有解决！

于是去查看哪个程序占用了这个端口，把它kill掉！

root@rich:~ # sockstat |grep 8081

root python 38498 7 tcp4 127.0.0.1:8081 \*:\*

root@rich:~ # pkill python

root@rich:~ # sockstat | grep 8081

root python 38498 7 tcp4 127.0.0.1:8081 \*:\*

root@rich:~ # sockstat | grep 8081

root@rich:~ # sockstat | grep 8081

再启动，ok了！

### Jupyterhub 配置问题

c.GitHubOAuthenticator.oauth\_callback\_url = 'https://www.zqfx.org/hub/oauth\_call

^

SyntaxError: EOL while scanning string literal

c.GitHubOAuthenticator.client\_secret = 'c7a3ac9e4f3dde505264e31b23d2e8f1e35534d1

^

SyntaxError: EOL while scanning string literal

经查，是在粘贴配置的时候把换行copy进去了。

于是进入vi修改即可！

### Jupyterhub的Nginx代理配置

其中nginx那里，使用配置文件为：

upstream zqfx {

server 127.0.0.1:8000;

}

server {

listen 80;

# optional ssl configuration

# end of optional ssl configuration

server\_name zqfx.org www.zqfx.org;

location / {

proxy\_set\_header Host $http\_host;

proxy\_set\_header X-Real-IP $remote\_addr;

proxy\_set\_header X-Forwarded-For $proxy\_add\_x\_forwarded\_for;

proxy\_set\_header X-Forwarded-Proto $scheme;

client\_max\_body\_size 10m;

client\_body\_buffer\_size 128k;

proxy\_connect\_timeout 60s;

proxy\_send\_timeout 90s;

proxy\_read\_timeout 90s;

proxy\_buffering off;

proxy\_temp\_file\_write\_size 64k;

proxy\_pass http://zqfx;

proxy\_redirect off;

}

}

现在的问题：

1 python的包不足

2 好像没有通过github验证！

### 安装科学计算包

### Notebook无法运行代码

Notebook中无法运行，Kernel error报错：

File "/usr/local/lib/python3.6/site-packages/notebook/services/sessions/sessionmanager.py", line 209, in row\_to\_model

raise KeyError

KeyError

网页上的提示是：A connection to the notebook server could not be established. The notebook will continue trying to reconnect. Check your network connection or notebook server configuration.

尝试1 ，重新生成配置文件，并调用配置文件：

jupyterhub --generate-config

jupyterhub -f /path/to/jupyterhub\_config.py

结果还是同上。

尝试2 在启动命令中把端口改为443，重新启动hub服务，结果就成功了！

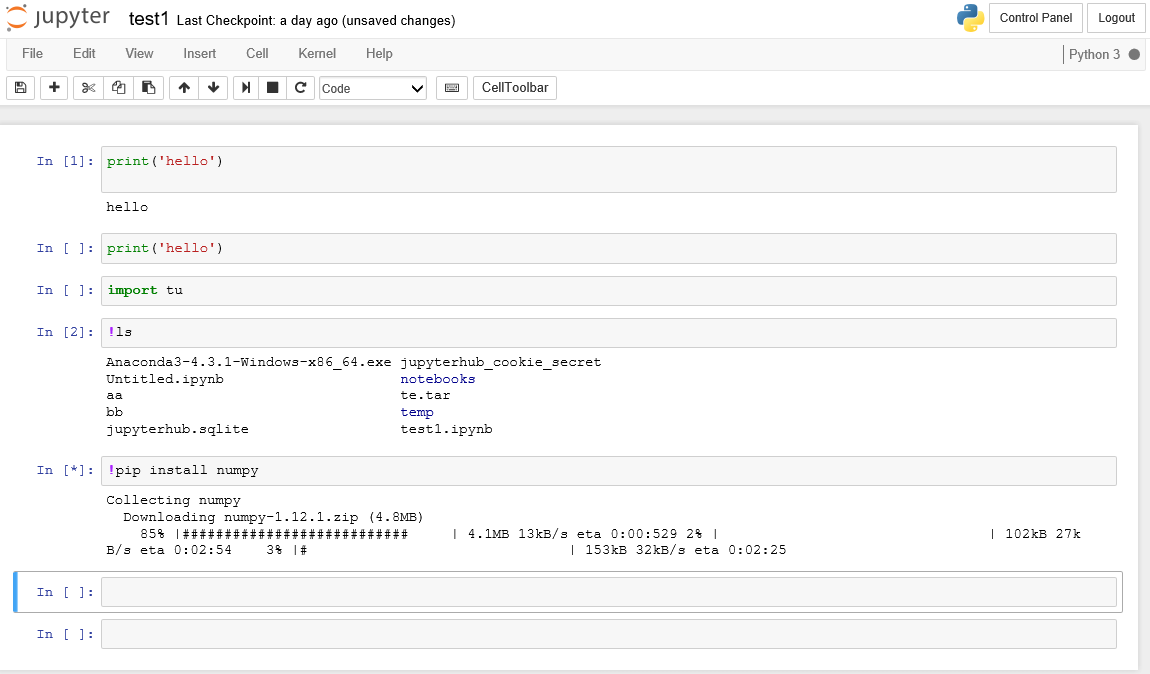
Notebook中终于可以运行代码了！

但是在测试中，总感觉那个配置文件没有起作用！

后来第二天再使用的时候，发现那个配置文件就起作用了，终于到github进行认证了！

但是github认证通过后，在网页中服务起不来。

尝试在notebook中安装numpy：



最后显示权限不足：

Collecting numpy

Downloading numpy-1.12.1.zip (4.8MB)

100% |################################| 4.8MB 26kB/s ta 0:00:019 2% | | 102kB 27kB/s eta 0:02:54 3% |# | 153kB 32kB/s eta 0:02:25

Building wheels for collected packages: numpy

Running setup.py bdist\_wheel for numpy ... - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ | / - \ done

Stored in directory: /home/skywalk/.cache/pip/wheels/50/b5/d0/3994af801e0786dfb41a9856ddf85d69c54f233e749935d536

Successfully built numpy

Installing collected packages: numpyException:

Traceback (most recent call last):

File "/usr/local/lib/python3.6/site-packages/pip/basecommand.py", line 215, in main

status = self.run(options, args)

File "/usr/local/lib/python3.6/site-packages/pip/commands/install.py", line 342, in run

prefix=options.prefix\_path,

File "/usr/local/lib/python3.6/site-packages/pip/req/req\_set.py", line 784, in install

\*\*kwargs

File "/usr/local/lib/python3.6/site-packages/pip/req/req\_install.py", line 851, in install

self.move\_wheel\_files(self.source\_dir, root=root, prefix=prefix)

File "/usr/local/lib/python3.6/site-packages/pip/req/req\_install.py", line 1064, in move\_wheel\_files

isolated=self.isolated,

File "/usr/local/lib/python3.6/site-packages/pip/wheel.py", line 345, in move\_wheel\_files

clobber(source, lib\_dir, True)

File "/usr/local/lib/python3.6/site-packages/pip/wheel.py", line 316, in clobber

ensure\_dir(destdir)

File "/usr/local/lib/python3.6/site-packages/pip/utils/\_\_init\_\_.py", line 83, in ensure\_dir

os.makedirs(path)

File "/usr/local/lib/python3.6/os.py", line 220, in makedirs

mkdir(name, mode)

PermissionError: [Errno 13] Permission denied: '/usr/local/lib/python3.6/site-packages/numpy'

关于包依赖问题，可以提前找到依赖包列表，直接安装

### 500Error

系统用户可以登陆，但是github用户登录，start server后，显示500error

500 : Internal Server Error

Spawner failed to start [status=1]

### 将jupyterhub作为一个服务运行

Run jupyterhub as a system service

<https://github.com/jupyterhub/jupyterhub/wiki/Run-jupyterhub-as-a-system-service>

## 安装ta-lib

直接在spyder里面安装，报错

!pip install talib

Collecting talib

Could not find a version that satisfies the requirement talib (from versions: )

No matching distribution found for talib

!pip install pytalib

Collecting pytalib

Could not find a version that satisfies the requirement pytalib (from versions: )

No matching distribution found for pytalib

!pip install ta-lib

Collecting ta-lib

Downloading TA-Lib-0.4.10.tar.gz (829kB)

Building wheels for collected packages: ta-lib

Running setup.py bdist\_wheel for ta-lib: started

Running setup.py bdist\_wheel for ta-lib: finished with status 'error'

Complete output from command D:\anaconda3\python.exe -u -c "import setuptools, tokenize;\_\_file\_\_='C:\\Users\\ADMINI~1\\AppData\\Local\\Temp\\pip-build-vweetmrp\\ta-lib\\setup.py';f=getattr(tokenize, 'open', open)(\_\_file\_\_);code=f.read().replace('\r\n', '\n');f.close();exec(compile(code, \_\_file\_\_, 'exec'))" bdist\_wheel -d C:\Users\ADMINI~1\AppData\Local\Temp\tmp2dkn9xcvpip-wheel- --python-tag cp36:

C:\Users\ADMINI~1\AppData\Local\Temp\pip-build-vweetmrp\ta-lib\setup.py:77: UserWarning: Cannot find ta-lib library, installation may fail.

warnings.warn('Cannot find ta-lib library, installation may fail.')

running bdist\_wheel

running build

running build\_py

creating build

creating build\lib.win-amd64-3.6

creating build\lib.win-amd64-3.6\talib

copying talib\deprecated.py -> build\lib.win-amd64-3.6\talib

copying talib\test\_abstract.py -> build\lib.win-amd64-3.6\talib

copying talib\test\_data.py -> build\lib.win-amd64-3.6\talib

copying talib\test\_func.py -> build\lib.win-amd64-3.6\talib

copying talib\test\_stream.py -> build\lib.win-amd64-3.6\talib

copying talib\\_\_init\_\_.py -> build\lib.win-amd64-3.6\talib

running build\_ext

skipping 'talib\common.c' Cython extension (up-to-date)

building 'talib.common' extension

creating build\temp.win-amd64-3.6

creating build\temp.win-amd64-3.6\Release

creating build\temp.win-amd64-3.6\Release\talib

C:\Program Files (x86)\Microsoft Visual Studio 14.0\VC\BIN\x86\_amd64\cl.exe /c /nologo /Ox /W3 /GL /DNDEBUG /MD -ID:\anaconda3\lib\site-packages\numpy\core\include -Ic:\ta-lib\c\include -ID:\anaconda3\include -ID:\anaconda3\include "-IC:\Program Files (x86)\Microsoft Visual Studio 14.0\VC\INCLUDE" "-IC:\Program Files (x86)\Windows Kits\10\include\10.0.10240.0\ucrt" "-IC:\Program Files (x86)\Windows Kits\8.1\include\shared" "-IC:\Program Files (x86)\Windows Kits\8.1\include\um" "-IC:\Program Files (x86)\Windows Kits\8.1\include\winrt" /Tctalib\common.c /Fobuild\temp.win-amd64-3.6\Release\talib\common.obj

common.c

talib\common.c(240): fatal error C1083: Cannot open include file: 'ta\_libc.h': No such file or directory

error: command 'C:\\Program Files (x86)\\Microsoft Visual Studio 14.0\\VC\\BIN\\x86\_amd64\\cl.exe' failed with exit status 2

----------------------------------------

Running setup.py clean for ta-lib

Failed to build ta-lib

Installing collected packages: ta-lib

Running setup.py install for ta-lib: started

Running setup.py install for ta-lib: finished with status 'error'

Complete output from command D:\anaconda3\python.exe -u -c "import setuptools, tokenize;\_\_file\_\_='C:\\Users\\ADMINI~1\\AppData\\Local\\Temp\\pip-build-vweetmrp\\ta-lib\\setup.py';f=getattr(tokenize, 'open', open)(\_\_file\_\_);code=f.read().replace('\r\n', '\n');f.close();exec(compile(code, \_\_file\_\_, 'exec'))" install --record C:\Users\ADMINI~1\AppData\Local\Temp\pip-3vzffcti-record\install-record.txt --single-version-externally-managed --compile:

C:\Users\ADMINI~1\AppData\Local\Temp\pip-build-vweetmrp\ta-lib\setup.py:77: UserWarning: Cannot find ta-lib library, installation may fail.

warnings.warn('Cannot find ta-lib library, installation may fail.')

running install

running build

running build\_py

creating build

creating build\lib.win-amd64-3.6

creating build\lib.win-amd64-3.6\talib

copying talib\deprecated.py -> build\lib.win-amd64-3.6\talib

copying talib\test\_abstract.py -> build\lib.win-amd64-3.6\talib

copying talib\test\_data.py -> build\lib.win-amd64-3.6\talib

copying talib\test\_func.py -> build\lib.win-amd64-3.6\talib

copying talib\test\_stream.py -> build\lib.win-amd64-3.6\talib

copying talib\\_\_init\_\_.py -> build\lib.win-amd64-3.6\talib

running build\_ext

skipping 'talib\common.c' Cython extension (up-to-date)

building 'talib.common' extension

creating build\temp.win-amd64-3.6

creating build\temp.win-amd64-3.6\Release

creating build\temp.win-amd64-3.6\Release\talib

C:\Program Files (x86)\Microsoft Visual Studio 14.0\VC\BIN\x86\_amd64\cl.exe /c /nologo /Ox /W3 /GL /DNDEBUG /MD -ID:\anaconda3\lib\site-packages\numpy\core\include -Ic:\ta-lib\c\include -ID:\anaconda3\include -ID:\anaconda3\include "-IC:\Program Files (x86)\Microsoft Visual Studio 14.0\VC\INCLUDE" "-IC:\Program Files (x86)\Windows Kits\10\include\10.0.10240.0\ucrt" "-IC:\Program Files (x86)\Windows Kits\8.1\include\shared" "-IC:\Program Files (x86)\Windows Kits\8.1\include\um" "-IC:\Program Files (x86)\Windows Kits\8.1\include\winrt" /Tctalib\common.c /Fobuild\temp.win-amd64-3.6\Release\talib\common.obj

common.c

talib\common.c(240): fatal error C1083: Cannot open include file: 'ta\_libc.h': No such file or directory

error: command 'C:\\Program Files (x86)\\Microsoft Visual Studio 14.0\\VC\\BIN\\x86\_amd64\\cl.exe' failed with exit status 2

----------------------------------------

Failed building wheel for ta-lib

Command "D:\anaconda3\python.exe -u -c "import setuptools, tokenize;\_\_file\_\_='C:\\Users\\ADMINI~1\\AppData\\Local\\Temp\\pip-build-vweetmrp\\ta-lib\\setup.py';f=getattr(tokenize, 'open', open)(\_\_file\_\_);code=f.read().replace('\r\n', '\n');f.close();exec(compile(code, \_\_file\_\_, 'exec'))" install --record C:\Users\ADMINI~1\AppData\Local\Temp\pip-3vzffcti-record\install-record.txt --single-version-externally-managed --compile" failed with error code 1 in C:\Users\ADMINI~1\AppData\Local\Temp\pip-build-vweetmrp\ta-lib\

直接到网站下载

<http://www.lfd.uci.edu/~gohlke/pythonlibs/#ta-lib>

我是64位 python36 ，因此下载下面那个文件：

* [TA\_Lib‑0.4.10‑cp36‑cp36m‑win\_amd64.whl](http://www.lfd.uci.edu/~gohlke/pythonlibs/javascript:;" \o "[972 KB] [Nov 22, 2016])

直接进入cmd界面，进入刚才下载到的文件目录，pip 安装：

D:\>cd 360极速浏览器下载

D:\360极速浏览器下载>pip install TA\_Lib-0.4.10-cp36-cp36m-win\_amd64.whl

Processing d:\360极速浏览器下载\ta\_lib-0.4.10-cp36-cp36m-win\_amd64.whl

Installing collected packages: TA-Lib

Successfully installed TA-Lib-0.4.10

进入spyder，测试下：

import talib

没有报错，证明安装成功！

### RQalpha测试框架

直接在spyder里安装了rqalpha框架

!pip install -i https://pypi.tuna.tsinghua.edu.cn/simple rqalpha

发现这个框架有搞头！

### VNpy交易框架

这个框架不错，集合了市面上常见的交易端

## Python金融科学计算包

root@rich:~ # pip install -i https://pypi.tuna.tsinghua.edu.cn/simple scipy pandas tushare

Collecting scipy

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e5/93/9a8290e7eb5d4f7cb53b9a7ad7b92b9827ecceaddfd04c2a83f195d8767d/scipy-0.19.0.zip (15.3MB)

100% |################################| 15.3MB 59kB/s

Collecting pandas

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/08/9d/31ec596099f14528fc6ad39428248ac5360f0bb5205a3ee79a5d1cf260fb/pandas-0.19.2.tar.gz (9.2MB)

100% |################################| 9.2MB 89kB/s

Collecting tushare

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e6/86/ad0b88b85119292a4503a43355091988c25a234d0e89511b782464c4ff46/tushare-0.7.4.tar.gz (89kB)

100% |################################| 92kB 1.4MB/s

Complete output from command python setup.py egg\_info:

Traceback (most recent call last):

File "<string>", line 1, in <module>

File "/tmp/pip-build-df739anc/tushare/setup.py", line 4, in <module>

import tushare

File "/tmp/pip-build-df739anc/tushare/tushare/\_\_init\_\_.py", line 6, in <module>

from tushare.stock.trading import (get\_hist\_data, get\_tick\_data,

File "/tmp/pip-build-df739anc/tushare/tushare/stock/trading.py", line 13, in <module>

import lxml.html

ModuleNotFoundError: No module named 'lxml'

----------------------------------------

Command "python setup.py egg\_info" failed with error code 1 in /tmp/pip-build-df739anc/tushare/

Pip安装lxml，失败。

发现需要安装的库为：lapack/blas

为了快速安装，使用了清华镜像。

pip install -i https://pypi.tuna.tsinghua.edu.cn/simple lxml scipy pandas

或者在在~/.pip/pip.conf文件中，加入：.

[global]

index-url = https://pypi.tuna.tsinghua.edu.cn/simple

Pkg 安装libxml2

root@rich:~ # pkg install libxml2

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 1 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

libxml2: 2.9.4

Number of packages to be installed: 1

The process will require 5 MiB more space.

802 KiB to be downloaded.

Proceed with this action? [y/N]: y

Fetching libxml2-2.9.4.txz: 100% 802 KiB 410.6kB/s 00:02

Checking integrity... done (0 conflicting)

[1/1] Installing libxml2-2.9.4...

[1/1] Extracting libxml2-2.9.4: 100%

安装好后，安装scipy：

提示：

no lapack/blas resources found

#pkg install blas

顺带着把gcc也装了：

Message from gcc-5.4.0:

To ensure binaries built with this toolchain find appropriate versions

of the necessary run-time libraries, you may want to link using

-Wl,-rpath=/usr/local/lib/gcc5

For ports leveraging USE\_GCC, USES=compiler, or USES=fortran this happens

transparently.

安装好后，scipy还是无法编译过关

手抖打出来了pip install 1,竟然安装了几个模块：

Successfully built l betterpath vcversioner

Installing collected packages: vcversioner, betterpath, click, l

Successfully installed betterpath-0.2.2 click-6.7 l-0.11.0 vcversioner-2.16.0.0

安装pandas 正常

### 安装matplotlib

，显示：

freetype, png 无法build

于是单独用pkg安装：

root@rich:~ # pkg install freetype png

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 2 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

freetype: 1.3.1\_5

png: 1.6.29

Number of packages to be installed: 2

The process will require 2 MiB more space.

410 KiB to be downloaded.

Proceed with this action? [y/N]:

安装好后，scipy和matplotlib还是安装不上

于是pkg安装几个包：

New packages to be INSTALLED:

cblas: 1.0\_6

swig: 2.0.12\_2

openblas: 0.2.19\_1,1

lua51: 5.1.5\_9

libedit: 3.1.20150325\_2,1

pcre: 8.40

安装matplotlib的时候，还是显示freetype没有安装

先安装了freetype2，然后安装matplotlib，成功！

root@rich:~ # pkg install freetype2

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 1 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

freetype2: 2.7.1

Number of packages to be installed: 1

The process will require 4 MiB more space.

629 KiB to be downloaded.

Proceed with this action? [y/N]: y

Fetching freetype2-2.7.1.txz: 100% 629 KiB 322.2kB/s 00:02

Checking integrity... done (0 conflicting)

[1/1] Installing freetype2-2.7.1...

[1/1] Extracting freetype2-2.7.1: 100%

Message from freetype2-2.7.1:

The 2.7.x series now uses the new subpixel hinting mode (V40 port's option) as

the default, emulating a modern version of ClearType. This change inevitably

leads to different rendering results, and you might change port's options to

adapt it to your taste (or use the new "FREETYPE\_PROPERTIES" environment

variable).

The environment variable "FREETYPE\_PROPERTIES" can be used to control the

driver properties. Example:

FREETYPE\_PROPERTIES=truetype:interpreter-version=35 \

cff:no-stem-darkening=1 \

autofitter:warping=1

This allows to select, say, the subpixel hinting mode at runtime for a given

application.

The controllable properties are listed in the section "Controlling FreeType

Modules" in the reference's table of contents

(/usr/local/share/doc/freetype2/reference/ft2-toc.html, if documentation was installed).

Freetype2安装好后，

root@rich:~ # pip install matplotlib

Collecting matplotlib

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/79/a9/db688816150a6ef91fd9ce284c828467f7271c7dd5982753a73a8e1aaafa/matplotlib-2.0.0.tar.gz (53.2MB)

100% |################################| 53.2MB 16kB/s

Requirement already satisfied: numpy>=1.7.1 in /usr/local/lib/python3.6/site-packages (from matplotlib)

Requirement already satisfied: six>=1.10 in /usr/local/lib/python3.6/site-packages (from matplotlib)

Requirement already satisfied: python-dateutil in /usr/local/lib/python3.6/site-packages (from matplotlib)

Requirement already satisfied: pytz in /usr/local/lib/python3.6/site-packages (from matplotlib)

Collecting cycler>=0.10 (from matplotlib)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f7/d2/e07d3ebb2bd7af696440ce7e754c59dd546ffe1bbe732c8ab68b9c834e61/cycler-0.10.0-py2.py3-none-any.whl

Requirement already satisfied: pyparsing!=2.0.4,!=2.1.2,!=2.1.6,>=1.5.6 in /usr/local/lib/python3.6/site-packages (from matplotlib)

Building wheels for collected packages: matplotlib

Running setup.py bdist\_wheel for matplotlib ... done

Stored in directory: /root/.cache/pip/wheels/d3/2a/1f/6548c1dd108aa44be34829dd3c851d5f7e9ea6bf84d4cc48e7

Successfully built matplotlib

Installing collected packages: cycler, matplotlib

Successfully installed cycler-0.10.0 matplotlib-2.0.0

Matplotlib安装成功！

在前面尝试中，

测试一下pkg安装matplotlib，发现会装一大堆东西：

py27-matplotlib: 1.5.3\_2

libglade2: 2.6.4\_8

gtk2: 2.24.29\_3

hicolor-icon-theme: 0.15

libXdamage: 1.1.4\_3

xproto: 7.0.31

libXfixes: 5.0.3

fixesproto: 5.0

libX11: 1.6.5,1

libXdmcp: 1.1.2

libxcb: 1.12\_2

libpthread-stubs: 0.4

libXau: 1.0.8\_3

kbproto: 1.0.7

damageproto: 1.2.1

gtk-update-icon-cache: 2.24.29

pango: 1.38.0\_1

encodings: 1.0.4\_3,1

font-util: 1.3.1

libXft: 2.3.2\_1

libXrender: 0.9.10

renderproto: 0.11.1

fontconfig: 2.12.1,1

expat: 2.2.0\_1

freetype2: 2.7.1

xorg-fonts-truetype: 7.7\_1

font-misc-meltho: 1.0.3\_3

mkfontdir: 1.0.7

mkfontscale: 1.1.2

libfontenc: 1.1.3\_1

font-bh-ttf: 1.0.3\_3

font-misc-ethiopic: 1.0.3\_3

dejavu: 2.37

harfbuzz: 1.4.5\_1

cairo: 1.14.8,2

glproto: 1.4.17

libEGL: 13.0.6

gbm: 13.0.6

libglapi: 13.0.6

libXvMC: 1.0.10

libXv: 1.0.11,1

videoproto: 2.3.3

libXext: 1.3.3\_1,1

xextproto: 7.3.0

libdrm: 2.4.75\_3,1

libpciaccess: 0.13.4

pciids: 20170316

libdevq: 0.0.4

libxshmfence: 1.2\_1

llvm39: 3.9.1\_4

libGL: 13.0.6

libXxf86vm: 1.1.4\_1

xf86vidmodeproto: 2.3.1

xcb-util-renderutil: 0.3.9\_1

xcb-util: 0.4.0\_2,1

dri2proto: 2.8

pixman: 0.34.0

glib: 2.46.2\_5

libiconv: 1.14\_10

graphite2: 1.3.9

libXcursor: 1.1.14\_3

libXinerama: 1.1.3\_3,1

xineramaproto: 1.2.1

libXcomposite: 0.4.4\_3,1

compositeproto: 0.4.2

libXi: 1.7.9,1

inputproto: 2.3.2

atk: 2.18.0

libXrandr: 1.5.1

randrproto: 1.5.0

gdk-pixbuf2: 2.32.3\_1

libXt: 1.1.5,1

libSM: 1.2.2\_3,1

libICE: 1.0.9\_1,1

jasper: 1.900.1\_16

jpeg-turbo: 1.5.1

tiff: 4.0.7\_1

jbigkit: 2.1\_1

shared-mime-info: 1.5

cups: 2.2.2\_1

avahi-app: 0.6.31\_5

gnome\_subr: 1.0

dbus-glib: 0.104

dbus: 1.10.14\_2

gobject-introspection: 1.46.0

gdbm: 1.12

libdaemon: 0.14\_1

gnutls: 3.5.9

nettle: 3.3

libtasn1: 4.10

trousers: 0.3.14\_1

tpm-emulator: 0.7.4\_1

p11-kit: 0.23.5

libunistring: 0.9.7

py27-tkinter: 2.7.13\_6

tcl86: 8.6.6\_2

tk86: 8.6.6

libXScrnSaver: 1.2.2\_3

scrnsaverproto: 1.2.2

py27-setuptools: 32.1.0\_1

py27-gobject: 2.28.6\_6

py27-cairo: 1.10.0\_2

py27-pyparsing: 2.2.0

py27-pytz: 2016.10,1

py27-dateutil: 2.6.0

py27-six: 1.10.0

py27-numpy: 1.11.2\_3,1

suitesparse: 4.0.2\_6

lapack: 3.5.0\_2

py27-gtk2: 2.24.0\_4

py27-tornado: 4.4.2

py27-certifi: 2017.1.23

py27-singledispatch: 3.4.0.3\_1

py27-backports\_abc: 0.5

py27-cycler: 0.10.0

换句话说，py3的库也会不少！

而且从上面的库中，可以发现freetype的库名叫freetype2，用pkg装了freetype2后，再用pip装matplotlib就成功了！

### 安装scipy

一直报错，没办法，先尝试安装2.7的scipy

root@rich:~ # pkg install science/py-scipy

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

Checking integrity... done (1 conflicting)

- py27-setuptools-32.1.0\_1 conflicts with py36-setuptools36-32.1.0 on /usr/local/bin/easy\_install

Checking integrity... done (0 conflicting)

The following 10 package(s) will be affected (of 0 checked):

Installed packages to be REMOVED:

py36-setuptools36-32.1.0

py36-pyzmq-16.0.2

New packages to be INSTALLED:

py27-scipy: 0.19.0\_1

py27-numpy: 1.11.2\_3,1

py36-setuptools: 32.1.0\_1

suitesparse: 4.0.2\_6

py27-setuptools: 32.1.0\_1

lapack: 3.5.0\_2

swig13: 1.3.40\_1

Installed packages to be UPGRADED:

py36-sqlite3: 3.6.0\_7 -> 3.6.1\_7

Number of packages to be removed: 2

Number of packages to be installed: 7

Number of packages to be upgraded: 1

The process will require 137 MiB more space.

489 KiB to be downloaded.

Proceed with this action? [y/N]:

结果发现需要卸载python3的几个包，所以当然没有安装2.7版本的。

Scipy官网建议的安装命令：

pip install --user numpy scipy matplotlib ipython jupyter pandas sympy nose

Pip安装scipy报错：

File "scipy/linalg/setup.py", line 20, in configuration

raise NotFoundError('no lapack/blas resources found')

numpy.distutils.system\_info.NotFoundError: no lapack/blas resources found

如果是windows平台，可以直接到下面网址下载whl安装包：

<http://www.lfd.uci.edu/~gohlke/pythonlibs/#scipy>

安装lapack包后，报错信息改变：

root@rich:~ # pkg install lapack

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

Checking integrity... done (0 conflicting)

The following 1 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

lapack: 3.5.0\_2

Number of packages to be installed: 1

The process will require 29 MiB more space.

Proceed with this action? [y/N]: y

[1/1] Installing lapack-3.5.0\_2...

[1/1] Extracting lapack-3.5.0\_2: 100%

Pip报错信息如下：

self.calc\_info()

File "/usr/local/lib/python3.6/site-packages/numpy/distutils/system\_info.py", line 1677, in calc\_info

lib = self.has\_cblas(info)

File "/usr/local/lib/python3.6/site-packages/numpy/distutils/system\_info.py", line 1721, in has\_cblas

extra\_postargs=info.get('extra\_link\_args', []))

File "/usr/local/lib/python3.6/distutils/ccompiler.py", line 734, in link\_executable

debug, extra\_preargs, extra\_postargs, None, target\_lang)

File "/usr/local/lib/python3.6/distutils/unixccompiler.py", line 198, in link

raise LinkError(msg)

distutils.errors.LinkError: Command "cc /tmp/tmpib10r\_9x/tmp/tmpib10r\_9x/source.o -L/usr/local/lib -lblas -o /tmp/tmpib10r\_9x/a.out" failed with exit status 1

初步看，是不是要安装lblas呢？

没有，但是发现clblas

root@rich:~ # pkg install clblas

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 4 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

clblas: 2.10\_2

boost-libs: 1.63.0\_1

opencl: 2.1

ocl-icd: 2.2.11\_1

Number of packages to be installed: 4

The process will require 168 MiB more space.

11 MiB to be downloaded.

Proceed with this action? [y/N]:

安装好后

还是pip安装失败，不过错误提示已经改变成：

python3.6/distutils/unixccompiler.py", line 198, in link

raise LinkError(msg)

Pip安装失败，再次在freebsd port中查找scipy，发现science/python-scipy包，在ports安装的时候，发现提示：

===> License BSD3CLAUSE accepted by the user

===> Found saved configuration for py36-scipy-0.18.1\_1

===> py36-scipy-0.18.1\_1 depends on file: /usr/local/sbin/pkg - found

=> scipy-0.18.1.tar.gz doesn't seem to exist in /usr/ports/distfiles/.

=> Attempting to fetch ftp://ftp.freebsdchina.org/pub/FreeBSD/ports/distfiles/scipy-0.18.1.tar.gz

看来有py36的scipy包了，先尝试用pkg安装试试。而且发现ports中获取的版本是0.18.1，而网站ports树现实最新版本是0.19，所以先更新ports树：

Portsnap auto

更新ports，ports安装：

File "/usr/local/lib/python3.6/distutils/ccompiler.py", line 734, in link\_exutable

debug, extra\_preargs, extra\_postargs, None, target\_lang)

File "/usr/local/lib/python3.6/distutils/unixccompiler.py", line 198, in lin

raise LinkError(msg)

distutils.errors.LinkError: Command "cc /tmp/tmpf57f1ukf/tmp/tmpf57f1ukf/sourco -L/usr/local/lib -lblas -o /tmp/tmpf57f1ukf/a.out" failed with exit status 1

\*\*\* Error code 1

有病乱求医，只好把pkg包都更新到最新：

root@rich:/usr/ports/science/py-scipy # pkg upgrade

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

Checking for upgrades (13 candidates): 100%

Processing candidates (13 candidates): 100%

The following 13 package(s) will be affected (of 0 checked):

Installed packages to be UPGRADED:

wget: 1.18\_2 -> 1.19

python36: 3.6.0 -> 3.6.1

perl5: 5.24.1.r4\_1 -> 5.24.1

npm: 4.0.5 -> 4.4.4\_1

node: 7.3.0 -> 7.8.0\_1

nano: 2.7.3 -> 2.8.0

lynx: 2.8.8.2\_5,1 -> 2.8.8.2\_6,1

libuv: 1.10.1 -> 1.11.0

libsodium: 1.0.11\_1 -> 1.0.12

libnghttp2: 1.18.0 -> 1.21.0

curl: 7.53.0 -> 7.53.1\_1

ca\_root\_nss: 3.29.3 -> 3.30

c-ares: 1.12.0 -> 1.12.0\_1

Number of packages to be upgraded: 13

The process will require 3 MiB more space.

39 MiB to be downloaded.

Proceed with this action? [y/N]: y

Fetching wget-1.19.txz: 100% 616 KiB 126.2kB/s 00:05

Fetching python36-3.6.1.txz: 100% 15 MiB 246.8kB/s 01:02

Fetching perl5-5.24.1.txz: 100% 13 MiB 191.7kB/s 01:13

Fetching npm-4.4.4\_1.txz: 100% 3 MiB 164.7kB/s 00:17

Fetching node-7.8.0\_1.txz: 100% 4 MiB 195.8kB/s 00:23

Fetching nano-2.8.0.txz: 100% 469 KiB 159.9kB/s 00:03

Fetching lynx-2.8.8.2\_6,1.txz: 100% 2 MiB 175.5kB/s 00:09

Fetching libuv-1.11.0.txz: 100% 88 KiB 90.4kB/s 00:01

Fetching libsodium-1.0.12.txz: 100% 217 KiB 110.9kB/s 00:02

Fetching libnghttp2-1.21.0.txz: 100% 104 KiB 106.3kB/s 00:01

Fetching curl-7.53.1\_1.txz: 100% 1 MiB 221.1kB/s 00:05

Fetching ca\_root\_nss-3.30.txz: 100% 333 KiB 170.7kB/s 00:02

Fetching c-ares-1.12.0\_1.txz: 100% 120 KiB 122.6kB/s 00:01

Checking integrity... done (0 conflicting)

[1/13] Upgrading libuv from 1.10.1 to 1.11.0...

[1/13] Extracting libuv-1.11.0: 100%

[2/13] Upgrading ca\_root\_nss from 3.29.3 to 3.30...

[2/13] Extracting ca\_root\_nss-3.30: 100%

[3/13] Upgrading c-ares from 1.12.0 to 1.12.0\_1...

[3/13] Extracting c-ares-1.12.0\_1: 100%

[4/13] Upgrading node from 7.3.0 to 7.8.0\_1...

[4/13] Extracting node-7.8.0\_1: 100%

[5/13] Upgrading libnghttp2 from 1.18.0 to 1.21.0...

[5/13] Extracting libnghttp2-1.21.0: 100%

[6/13] Upgrading wget from 1.18\_2 to 1.19...

[6/13] Extracting wget-1.19: 100%

[7/13] Upgrading python36 from 3.6.0 to 3.6.1...

[7/13] Extracting python36-3.6.1: 100%

[8/13] Upgrading perl5 from 5.24.1.r4\_1 to 5.24.1...

[8/13] Extracting perl5-5.24.1: 100%

[9/13] Upgrading npm from 4.0.5 to 4.4.4\_1...

[9/13] Extracting npm-4.4.4\_1: 100%

[10/13] Upgrading nano from 2.7.3 to 2.8.0...

[10/13] Extracting nano-2.8.0: 100%

[11/13] Upgrading lynx from 2.8.8.2\_5,1 to 2.8.8.2\_6,1...

[11/13] Extracting lynx-2.8.8.2\_6,1: 100%

[12/13] Upgrading libsodium from 1.0.11\_1 to 1.0.12...

[12/13] Extracting libsodium-1.0.12: 100%

[13/13] Upgrading curl from 7.53.0 to 7.53.1\_1...

[13/13] Extracting curl-7.53.1\_1: 100%

Message from ca\_root\_nss-3.30:

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* WARNING \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

FreeBSD does not, and can not warrant that the certification authorities

whose certificates are included in this package have in any way been

audited for trustworthiness or RFC 3647 compliance.

Assessment and verification of trust is the complete responsibility of the

system administrator.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* NOTE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

This package installs symlinks to support root certificates discovery by

default for software that uses OpenSSL.

This enables SSL Certificate Verification by client software without manual

intervention.

If you prefer to do this manually, replace the following symlinks with

either an empty file or your site-local certificate bundle.

\* /etc/ssl/cert.pem

\* /usr/local/etc/ssl/cert.pem

\* /usr/local/openssl/cert.pem

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Message from node-7.8.0\_1:

Note: If you need npm (Node Package Manager), please install www/npm.

Message from python36-3.6.1:

===========================================================================

Note that some standard Python modules are provided as separate ports

as they require additional dependencies. They are available as:

py36-gdbm databases/py36-gdbm

py36-sqlite3 databases/py36-sqlite3

py36-tkinter x11-toolkits/py36-tkinter

===========================================================================

Message from perl5-5.24.1:

The /usr/bin/perl symlink has been removed starting with Perl 5.20.

For shebangs, you should either use:

#!/usr/local/bin/perl

or

#!/usr/bin/env perl

The first one will only work if you have a /usr/local/bin/perl,

the second will work as long as perl is in PATH.

Message from lynx-2.8.8.2\_6,1:

To enable certificate handling for SSL connnections, set

SSL\_CERT\_DIR and SSL\_CERT\_FILE in your environment to the

proper values (depending upon which SSL library

/usr/local/bin/lynx uses), as described in:

/usr/local/share/doc/lynx/docs/README.sslcerts

and:

/usr/local/share/doc/lynx/docs/README.rootcerts.

You may also need to generate keys and certificates as

described in the latter document and your SSL documentation.

再次ports安装scipy，还是报错：

Command "cc /tmp/tmpx4gf2\_ls/tmp/tmpx4gf2\_ls/source.o -L/usr/local/lib -lblas -o /tmp/tmpx4gf2\_ls/a.out" failed with exit status 1

### 安装sympy成功

pip install sympy

### 安装tushare

root@rich:~ # pip install tushare

Collecting tushare

Using cached https://pypi.tuna.tsinghua.edu.cn/packages/e6/86/ad0b88b85119292a4503a43355091988c25a234d0e89511b782464c4ff46/tushare-0.7.4.tar.gz

Complete output from command python setup.py egg\_info:

Traceback (most recent call last):

File "<string>", line 1, in <module>

File "/tmp/pip-build-beqv9nrn/tushare/setup.py", line 4, in <module>

import tushare

File "/tmp/pip-build-beqv9nrn/tushare/tushare/\_\_init\_\_.py", line 6, in <module>

from tushare.stock.trading import (get\_hist\_data, get\_tick\_data,

File "/tmp/pip-build-beqv9nrn/tushare/tushare/stock/trading.py", line 13, in <module>

import lxml.html

ModuleNotFoundError: No module named 'lxml'

----------------------------------------

Command "python setup.py egg\_info" failed with error code 1 in /tmp/pip-build-beqv9nrn/tushare/

现实没有lxml模块。

Pip install lxml 还是失败：

Could not find function xmlCheckVersion in library libxml2. Is libxml2 installed?

发现有py27的lxml安装包：

root@rich:~ # pkg install py-lxml

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

pkg: No packages available to install matching 'py-lxml' have been found in the repositories

root@rich:~ # pkg install devel/py-lxml

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 5 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

py27-lxml: 3.6.0

libxslt: 1.1.29\_1

libgcrypt: 1.7.6

libgpg-error: 1.27

py27-setuptools: 32.1.0\_1

Number of packages to be installed: 5

The process will require 35 MiB more space.

3 MiB to be downloaded.

Proceed with this action? [y/N]:

但是我们需要3.6版本，所以没有安装这个

先安装libxslt

root@rich:~ # pkg install libxslt

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 3 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

libxslt: 1.1.29\_1

libgcrypt: 1.7.6

libgpg-error: 1.27

Number of packages to be installed: 3

The process will require 6 MiB more space.

1 MiB to be downloaded.

Proceed with this action? [y/N]: y

Fetching libxslt-1.1.29\_1.txz: 100% 221 KiB 225.8kB/s 00:01

Fetching libgcrypt-1.7.6.txz: 100% 683 KiB 349.6kB/s 00:02

Fetching libgpg-error-1.27.txz: 100% 183 KiB 187.9kB/s 00:01

Checking integrity... done (0 conflicting)

[1/3] Installing libgpg-error-1.27...

[1/3] Extracting libgpg-error-1.27: 100%

[2/3] Installing libgcrypt-1.7.6...

[2/3] Extracting libgcrypt-1.7.6: 100%

[3/3] Installing libxslt-1.1.29\_1...

[3/3] Extracting libxslt-1.1.29\_1: 100%

装完libxslt后，再次安装lxml：

root@rich:~ # pkg install libxslt

Updating FreeBSD repository catalogue...

FreeBSD repository is up-to-date.

All repositories are up-to-date.

The following 3 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:

libxslt: 1.1.29\_1

libgcrypt: 1.7.6

libgpg-error: 1.27

Number of packages to be installed: 3

The process will require 6 MiB more space.

1 MiB to be downloaded.

Proceed with this action? [y/N]: y

Fetching libxslt-1.1.29\_1.txz: 100% 221 KiB 225.8kB/s 00:01

Fetching libgcrypt-1.7.6.txz: 100% 683 KiB 349.6kB/s 00:02

Fetching libgpg-error-1.27.txz: 100% 183 KiB 187.9kB/s 00:01

Checking integrity... done (0 conflicting)

[1/3] Installing libgpg-error-1.27...

[1/3] Extracting libgpg-error-1.27: 100%

[2/3] Installing libgcrypt-1.7.6...

[2/3] Extracting libgcrypt-1.7.6: 100%

[3/3] Installing libxslt-1.1.29\_1...

[3/3] Extracting libxslt-1.1.29\_1: 100%

root@rich:~ # whereis python-lxml2

python-lxml2:

root@rich:~ # pip install lxml

Collecting lxml

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/39/e8/a8e0b1fa65dd021d48fe21464f71783655f39a41f218293c1c590d54eb82/lxml-3.7.3.tar.gz (3.8MB)

100% |################################| 3.8MB 230kB/s

Building wheels for collected packages: lxml

Running setup.py bdist\_wheel for lxml ... \ done

Stored in directory: /root/.cache/pip/wheels/c0/d5/e8/2ed034ad24fccd94d8bd888071997203129aedd78a4ca83b8e

Successfully built lxml

Installing collected packages: lxml

Successfully installed lxml-3.7.3

终于把lxml装好了！

还是这句报错：

File "/usr/local/lib/python3.6/distutils/unixccompiler.py", line 198, in link

raise LinkError(msg)

# 现在的工作

Running My Own Jupyter Notebook Server in a FreeBSD Jail

http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/#installpython

# 解决程序化几个问题：

## 1 信息获取

基本股票信息获取：Tushare

信息获得可以从几个方面：

### 1 Tushare框架

目前只有股票，没有期货的。未来会增加期货数据

### 2 Ricequant

有股票、期货以及1分钟数据，但是因为是在网上，有些策略可能不愿意放在网上。

### 3 RQalpha

开源的只有A股市场日线，如果需要分钟回测或更细级别回测，可以在Ricequant上进行。也可以实现数据层接口函数来使用自己的数据。

### 4 Wind程序化插件

Wind有个人免费版和收费版，免费版数据量和范围会受一些限制，交易单元除账户数受限制外一样。

|  |  |  |  |
| --- | --- | --- | --- |
| **命令** | **功能** | **免费个人版** | **机构版** |
| WSQ | 获取行情数据,股票、期货、期权都能取 | 不限股票代码，订阅指标个数不超过100个 | 最多40000个指标 |
| 交易接口 | 进行模拟和实盘交易接口 | 支持模拟交易；同时支持5个账号；支持期货CTP实盘交易 | 同时支持50个账号，支持模拟交易和期货CTP实盘交易； |
| WSS\WSD | 获取历史数据（日数据/快照数据） | 个人版不再限制A股和期货的代码，现在支持所有A股和股指期货的历史日行情数据的获取，除历史日行情和基本资料以外的其他日级别数据限1年  说明：1. 技术指标每次限取50个，大于50个时可分多次获取；2. 复权因子 只能取最近三年 | 除行情数据外，还能获取股票、期货、期权、基金、外汇等行情数据、财务数据、分析师预测和评级以及融资融券等各种数据 |
| WSI | 获取历史数据（分钟数据） | 股票以及期货最近1个月的分钟数据 | 最近3年，不限品种 |
| WSET | 获取数据集，如指数成分，板块成分等等 | 支持部分数据获取 | 支持各种板块成分和统计报表数据 |
| WST | 获取日内跳价数据（高频数据） | 不提供 | 最近7天，不限品种 |
| EDB | 获取宏观经济数据 | 不提供 | 支持 |

### Quandl

网站：<https://www.quandl.com>

支持各种语言api插件！

可以自由使用，但是需要注册一个账号！

安装方式：

pip3 install quandl

import quandl

设置api key：

quandl.ApiConfig.api\_key = "YOURAPIKEY"

我的Key 9QJdG-RZ4zb7gvS\_DYs-

quandl.ApiConfig.api\_key = "9QJdG-RZ4zb7gvS\_DYs-"

下载Nokia的数据：

data=quandl.get\_table('MER/F1',compnumber='39102',paginate=True)

下载苹果和微软的收盘价：

data = quandl.get\_table('WIKI/PRICES', qopts = { 'columns': ['ticker', 'date', 'close'] }, ticker = ['AAPL', 'MSFT'], date = { 'gte': '2016-01-01', 'lte': '2016-12-31' })

总体而言数据非常多，主要有：

股价、基本面、收益评级分析、期货、期权、经济和外汇数据等

<https://docs.quandl.com/docs/data-organization>

## 2 信息处理

Pandas数据处理

## 3 信息输出

## 4 程序化交易

# 程序化交易系统实例

## Wind资讯量化交易系统

1 安装

首先到Wind资讯量化交易系统网站，下载交易系统插件。有个人版和机构版两种，个人版在一些方面受限制，但是也可以进行前期的学习和测试，机构版需要购买Wind金融终端，公开报价8.8万/年。

我们首先去网站下载个人版进行演示操作！

下载地址：

<http://www.dajiangzhang.com/document>



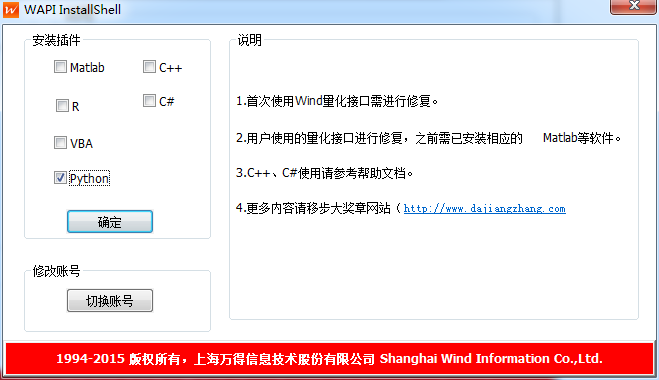
直接点击立即下载，下载完成后开始安装：



安装完成：

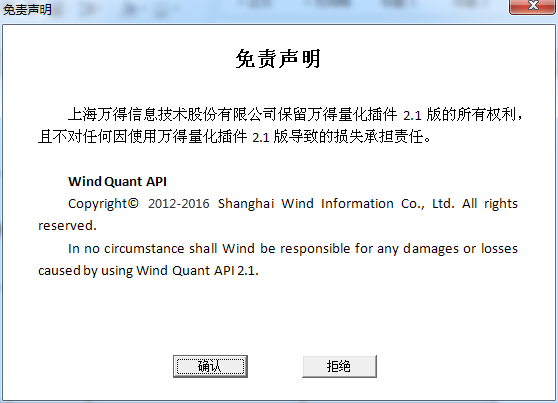


我们选择启动量化接口，进入选择语言界面：

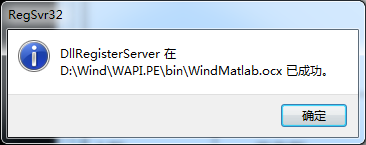


如上图所示，量化接口支持Matlab、C++ 、R、C#、VBA、Python等语言，这里我们选择Python！目前量化接口版本是2.1，最后一次更新是2015年。自从2015年股市暴跌以后，股票的量化基本被禁了。

点击确定后，出来免责声明，这个你懂的：



插件注册成功：



他在系统里找到了python：

D:\anaconda3\python.exe "D:\Wind\WAPI.PE\bin\installWindPy.py" "D:\Wind\WAPI.PE"

3.6.0 |Anaconda custom (64-bit)| (default, Dec 23 2016, 11:57:41) [MSC v.1900 64

bit (AMD64)]

Python is 64 bits

Installed into

D:\anaconda3\lib\site-packages

OK!

请按任意键继续. . .

我的Python环境是64位， 安装在D:\anaconda3\，Wind把它的插件包装在了D:\anaconda3\lib\site-packages目录下。后面的大家可以略过，具体在site-packages目录下，存在这个文件Windpy.pth,文档内容就是插件的实际位置：D:\Wind\WAPI.PE\x64 ，在这个目录下，就是wind插件的真正文件了，比如.dll库文件，windpy.py文件，以及WindNavigator.exe文件 。

好了，到这里wind量化插件就安装好了，是不是很简单呢？

下面就是获取账号和密码了，需要在大奖章网站注册账户，并绑定手机号，在使用量化插件的时候，第一次启动的时候，需要输入手机号和密码。

### 2 开始使用

下面进入量化交易的神奇之旅！

对我们来说，现在就可以进入Python环境体验wind插件了。

我的python环境是anaconda，启动spyder。

Spyder有报错，不过不影响，先过去

Exception in thread Thread-4:

Traceback (most recent call last):

File "D:\anaconda3\lib\threading.py", line 916, in \_bootstrap\_inner

self.run()

File "D:\anaconda3\lib\site-packages\spyder\widgets\externalshell\introspection.py", line 65, in run

sock.bind( ("127.0.0.1", self.port) )

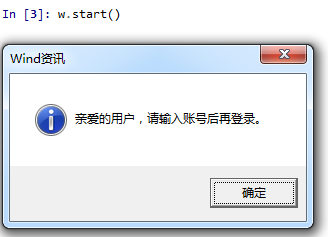
OSError: [WinError 10013] 以一种访问权限不允许的方式做了一个访问套接字的尝试。

输入：

from WindPy import w

没有报错提示，这证明wind量化插件已经安装好了

输入 w.start()



点击确定后，出现wind登陆界面，这时候就要把手机号和密码输入才能登陆。



好久没有使用了，竟然登陆进去了！

提示信息是这样的：

w.start()

Welcome to use Wind Quant API for Python (WindPy)!

You can use w.menu to help yourself to create commands(WSD,WSS,WST,WSI,WSQ,...)!

COPYRIGHT (C) 2016 WIND HONGHUI INFORMATION & TECHKNOLEWDGE CO., LTD. ALL RIGHTS RESERVED.

IN NO CIRCUMSTANCE SHALL WIND BE RESPONSIBLE FOR ANY DAMAGES OR LOSSES CAUSED BY USING WIND QUANT API FOR Python.

Out[6]:

.ErrorCode=0

.Data=[OK!]

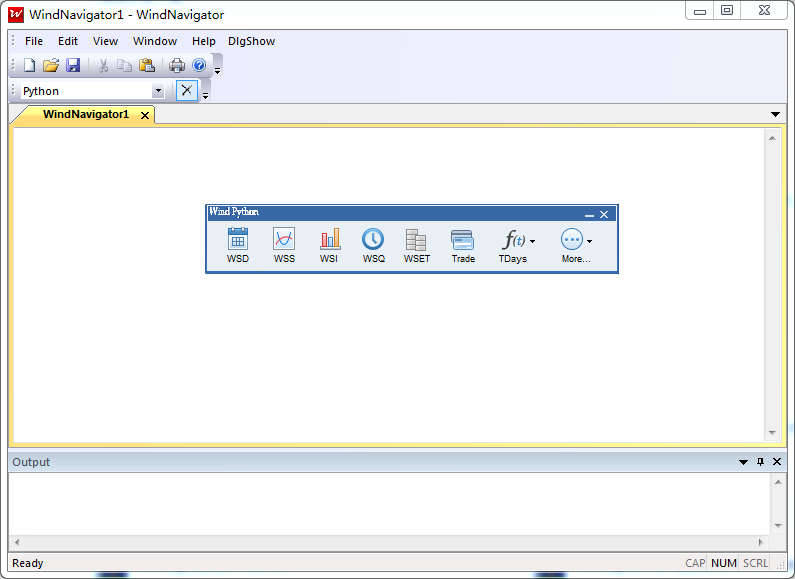
输出的信息比较多，.ErrorCode=0 ,应该就是没有出错，Data=[OK!]意思就是数据正常。

上面的提示中，还有一个很有帮助的信息，就是提示我们，可以用w.menu来帮助我们创建命令。因为大家对wind量化的命令可能并不熟悉，它专门给我们制作了命令生成器！

输入w.menu 或w.menu()

结果并没有调出来命令生成器...

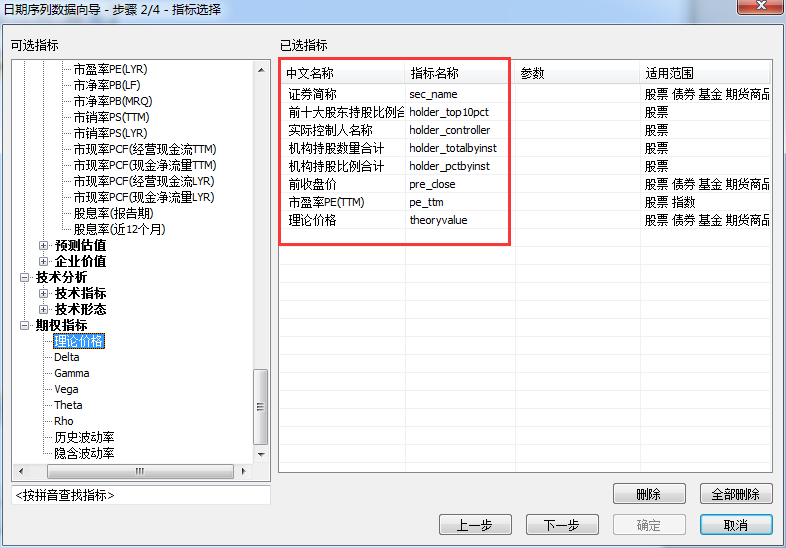
不过我们可以手工去运行这个文件，还记得前面讲过的它们被安装在哪个目录了吗？ 对，在D:\Wind\WAPI.PE\x64这个目录。每个人安装的时候可以自定义目录，不过建议安装在c盘或者d盘，目录结构不要改变。在这个目录里，可以看见一个执行文件WindNavigator.exe，运行它：



这就是我们的wind导航器，也就是命令生成器了！

下面写几个命令试试！

也许我们知道wsd是获取市场信息的，但是不知道语法怎么写，这时候就可以通过点击WSD，用选菜单的方法来生成命令，比如我们选浦发银行，设定了如下几个指标（参数）：



然后选择周期、时间限定、日期类型等



再选择货币、价格修正、运行设置等，



很好，系统自动给我们写出代码来了：

w.wsd("600000.SH", "sec\_name,holder\_top10pct,holder\_controller,holder\_totalbyinst,holder\_pctbyinst,pre\_close,pe\_ttm,theoryvalue", "2017-02-09", "2017-03-11", "Fill=Previous")

让我们去运行一下看看效果！

输出的是一个wind的特有数据格式：

.ErrorCode=0

.Codes=[600000.SH]

.Fields=[SEC\_NAME,HOLDER\_TOP10PCT,HOLDER\_CONTROLLER,HOLDER\_TOTALBYINST,HOLDER\_PCTBYINST,PRE\_CLOSE,PE\_TTM,THEORYVALUE]

.Times=[20170209,20170210,20170213,20170214,20170215,20170216,20170217,20170220,20170221,20170222,...]

.Data=[[浦发银行,浦发银行,浦发银行,浦发银行,浦发银行,浦发银行,浦发银行,浦发银行,浦发银行,浦发银行,...],[None,None,None,None,None,None,None,None,None,None,...],[None,None,None,None,None,None,None,None,None,None,...],[None,None,None,None,None,None,None,None,None,None,...],[None,None,None,None,None,None,None,None,None,None,...],[16.67,16.72,16.78,16.85,16.75,16.84,16.78,16.64,16.91,16.88,...],[6.8072400665895785,6.83166796156538,6.860167172370479,6.819454014077479,6.856095856541178,6.83166796156538,6.7746695399551795,6.884595067346279,6.872381119858378,6.819454014077479,...],[None,None,None,None,None,None,None,None,None,None,...]]

这个数据看起来有点乱啊，可以把wind数据转成python的series和Dataframe类型。

然后模拟登陆：

w.tlogon("00000010","0","M:1585379922602","\*\*\*\*\*\*","DCE")

Out[41]:

.ErrorCode=0

.Fields=[LogonID,LogonAccount,AccountType,ErrorCode,ErrorMsg]

.Data=[[1],[M:1585379922602],[DCE],[0],[]]

这样应该就是登上去了。

但是查询的时候报错：

w.tquery("Account","LogonId=M:1585379922602")

Out[45]:

.ErrorCode=-40530004

.Fields=[LogonID,ErrorCode,ErrorMsg]

.Data=[[M:1585379922602],[-40530004],[ErrorB:004LogonID错（或未输入此参数）]]

开始以为是双休日的缘故，准备等工作日再来测试！后来仔细看了下登陆的输出信息，发现loginid应该是登陆后返回的数值，也就是“1”，重新生成查询命令，测试：

w.tquery("Account","LogonId=1")

Out[49]:

.ErrorCode=0

.Fields=[ShareholderStatus,MainShareholderFlag,AccountType,MarketType,Shareholder,AssetAccount,Customer,LogonID,ErrorCode,ErrorMsg]

.Data=[[48,48,48,48],[0,0,0,0],[CFE,SHF,CZC,DCE],[CFE,CZC,CZC,CZC],[000100001614,000100001615,000100001616,000100001617],[M:1585379922602,M:1585379922602,M:1585379922602,M:1585379922602],[M:15853799226,M:15853799226,M:15853799226,M:15853799226],[1,1,1,1],[0,0,0,0],[,,,]]

查询一下账户多少钱：

w.tquery("Capital","LogonId=1")

Out[50]:

.ErrorCode=0

.Fields=[MoneyType,AvailableFund,BalanceFund,FetchFund,ExerciseMargin,RealFrozenMarginA,RealFrozenMarginB,HoldingProfit,TotalFloatProfit,InitRightsBalance,...]

.Data=[[CNY],[0.0],[100000000.0],[0.0],[0.0],[0.0],[0.0],[0.0],[0.0],[100000000.0],...]

哇，有1亿啊，真高兴！

### Wind几个查询函数简单学习：

WSQ

通过命令生成器，生成如下命令：

w.wsq("RB1705.SHF", "rt\_last,rt\_last\_vol,rt\_chg,rt\_pct\_chg,rt\_oi", func=DemoWSQCallback)

此命令为实时接收RB1705螺纹钢1705交易数据，共接收现价、现量、涨跌、涨跌幅以及持仓量5个数据。要记住，只有当以上数据有变化的时候，wind才会推送数据，有几个变化就推送几个，如果是非活跃合约，很长时间没有成交，那就很长时间没有推送数据。

推送过来的数据是这样的：

==============================

.ErrorCode=0

.StateCode=1

.RequestID=8

.Codes=[RB1710.SHF]

.Fields=[RT\_LAST,RT\_LAST\_VOL,RT\_CHG,RT\_PCT\_CHG,RT\_OI]

.Times=[20170316 13:52:01]

.Data=[[3394.0],[50.0],[2.0],[0.0006000000000000001],[1091316.0]]

==============================

.ErrorCode=0

.StateCode=1

.RequestID=8

.Codes=[RB1710.SHF]

.Fields=[RT\_LAST,RT\_LAST\_VOL,RT\_CHG,RT\_PCT\_CHG,RT\_OI]

.Times=[20170316 13:52:02]

.Data=[[3393.0],[2.0],[1.0],[0.00030000000000000003],[1091318.0]]

==============================

.ErrorCode=0

.StateCode=1

.RequestID=8

.Codes=[RB1710.SHF]

.Fields=[RT\_LAST,RT\_LAST\_VOL,RT\_CHG,RT\_PCT\_CHG]

.Times=[20170316 13:52:08]

.Data=[[3394.0],[6.0],[2.0],[0.0006000000000000001]]

==============================

.ErrorCode=0

.StateCode=1

.RequestID=8

.Codes=[RB1710.SHF]

.Fields=[RT\_LAST,RT\_LAST\_VOL,RT\_OI]

.Times=[20170316 13:52:09]

.Data=[[3394.0],[254.0],[1091470.0]]

==============================

### 3 股票模拟交易

dct1=w.tlogon("00000010","0","M:1585379922601","123456","SHSZ")

### 4 期货交易

登陆模拟期货账户

dct2= w.tlogon("00000010","0","M:1585379922602","\*\*\*\*\*\*","CZC")

w.tquery("Capital","LogonId=2")

买入黄金等品种

w.torder("AU1706.SHF","Buy","277.10","2","OrderType=LMT;LogonID=2")

w.torder("M1709.DCE","Buy","2889","2","OrderType=LMT;LogonID=2")

w.torder("RB1709.SHF","Buy","3472","2","OrderType=LMT;LogonID=2")

# 数据挖掘与算法

把思想融入到程序化

## 基本数据操作：

### 从日收益到月收益：

# 附录：

## 环境相关文档链接

Docker+jupyter快速搭建数据科研环境

<http://geek.csdn.net/news/detail/51199>

基于Docker，我们可以下载一个镜像文件，其中已经包含了一系列的软件包和数据科研工具。我们可以基于这个镜像在极短时间内启动数据科研环境，不必花费漫长的时间来人工挨个安装编译各个软件包。这个环境就是Docker容器。容器可以帮助我们消除配置问题，即当容器被启动时，它就已经是一个所有软件包都正常工作的良好状态。

这个博客讲jupyter的安装

<http://www.cnblogs.com/bregman/p/5744109.html>

这里是官方jupyterhub安装，我就是主要参考这个文档：

<https://github.com/jupyterhub/jupyterhub/wiki/Installation-of-Jupyterhub-on-remote-server>

官方Getting started with JupyterHub

<https://github.com/jupyterhub/jupyterhub/blob/master/docs/source/getting-started.md>

官方jupyterhub网站：

<http://jupyterhub.readthedocs.io/en/latest/>

阿里云FreeBSD安装node

<https://yq.aliyun.com/articles/54795>

能够安装好node和npm

升级阿里云到Freebsd11

<https://bbs.aliyun.com/read/297189.html>

快速安装jupyterhub

<http://jupyterhub.readthedocs.io/en/latest/quickstart.html>

Pyzmq手册

<https://pyzmq.readthedocs.io/en/latest/>

FreeBSD ports文件依赖关系

<https://www.freebsd.org/cgi/ports.cgi?query=pyzmq&stype=all>

Python库大全！

<https://www.zhihu.com/question/24590883>

Github OAuthenticator介绍

OAuth + JupyterHub Authenticator = OAuthenticator

<https://github.com/jupyterhub/oauthenticator>

oAuth 2.0 第三方登录详细介绍(github)

<http://www.open-open.com/lib/view/open1440845454263.html>

用github登录，oauth开发

<http://www.open-open.com/lib/view/open1416812717570.html>

## Jupyter FreeBSD案例！

Running My Own Jupyter Notebook Server in a FreeBSD Jail

<http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/>

As a non-computer/data science professional, my fascination of what one can do with data science is growing day by day. I am aware that [Enthought Canopy](https://www.enthought.com/products/canopy/) and[Continuum Anaconda](https://www.continuum.io/why-anaconda) are both excellent pre-built  packages with intergrated Jupyter notebook and everything that I might need for doing data analysis with Python. I have been using Anaconda on individual computers for over a year and really like it. However I would love to have a central place for all my notebooks, so I don’t have to copy them around while working on my projects on different devices.

There are plenty of advises out there on the web telling people that how difficult and frustrating it is to compile and install Python and those data analysis packages from scratch (e.g. numpy, scipy, matplotlib and pandas just to name a few).  But I wanted to see how hard it really is. So after successfully [set up ownCloud in my FreeNAS jail](http://www.mianchen.com/installing-owncloud-and-lighttpd-in-freenas-freebsd-jail/) in a recent attempt, I (foolishly?) decided to have a go at setting up my own [Jupyter](http://jupyter.org/) notebook server in another FreeBSD jail instance in my home server.  This documents how I did it.

[1. Setup a new FreeNAS jail](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "freenasjail)  
[2. Install Python](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "installpython)  
[3. Install Jupyter](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "installjupyter)  
[4. Setup Jupyter server](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "jupytersetup)  
[5. numpy, pandas and matplotlib](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "numpypandasmatplotlib)  
[6. Some problems and their fixes](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "fixes)  
[7. Installed modules](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "modules)  
  
****1. Set up a new FreeNAS jail**** [[^top]](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "tableofcontents)

****Create Jail****: Click the Jails icon from the FreeNAS admin page menu and thenAdd Jails. Choose Advanced Mode and give the jail a name. Uncheck the box next toVIMAGE then click OK to continue. This will take a while if a jail using the standard template has never been set up before.

****Enable SSH****: Launch the FreeNAS shell from the treeview menu on the left. Copy all of the files in the /etc/ssh/ to the jail.

|  |  |
| --- | --- |
| 1 | cp /etc/ssh/\* [jail data store path]/etc/ssh/ |

If SSH is off by default for FreeNAS, the following line in ssh/sshd\_config must be commented out before copying – it can also be edited out later obviously.

|  |  |
| --- | --- |
| 1 | NoneEnabled yes     *//comment out or delete this row* |

Launch a shell for the jail from the Jails tab, enable password and launch sshd service:

|  |  |
| --- | --- |
| 1  2 | passwd  service sshd onestart |

Or permanently enable sshd:

|  |  |
| --- | --- |
| 1  2 | sysrc sshd\_enable="YES"  service sshd start |

Close the shell, SSH into the jail then update pkg and the ports repository:

|  |  |
| --- | --- |
| 1  2  3 | pkg update  portsnap fetch extract  pkg install nano     *//for convenience* |

This may take a while, if there is any problem, delete /var/db/pkg/repo-\*.\* then redopkg upgrade.  
  
****2. Install Python**** [[^top]](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "tableofcontents)  
Many of the necessary packages can easily be installed bypkg install [packagename]. Before any attempt of installing from source, try pkgfirst.

|  |  |
| --- | --- |
| 1  2 | pkg install python34  ln /usr/local/bin/python3.4 /usr/local/bin/python  *//symlink for convenience* |

Some of the packages can also be installed using pip, so it’s a good idea to installpip first:

|  |  |
| --- | --- |
| 1  2 | curl -G "https://bootstrap.pypa.io/get-pip.py" -o get-pip.py  python get-pip.py |

****3. Install Jupyter**** [[^top]](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "tableofcontents)  
pyzmq the Python bindings for [ZeroMQ](http://zeromq.org/" \t "http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/_blank) must be installed before jupyter.

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9 | #for Python 3.4:  cd /usr/ports/net/py-pyzmq  make PYTHON\_VERSION=python3.4 install clean    #for Python 2.7 simply run:  pkg install py-pyzmq    #after pyzmq is installed successfully run:  pip install jupyter |

This whole installation shouldn’t take more than a few minutes. Before I figured out how to install these quickly, I went down the route of installing jupyter from BSD ports and it took a very long time!  
  
****4. Set up Jupyter server**** [[^top]](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "tableofcontents)  
Jupyter notebook’s online [documentation](http://jupyter-notebook.readthedocs.org/en/latest/public_server.html" \t "http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/_blank) details how to setup and run a secure Jupyter server. To quickly test the server is working properly, the password protection and SSL encryption can be skipped and added later when required. A default configuration can be generated using the following command:

|  |  |
| --- | --- |
| 1 | jupyter notebook --generate-config |

This outputs jupyter\_notebook\_config.py in the ~/.Jupyter directory. There are a huge amount of options in the configuration file. To simplify things, I just created ajupyter\_notebook\_config.py with the following lines, instead of using the automatically generated one.

|  |  |
| --- | --- |
| 1  2  3  4 | c.NotebookApp.ip ='\*'  c.NotebookApp.open\_browser = **False**  c.NotebookApp.notebook\_dir  = '/tmp'  #default start up directory  c.NotebookApp.port = 8888 |

Once the above steps are complete, start the notebook server:

|  |  |
| --- | --- |
| 1  2  3  4  5 | jupyter notebook    # or run the python script:    jupyter-notebook |

At this point, the server needs to be launched via SSH, it would be very annoying and inconvenient to do that. We need to add this to the crontab:

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23 | #I don't want to spend time learning vi,  #so before working with crontab,  #run this command:  setenv EDITOR nano    #or change it permanently by:  nano /.cshrc    #find this line:  setenv EDITOR vi    #change it to:  setenv EDITOR nano    #save and exit    #run:  crontab -e    #add the following line:  @reboot /usr/local/bin/jupyter-notebook    #save and exit |

Now restart the jail and try out the brand new Jupyter Notebook server! Everything should work as expected.  
  
****5. numpy, pandas and matplotlib**** [[^top]](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "tableofcontents)  
Unfortunately, a Jupyter notebook server is not very useful without a few Python modules such as numpy, pandas and matplotlib.

****numpy and pandas****:

|  |  |
| --- | --- |
| 1  2  3  4  5  6 | #numpy:  cd /usr/ports/math/py-numpy  make PYTHON\_VERSION=python3.4 install clean    #pandas:  pip install pandas |

matplotlib:  
The easiest way to install matplotlib is to follow the [installation guide](http://matplotlib.org/faq/installing_faq.html" \l "how-to-install) on its website:

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7 | *#use either of the commands to download the repo:*  git clone git@github.com:matplotlib/matplotlib.git  git clone git://github.com/matplotlib/matplotlib.git    *#when download finishes:*  cd matplotlib  python setup.py install |

The installation takes less than 10 minutes, compared to building and installing from BSD ports, this is like ‘lightening fast’.

6. Some problems and fixes [[^top]](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "tableofcontents)  
When importing numpy, pandas or maplotlib in the notebook, an error occurs with the following lines at the very bottom of the error message.

|  |  |
| --- | --- |
| 1  2 | ImportError: /lib/libgcc\_s.so.1: version GCC\_4.6.0 required by  /usr/local/lib/gcc48/libgfortran.so.3 **not** found |

This can be fixed by setting the LD\_LIBRARY\_PATH to the required gcc version. This was discussed over in [stackoverflow](http://stackoverflow.com/questions/35416195/jupyter-ipython-notebook-numpy-pandas-matplotlib-error-freebsd" \t "http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/_blank).

If Jupyter is always being called from terminals, adding the following line to /.cshrcwill make the LD\_LIBRARY\_PATH setting permanent:

|  |  |
| --- | --- |
| 1 | setenv LD\_LIBRARY\_PATH /usr/local/lib/gcc48 |

However, if Jupyter notebook is to be launched automatically after boot by crontab, this fix does not work. I have to modify the /usr/local/bin/jupyter-notebook file to change the system environment before launching the notebook server (highlighted are inserted lines of code):

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14 | *#!/usr/local/bin/python3.4*    *# -\*- coding: utf-8 -\*-*  **import** re  **import** sys    **import** os  os.environ['LD\_LIBRARY\_PATH'] = '/usr/local/lib/gcc48'    **from** notebook.notebookapp **import** main    **if** \_\_name\_\_ == '\_\_main\_\_':      sys.argv[0] = re.sub(r'(-script\.pyw|\.exe)?$', '', sys.argv[0])      sys.exit(main()) |

****7. List of all installed modules**** [[^top]](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "tableofcontents)  
Some of the packages below (e.g. biopython, beautifulsoup4, pypyodbc etc.) are not required but they were installed for future use, when I was stuck and got frustrated :

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40  41  42  43  44  45  46  47  48  49  50  51  52  53  54  55  56  57  58  59  60  61  62  63  64 | pip list    -sqlite3 (0.0.0)  alabaster (0.7.6)  Babel (2.2.0)  backports-abc (0.4)  beautifulsoup4 (4.4.1)  biopython (1.66)  bokeh (0.11.1)  certifi (2015.11.20)  cycler (0.9.0)  decorator (4.0.9)  docutils (0.12)  ipykernel (4.2.2)  ipython (4.1.1)  ipython-genutils (0.1.0)  ipywidgets (4.1.1)  Jinja2 (2.8)  jsonschema (2.5.1)  jupyter (1.0.0)  jupyter-client (4.1.1)  jupyter-console (4.1.0)  jupyter-core (4.0.6)  lxml (3.5.0)  MarkupSafe (0.23)  matplotlib (1.5.1)  mistune (0.7.1)  nbconvert (4.1.0)  nbformat (4.0.1)  notebook (4.1.0)  numpy (1.10.4)  pandas (0.17.1)  path.py (8.1.2)  pexpect (4.0.1)  pickleshare (0.6)  pip (8.0.2)  ptyprocess (0.5.1)  py (1.4.31)  Pygments (2.1)  pyparsing (2.1.0)  pypyodbc (1.3.3)  PyStemmer (1.3.0)  pytest (2.8.7)  python-dateutil (2.4.2)  pytz (2015.7)  PyYAML (3.11)  pyzmq (15.2.0)  qtconsole (4.1.1)  requests (2.9.1)  scikit-learn (0.17.1)  scipy (0.17.0)  seaborn (0.7.0)  setuptools (20.1.1)  simplegeneric (0.8.1)  six (1.10.0)  snowballstemmer (1.2.0)  Sphinx (1.3.1)  sphinx-rtd-theme (0.1.8)  SQLAlchemy (1.0.12)  terminado (0.6)  tornado (4.3)  traitlets (4.1.0)  virtualenv (14.0.6)  wheel (0.29.0) |

****Conclusion****  
I have had spent more than a couple of days to make this whole thing working. After I was satisfied with the server, I then created another jail, and made a second attempt looking for ‘better’ ways to set this up. The above procedures take only a couple of hours in total.

To be honest, without a proper step-by-step tutorial at the beginning, for a newbie like myself, it was quite difficult! But I have learned a lot during this process, in the end I think it’s worth it.

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16 | Server:        HP Gen8 Microserver  RAM:           16GB ECC  CPU:           Intel Celeron G1610T  HDD:           2TB x 4 (ZFS)    Server OS:     FreeNAS-9.3-STABLE-201506292332  Jail OS:       FreeBSD 9.3-RELEASE-p16 (FREENAS.amd64)  Python:        Python 3.4.4  Jupyter:       Jupyter Core 4.0.6  OS gcc:        gcc version 4.2.1 20070831 patched [FreeBSD]                   #A newer version of gcc must be installed for numpy to work                 #the following versions have been tested and worked:                   gcc version 4.8.5 (FreeBSD Ports Collection)                 gcc version 5.3.0 (FreeBSD Ports Collection) |

[[back to ^top]](http://www.mianchen.com/running-my-own-jupyter-notebook-server-in-a-freebsd-jail/" \l "tableofcontents)

### 2017.3.11 更新freebsd10.1到11.0-release-p8记录

主要用到的命令是：

查看版本

945 22:20 freebsd-version -k -u

设置环境变量，10.3版本，好像不需要弄这个：

946 22:20 setenv UNAME\_r "10.3-RELEASE"

更新，这个在国内如果没有镜像的话时间超长！

为了装jupyter，使用了其它一下命令：

947 22:20 freebsd-update fetch

920 20:59 whereis jupyterhub

921 21:00 whereis jupyter

926 21:00 locate notejs

927 21:21 df

928 21:25 whereis nodejs

929 21:25 locate node

930 21:27 pkg install node

931 21:27 pkg-static install node

932 21:55 pkg\_stick install python36

933 21:56 pkg-static install python36

934 22:02 whereis py-pyzmq

935 22:03 make PYTHON\_VERSION=python3.6 install clean

936 22:03 cd /usr/ports/net/py-pyzmq

937 22:03 make PYTHON\_VERSION=python3.6 install clean

938 22:07 pkg-static install py-setuptools36

939 22:07 pkg-static install devel/py-setuptools36

940 22:08 cd /usr/ports/net/py-pyzmq

943 22:09 make -V PYTHON\_VERSION=python3.6 install clean

944 22:19 freebsd-version

945 22:20 freebsd-version -k -u

946 22:20 setenv UNAME\_r "10.3-RELEASE"

后来知道，这里不需要设这个环境变量。

956 22:29 /usr/local/bin/python3.6

957 22:31 ps -aux

958 22:31 nameserver

959 22:32 nslookup

960 22:32 vi /etc/resolv.conf

983 22:36 freebsd-update fetch

984 22:36 freebsd-update fetch &

1000 22:43 freebsd-update -s 'freebsd-updates.mirrors.163.com' fetch

发现那篇文章中有误，

不过那个错误不影响大局，因为到了后面会有提示

freebsd-update fetch 之后，就可以先升级到10.3了

 freebsd-update upgrade -r 10.3-RELEASE

root@iZ25alqsdzzZ:~ # freebsd-update upgrade -r 10.3-RELEASE

Looking up update.FreeBSD.org mirrors... 4 mirrors found.

Fetching metadata signature for 10.1-RELEASE from update5.freebsd.org... done.

Fetching metadata index... done.

Fetching 2 metadata files... done.

Inspecting system... done.

The following components of FreeBSD seem to be installed:

kernel/generic world/base world/lib32

The following components of FreeBSD do not seem to be installed:

src/src world/doc world/games

Does this look reasonable (y/n)? y

Fetching metadata signature for 10.3-RELEASE from update5.freebsd.org... done.

Fetching metadata index... done.

Fetching 1 metadata patches. done.

Applying metadata patches... done.

Fetching 1 metadata files...

done.

Inspecting system...

done.

Fetching files from 10.1-RELEASE for merging... done.

Preparing to download files... done.

Fetching 11045 patches.....10....20....30....40....50....60....70....80....90....100....110....120....130....140....150....160....170....180....190....200....210....220....230....240....250....260....270..

本来以为要3个小时呢，后来很快：

....10010....10020....10030....10040....10050........11030....11040.. done.

Applying patches... done.

Fetching 393 files... done.

Attempting to automatically merge changes in files... done.

The following file could not be merged automatically: /etc/ntp.conf

Press Enter to edit this file in vi and resolve the conflicts

manually...

说/etc/ntp.conf无法自动合并，只能手工上！

回答了一大堆yes

然后运行安装：

/usr/sbin/freebsd-update install

root@iZ25alqsdzzZ:~ #/usr/sbin/freebsd-update install

Installing updates...

Kernel updates have been installed. Please reboot and run

"/usr/sbin/freebsd-update install" again to finish installing updates.

一年多没重启了，重启一下

启动后看下：

root@rich:~ # freebsd-version -k -u

10.3-RELEASE-p11

10.1-RELEASE

Ok，现在开始主版本升级，从10升级到11，输入如下命令：

# : > /usr/bin/bspatch

# freebsd-update upgrade -r 11.0-RELEASE

# freebsd-update install

<reboot the system>

# freebsd-update install

<rebuild third-party software>

# freebsd-update install

root@rich:~ # freebsd-update upgrade -r 11.0-RELEASE

src component not installed, skipped

Looking up update.FreeBSD.org mirrors... 4 mirrors found.

Fetching metadata signature for 10.3-RELEASE from update5.freebsd.org... done.

Fetching metadata index... done.

Fetching 1 metadata patches. done.

Applying metadata patches... done.

Fetching 1 metadata files... done.

Inspecting system... done.

The following components of FreeBSD seem to be installed:

kernel/generic world/base world/lib32

The following components of FreeBSD do not seem to be installed:

world/doc world/games

Does this look reasonable (y/n)? y

Fetching metadata signature for 11.0-RELEASE from update5.freebsd.org... done.

Fetching metadata index... done.

Fetching 1 metadata patches. done.

Applying metadata patches... done.

Fetching 1 metadata files... done.

Inspecting system... done.

Fetching files from 10.3-RELEASE for merging... done.

Preparing to download files... done.

Fetching 11218 patches.....10....20....30....40....50....60....70....80....90....100....110....120....130....140....150....160....170....180....190....200....210....220....230....240....250....260....270....280....290....300....310....320....330....340....350....360....370....380....390....400....410....420....430....440....450....460....470....480....490....500..........11200....11210.... done.

Applying patches... done.

Fetching 1645 files... done.

Attempting to automatically merge changes in files... done.

The following file could not be merged automatically: /etc/ntp.conf

Press Enter to edit this file in vi and resolve the conflicts

安装过程中，又出现ntp.conf，我直接确认退出，然后出现：

The following changes, which occurred between FreeBSD 10.3-RELEASE and

FreeBSD 11.0-RELEASE have been merged into /etc/group:

--- current version

+++ new version

@@ -1,6 +1,6 @@

-# $FreeBSD: releng/10.3/etc/group 256366 2013-10-12 06:08:18Z rpaulo $

+# $FreeBSD: releng/11.0/etc/group 294896 2016-01-27 06:28:56Z araujo $

#

wheel:\*:0:root,sky

daemon:\*:1:

kmem:\*:2:

sys:\*:3:

@@ -15,10 +15,11 @@

staff:\*:20:

sshd:\*:22:

smmsp:\*:25:

mailnull:\*:26:

guest:\*:31:

+video:\*:44:

bind:\*:53:

unbound:\*:59:

proxy:\*:62:

authpf:\*:63:

\_pflogd:\*:64:

@@ -26,10 +27,11 @@

uucp:\*:66:

dialer:\*:68:

network:\*:69:

audit:\*:77:

www:\*:80:

+\_ypldap:\*:160:

hast:\*:845:

nogroup:\*:65533:

nobody:\*:65534:

mysql:\*:88:

sky:\*:1001:

Does this look reasonable (y/n)?

更新了一大堆东西，这个是我真实目的：

/usr/sbin/periodic

/usr/sbin/pkg

/usr/sbin/pmcannotate

最后出现：

/var/yp/Makefile.dist

To install the downloaded upgrades, run "/usr/sbin/freebsd-update install".

按照提示运行

/usr/sbin/freebsd-update install

root@rich:~ #/usr/sbin/freebsd-update install

src component not installed, skipped

Installing updates...

Kernel updates have been installed. Please reboot and run

"/usr/sbin/freebsd-update install" again to finish installing updates.

重启系统后，看一下：

root@rich:~ # uname -a

FreeBSD rich 11.0-RELEASE-p8 FreeBSD 11.0-RELEASE-p8 #0: Wed Feb 22 06:12:04 UTC 2017 root@amd64-builder.daemonology.net:/usr/obj/usr/src/sys/GENERIC amd64

root@rich:~ # freebsd-version -k -u

11.0-RELEASE-p8

10.3-RELEASE-p17

呵呵，已经是11啦！

再来一次/usr/sbin/freebsd-update install

root@rich:~ # /usr/sbin/freebsd-update install

src component not installed, skipped

Installing updates...

Completing this upgrade requires removing old shared object files.

Please rebuild all installed 3rd party software (e.g., programs

installed from the ports tree) and then run "/usr/sbin/freebsd-update install"

again to finish installing updates.

root@rich:~ #

这里让重新build所有的三方软件，天啊！

这个先不管它了

先看一下版本：

root@rich:~ # freebsd-version -k -u

11.0-RELEASE-p8

11.0-RELEASE-p8

嗯，这样就对了 ！

总体来说，目前看算顺利，没有出什么内核无法启动，sshd无法启动，网站挂了等幺蛾子 ！

在使用过程中，发现pkg那里还是有点问题：

root@rich:~ # pkg info

pkg: warning: database version 34 is newer than libpkg(3) version 33, but still compatible

pkg: sqlite error while executing INSERT OR ROLLBACK INTO pkg\_search(id, name, origin) VALUES (?1, ?2 || '-' || ?3, ?4); in file pkgdb.c:1544: no such table: pkg\_search

网上有人也碰到同样的问题，别人的答复：

 I think you can try to nuke /var/db/pkg and run *pkg update* - then you'll run into issues with files from packages that already exist but the pkg does not know about them, that is if you actually managed to install something before. This seems to be an issue even with the bootstrapped pkg itself, so even if you did not manage to install anything yet. Did not have time to play with that yet since I've filed the bug.

弄不明白这里nuke是不是摧毁的意思

于是把/var/db/pkg备份后，删除，重新upgrade

root@rich:~ # mkdir temp

root@rich:~ # cd temp

root@rich:~/temp # ls

root@rich:~/temp # cp /var/db/pkg/\* .

root@rich:~/temp # ls

FreeBSD.meta local.sqlite repo-FreeBSD.sqlite vuln.xml

root@rich:~/temp # ls -l

total 61348

-rw-r--r-- 1 root wheel 246 Mar 12 12:06 FreeBSD.meta

-rw-r--r-- 1 root wheel 9957376 Mar 12 12:06 local.sqlite

-rw-r--r-- 1 root wheel 47798272 Mar 12 12:06 repo-FreeBSD.sqlite

-r--r--r-- 1 root wheel 4919740 Mar 12 12:06 vuln.xml

root@rich:~/temp # rm /var/db/pkg/\*

root@rich:~/temp # pkg upgrade

Updating FreeBSD repository catalogue...

Fetching meta.txz: 100% 944 B 0.9kB/s 00:01

Fetching packagesite.txz: 7% 430 KiB

备份的时候，本来想打tar包的，但是tar命令也不好用了，后来用普通账户测试了一下，ok。可能是太久不用tar命令，不熟悉导致的。

现在pkg终于正常了：

root@rich:~/temp # pkg upgrade

Updating FreeBSD repository catalogue...

Fetching meta.txz: 100% 944 B 0.9kB/s 00:01

Fetching packagesite.txz: 100% 851 KiB 2.3kB/s 06:20

pkg: http://pkg.FreeBSD.org/FreeBSD:11:amd64/quarterly/packagesite.txz: Operation timed out

Unable to update repository FreeBSD

All repositories are up-to-date.

pkg: Repository FreeBSD cannot be opened. 'pkg update' required

Checking for upgrades (0 candidates): 100%

Processing candidates (0 candidates): 100%

Checking integrity... done (0 conflicting)

Your packages are up to date.

root@rich:~/temp # pkg info

root@rich:~/temp #

看来pkg里是没有啥信息了！

看另一个人的方法：

root@rich:~ # pkg update -f

Updating FreeBSD repository catalogue...

Fetching meta.txz: 100% 944 B 0.9kB/s 00:01

Fetching packagesite.txz: 100% 6 MiB 1.2MB/s 00:05

Processing entries: 100%

FreeBSD repository update completed. 25858 packages processed.

### Nginx代理

upstream zqfx.org {

server 127.0.0.1:8000;

}

server {

listen 80;

# optional ssl configuration

# end of optional ssl configuration

server\_name zqfx.org www.zqfx.org;

location / {

proxy\_set\_header Host $http\_host;

proxy\_set\_header X-Real-IP $remote\_addr;

proxy\_set\_header X-Forwarded-For $proxy\_add\_x\_forwarded\_for;

proxy\_set\_header X-Forwarded-Proto $scheme;

client\_max\_body\_size 10m;

client\_body\_buffer\_size 128k;

proxy\_connect\_timeout 60s;

proxy\_send\_timeout 90s;

proxy\_read\_timeout 90s;

proxy\_buffering off;

proxy\_temp\_file\_write\_size 64k;

proxy\_pass http://zqfx.org;

proxy\_redirect off;

}

}

## 【个人版】Wind量化接口个人版使用和权限说明

<http://www.dajiangzhang.com/q?529d26bf-7b34-46b1-bc92-ff9a2494b0a6>

|  |  |  |
| --- | --- | --- |
| **【个人版】Wind量化接口个人版使用和权限说明** | 99人已关注 |  |

Wind量化接口个人版使用说明，请**下载附件**

(备注：个人版量化接口的账号是手机号，密码是手机收到的短信上的密码。如果您是用邮箱注册的网站，请先点击“个人中心”->“模拟交易”绑定手机号)

**一. 支持的期货公司交易接口列表：**

[CTP期货公司列表](http://www.dajiangzhang.com/q?9694ccff-8216-4f50-8568-4c496293d582" \t "http://www.dajiangzhang.com/_blank)

1. **权限表：**

|  |  |  |  |
| --- | --- | --- | --- |
| 命令 | 功能 | 免费个人版 | 机构版 |
| WSQ | 获取行情数据,股票、期货、期权都能取 | 不限股票代码，订阅指标个数不超过100个 | 最多40000个指标 |
| 交易接口 | 进行模拟和实盘交易接口 | 支持模拟交易；同时支持5个账号；支持期货CTP实盘交易 | 同时支持50个账号，支持模拟交易和期货CTP实盘交易； |
| WSS\WSD | 获取历史数据（日数据/快照数据） | 个人版不再限制A股和期货的代码，现在支持所有A股和股指期货的历史日行情数据的获取，除历史日行情和基本资料以外的其他日级别数据限1年  说明：1. 技术指标每次限取50个，大于50个时可分多次获取；2. 复权因子 只能取最近三年 | 除行情数据外，还能获取股票、期货、期权、基金、外汇等行情数据、财务数据、分析师预测和评级以及融资融券等各种数据 |
| WSI | 获取历史数据（分钟数据） | 股票以及期货最近1个月的分钟数据 | 最近3年，不限品种 |
| WSET | 获取数据集，如指数成分，板块成分等等 | 支持部分数据获取 | 支持各种板块成分和统计报表数据 |
| WST | 获取日内跳价数据（高频数据） | 不提供 | 最近7天，不限品种 |
| EDB | 获取宏观经济数据 | 不提供 | 支持 |

**各函数功能说明：**

|  |  |
| --- | --- |
| 函数名 | 函数功能 |
| wsd/wss | 获取日间基本面数据、行情数据等 |
| wsi | 获取分钟行情数据、支持技术指标变参 |
| wst | 获取日内买卖十档盘口快照、成交数据 |
| wsq | 获取订阅实时行情数据 |
| wset | 获取变长数据集数据：指数成分、分红、ST股票等 |
| EDB | 获取宏观经济数据 |

**三. 如果您是第一次接触Wind量化接口（个人版），请按照以下步骤操作：**

**1. 用手机号码注册大奖章网站，**[注册地址](http://www.dajiangzhang.com/userinfo/regist.action" \t "http://www.dajiangzhang.com/_blank)

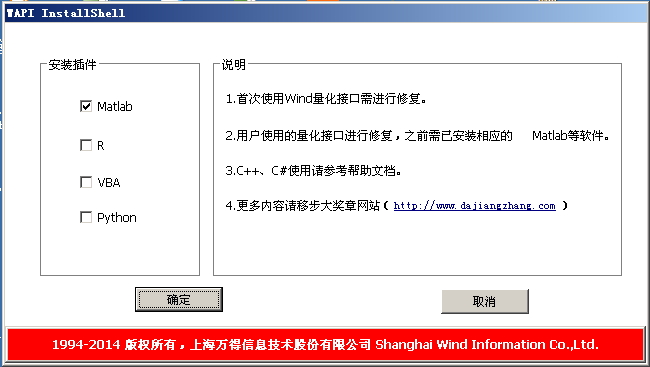
  (注释：如果您已经用邮箱注册过大奖章网站，登陆后，找到[个人中心 -> 账户设置](http://www.dajiangzhang.com/user/set.jsp" \t "http://www.dajiangzhang.com/_blank) -> 绑定手机，绑定手机后，即可使用Wind量化接口)

**2. 下载最新版量化接口（**[下载地址](http://www.dajiangzhang.com/download" \t "http://www.dajiangzhang.com/_blank)**），然后安装压缩包里面的软件，安装完成后，打开软件，选择一种你要使用的语言，然后确定，完成接口安装。**

（1）双击打开该软件



（2）选择您将要使用的语言，点击“确认”，进行接口插件。 比如我使用Matlab语言，我就选择Matlab进行安装。 注意，在安装接口插件之前，需要先安装好语言软件，比如Matlab软件，R，Python、Excel



**3. 下载相应语言的使用手册（**[下载地址](http://www.dajiangzhang.com/download" \t "http://www.dajiangzhang.com/_blank)**），阅读使用手册**

**4. 启动量化接口**

比如Mablab，可用如下命令启动量化接口  
>>w=windmatlab  
>>w.menu

R语言可用如下命令启动量化接口：  
>library(WindR)  
>w.start()

Python可用如下命令启动量化接口：

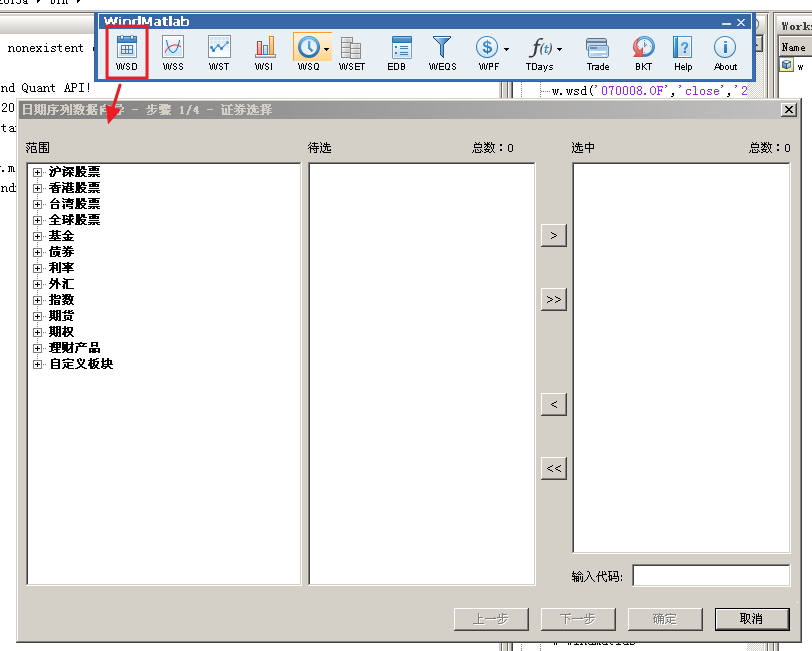
>>>from WindPy import \*

>>>w.start()

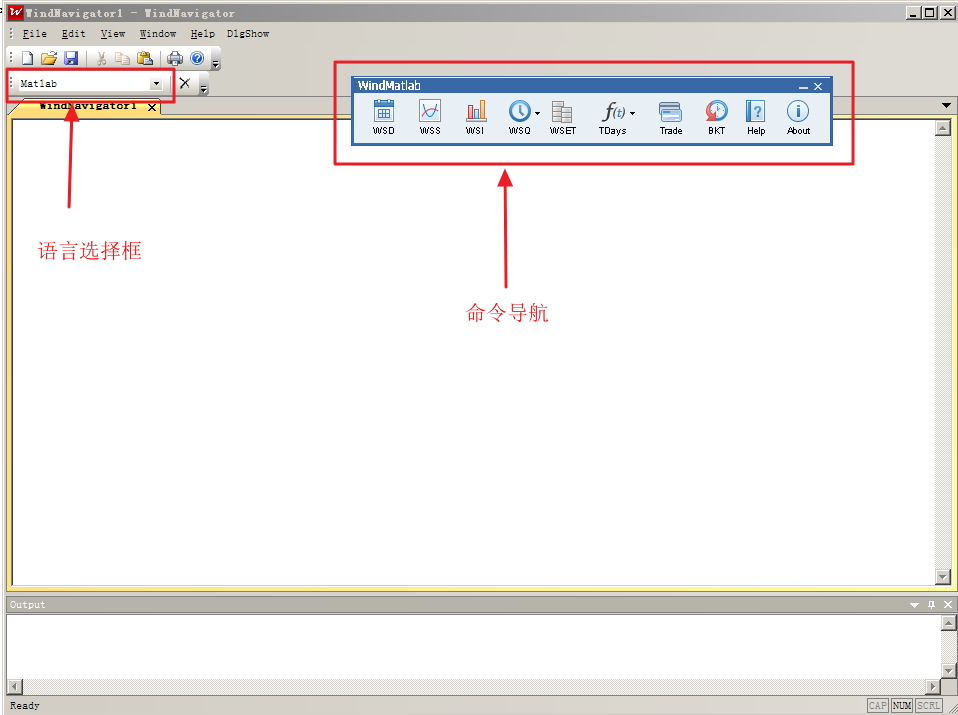
**5. 然后用menu或者命令生成器（C:\Wind\WAPI.PE\bin\WindNavigator.exe），按照一步一步的引导，生成取数据的命令，然后运行，即可取到您想要的数据**

（注：强烈建议大家用menu或者命令生成器生成相关代码语句，自己随意填参数会遇到很多错误，造成不必要的麻烦）

menu界面：



命令生成器界面：



**6. 如何使用模拟交易**

（1） 使用模拟交易

在menu或者[命令生成器](http://www.dajiangzhang.com/q?8af59261-8a2b-4ebc-8aa4-7e9ed464693a" \t "http://www.dajiangzhang.com/_blank)中，点击Trade，即可弹出交易登录框。其中

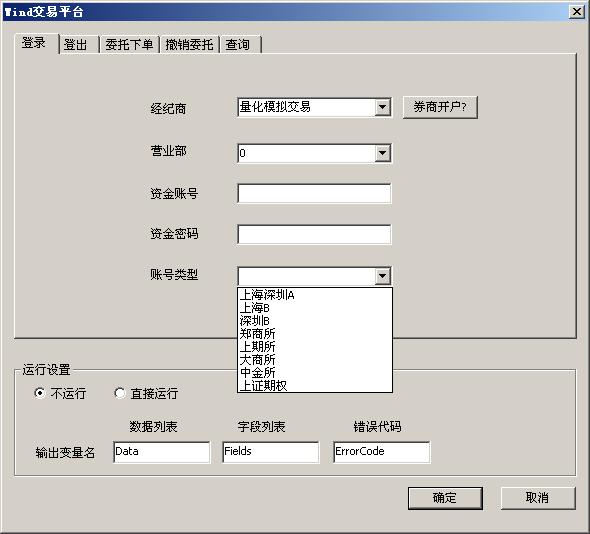
“经纪商”选择“量化模拟交易”；

“营业部”输入“0”或者不填；

“资金账号”为 M:xxxxxxxxxxx01（或者M:xxxxxxxxxxx02，或者M:xxxxxxxxxxx03，xxxxxxxxxxx为您的手机号。您可在网站的“个人中心”->“模拟交易”中查看自己的模拟交易账户），**请注意资金账户前面的 "M:" 是必须的**；

“资金密码”输入123456；

“账户类型”选择相应的类型，比如，A股就选择“上海深圳A”；



（2） 模拟交易查看

在大奖章网站的“个人中心”-> “模拟交易”中，可开通模拟交易账户、重置账户资金、查看模拟交易记录和资金等详细信息。

## Wind插件python接口手册

### 接口规范

**1. 启动Wind API 接口**

from WindPy import \*

w.start()

**2. 命令区分大小写，且“w.”不能省略**

如：w.tdaysoffset(-1)不能写成tdaysoffset(-1)，或者w.TDaysOffset(-1)；

**3. 中文以及单字节码和双字节码的问题**

中文常使用双字节编码，这在Python中使用时就会错误。比如引号、逗号、括号等；

输入的字符串中若存在中文，有的平台可以直接输入中文，而有的需要使用unicode编码，即如：u”上证50”

**4. 品种、指标、参数等引号内的部分不区分大小写**

比如w.wsd('090007.IB','close',Sys.Date()-5,Sys.Date(),'Priceadj=F;tradingcalendar=NIB')

和w.wsd('090007.ib','CLOSE',Sys.Date()-5,Sys.Date(),'Priceadj=f;tradingcalendar=nib') 一样；

**5. 参数支持list输入**

比如w.wss("600000.SH,600005.SH,600004.SH,600007.SH","roe\_avg,roa","rptDate=20121231")

可以写成：

   code=['600000.SH','600005.SH','600004.SH']

   field=['roe\_avg','roa']

   w.wss(code,field,"rptDate=20121231")

**6. 时间、日期支持Python语言的时间、日期格式**

比如w.wsd('600000.SH','open','20130505')

也可以写成w.wsd('600000.SH','close','20130303',datetime.today())

**7. 参数中有缺省值的可以不用输入**

比如w.wsd定义为w.wsd(codes, fields, beginTime, endTime = None, options = None)，可选参数和结束时间都有缺省值，因此用户可以不输入可选参数，也可以不输入结束时间。不输入时使用缺省值。

如：w.wsd('600000.SH','open','20130505')等同于w.wsd('600000.SH','open','20130505',datetime.today())；

**8. 可以带参数名输入**

比如w.wsd定义为w.wsd(codes, fields, beginTime, endTime = None, options = None)。

w.wsd("600000.SH","high","2013-05-09",datetime.today(),"Period=W") 等同于

w.wsd("600000.SH","high","2013-05-09",datetime.today(),options="Period=W")等同于

w.wsd("600000.SH","high","2013-05-09",options="Period=W",endTime=datetime.today())

带参数名输入后，参数顺序就可以变化；

**9. Showblank参数**

Showblank参数可以指定对返回的NaN单元进行特别处理，如：

把NaN用-1替换：

w.wsd('600001.sh','open,close','20130707','20130909','showblank=-1');

或w.wsd('600001.sh','open,close','20130707','20130909',showblank=-1);

把NaN用0替换：

w.wsd('600001.sh','open,close','20130707','20130909','showblank=0');

或w.wsd('600001.sh','open,close','20130707','20130909',showblank=0);

**10. 交易接口中Showfields参数**

交易接口返回的内容的指标根据具体情况会有变化，而有的情况下，客户需要指定确切的返回字段和顺序，此时可以使用showfields参数。如：

w.tquery(1,logonid=1,'showfields=securitycode,Profit,securityBalance')

或：w.tquery(1,logonid=1,showfields='securitycode,Profit,securityBalance ')

**11. ErrorCode定义**

ErrorCode=0表示操作成功。

其他：

-40520001  未知错误 -40520002  内部错误

-40520003  系统错误 -40520004  登录失败

-40520005  无权限 -40520006  用户取消

-40520007  无数据 -40520008  超时错误      -40521010  超时错误

-40520009  本地WBOX错误 -40520010  需要内容不存在

-40520011  需要服务器不存在 -40520012  引用不存在

-40520013  其他地方登录错误 -40520014  未登录使用WIM工具，故无法登录

-40520015  连续登录失败次数过多

-40521001  IO操作错误 -40521002  后台服务器不可用

-40521003  网络连接失败 -40521004  请求发送失败

-40521005  数据接收失败 -40521006  网络错误

-40521007  服务器拒绝请求 -40521008  错误的应答

-40521009  数据解码失败 -40521010  网络超时

-40521011  频繁访问

-40522001  无合法会话 -40522002  非法数据服务

-40522003  非法请求 -40522004  万得代码语法错误

-40522005  不支持的万得代码 -40522006  指标语法错误

-40522007  不支持的指标 -40522008  指标参数语法错误

-40522009  不支持的指标参数 -40522010  日期与时间语法错误

-40522011  不支持的日期与时间 -40522012  不支持的请求参数

-40522013  数组下标越界 -40522014  重复的WQID

-40522015  请求无相应权限 -40522016  不支持的数据类型

-40522017  数据提取量超限

### 函数说明

在手册中，有些带有中文内容的命令不能运行，此时请尝试把非unicode改成unicode，或者unicode改成非unicode，也即在字符串前增加或删除“u”。

如：w.wset("SectorConstituent", u"date=20130608;sector=风险警示股票;field=wind\_code,sec\_name")

改成w.wset("SectorConstituent","date=20130608;sector=风险警示股票;field=wind\_code,sec\_name")

**1. from WindPy import \*：装载WindPy包**

在具体运行各种命令前，用户首先应装载WindPy包。

实例：from WindPy import \*

**2. w.start：启动WindPy**

在真正开始操作之前，可以使用该命令登录并启动windPy插件。

实例：from WindPy import \*

      w.start();#命令超时时间为120秒

     w.start(waitTime=60);#命令超时时间设置成60秒

注：

    w.start不重复启动，若需要改变参数，如超时时间，用户可以使用w.stop命令先停止后再启动。

**3. w.stop：停止WindPy**

当需要停止WindPy时，可以使用该命令。

实例：

       w.start();

       w.stop()

注：退出时，会自动执行w.stop()，用户一般并不需要执行w.stop。

**4. w.isconnected：判断是否已经登录**

可以使用该命令确定windPy是否登陆成功。

实例：w.start();

   w.isconnected()#即判断WindPy是否已经登陆成功

**5. w.cancelRequest：取消订阅**

该命令用来根据订阅请求的id，取消订阅（目前只有w.wsq订阅）。

实例：from WindPy import \*

   w.start();

   data=w.wsq("600000.SH","rt\_low,rt\_last\_vol",func=DemoWSQCallback);#订阅

    #等待回调，用户可以根据实际情况写回调函数

    #....

   w.cancelRequest(data$RequestID);#根据刚才wsq返回的请求ID，取消订阅

注：可以象w.cancelRequest(3)一样，输入一个id的数字，而取消某订阅

**6. w.wsd：获取历史序列数据**

该命令用来获取选定证券品种的历史序列数据，包括日间的行情数据、基本面数据以及技术数据指标。

实例：from WindPy import \*

   w.start();

   data=w.wsd("600000.SH","close,amt","2013-04-30", datetime.today()-timedelta(1))#取浦发银行收盘价等信息

   data=w.wsd("600000.SH","close,amt", datetime.today()-timedelta(100))#取浦发银行收盘价等信息

注：1）一次只能一个品种，并且品种名带有“.SH”等后缀；

2）指标和可选参数也可以用list实现；

3）日期支持Python中时间和日期格式；

4）可选参数有很多种；

**7. w.wsi：获取分钟数据**

该命令用来获取选定证券品种的分钟K线数据，包含历史和当天，分钟周期可以指定，技术指标参数可以自定义设置。命令原型为：data= w.wsi(品种代码,指标,开始时间,结束时间,可选参数)；

实例： w.wsi("600000.SH","close,amt","2013-05-30 9:00:00")#取浦发银行分钟收盘价等信息

    w.wsi("600000.SH","close,amt", datetime.today()-timedelta(10))#取浦发银行分钟收盘价等信息

注：1）一次只能一个品种，并且品种名带有“.SH”等后缀；

2）指标和可选参数也可以用list实现；

3）日期支持R中时间和日期格式；

4）可选参数有很多种；

5）一次只能取3个月内数据。

**8. w.wst：获取日内tick级别数据**

该命令用来获取选定证券品种的日内盘口买卖十档快照数据和分时成交数据（tick数据）。命令原型为：data= w.wst(品种代码,指标,开始时间,结束时间,可选参数)；

实例：

from WindPy import \*

   w.start();

   data=w.wst("600000.SH","open", datetime.today()-timedelta(0,2\*3600), datetime.now())#取浦发银行tick数据信息

注：1）一次只能一个品种，并且品种名带有“.SH”等后缀；

2）指标和可选参数也可以用list实现；

3）日期支持R中时间和日期格式；

4）可选参数有很多种；

5）目前只支持当天数据（假日可以取上一交易日数据），并且只有时间有意义，日期无意义。

**9. w.wss：获历史截面数据**

命令用来获取选定证券品种的历史截面数据，比如取沪深300只股票的2012年3季度的净利润财务指标数据。命令原型为：data= w.wss(品种代码,指标,可选参数)；

实例：

from WindPy import \*

w.start();

data=w.wss("600000.SH,000001.SZ","eps\_ttm,orps,surpluscapitalps","rptDate=20121231")

#取浦发银行等财务数据信息

注：1）一次只能取一个报告期，但可以取多个品种数据

2）品种代码、指标和可选参数也可以用list实现；

3）可选参数有很多种；

**10. w.wsq：获取和订阅实时行情数据**

命令用来获取选定证券品种的当天实时指标数据，数据可以一次性请求，也可以通过订阅的方式获取。命令原型为：data=w.wsq(品种代码,指标,可选参数,回调函数)；

实例：

from WindPy import \*

   w.start();

   w.wsq("600000.SH,000001.SZ","rt\_last,rt\_last\_vol")#取浦发银行等股票当前行情信息

data=w.wsq("600000.SH","rt\_low,rt\_last\_vol",func=DemoWSQCallback)#订阅浦发银行等股票当前行情信息

#.....

w.cancelRequest(data.RequestID)#取消订阅

注：

* 用户自己定义的回调函数格式请参考DemoWSQCallback，回调函数中不应处理复杂的操作。
* 品种代码、指标和可选参数也可以用list实现；用户可以一次提取或者订阅多个品种数据
* 订阅时，API发现用户订阅内容发生变化则调用回调函数，并且只把变动的内容传递给回调函数。

**11. w.wset：获取板块、指数等成分数据**

命令用来获取数据集信息，包括板块成分、指数成分、ETF申赎成分信息、分级基金明细、融资标的、融券标的、融资融券担保品、回购担保品、停牌股票、复牌股票、分红送转。参数设置为起止日期、板块名称等。命令原型为：data=w.wset(数据集名称,可选参数)；

实例：

from WindPy import \*

w.start();

w.wset("SectorConstituent",u"date=20130608;sector=全部A股")#取全部A股股票代码、名称信息

#取沪深300指数中股票代码和权重

w.wset("IndexConstituent","date=20130608;windcode=000300.SH;field=wind\_code,i\_weight")

#取停牌信息

w.wset("TradeSuspend","startdate=20130508;enddate=20130608;field=wind\_code,sec\_name,suspend\_type,suspend\_reason")

#取ST股票等风险警示股票信息

w.wset("SectorConstituent",u"date=20130608;sector=风险警示股票;field=wind\_code,sec\_name")

**12. w.weqs：获取条件选股结果**

用来读取某个条件选股的结果。命令原型为：data= w.weqs(filtername,…)；

实例：

from WindPy import \*

w.start();

#事先已经创建了“七日新低”这个条件选股。（可以在终端上输入eqs创建）

w.weqs('七日新低')

注：

1）可选参数也可以用list实现；

**13. w.wpf：获取资产管理、组合管理数据**

用来读取交易账户与资管账户中的报表数据。命令原型为：data=w.wpf(产品名，数据表名,可选参数)；

实例：

from WindPy import \*

w.start();

#返回组合管理演示 产品中的 组合日结算数据

Data=w.wpf(u"组合管理演示","PMS.PortfolioDaily",

"startdate=20130509;enddate=20130609;reportcurrency=CNY;owner=")

Data=w.wpf(u"总账-MMM","AMS.PortfolioDailySerial")#取资产管理AMS中"总账-MMM"产品日数据序列信息

注：

1）可选参数也可以用list实现；

3）ams 需要先授权，并创建了产品之后才能使用，具体可以联系Wind客服；

4）pms有缺省产品“组合管理演示”，用户可以使用。

### 交易函数

**1. w.tlogon交易登录**

命令用来登录交易系统。命令原型为：data = w.tlogon(BrokerID, DepartmentID, LogonAccount, Password, AccountType,...)

返回参数为：

Data.Fields返回内容列的标题；

Data.Data返回的数据，每个标题有对应的一列数据，最后两列为错误号和错误信息；

               Data.ErrorCode 命令是否成功的错误码，0表示成功。

例如：Wind终端账号为w0812638的用户自动开启了'w081263801'股票模拟交易账号，'w081263802'期货模拟交易账号

>>> LogonID=w.tlogon('0000',0,['w081263801','w081263802'],'000000',['sh','cfe'])  #同时登陆两个账号

>>> LogonID

.ErrorCode=0

.Fields=[u'LogonID', u'LogonAccount', u'AccountType', u'ErrorCode', u'ErrorMsg']

.Data=[[1, 2], [u'w081263801', u'w081263802'], [u'SZSHA', u'CFE'], [0, 0], [u'OK', u'OK']]

注：

1）本命令支持向量操作，也即每个参数都可以使用数组输入，对于只有一个元素的参数会自动扩充；

2）数字和字符串具有同等效果

3) 有WFT账号的用户，已经自动开通模拟账号，其中股票模拟账号为：WFT账号+01，期货为WFT账号+02

**2. w.tlogout交易登出**

命令用来登出交易系统。命令原型为：data = w.tlogout((LogonID = "")

返回参数为：

Data.Fields返回内容列的标题；

Data.Data返回的数据，每个标题有对应的一列数据，最后两列为错误号和错误信息；

              Data.ErrorCode 命令是否成功的错误码，0表示成功。

例如：退出登陆ID为1，2两个账号

>>> w.tlogout([1,2])

.ErrorCode=0

.Fields=[u'LogonID', u'ErrorCode', u'ErrorMsg']

.Data=[[u'1', u'2'], [0, 0], [u'logout', u'logout']]

注：

1）本命令支持向量操作，也即每个参数都可以使用数组输入，对于只有一个元素的参数会自动扩充；

2）数字和字符串具有同等效果

3）只有一个交易登录时，可以不输入LogonID。

**3. w.torder委托下单**

命令用来委托下单。命令原型为：data =w.torder(SecurityCode, TradeSide, OrderPrice, OrderVolume, ..., MarketType = "", OrderType = "", HedgeType = "", LogonID = "")

返回参数为：

Data.Fields返回内容列的标题；

Data.Data返回的数据，每个标题有对应的一列数据，最后两列为错误号和错误信息；

              Data.ErrorCode 命令是否成功的错误码，0表示成功。

例如：

>>> w.torder('600000.SH', 'buy', 9.8, 100,logonid=1) #如果是单账号下不需要LogonID

.ErrorCode=0

.Fields=[u'RequestID', u'SecurityCode', u'TradeSide', u'OrderPrice', u'OrderVolume', u'LogonID', u'ErrorCode', u'ErrorMsg']

.Data=[[23], [u'600000.SH'], [u'Buy'], [u'9.8'], [u'100'], [u'1'], [0], [u'Sending ...']]

例如：向量下单

>>> code=['600000.SH','000001.SZ']

>>> price=w.wsq(code,'rt\_last').Data[0]

>>> w.torder(code,'buy',price,100,logonid=1)

.ErrorCode=0

.Fields=[u'RequestID', u'SecurityCode', u'TradeSide', u'OrderPrice', u'OrderVolume', u'LogonID', u'ErrorCode', u'ErrorMsg']

.Data=[[24, 25], [u'600000.SH', u'000001.SZ'], [u'Buy', u'Buy'], [u'8.42', u'10.62'], [u'100', u'100'], [u'1', u'1'], [0, 0], [u'Sending ...', u'Sending ...']]

注：

1）本命令支持向量操作，也即每个参数都可以使用数组输入，对于只有一个元素的参数会自动扩充；

2）数字和字符串具有同等效果

3）只有一个交易登录时，可以不输入LogonID，否则一定需要输入，即用LogonID=xxxx方式输入。

4）TradeSide可以为：1/buy; 2/short; 3/cover; 4/sell; 5/coverToday; 6/sellToday

5）OrderType可以为：0/LMT; 1/BOC; 2/BOP; 3/ITC; 4/B5TC; 5/FOK; 6/B5TL;

6）当用户输入的代码没有带.的市场后缀时，需要提供MarketType，MarketType可以取：0/SZ; 1/SZ; 2/OC; 6/HK; 7/CZC; 8/SHF;  9/DCE; 10/CFE;

7）可以通过w.tquery(‘order’,requestid=XXX)查询委托情况

8）期货套保账号时一定需要加上HedgeType=HEDG/1，因为缺省是投机SPEC 0

**4. w.tcancel撤销委托**

命令用来撤销委托。命令原型为：data =w.tcancel(OrderNumber, ..., MarketType = "", LogonID = "")

返回参数为：

Data.Fields返回内容列的标题；

Data.Data返回的数据，每个标题有对应的一列数据，最后两列为错误号和错误信息；

              Data.ErrorCode 命令是否成功的错误码，0表示成功。

例如：

>>> w.tcancel([24,25],logonid=1)

.ErrorCode=0

.Fields=[u'OrderNumber', u'LogonID', u'ErrorCode', u'ErrorMsg']

.Data=[[u'24', u'25'], [u'1', u'1'], [0,02], [u'Sending ...', u'Sending ...']]

注：

1）本命令支持向量操作，也即每个参数都可以使用数组输入，对于只有一个元素的参数会自动扩充；

2）数字和字符串具有同等效果

3）只有一个交易登录时，可以不输入LogonID，否则一定需要输入，即用LogonID=xxxx方式输入。

4）当用户有很多笔不同市场的下单时，OrderNumber可能会有重复，此时需要使用MarketType区别，MarketType可以取：0/SZ; 1/SZ; 2/OC; 6/HK; 7/CZC; 8/SHF; 9/DCE; 10/CFE;

**5. w.tquery交易查询**

命令用来查询交易相关各信息。命令原型为：data =w.tquery(qrycode, ..., LogonID = "", RequestID = "", OrderNumber = "",SecurityCode = "", options = "")

返回参数为：

Data.Fields返回内容列的标题；

Data.Data返回的数据，每个标题有对应的一列数据，最后两列为错误号和错误信息；

              Data.ErrorCode 命令是否成功的错误码，0表示成功。

查询返回的内容很多，请参考常见问题，查看返回的各字段意义。

例如：

>>> w.tquery(0,logonid=[1,2]) #查询资金情况

.ErrorCode=0

.Fields=[u'MoneyType', u'AvailableFund', u'BalanceFund', u'SecurityValue', u'FundAsset', u'TotalAsset', u'Profit', u'FundFrozen', u'OtherFund', u'BuyFund', u'SellFund', u'FetchFund', u'ExerciseMargin', u'RealFrozenMarginA', u'RealFrozenMarginB', u'HoldingProfit', u'TotalFloatProfit', u'InitRightsBalance', u'CurrRightsBalance', u'FloatRightsBal', u'RealDrop', u'RealDrop\_Float', u'FrozenFare', u'CustomerMargin', u'RealOpenProfit', u'FloatOpenProfit', u'Interest', u'Remark', u'DepartmentID', u'Customer', u'AssetAccount', u'LogonID', u'ErrorCode', u'ErrorMsg']

.Data=[[u'CNY', u'CNY'], [9988360.0, 9917730.0], [9989220.0, 10000000.0], [7548.6000000000004, None], [9988360.0, None], [9995910.0, None], [-0.079000000000000001, None], [0.0, None], [0.0, None], [861.0, None], [0.0, None], [None, 0.0], [None, 82238.399999999994], [None, 0.0], [None, 0.0], [None, 0.0], [None, 0.0], [None, 9999970.0], [None, 9999970.0], [None, 9999970.0], [None, 0.0], [None, 0.0], [None, 82238.399999999994], [None, 82238.399999999994], [None, 0.0], [None, 0.0], [None, 0.0], [u'\u6a21\u62df\u5f00\u6237', None], [u'W081', None], [u'W0812638', u'W0812638'], [u'W081263801', u'W081263802'], [1, 2], [0, 0], [u'OK', u'OK']]

>>>  w.tquery(2,logonid=1) #查询委托情况

>>> w.tquery(7) #查询登录账号

.ErrorCode=0

.Fields=[u'LogonID', u'LogonAccount', u'AccountType', u'ErrorCode', u'ErrorMsg']

.Data=[[1, 2], [u'w081263801', u'w081263802'], [u'SZSHA', u'CFE'], [0, 0], [u'', u'']]

注：

1）除qrycode外，本命令支持向量操作，也即其他每个参数都可以使用数组输入，对于只有一个元素的参数会自动扩充；

2）数字和字符串具有同等效果

3）只有一个交易登录时，可以不输入LogonID，否则一定需要输入，即用LogonID=xxxx方式输入。

4）qrycode可取：0/capital 资金查询；1/position 持仓查询；2/order 今日委托查询；3/trade 今日成交查询；4/department营业部查询；5/account股东账号查询；6/broker 经济商查询；7/logonid 登录的账号查询

5）今日委托查询2/order时可以依据委托order返回的requestid查询，该查询立即返回，返回服务器已经返回的信息；

6）营业部查询时4/department，需要输入brokerid参数

### 日期函数

**1. w.tdays：返回区间内的日期序列**

命令用来获取两个时间区间内的某种规则下的日期序列。命令原型为：data= w.tdays(开始时间，结束时间,可选参数)；

实例：from WindPy import \*

w.start();

   w.tdays("2013-05-01","2013-06-08")#返回5月1日到6月8日之间的交易日序列

   w.tdays("2013-05-01")#返回5月1日到当前时间的交易日序列

注：

1）可选参数有很多种，可选参数可以用数组实现；

2）时间支持Python中时间和日期格式，结束时间缺省为当前时间；

**2. w.tdaysoffset：返回某个偏移值对应的日期**

命令用来获取基于某个基准时间前推（<0）或者后推(>0)指定天数的日期。命令原型为：data=w.tdays(偏移值，基准时间,可选参数)；

实例：from WindPy import \*

w.start();

   w.tdaysoffset(-5,"2013-05-01")#返回5月1日前推五个交易日的日期，返回2013-4-19

   w.tdaysoffset(-5)#返回当前时间前推五个交易日的日期

注：

1）可选参数有很多种，可选参数可以用数组实现；

2）时间支持Python中时间和日期格式，基准时间缺省为当前时间；

**3. w.tdayscount：返回某个区间内日期数量**

命令用来获取两个时间区间内的某种规则下的日期序列个数。命令原型为：data= w.tdayscount(开始时间，结束时间,可选参数)；

返回参数为：

data$Data返回的序列数据，为data.frame格式；

              data$Code 无意义

              data$ErrorCode 命令是否成功的错误码，0表示成功。

实例： from WindPy import \*

w.start();

   w.tdayscount("2013-05-01","2013-06-08")#返回5月1日到6月8日之间的交易日序列长度，为27

   w.tdayscount("2013-05-01")#返回5月1日到当前时间的交易日序列长度

注：

1）可选参数有很多种，可选参数可以用数组实现；

2）时间支持Python中时间和日期格式，结束时间缺省为当前时间；

### Talib简介

Talib支持的指标：

<http://ta-lib.org/function.html>

Talib的freebsd版本:

<http://ta-lib.org/hdr_dw.html>

Tailib的windows版本：

<http://www.lfd.uci.edu/~gohlke/pythonlibs/#ta-lib>

IBPY简介：

<https://github.com/blampe/IbPy>

### 苹果端brew安装！

Brew基于ruby，是苹果下面的包管理软件

安装brew的目的是为了安装talib，因为pip安装和编译安装都失败了

### 海龟turtle模型

长时间测试，海龟未必能跑过普通的macd等。

但是加强版的海龟，在弱势情况下确实能很长时间不操作或者空仓、轻仓等，仓位控制方面不错。

在顺势加仓方面，如果海龟碰到适合的行情，将很有效，否则将会赚钱、回吐，赚钱回吐。其实这跟人顺势加仓碰到的情况一样......只是它这个策略已经是明确的写出来，很多人用来借鉴、学习，而自己方法一般没有公开罢了。

### Rqalpha支持Facebook的

### RQalpha苹果上面输出是英文

字库已经安装了，但程序还是说找不到

### ricequant支持基金回测吗

ricequant支持基金回测吗?支持 比如基金代码510050.XSHG 深圳的是XSHE

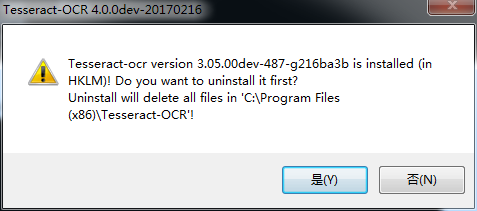
# 报错集锦

Error in sitecustomize; set PYTHONVERBOSE for traceback:

ConnectionRefusedError: [WinError 10061] 由于目标计算机积极拒绝，无法连接。

知乎回应：找了很久，看到一个外国网站的帖子的解决办法，虽然不知道是哪一步弄好的，现在可以用了，貌似和setuptools 包、path.py文件 ，以及.spyder2-py3文件夹有关。

## Tesseract安装



# 名词解析

## Zmq

引用官方的说法： “ZMQ (以下 ZeroMQ 简称 ZMQ)是一个简单好用的传输层，像框架一样的一个 socket library，他使得 Socket 编程更加简单、简洁和性能更高。是一个消息处理队列库，可在多个线程、内核和主机盒之间弹性伸缩。ZMQ 的明确目标是“成为标准网络协议栈的一部分，之后进入 Linux 内核”。现在还未看到它们的成功。但是，它无疑是极具前景的、并且是人们更加需要的“传统”BSD 套接字之上的一层封装。ZMQ 让编写高性能网络应用程序极为简单和有趣。”